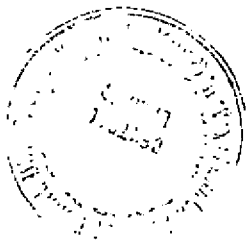
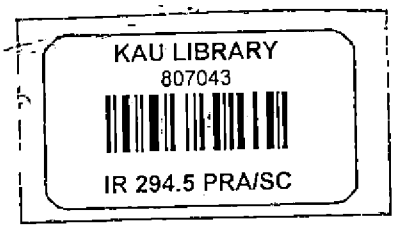
SCIENTIFIC EVALUATION

OF



APTHORYAMA YAGAM 2004

COMPLETE



SREENARAYANAPURAM

MULANKUNNATHUKAVU

THRISSUR

IE
2944.5
PRA/SC

TABLE OF CONTENTS

Scientific Evaluation Of Apthoryama Yagam 2004
Mulankunnathukavu, Thrissur
From 10-04-04 to 20-04-04

8. INFLUENCE OF YAGAM ON MENTAL HEALTH By DR.ANANDAN.K.R. (Psychiatrist), DR.PRAVEENLAL (Professor of psychiatry) & AJITHA (Statistician), Government .Medical College, Thrissur

ANIMALS

9. EFFECT OF APTHORYAMA YAGAM ON CERTAIN PHYSIOLOGICAL PARAMETERS IN ANIMALS By Ramnath, V, Girish Varma, G,; Sreekumar K.P,; Sethu Nair,C and Philomina, P.T., Dept of Physiology College of Veterinary and Animal Sciences, Mannuthy.Thrissur – 680 651

10. BEHAVIOURAL AND PHYSIOLOGICAL CHANGES IN ELEPHANTS DURING RELIGIOUS RITUALS By Saseendran.P.C., Anil K.S., Subhash.C.K, Cijo K Joseph, Sathasivam S. & Deepak Mathew D.K. Department of Livestock Production Management, College of Veterinary & Animal Sciences, Mannuthy, Thrissur – 680 651

11. REPORT ON BEHAVIOURAL STUDIES OF SELECTED SPECIES OF MAMMALS DURING THE APTHORYAMA YAGAM 2004 By P. PADMANABHAN, Scientist, Wildlife Biology Discipline, Division of Forest Ecology and Biodiversity Conservation Kerala Forest Research Institute, Peechi, Thrissur, Kerala 680 653

12. REPORT ON THE SPECIES COMPOSITION AND ABUNDANCE OF BIRD COMMUNITY IN THE APTHORMA YAAGAM AREA AND THE SURROUNDINGS, THRISSUR By C. Sivaperuman & E.A. Jayson, Division of Forest Ecology and Biodiversity Conservation, Kerala Forest Research Institute, Peechi, Thrissur – 680 653, Kerala

13. AGRICULTURAL ORNITHOLOGICAL STUDY OF APTHORYAMA YAGAM By DR. Mani Chellappan, Associate Professor, Department of Entomology, College of Horticulture, Vellanikkara, Thrissur, Kerala – 680 656

14. A REPORT ON THE ACTIVITY OF BEES AND OVIPOSITION BY MOSQUITOES IN SIMULATED OVIPOSITION SITES AT THE APTHORYAMA YAGAM SITE AT MULANGUNNATHUKAVU By Dr. A. M. Ranjith, Associate Professor, Department of Entomology, College of Horticulture Vellanikkara, Thrissur – 680 656

PLANT & SOIL

15. EFFECT OF YAGA ON SEED QUALITY By Dr. T. Girija and Dr. K. Nandini, Department of Plant Physiology, College of Horticulture, Vellanikkara, Thrissur – 680 656

16. METABOLITE ANALYSIS OF PLANT MATERIALS USED IN APTHORYAMA YAGAM 2004 By Dr. K. Pushpangadan, NBRI, Lucknow, UP

17. Medicinal values of plant and other substances used in Apthoryama Yagam By Dr, M.N.B. Nair, FLRHT, Banglore

SAGNICHITHYA APTHORYAMA SOAMA YAAGA- 2004

PROGRAMME SCHEDULE

DAY ONE:

- GANESHA POOJA
- ISHTA DEVATHAA POOJA
- MAHAA SAMKALPAM
- SWASTHI PUNYAAHAVAACHANAM
- NAANDEE SRAARDHAM
- SRADHAAHWAANAM
- AAKOOTHYAAVEDANAM
- RUTHWIK VARANAM
- MADHU PARKAM
- SABHAA POOJA
- UKHAA SAMBHARANAM
- VAAYAVYA YAAGAM

DAY TWO:

- YAAGA SAALA PRAVESAM
- PRAVARGYA SAMBHARANAM
- SAPTHA HOTR HOAMAADI YOOPA GRAHANAM
- YAJAMAANA PATNI VRATHA DOAHAM, VRATHA PAANAM
- APSU DEEKSHA
- DEEKSHANEEYA ISHTI
- DEEKSHAA SAMBHARA PARIGRAHAM
- UKHA AGNI JANANAM
- NIHNAVANAM
- VISHNU KRAMAM
- VASAPRA UPASTHAANAM
- MUSHTEEKARANAM
- DEEKSHITHA VAADAM
- SANEEHAARAM
- SANEEHAARA PRESHANAM
- SHENA CHITHI SAMKALPAM
- AGNI MAANAM
- VEDEE MAANAM
- VRATHA DOAHAM, VRATHA PAANAM

DAY THREE:

Fore-Noon:

- VRATHA DOAHA, VRATHA PAANAM
- GARHAPATHYA CHITHI UPADAANAM [*dismantling the ahavaneeya kunda and piling an altar there with one hundred and five burnt clay bricks in 5 layers of 21 each*]
- AGNI PRATHISHTA IN GARHAPATHYA CHITHI
- PRAYANEEYA ISHTI
- PADA GRAHANAM

- SOAMA KRAYANAM [purchase of soama]
- AATHITHYESHTI
- THAANOO NAPTHRAM
- SOAMA AAPYAAYANAM
- NIHNAVANAM
- AVANTHARA DHEEKSHA

- PRAVARGYA, UPASAD, SUBRAHMANYA AHVAANAM
- VEDEEKARANAM
- PLOUGHING THE LAND FOR THE GARUDA CHITHI
- DEPOSITING MATERIALS IN THE FOUNDATION FOR GARUDA CHITHI
- PILING THE **FIRST LAYER** OF THE GARUDA CHITHI

After-Noon:
- PRAVARGYA, UPASAD, SUBRAHMANYA AHVAANAM
- VRATHA DOAHA, VRATHA PAANAM

DAY FOUR:

Fore-Noon:
- VRATHA DOAHA, VRATHA PAANAM
- PRAVARGYA, UPASAD, SUBRAHMANYA AHVAANAM
- PILING OF THE **SECOND LAYER** OF THE CHITHI [BIRD ALTAR]

After-Noon:
- PRAVARGYA, UPASAD, SUBRAHMANYA AHVAANAM
- VRATHA DOAHA, VRATHA PAANAM

DAY FIVE:

Fore-Noon:
- VRATHA DOAHA, VRATHA PAANAM
- PRAVARGYA, UPASAD, SUBRAHMANYA AHVAANAM
- PILING OF THE **THIRD LAYER** OF THE CHITHI [BIRD ALTAR]

After-Noon:
- PRAVARGYA, UPASAD, SUBRAHMANYA AHVAANAM
- VRATHA DOAHA, VRATHA PAANAM

DAY SIX:

Fore-Noon:
- VRATHA DOAHA, VRATHA PAANAM
- PRAVARGYA, UPASAD, SUBRAHMANYA AHVAANAM
- PILING OF THE **FOURTH LAYER** OF THE CHITHI [BIRD ALTAR]

After-Noon:
- PRAVARGYA, UPASAD, SUBRAHMANYA AHVAANAM
- VRATHA DOAHA, VRATHA PAANAM

DAY SEVEN:

Fore-Noon:

- VRATHA DOAHA, VRATHA PAANAM
- PRAVARGYA, UPASAD, SUBRAHMANYA AHVAANAM
- PILING OF THE FIFTH LAYER OF THE CHITHI [BIRD ALTAR]

After-Noon:

- PRAVARGYA, UPASAD, SUBRAHMANYA AHVAANAM
- VRATHA DOAHA, VRATHA PAANAM

DAY EIGHT:

FORENOON:

- VRATHA DOAHA, VRATHA PAANAM
- PRAVARGYA, UPASAD, SUBRAHMANYA AHVAANAM

COMPLETION OF THE 5TH LAYER OF THE CHITHI

- SAHASRA PROAKSHANAM : *SPRINKLING WATER AND GOLD POWDER ON THE BIRD ALTAR.*
- ISHTAKA DHENU KARANAM: *CONVERTING THE BRICKS INTO DESIRE FULFILLING COWS*
- RUDRA HOAMAM: *OFFERING AN UNINTERRUPTED FLOW OF GOAT';S MILK ON THE FINAL BRICK RECITING SHRI RUDRA MANTRA*
- CHITHI UPASHTAANAM : *CONSECRATION*
- CHITHI PARISHEKAM: *POURING A CONTINUOUS FLOW OF WATER AROUND THE BIRD ALTAR IN THREE PERAMBULATIONS.*
- MANDOOKA MAARJANAM: *TOUCHING THE ENTIRE SURFACE OF THE BIRD ALTAR WITH A FROG.*
- SARPAAHUTHI
- UPASTHAANAM : *CHANTING SAAMA VEDAM*
- UKHTHYAANU SAMSANAM: *OFFERING DAKSHINA TO ADHWARYU FOR THE GARUDA CHAYANAM*
- GANDHARVA AAHUTI

AFTERNOON:

PRAVARGYA, UPASAD, SUBRAHMANYA AHVAANAM

- DISPOSAL OF PRAVARGYA IMPLEMENTS
- VAISWAANARA MAARUTA NIRVAAPA, VAISWA KARMANA HOAMAM
- AGNI PRANAYANAM: *CARRYING FORWARD OF AGNI FROM AAHAVANEEYA TO THE BIRD ALTAR*
- VAISWAANARA MAARUTA YAAGA
- VASOARDHARA: *OFFERING OF UNINTERRUPTED FLOW OF GHEE IN THE RITUAL FIRE RECITING CHAMAKA MANTRA*
- VAAJAPRASAVEEYAKA HOAMAM , RAASHTRABRITH HOAMAM , DHISHNIYA UPADAANAM
- VRATA DOAHAM, VRATA PAANAM
- AGNISHOAMEEYA PRANAYANAM: *CARRYING FORWARD AGNI TO AAGNEETHRIYA AND SOAMA TO HAVIRDHAANA*
- AGNISHOAMEEYA YAAGAM

- PITHAAPUTHREEYA SUBRAHMANYA AAHWAANAM, DEVASUVA AAHUTHI
- PUROADAASA YAAGAM
- VISHNU KRAMANAM, PUROADAASA SWISHTA KRITH
- VASATHEEVAREE GRAHANAM.

DAY NINE:

SUTHYA DAY: DAY OF OFFERING SOAMA

FROM 3.00 AM ONWARDS – UNINTERRUPTED (ROUND-THE-CLOCK) TILL THE CONCLUSION OF THE YAJNA.

- PRAATHA SAVANAM
- YAJNA SAARATHI SAAMA
- SAVANEEYA NIRVAAPA
- PRAATHARANUVAAKAM (RECITATION OF 300 RIGVEDIC HYMS)
- DADHI, KAMA, ADHABHYA, AMSU, UPAAMSU, GRAHA HOAMAM

- ABHISHAVAM : CRUSHING OF SOAMA
- COLLECTION OF SOAMA IN ANTARYAAMA GRAHAM- SOAMA GRAHAM
- RITWIKS GLIDING INTO THE YAAGASAALA – PRASARPANAM

- BAHISHPAVAMAANA STHUTHI
- AVAKAASA UPASHTHAANAM
- DHISHNIYA VYAAKARANAM
- SAVANEEYA YAAGAM
- SADA PRAVESAM
- SAVANEEYA PUROADAASA YAAGAM
- SUKRA MANTHEE PRACHAARAM
- SAVANA MUKHA YAAGAM

- IDAA BHAKSHANAM – PARTAKING SOAMA
- ACHAAVAAKEEYAM
- COLLECTION OF PANEEJANI
- RITHU YAAGAM
- AINDRAAGNA SASTHRAM (FIRST AAJYA SASTHRAM)
- VAISWADEVA SASTHRAM
- PROUGA SASHTRAM
- MAITRAAVARUNA SASTHRAM
- AINDRAAGNA SASTHRAM
- MAADHYANTHINA SAVANAM
- GRAAVASHTUTHA PAVAMAANA STHUTHI
- ABHISHAVAM (CRUSHING OF SOAMA)
- DRAHA GRAHANAM (COLLECTING SOAMA IN GRAHAS)
- RITWIKS GLIDING INTO THE YAAGASAALA
- BAHISHPAVAMAANA STUTHI
- DADHI GHARMA HOAMAM
- SUKRAMANTHEE PRACHAARAM
- SAVANA MUKHA YAAGAM

- DAKSHINAA HOAMAM
- OFFERING OF DAKSHINA

- MARUTHVATHEEYA SASTHRAM
- SAAMRAAJYA ABHISHEKAM : ANOINTMENT OF YAJAMAANA
- PRUSHTHA SAAMA STITHIS : CORRESPONDING SASTHRAAS
- SOAMAAHUTIS
- PRUSHTA SASTHRAAS

DAY TEN:

- THRITHEEYA SAVANAM
- SOAMA ABHISHAVAM : **Crushing of Soama**
- RITWIKS GLIDING INTO THE YAAGASAALA
- AADITYA GRÁHA PRACHAARAM
- AARBHAVA PAVAMAANA STHUTHI
- SAVANA MUKHA YAAGAM
- SAVANAAHUTHI
- SOAMA PRAASANAM
- PITHROAPAASANAM
- SAAVITHRA GRAHA PRACHAARAM
- MAHAA VAISWADEVA SASTHRAM
- SOWMYAACHARU YAAGAM
- PAATNIVADA GRAHA PRACHAARAM
- YAGNAAYAGNEEYA SAAMA
- AAGNIMAARUTA SASTHRAM
- UKHTHYA STHUTHIS, UKHTHYA SASTHRAS
- MAHAA, VAALABHITH, VRISHAAKAPI, YEVAYAAMARUT

- = SHOADASHI STUTHI = (WHEN THE SUN IS HALF SET)

(CONTINUES TO THE ELEVENTH DAY)

- VIHATAA SHOADASI MAHAA SASTHRAM
- SANDHI STOATRAM, AASWINA SASTHRAM
- ATHIRIKTHA STHUTHIS, ATHIRIKTHA SASTHRAS
- ANUYAAJADI YAJNA PUCHAM (ANUJAAJA, PATNISAMYAAJAS, HAREEYOJANAM)
- AVAPRUTHA ISHTI
- AVAPRUTHA SNAANAM
- UDEYNEEYA ISHTI
- MAITRAVARUNEEYA AAMEKSHA

- POORNAAHUTHI
- AASIRWAADAM
- YAJNA MANGALAM

ENERGY & ENVIRONMENT

ENERGY CHANGES DURING APTHORYAMA YAGAM 2004

Dr. Prabhat Kumar Podder

Akash Education & Research Foundation

Pondichery

GRAPHICAL REPRESENTATION OF ENERGY CHANGES DURING APTHOARYAAMA SOMAYAAGA 2004

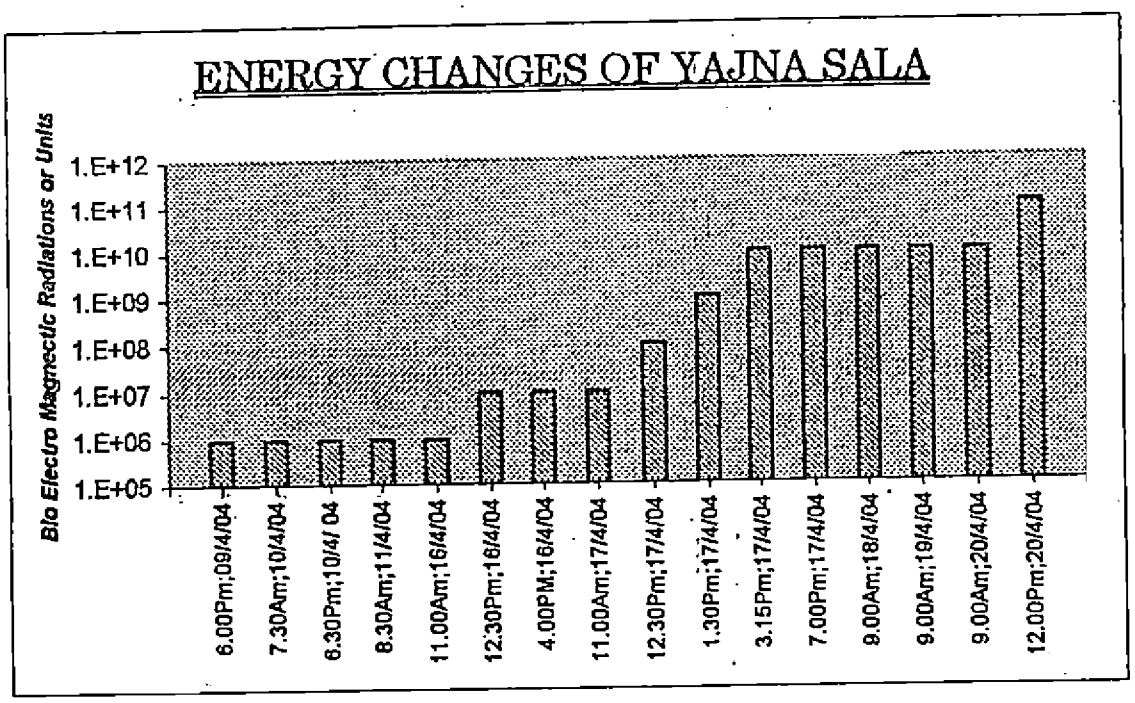
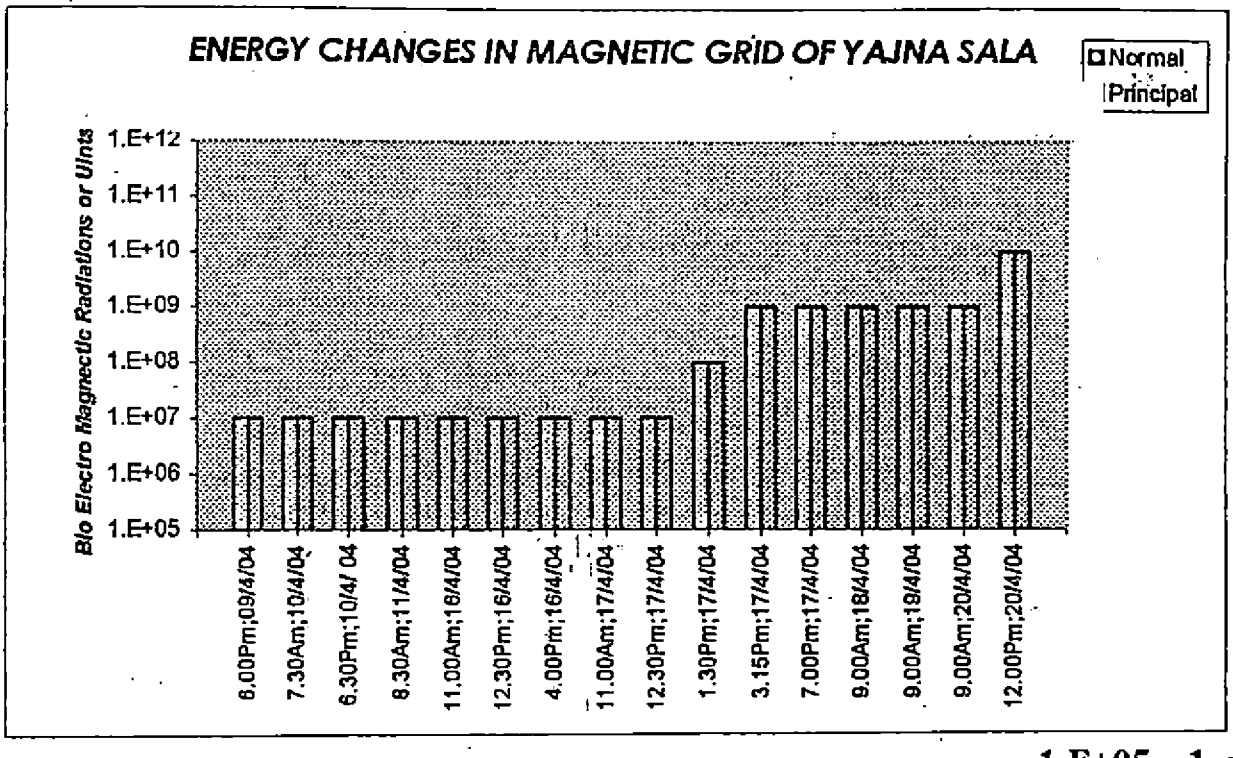


Table No: 1:-

$1.E+05 = 1 \times 10^{5}$
(E = Exponential)

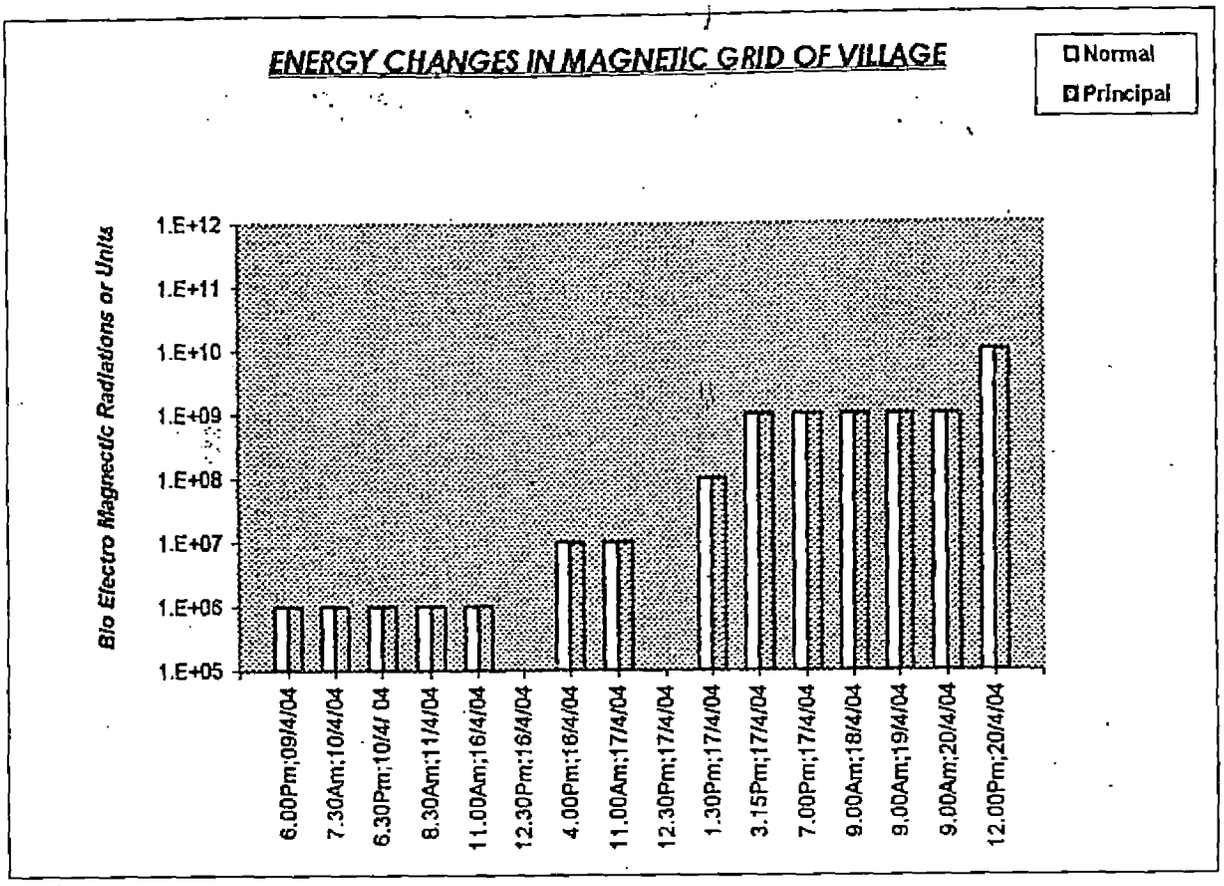
Date & Time	Energy of Yaj. Sala
	BEM
6.00Pm;09/4/04	1,000,000
7.30Am;10/4/04	1,000,000
6.30Pm;10/4/ 04	1,000,000
8.30Am;11/4/04	1,000,000
11.00Am;16/4/04	1,000,000
12.30Pm;16/4/04	10,000,000
4.00PM;16/4/04	10,000,000
11.00Am;17/4/04	10,000,000
12.30Pm;17/4/04	100,000,000
1.30Pm;17/4/04	1,000,000,000
3.15Pm;17/4/04	10,000,000,000
7.00Pm;17/4/04	10,000,000,000
9.00Am;18/4/04	10,000,000,000
9.00Am;19/4/04	10,000,000,000
9.00Am;20/4/04	10,000,000,000
12.00Pm;20/4/04	100,000,000,000



1.E+05 = 1 x 10 ^{5}

Table No: 2 :-

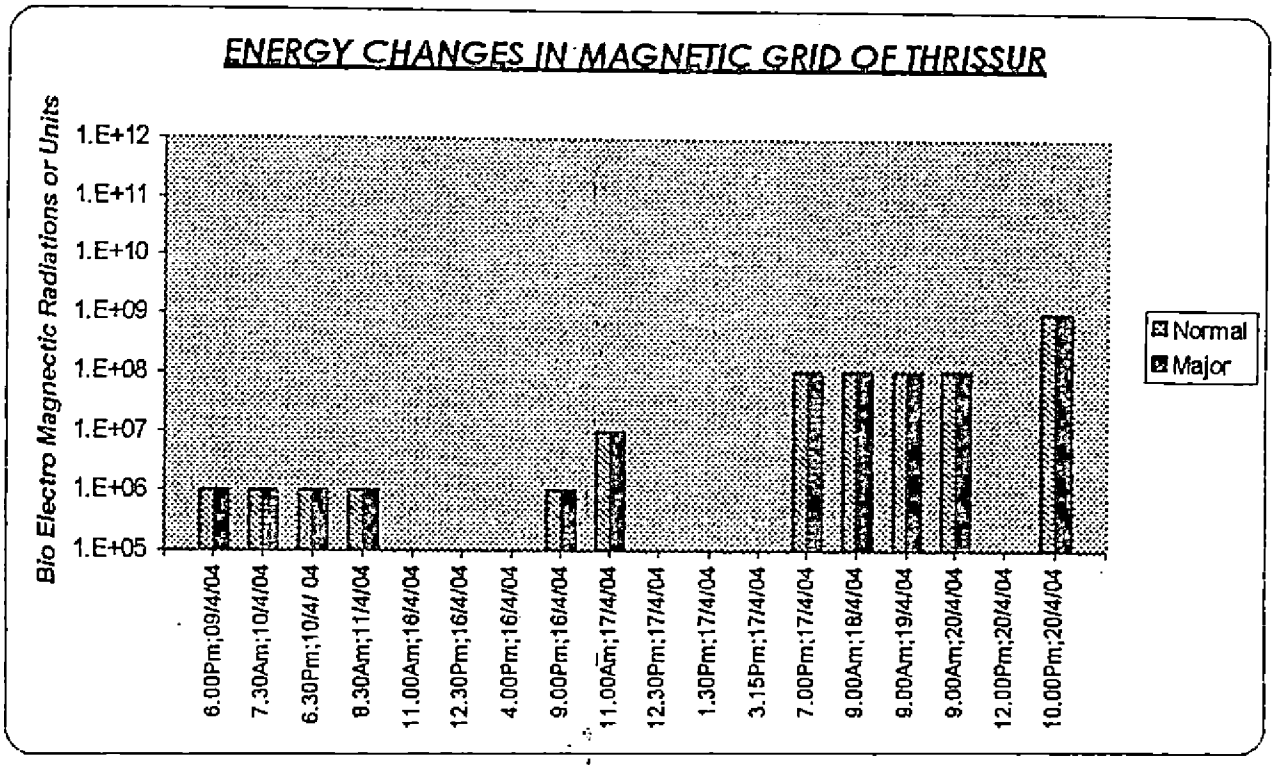
Date & Time	Mag. Grid of Yaj. Sala Normal (BEM)	Mag. Grid of Yaj. Sala Principal (BEM)
6.00Pm;09/4/04	10,000,000	10,000,000
7.30Am;10/4/04	10,000,000	10,000,000
6.30Pm;10/4/ 04	10,000,000	10,000,000
8.30Am;11/4/04	10,000,000	10,000,000
11.00Am;16/4/04	10,000,000	10,000,000
12.30Pm;16/4/04	10,000,000	10,000,000
4.00Pm;16/4/04	10,000,000	10,000,000
11.00Am;17/4/04	10,000,000	10,000,000
12.30Pm;17/4/04	10,000,000	10,000,000
1.30Pm;17/4/04	100,000,000	100,000,000
3.15Pm;17/4/04	1,000,000,000	1,000,000,000
7.00Pm;17/4/04	1,000,000,000	1,000,000,000
9.00Am;18/4/04	1,000,000,000	1,000,000,000
9.00Am;19/4/04	1,000,000,000	1,000,000,000
9.00Am;20/4/04	1,000,000,000	1,000,000,000
12.00Pm;20/4/04	10,000,000,000	10,000,000,000



$1.E+05 = 1 \times 10^{5}$

Table No: 3:-

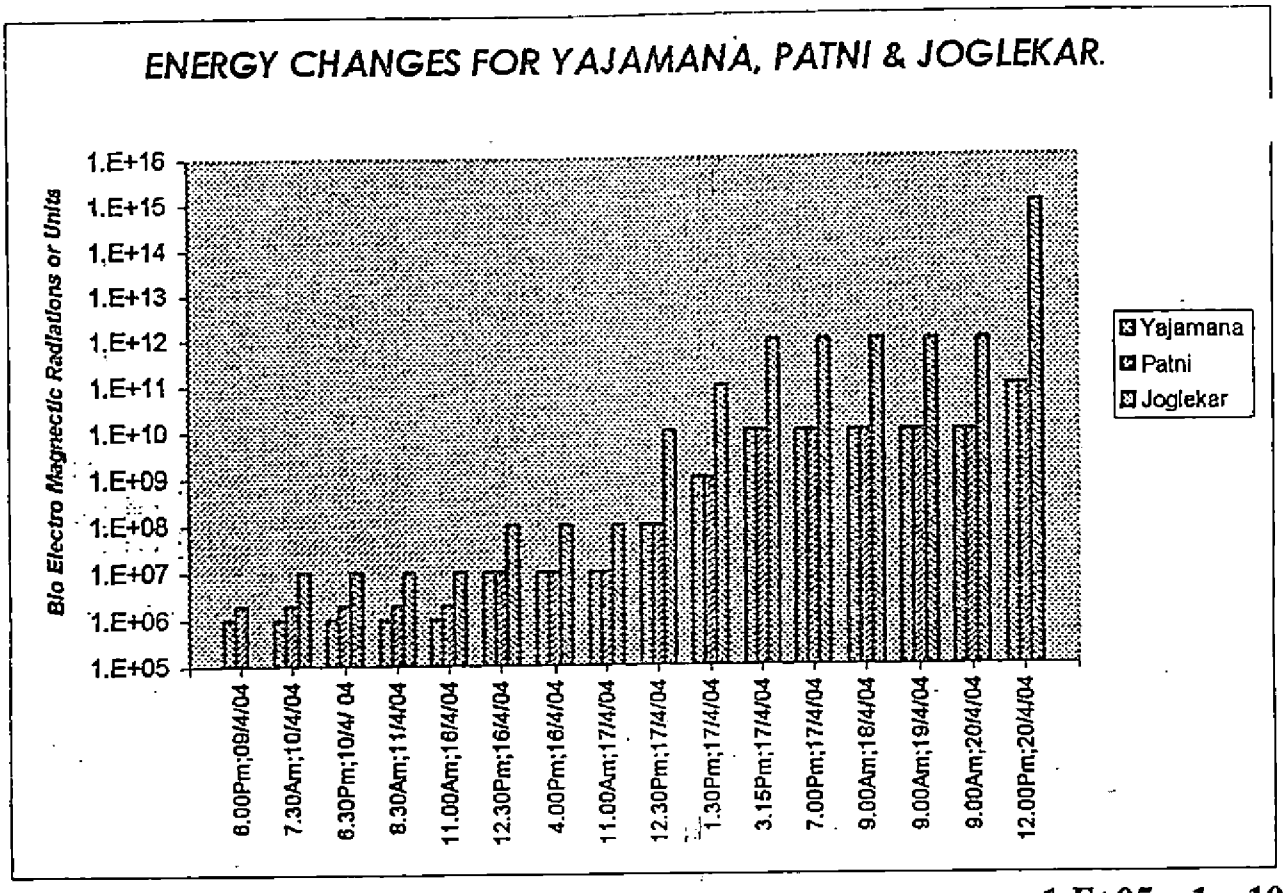
Date & Time	Magnetic Grid of Village	
	Normal (BEM)	Principal (BEM)
6.00Pm;09/4/04	1,000,000	1,000,000
7.30Am;10/4/04	1,000,000	1,000,000
6.30Pm;10/4/ 04	1,000,000	1,000,000
8.30Am;11/4/04	1,000,000	1,000,000
11.00Am;16/4/04	1,000,000	1,000,000
12.30Pm;16/4/04		
4.00Pm;16/4/04	10,000,000	10,000,000
11.00Am;17/4/04	10,000,000	10,000,000
12.30Pm;17/4/04		
1.30Pm;17/4/04	100,000,000	100,000,000
3.15Pm;17/4/04	1,000,000,000	1,000,000,000
7.00Pm;17/4/04	1,000,000,000	1,000,000,000
9.00Am;18/4/04	1,000,000,000	1,000,000,000
9.00Am;19/4/04	1,000,000,000	1,000,000,000
9.00Am;20/4/04	1,000,000,000	1,000,000,000
12.00Pm;20/4/04	10,000,000,000	10,000,000,000



1.E+05 = 1 x 10 ^{5}

Table NO: 4:-

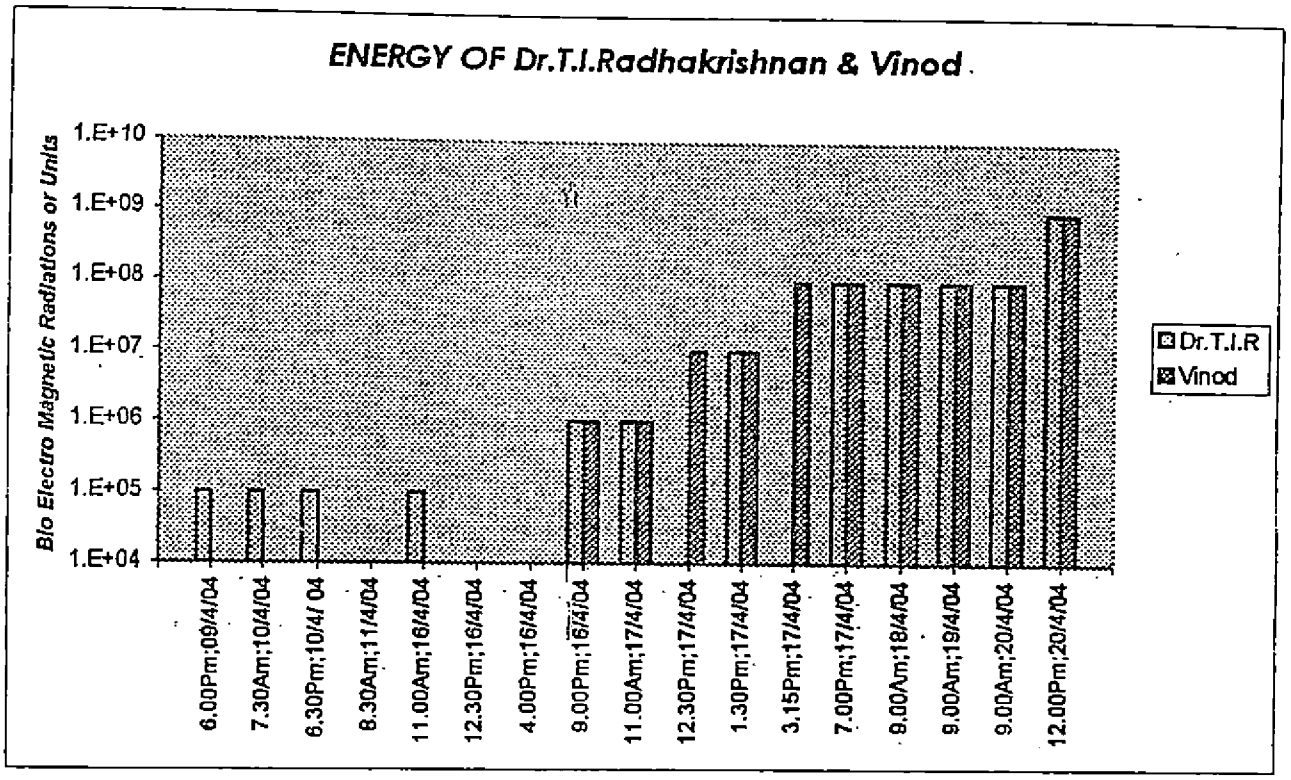
Date & Time	Magnetic Grid - Thrissur	
	Normal (BEM)	Major (BEM)
6.00Pm;09/4/04	1,000,000	1,000,000
7.30Am;10/4/04	1,000,000	1,000,000
6.30Pm;10/4/ 04	1,000,000	1,000,000
8.30Am;11/4/04	1,000,000	1,000,000
11.00Am;16/4/04		
12.30Pm;16/4/04		
4.00Pm;16/4/04		
9.00Pm;16/4/04	1,000,000	1,000,000
11.00Am;17/4/04	10,000,000	10,000,000
12.30Pm;17/4/04		
1.30Pm;17/4/04		
3.15Pm;17/4/04		
7.00Pm;17/4/04	100,000,000	100,000,000
9.00Am;18/4/04	100,000,000	100,000,000
9.00Am;19/4/04	100,000,000	100,000,000
9.00Am;20/4/04	100,000,000	100,000,000
12.00Pm;20/4/04		
10.00Pm;20/4/04	1,000,000,000	1,000,000,000



1.E+05 = 1 x 10^5

Table No: 5:-

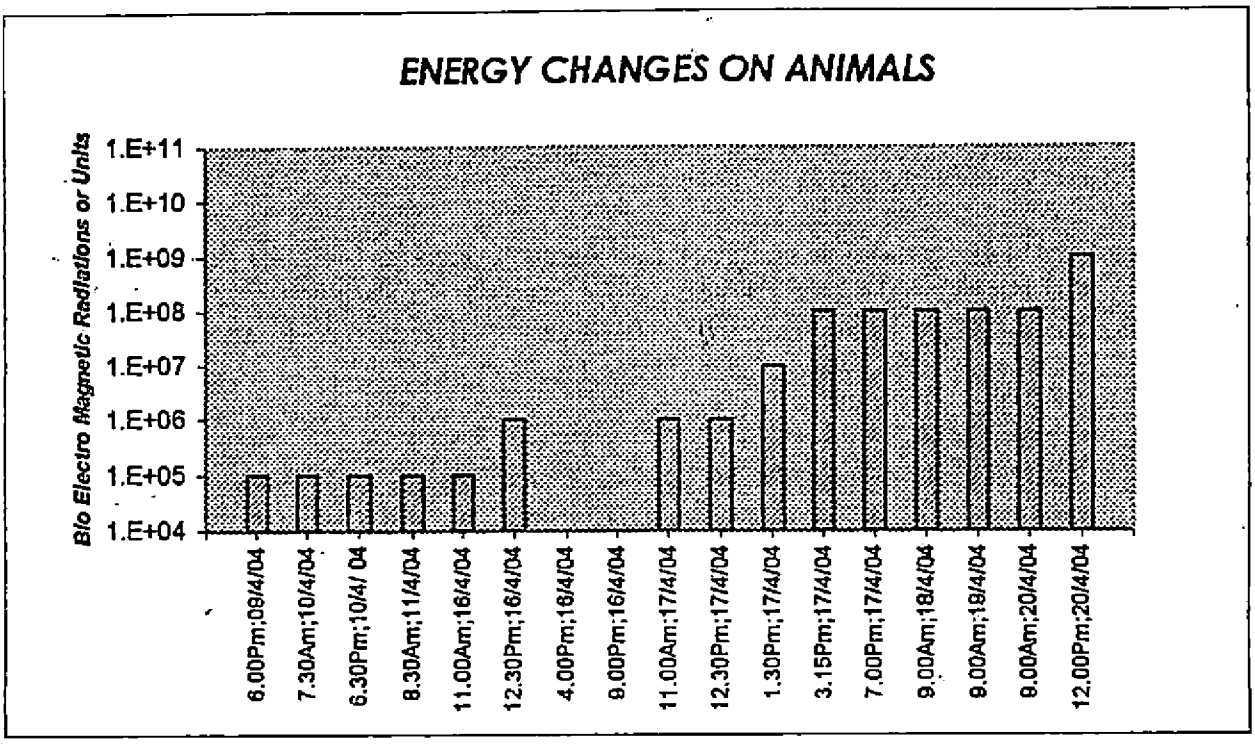
Date & Time	Energy of Yajamana	Energy of Patni	Energy of Joglekar
6.00Pm;09/4/04.	1,000,000	2,000,000	
7.30Am;10/4/04	1,000,000	2,000,000	10,000,000
6.30Pm;10/4/ 04	1,000,000	2,000,000	10,000,000
8.30Am;11/4/04	1,000,000	2,000,000	10,000,000
11.00Am;16/4/04	1,000,000	2,000,000	10,000,000
12.30Pm;16/4/04	10,000,000	10,000,000	100,000,000
4.00Pm;16/4/04	10,000,000	10,000,000	100,000,000
11.00Am;17/4/04	10,000,000	10,000,000	100,000,000
12.30Pm;17/4/04	100,000,000	100,000,000	10,000,000,000
1.30Pm;17/4/04	1,000,000,000	1,000,000,000	100,000,000,000
3.15Pm;17/4/04	10,000,000,000	10,000,000,000	1,000,000,000,000
7.00Pm;17/4/04	10,000,000,000	10,000,000,000	1,000,000,000,000
9.00Am;18/4/04	10,000,000,000	10,000,000,000	1,000,000,000,000
9.00Am;19/4/04	10,000,000,000	10,000,000,000	1,000,000,000,000
9.00Am;20/4/04	10,000,000,000	10,000,000,000	1,000,000,000,000
12.00Pm;20/4/04	100,000,000,000	100,000,000,000	1,000,000,000,000,000



1.E+05 = 1 x 10^5

Table No: 6:-

Date & Time	Energy of Dr. T. I. Radhakrishnan	Energy of Vinod
6.00Pm;09/4/04	100,000	
7.30Am;10/4/04	100,000	
6.30Pm;10/4/ 04	100,000	
8.30Am;11/4/04		
11.00Am;16/4/04	100,000	
12.30Pm;16/4/04		
4.00Pm;16/4/04		
9.00Pm;16/4/04	1,000,000	1,000,000
11.00Am;17/4/04	1,000,000	1,000,000
12.30Pm;17/4/04		10,000,000
1.30Pm;17/4/04	10,000,000	10,000,000
3.15Pm;17/4/04		100,000,000
7.00Pm;17/4/04	100,000,000	100,000,000
9.00Am;18/4/04	100,000,000	100,000,000
9.00Am;19/4/04	100,000,000	100,000,000
9.00Am;20/4/04	100,000,000	100,000,000
12.00Pm;20/4/04	1,000,000,000	1,000,000,000



1.E+05 = 1 x 10 -

Table No: 7:-

Date & Time	Energy of Animals
6.00Pm;09/4/04	100,000
7.30Am;10/4/04	100,000
6.30Pm;10/4/ 04	100,000
8.30Am;11/4/04	100,000
11.00Am;16/4/04	100,000
12.30Pm;16/4/04	1,000,000
4.00Pm;16/4/04	
9.00Pm;16/4/04	
11.00Am;17/4/04	1,000,000
12.30Pm;17/4/04	1,000,000
1.30Pm;17/4/04	10,000,000
3.15Pm;17/4/04	100,000,000
7.00Pm;17/4/04	100,000,000
9.00Am;18/4/04	100,000,000
9.00Am;19/4/04	100,000,000
9.00Am;20/4/04	100,000,000
12.00Pm;20/4/04	1,000,000,000

NOTES:

The above readings are the Geobiological measurements done by Dr. Prabhat Kumar Poddar, Akash Education & Research Trust, Pondicherry for the scientific evaluation of the Apthoaryaama Soamayaga from April 10 to 20, 2004. The readings are on λ4.05; λ5.4; λ7.8; λ8.0; λ10.0; λ12.0

The Energy cnanges were measured for:

- the Yajna sala,
- Magnetic grid of Yajna Sala ,
- Magnetic Grid in the village Mulangunnathukavu, where Yajna Sala is situated, as well as,
- Magnetic Grid at the residence of Dr. T. I. Radhakrishnan, in Thrissur Town, roughly 10Km away from Yajna Sala.

Also the energy changes following Personalities were constantly measured:

- Yajamana,
- Yajmana Patni,
- Ritwick Joglekhar,
- Dr. T.I. Radhakrishnan, and
- Vinod

The animals selected for study included: - horse, foal, cow, calf, ass and goat.

There was no change in the initial readings till the 16th of April 2004 - (the seventh day after the commencement of the Yaga). The first change in energy was seen on 16th April at 12.30 PM, after the completion of the fifth layer of Garuda Chiti, as soon as the last ghee-consecrated brick was laid in position.

On 17th April, three major changes took place in the energy levels.

- The Second change happened at 12.30 PM on completion of the second Water Parikrama around Garuda Chiti.
- The Third change was seen at 1.30 Pm after the Lighting of fire on the Garuda Chiti.
- The fourth change in energy level was observed at 3.15 Pm after the completion of the ritual "Vasordhaara".

During 18th and 19th April, there was no change in the energy levels, though the Soma juice was being ritually offered on the fire altar of the Garuda Chithi.

On 20th April, even after the completion of the final 33rd Soma offering there was no change in the energy levels. But strangely, at 12 noon, after the Avabhratha Snana ritual, the fifth and final energy change happened, even though the ritual bath took place 400m away from the Yagna Shala.

For the General public, the final energy level was found to be 100 M in the Yagna Shala, after this fifth and final energy change!

An interesting point was observed after the completion of the Yagna,

- When the crowd offered its obeisance individually to the Yajaman and Yajmana Patni. It was found that, when gents bowed to Yajamana, their Energy shot up to 10B; but when they bowed to Yajamana Patni, their energy reduced to 1B.
- For ladies, they achieved the same energy level of 10B by bowing to Yajamana Patni, but it reduced to 1B, when bowing to the Yajamana.

This effect was only temporary. Hence to get maximum benefit even though temporary, Gents should bow to the Yajamana only, and the ladies to Yajamana Patni only.

Conclusio...

The entire purpose of the Yagna seems to be the raising of the energy levels of the Yajamana and the Yajamana Patni, which in turn helps raise the energy level of the human consciousness around the World, through what science today accepts and calls the "Universal Consciousness of the Specie".

All energy changes observed show an exponential increase, and therefore a logarithmic scale has been used for its graphical representation.

For Suggestions & Enquires, Contact:

Dr. Prabhat Kumar Poddar,
Chairman,
Akash Educational & Research Center
No – 66, Tathastu,
Marwadi Street, Padmini Nagar,
Pondicherry – 605 012.

Email: prabhatpoddar@yahoo.com

APTHOARYAAMA SOAMA YAAGA, MULANGUNNATHUKAVU, THRISSUR, KERALA - 2004

GEOBIOLOGICAL READINGS BY DR. PRABHAT KUMAR PODDAR, AKASH EDUCATIONAL & RESEARCH TRUST, PONDICHERRY

Date	Time	Energy	Yajna Sala Magnetic Grid		Village Magnetic Grid		Dr. Residence Thrissur Magnetic Grid		Human Energy					Energy	Remarks
		Yaj. Sala	N	P	N	P	N	M	Yajaman	Patni	Joglekar	Dr.T.I.R	Vinod	Animals	
9/4/2004	5.00PM													100,000	
	5.30PM		10M	10M	1M	1M	1M	1M	1M	2M					No change in readings before and -
	6.00PM											100,000			after Agni lighting in SW Kundas
	6.30PM	1M	10M	10M	1M	1M	1M	1M	1M	2M		100,000		100,000	Somalatha - 1M
Note: Animals :- Horse, Foal, cow, calf, Ass & goat							Brick shapes in mud used for making Yajna Bird. Mud articles, lamps, snakes, tortoise, horses, jars - 10,000/- BEM - 10,000/								
10/4/2004	7.30AM	1M	10M	10M	1M	1M	1M	1M	1M	2M	10M	100,000		100,000	
	6.30PM	1M	10M	10M	1M	1M	1M	1M	1M	2M	10M	100,000		100,000	
11/4/2004	8.30AM	1M	10M	10M	1M	1M	1M	1M	1M	2M	10M			100,000	
16/4/04	9.00AM	1M	10M	10M	1M	1M	1M	1M	1M	2M	10M	100,000			
	11.00AM	1M	10M	10M	1M	1M			1M	2M	10M			100,000	
Ist Change	12.30PM	10M	10M	10M					10M	10M	100M			1M.	Completion of Garuda Chiti 5th Layer
	4.00PM	10M	10M	10M	10M	10M			10M	10M	100M				Each layer is one among 5 elements
	9.00PM						1M	1M				1M	1M		(Top layer is Earth)
17/4/04	11.00AM	10M	10M	10M	10M	10M	1M	1M	10M	10M	100M	1M	1M	1M	
2nd Change	12.30PM	100M	10M	10M					100M	100M	10B		10M	1M	Energy Change after 2nd Water -
															Parikrama around Garuda Chiti
3rd Change	1.30PM	1B	100M	100M	100M	100M			1B	1B	100B	10M	10M	10M	Lighting of fire in Chiti
4th Change	3.15PM	10B	1B	1B	1B	1B			10B	10B	1000B		100M	100M	After 'Vasoardhaara' completion
	6.00PM	10B	1B	1B	1B	1B	100M	100M	10B	10B	1000B		100M	100M	
	7.00PM	10B	1B	1B	1B	1B	100M	100M	10B	10B	1000B	100M	100M	100M	(Ritwicks - 100M)
18/4/04	9.00AM	10B	1B	1B	1B	1B	100M	100M	10B	10B	1000B	100M	100M	100M	No change through out the day for
															any readings. Soma Yajna started.
19/4/04	9.00AM	10B	1B	1B	1B	1B	100M	100M	10B	10B	1000B	100M	100M	100M	No change in any readings
20/4/04	9.00 AM	10B	1B	1B	1B	1B	100M	100M	10B	10B	1000B	100M	100M	100M	
5th Change	12.00 Noon	100B	10B	10B	10B	10B			100B	100B	1MB	1B	1B	1B	After the Avabhratha Snana
	10.00PM						1B	1B							

oing the Avabrutha Snana, the dip in a pond, 300 m away, Energy change took place in the entire Yajna, including grids. Yajna Shala, Ritwicks etc - around 12.00 No
Water from the Pond - 100 B (20 / 4/ 2004) at 12.00 Mid day (The disipation of Energy is happening in how many days to base level.)
For the General public, it is 100 M; When gents bow to Yajamana, their Energy goes up to 10B; and when they bow to Yajamana Patni, it becomes 1B only.
For ladies, bowing to Yajaman Patni is 10 B; to Yajamana is 1B - Effect is only temporary.

M = Million, B = Billion, MB = Million Billion, BEM = Bio Electro Magnetic Radiations or Units

Readings are on λ4.05; λ5.4; λ7.8; λ8.0; λ10.0; λ12.0

APTHORYAMA YAGAM

Weather at Yagam Site

Venue: Mulankunnathukavu (Thrissur)

(10.04.04 to 24.04.04)

Prepared by

GSLHV Prasada Rao, M.V. Sudheesh and N. Manikandan
Department of Agricultural Meteorology
College of Horticulture
Kerala Agricultural University
Vellanikkara – 680 656

WEATHER AT YAGAM SITE

(10.04.04 TO 24.04.04)

EXECUTIVE SUMMARY

The maximum surface air temperature during the Yagam period varied between 35.0°C (12/13th April) and 32.8°C (17/18th April) while minimum temperature between 27.0°C (15/16th April) and 25.1°C (14/15th April). The range in surface air temperature varied between 6.4°C (15/16th April) and 8.6°C (18/19th April). It also revealed that there was a significant change in maximum (33.4°C) and minimum (27.0°C) temperatures on sixth day (15.04.04) of Yagam. The sixth day experienced low maximum temperature during the day time and high night temperature. It was attributed to the prevalence of cloud. However, there was a sharp increase (10.6°C on 21/22nd April) in temperature range on 12th day at the yaga site. A trace of drizzle on the last day (20.04.04) of yaga during day time was noticed and reported light to heavy showers in some regions around the yagam site. A significant rain (6.9 mm) on the next day was noticed. At Vellanikkara, the rainfall recorded was 28.2 mm on 21st April.

Summer showers were noticed during April and May and monsoon was early (18th May) over Kerala coast in 2004. Can we contribute these changes due to Apthoryama Yagam?

DAY 1 (10/11-04-2004)

The diurnal range in ambient air temperature was 8.5°C (34.5-26.0°C). The relative humidity varied between 93 and 55%. Cloudy weather prevailed up to noon and partly cloudy during evening hour. Dew

formation was noticed in the night, which can be attributed mainly due to clear sky coupled with no wind. Received no rainfall and the evaporation was 4.4 mm/day. The maximum wind speed recorded was 12 kmph at 1500 hrs. Mostly westerly wind prevailed during noon hours.

DAY 2 (11/12-04-2004)

The difference in maximum and minimum temperature was 8.0°C (33.8-25.8°). The relative humidity varied between 94 and 58%. The day time sky was partly cloudy and continued till 2300 hrs while clear sky during night. This condition along with no wind during night favoured the process of night time condensation. The maximum wind speed reached to 14 kmph at 1400 hrs and pan evaporation recorded was 4.6 mm/day. High relative humidity with clouds for more number of hours was seen relatively when compared to that of previous day.

DAY 3 (12/13-04-2004)

The diurnal range of ambient air temperature was 8.8°C (35.0-26.2°C). The relative humidity varied between 94 and 49%. The sky was more or less clear during day hours and night except during the early morning hours of 13.4.04. Night time condensation of water vapour in the form of dew was noticed. The atmospheric demand of water vapour was 4.9 mm. It was a clear day with relatively dry weather when compared to that of previous two days.

DAY 4 (13/14-04-04)

The diurnal variation in ambient air temperature varied between 34.1°C and 25.3°C, indicating a difference of 8.8°C. Relative humidity varied between 92 and 56%. Cloudy sky prevailed during early morning and early night hours while in remaining hours the sky was relatively clear. Dew formation was noticed during the early morning hours of 14.04.04. Evaporation was 5.4 mm. The wind direction during the early afternoon hours was westerly and it was with moderate speed. All the four days, wind speed was noticed only during evening hours.

DAY 5 (14/15-04-04)

The range in diurnal variation in ambient air temperature was 8.6°C (33.7-25.1°). The relative humidity varied between 98 and 58%. Westerly to North westerly wind with moderate speed prevailed during noon and continued till 1800 hrs. Partly cloudy sky prevailed during morning hours while more or less clearly sky during evening and late night hours. Dew formation was noticed and evaporation was 5.2 mm. Relatively, the fifth day was humid with low wind speed when compared to that of previous day.

DAY 6 (15/16-04-04)

The range in diurnal variation in ambient air temperature was 6.4°C (33.4-27.0°C). Relative humidity varied between 97 and 59%. Mainly westerly wind with moderate speed was noticed during late morning hours. Cloudy sky prevailed during the morning hours and partly cloudy sky thereafter till late evening. The sky was almost free from cloud during night. Evaporation was 5.0 mm. The UVB radiation during the day time never

crossed 2MED. The radiation values showed a gradual increase from morning hours to noon hours and it declined to minimum during the evening hours. It is interesting to note that the maximum temperature was low and minimum temperature was high due to high humidity in the atmosphere since last two days. Unlike in the previous days, winds started by 9:00 am whereas wind was seen only during in noon hours in the previous days.

DAY 7 (16/17-04-04)

The range in diurnal variation in ambient air temperature was 8.3°C (34.2-25.9°C). Relative humidity varied between 93 and 51%. Mainly westerly winds with moderate speed prevailed during afternoon hours. Mostly partly cloudy sky condition was noticed during morning hours while it was clear sky during night hours. No significant change in UVB radiation was noticed during the semidiurnal cycle except that the radiation showed an increase from morning to noon hours and thereafter a decline. Evaporation was 4.6 mm. The significant change that was noticed in air temperature and humidity on the ninth day was not seen on seventh day.

DAY 8 (17/18-04-04)

The range in diurnal variation in ambient air temperature was 7.4°C (32.8-25.4°C). Relative humidity varied between 95 and 63%. Mainly westerly to south westerly winds with moderate speed prevailed during noon and afternoon hours. Partly cloudy sky condition was noticed during day hours while it was clear sky during night hours. No significant change in UV-B radiation was noticed during the semidiurnal cycle. Evaporation was 4.9 mm. The maximum temperature was low. Relatively low minimum temperature was due to clear sky in the night.

DAY 9 (18/19-04-04)

The range in diurnal variation in ambient air temperature was 8.6°C (33.9-25.3°C). Relative humidity varied between 96 and 57%. Mainly westerly to south westerly winds with moderate speed prevailed during noon and late afternoon hours. Mostly clear sky prevailed during day hours and partly cloudy sky during night hours. UVB radiation did not show any significant change during the day hours. The maximum radiation never crossed 2MED. Evaporation was 4.3 mm. It was similar to previous day except rise in maximum temperature.

DAY 10 (19/20-04-04)

The range in diurnal variation in ambient air temperature was 7.8°C (34.0-26.2°C). Relative humidity varied between 93 and 53%. Mainly north westerly to westerly winds with moderate speed prevailed during noon hours. Partly cloudy sky prevailed during the day except few hours of clear sky condition. UV-B radiation did not show any significant change during the day hours. The radiation showed a gradual increase from morning to noon and thereafter a gradual decline. Evaporation was 4.6 mm. Moderate winds prevailed during the noon hours. The increase in minimum temperature was also noticed when compared to that of previous three days.

DAY 11 (20/21-04-04)

The range in diurnal variation in ambient air temperature was 8.0°C (34.5-26.5°C). Relative humidity varied between 98 and 61%. Mainly north westerly to westerly winds with moderate speed prevailed during afternoon hours. Partly cloudy to overcast sky prevailed during the day.

Rainfall was noticed from 2000 hrs to 0100 hrs. The pan evaporation was 5.8 mm. Highest diurnal range was noticed on twelfth day. Heavy thunder and lighting were noticed due to convection in night hours. The rainfall recorded in the night was 6.9 mm. At the same time, the rainfall received was relatively high at Vellanikkara (28.2 mm).

DAY 13 (22/23-04-04)

The range in diurnal variation in ambient air temperature was 9.5°C (33.7-24.2°C). Relative humidity varied between 97 and 64%. Mainly westerly to south westerly winds with moderate speed noticed during afternoon hours only. Mainly clear sky prevailed during the day. UVB radiation did not show any significant change. The maximum radiation never crossed 2MED. Evaporation was 3.8 mm.

DAY 14 (23/24-04-04)

The range in diurnal variation in ambient air temperature was 8.5°C (33.7-25.2°C). Relative humidity varied between 96 and 58%. Mainly westerly winds with moderate speed were noticed during afternoon hours. Partly cloudy was noticed during day hours and drizzle was observed in early morning hours of 24.4.2004. UV-B radiation did not show any significant change. Evaporation was 3.4 mm.

APPENDIX

Abbreviations:

- DB – Dry bulb temperature (°C)
- WB – Wet bulb temperature (°C)
- RH – Relative humidity (%)
- AVP – Actual Vapour Pressure (mm of Hg)
- SVP – Saturation Vapour Pressure (mm of Hg)
- WS – Wind speed (Kilometer per hour)
- WD –Wind direction
- Rain – Rainfall (mm)
- Evap – Evaporation (mm)

Table 1. Weather parameters observed on Day 1 (10/11-04-04)

Time	DB	WB	RH	DPT	AVP	SVP	WS	WD	Cloud	Rain	Evap.
6:00	26.1	25.1	92	24.7	31.1	33.8	0	C	5	0	
7:00	26.3	25.4	93	25.1	31.9	34.5	0	C	7	0	
8:00	27.3	26.0	90	25.5	32.6	36.4	0	C	7	0	
9:00	29.0	26.5	82	25.5	32.6	10.0	0	C	7	0	
10:00	30.9	26.8	72	25.1	29.7	41.5	0	C	6	0	
11:00	32.0	26.0	60	23.3	28.6	47.7	0	C	6	0	
12:00	32.9	26.4	59	23.6	29.1	49.7	1	WSW	6	0	
13:00	34.2	27.0	55	23.9	29.7	54.0	4	W	5	0	
14:00	34.5	28.0	60	25.4	32.4	54.5	6	W	4	0	3.4
15:00	34.3	27.9	61	25.3	32.2	53.2	12	W	4	0	
16:00	33.7	27.1	58	24.3	30.4	52.4	8	W	4	0	
17:00	33.0	26.8	60	24.2	30.2	50.3	0	C	4	0	
18:00	31.8	26.5	65	24.3	30.4	47.1	0	C	6	0	1.0
19:00	30.4	26.1	70	24.3	30.4	43.7	0	C	3	0	
20:00	29.8	26.1	74	24.5	30.7	41.8	0	C	0	0	
21:00	28.1	26.1	85	25.3	32.2	37.9	0	C	0	0	
22:00	27.8	26.1	87	25.4	32.4	37.5	0	C	0	0	
23:00	28.0	25.1	78	23.8	29.5	37.8	0	C	2	0	
0:00	27.8	25.1	80	23.9	29.7	37.4	0	C	2	0	
1:00	27.3	25.2	84	24.3	30.4	36.4	0	C	2	0	
2:00	26.6	25.1	88	24.5	30.7	34.9	0	C	3	0	
3:00	26.4	25.1	90	24.6	30.9	34.5	0	C	5	0	
4:00	26.2	25.1	91	24.7	31.1	34.2	0	C	2	0	
5:00	26.0	25.1	92	24.8	31.3	34.0	0	C	0	0	

Table 2. Weather parameters observed on Day 2 (11/12-04-04)

Time	DB	WB	RH	DPT	AVP	SVP	WS	WD	Cloud	Rain	Evap.
6:00	25.8	25.0	93	24.6	30.9	33.2	0	C	2	0	
7:00	26.0	25.1	93	24.8	31.3	33.8	0	C	6	0	
8:00	28.0	26.0	84	25.2	32.1	38.2	0	C	5	0	
9:00	29.7	26.4	76	25.1	31.9	42.0	0	C	5	0	
10:00	31.1	27.0	72	25.4	32.4	45.3	0	C	4	0	
11:00	31.9	26.3	63	23.9	29.7	47.5	0	C	5	0	
12:00	32.9	26.4	59	23.6	29.1	49.7	0	C	5	0	
13:00	33.8	27.1	58	24.3	30.4	52.9	0	C	5	0	
14:00	33.8	27.8	61	25.4	32.4	53.1	14	W	5	0	4.0
15:00	33.0	27.0	61	24.5	30.7	50.3	6	W	4	0	
16:00	32.5	27.3	66	25.2	32.1	49.0	6	SW	3	0	
17:00	32.0	27.5	70	25.7	33.0	47.5	8	W	4	0	
18:00	30.5	27.0	75	25.6	32.8	43.7	6	W	5	0	0.6
19:00	29.8	26.9	79	25.8	33.2	42.3	0	C	7	0	
20:00	29.5	26.9	81	25.9	33.4	41.3	0	C	3	0	
21:00	29.2	26.8	82	25.8	33.2	40.5	0	C	4	0	
22:00	28.8	26.9	86	26.2	34.0	39.8	0	C	2	0	
23:00	28.1	26.9	91	26.4	34.4	38.0	0	C	2	0	
0:00	27.8	26.8	92	26.3	34.2	37.2	0	C	0	0	
1:00	27.5	26.7	94	26.4	34.4	36.7	0	C	0	0	
2:00	27.0	26.4	95	26.2	34.0	35.8	0	C	0	0	
3:00	27.0	26.2	93	25.9	33.4	35.9	0	C	0	0	
4:00	26.9	26.0	93	25.7	33.0	35.7	0	C	0	0	
5:00	26.6	25.9	94	25.6	32.8	34.9	0	C	0	0	

Table 3. Weather parameters observed on Day 3 (12/13-04-04)

Time	DB	WB	RH	DPT	AVP	SVP	WS	WD	Cloud	Rain	Evap.
6:00	26.2	25.5	94	25.2	32.1	34.1	0	C	2	0	
7:00	26.5	25.8	94	25.5	32.6	34.7	0	C	2	0	
8:00	28.9	26.0	78	24.8	31.3	40.3	0	C	2	0	
9:00	30.3	26.0	70	24.2	30.2	43.5	0	C	1	0	
10:00	32.6	26.0	57	23.1	28.3	49.6	2	N	1	0	
11:00	33.5	26.0	53	22.6	27.4	51.7	0	C	0	0	
12:00	34.5	26.9	53	23.7	29.3	55.3	2	SSW	2	0	
13:00	33.0	27.7	56	24.7	31.1	55.5	4	SSW	3	0	
14:00	34.2	27.1	56	24.1	30.0	54.1	12	SW	4	0	4.6
15:00	34.8	26.4	49	22.7	27.6	56.3	6	NNW	3	0	
16:00	32.9	27.0	62	24.6	30.9	50.2	8	NNW	1	0	
17:00	31.9	27.0	67	25.0	31.7	47.7	6	W	1	0	
18:00	31.0	26.5	69	24.6	30.9	45.1	4	W	2	0	0.3
19:00	29.5	27.0	82	26.0	33.0	41.2	0	MW	3	0	
20:00	29.4	27.1	83	26.2	34.0	41.2	0	C	1	0	
21:00	29.0	27.0	85	26.2	34.0	40.0	0	C	3	0	
22:00	28.3	26.9	89	26.3	34.2	38.4	0	C	0	0	
23:00	28.0	26.7	90	26.2	34.0	37.8	0	C	0	0	
0:00	27.9	26.5	89	25.9	33.4	37.5	0	C	1	0	
1:00	27.5	26.5	92	26.1	33.8	36.7	0	C	1	0	
2:00	27.3	26.5	94	26.2	34.0	36.2	0	C	1	0	
3:00	27.3	26.3	92	25.9	33.4	36.3	0	C	6	0	
4:00	27.1	26.0	91	25.5	32.6	35.8	0	C	6	0	
5:00	26.8	25.7	91	25.3	30.2	33.2	0	C	6	0	

Table 4. Weather parameters observed on Day 4 (13/14-04-04)

Time	DB	WB	RH	DPT	AVP	SVP	WS	WD	Cloud	Rain	Evap.
6:00	26.7	25.2	88	24.6	30.9	35.1	0	C	3	0	
7:00	26.8	25.5	90	25.0	31.7	35.4	0	C	6	0	
8:00	29.3	26.0	75	24.5	30.7	40.9	0	C	6	0	
9:00	31.3	26.8	69	25.0	31.7	45.9	0	C	5	0	
10:00	31.0	26.3	68	24.3	30.4	44.7	0	C	4	0	
11:00	33.0	27.0	61	24.5	30.7	50.3	0	C	5	0	
12:00	33.9	27.6	60	25.1	31.9	53.6	0	C	3	0	
13:00	33.9	28.0	63	25.7	33.0	52.8	8	SW	3	0	
14:00	33.9	27.3	57	24.6	30.9	54.7	6	W	2	0	5.0
15:00	34.1	27.0	56	24.0	29.8	53.7	10	SW	2	0	
16:00	33.7	26.8	57	23.9	29.7	52.6	8	SW	3	0	
17:00	32.1	27.0	66	24.9	31.5	48.1	6	W	3	0	
18:00	30.8	26.9	73	25.3	32.2	44.4	4	W	5	0	0.4
19:00	29.1	25.5	74	23.9	29.7	40.1	4	E	7	0	
20:00	27.8	25.1	80	23.9	29.7	37.4	0	C	7	0	
21:00	27.2	24.9	82	23.9	29.7	36.2	0	C	3	0	
22:00	27.1	25.0	84	24.1	30.0	35.9	0	C	6	0	
23:00	27.0	25.0	84	24.1	30.0	35.7	0	C	6	0	
0:00	26.8	25.0	86	24.2	30.2	35.1	0	C	4	0	
1:00	26.4	25.0	89	24.4	30.5	34.3	0	C	1	0	
2:00	26.0	24.8	90	24.3	30.4	33.8	0	C	1	0	
3:00	25.8	24.5	89	24.0	29.8	33.5	0	C	1	0	
4:00	25.5	24.4	91	23.9	29.7	32.6	0	C	1	0	
5:00	25.3	24.3	92	23.8	29.5	32.2	0	C	1	0	

Table 5. Weather parameters observed on Day 5 (14/15-04-04)

Time	DB	WB	RH	DPT	AVP	SVP	WS	WD	Cloud	Rain	Evap.
6:00	25.1	24.5	95	24.2	30.2	31.8	0	C	5	0	
7:00	27.5	25.1	81	24.0	29.8	36.8	0	C	5	0	
8:00	29.0	25.6	75	24.1	30.0	40:0	0	C	5	0	
9:00	30.2	26.4	73	24.8	31.3	42.9	0	C	5	0	
10:00	31.3	26.6	68	24.7	31.1	46.1	0	C	5	0	
11:00	32.2	27.0	65	24.8	31.3	48.2	0	C	4	0	
12:00	33.0	27.1	62	24.7	31.1	50.6	6	NW	6	0	
13:00	32.9	27.2	63	24.9	31.5	50.4	4	W	5	0	
14:00	33.3	27.9	65	25.8	33.2	51.2	6	NW	3	0	4.6
15:00	33.7	27.0	58	24.2	30.2	52.5	8	W	2	0	
16:00	33.6	26.9	58	24.1	30.0	52.2	8	W	1	0	
17:00	32.5	26.7	62	24.2	30.2	48.7	4	NNW	0	0	
18:00	31.0	26.5	69	24.6	30.9	45.1	6	W	2	0	0.6
19:00	30.0	26.5	75	25.1	31.9	42.8	0	C	1	0	
20:00	29.5	26.9	81	25.9	33.4	41.2	0	C	1	0	
21:00	28.8	26.8	85	26.0	33.6	39.5	0	C	1	0	
22:00	28.0	26.6	89	26.0	33.6	37.8	0	C	1	0	
23:00	27.5	26.5	92	26.1	33.8	36.7	0	C	1	0	
0:00	27.2	26.4	94	26.1	33.8	36.0	0	C	1	0	
1:00	27.2	26.4	94	26.1	33.8	36.0	0	C	2	0	
2:00	27.2	26.6	95	26.4	34.4	36.2	0	C	2	0	
3:00	27.1	26.6	96	26.4	34.4	35.8	0	C	2	0	
4:00	27.1	26.8	98	26.7	35.0	35.9	0	C	2	0	
5:00	27.1	26.9	98	26.8	35.2	36.1	0	C	3	0	

Table 6. Weather parameters observed on Day 6 (15/16-04-04)

Time	DB	WB	RH	DPT	AVP	SVP	WS	WD	Cloud	Rain	Evap.
6:00	27.0	26.6	97	26.4	25.8	26.6	0	C	7	0	
7:00	27.5	26.7	94	26.4	25.8	27.5	0	C	6	0	
8:00	28.0	27.0	92	26.6	26.1	28.4	0	C	6	0	
9:00	30.2	27.4	80	26.3	25.7	32.1	2	N	6	0	
10:00	30.5	27.2	77	25.9	25.1	32.8	6	W	5	0	
11:00	31.0	27.4	75	26.0	25.2	33.6	12	NW	6	0	
12:00	32.9	27.6	66	25.5	24.5	37.4	12	SSW	5	0	
13:00	32.0	27.5	70	25.7	24.8	35.6	8	W	4	0	
14:00	33.0	27.0	61	24.5	23.1	37.8	6	SW	4	0	5.0
15:00	33.4	27.0	59	24.3	22.8	38.6	8	NW	4	0	
16:00	32.9	27.2	63	24.9	23.6	37.8	6	W	4	0	
17:00	32.0	26.7	65	24.5	23.1	35.8	0	C	4	0	
18:00	31.0	26.8	71	25.1	23.9	33.7	0	C	4	0	0.4
19:00	30.0	26.5	75	25.1	23.9	32.1	0	C	4	0	
20:00	29.3	26.6	80	25.5	24.5	30.6	0	C	3	0	
21:00	29.1	26.7	82	25.7	24.8	30.2	0	C	1	0	
22:00	29.5	27.0	82	26.0	25.2	30.9	0	C	1	0	
23:00	27.3	26.3	92	25.9	25.1	27.3	0	C	1	0	
0:00	27.5	26.5	92	26.1	25.4	27.6	0	C	0	0	
1:00	27.5	26.5	92	26.1	25.4	27.6	0	C	4	0	
2:00	27.3	26.5	94	26.2	25.5	27.1	0	C	1	0	
3:00	27.2	26.3	93	26.0	25.2	27.1	0	C	2	0	
4:00	27.0	26.1	93	25.8	24.9	26.9	0	C	2	0	
5:00	27.0	26.1	93	25.8	24.9	26.9	0	C	4	0	

Table 7. Weather parameters observed on Day 7 (16/17-04-04)

Time	DB	WB	RH	DPT	AVP	SVP	WS	WD	Cloud	Rain	Evap.
6:00	27.0	26.1	93	25.8	33.2	35.9	0	C	4	0	
7:00	28.3	27.0	90	26.5	34.6	38.4	0	C	4	0	
8:00	29.2	26.6	81	25.5	32.6	40.2	0	C	3	0	
9:00	30.5	27.0	75	25.6	32.8	43.7	2	W	4	0	
10:00	32.0	26.5	64	24.2	30.2	47.6	4	SW	4	0	
11:00	32.3	27.3	67	25.3	32.2	48.1	4	NNW	4	0	
12:00	33.7	27.2	59	24.5	30.7	52.5	4	NW	5	0	
13:00	33.9	27.2	58	24.4	30.5	53.0	10	W	5	0	
14:00	34.2	27.2	56	24.3	30.4	54.3	10	W	4	0	4.2
15:00	33.8	26.7	56	23.7	29.3	52.8	8	W	1	0	
16:00	33.0	25.4	52	21.9	26.3	50.6	12	W	2	0	
17:00	32.5	25.4	55	22.0	26.4	48.4	8	W	3	0	
18:00	31.8	24.2	51	20.4	24.0	47.1	2	SSW	3	0	0.4
19:00	30.0	25.5	69	23.5	28.9	42.2	0	C	4	0	
20:00	29.0	25.4	74	23.8	29.5	39.9	0	C	0	0	
21:00	27.9	25.4	81	24.3	30.4	37.5	0	C	0	0	
22:00	27.3	25.4	85	24.6	30.9	34.4	0	C	0	0	
23:00	26.9	25.3	87	24.6	30.9	35.5	0	C	0	0	
0:00	26.5	25.3	90	24.8	31.3	34.8	0	C	0	0	
1:00	26.1	25.2	93	24.9	31.5	34.1	0	C	0	0	
2:00	26.1	25.2	93	24.9	31.5	34.1	0	C	0	0	
3:00	26.0	25.2	93	24.9	31.5	33.9	0	C	0	0	
4:00	26.0	25.2	93	24.9	31.5	33.9	0	C	0	0	
5:00	25.9	25.1	93	24.8	31.3	33.7	0	C	0	0	

Table 8. Weather parameters observed on Day 8 (17/18-04-04)

Time	DB	WB	RH	DPT	AVP	SVP	WS	WD	Cloud	Rain	Evap.
6:00	26.0	25.3	94	25.0	23.8	25.3	0	C	5	0	
7:00	27.1	25.6	88	25.0	23.8	27.0	0	C	5	0	
8:00	28.1	26.1	85	25.3	24.2	28.5	0	C	3	0	
9:00	29.0	26.5	82	25.5	24.5	30.0	0	C	2	0	
10:00	30.4	27.1	77	25.8	24.9	32.6	0	C	4	0	
11:00	32.1	27.1	67	25.0	23.8	35.7	2	SSW	4	0	
12:00	32.2	27.3	68	25.3	24.2	35.8	6	SSW	3	0	
13:00	32.3	27.3	67	25.3	24.2	36.1	6	NW	4	0	
14:00	32.0	27.1	67	24.9	23.6	35.3	8	NNW	4	0	
15:00	32.8	27.2	63	24.9	23.6	37.5	8	SSW	5	0	4.6
16:00	32.8	27.1	63	24.8	23.5	37.6	2	SSW	5	0	
17:00	32.0	27.0	66	24.9	23.6	35.8	10	SW	4	0	
18:00	30.8	26.5	70	24.7	23.3	33.3	6	W	1	0	0.3
19:00	29.6	26.0	74	24.5	23.1	31.2	0	C	0	0	
20:00	28.6	26.0	80	24.9	23.6	29.5	0	C	0	0	
21:00	27.1	25.5	87	24.8	23.5	27.0	0	C	0	0	
22:00	26.5	25.3	90	24.8	23.5	26.1	0	C	0	0	
23:00	26.5	25.2	89	24.7	23.3	26.2	0	C	0	0	
0:00	26.3	25.2	90	24.8	23.5	26.1	0	C	0	0	
1:00	26.1	25.1	92	24.7	23.3	25.4	0	C	0	0	
2:00	26.0	25.1	93	24.8	23.5	25.4	0	C	0	0	
3:00	25.8	25.1	94	24.8	23.5	25.0	0	C	0	0	
4:00	25.6	25.0	95	24.7	23.3	24.6	0	C	0	0	
5:00	25.4	24.8	95	24.5	23.1	24.3	0	C	0	0	

Table 9. Weather parameters observed on Day 9 (18/19-04-04)

Time	DB	WB	RH	DPT	AVP	SVP	WS	WD	Cloud	Rain	Evap.
6:00	25.3	24.8	96	24.5	30.7	32.1	0	C	3	0	
7:00	26.0	25.2	93	24.9	31.5	33.9	0	C	3	0	
8:00	27.8	26.2	87	25.5	32.6	37.5	0	C	3	0	
9:00	29.0	26.2	79	25.0	31.7	40.1	0	C	2	0	
10:00	30.6	26.9	74	25.4	32.4	44.1	0	C	4	0	
11:00	31.0	27.0	72	25.4	32.4	45.0	2	SW	2	0	
12:00	32.5	26.5	61	23.9	29.7	48.7	10	SSW	2	0	
13:00	33.1	27.0	61	24.5	30.7	50.7	8	SSW	2	0	
14:00	33.4	26.9	59	24.2	30.2	53.6	6	W	2	0	4.3
15:00	33.9	27.1	57	24.3	30.4	53.8	14	NW	2	0	
16:00	32.9	26.7	60	24.1	30.0	50.0	8	NW	1	0	
17:00	31.8	26.6	65	24.4	30.5	46.9	6	NW	1	0	
18:00	30.1	26.3	73	24.7	31.1	42.6	0	C	1	0	0.3
19:00	29.5	26.0	75	24.5	30.7	41.2	0	C	0	0	
20:00	29.0	26.2	79	25.0	31.7	40.1	0	C	0	0	
21:00	28.5	26.2	83	25.3	32.2	39.0	0	C	0	0	
22:00	27.5	26.1	89	25.5	32.6	36.6	0	C	1	0	
23:00	27.5	25.8	86	25.1	31.9	37.1	0	C	7	0	
0:00	27.8	26.1	87	25.4	32.4	37.5	0	C	6	0	
1:00	27.4	26.0	89	25.4	32.4	36.4	0	C	3	0	
2:00	27.0	26.0	92	25.6	32.8	35.7	0	C	3	0	
3:00	26.4	25.9	96	25.7	33.0	34.4	0	C	3	0	
4:00	26.5	25.7	93	25.4	32.4	34.8	0	C	4	0	
5:00	26.5	25.7	93	25.4	32.4	34.8	0	C	4	0	

Table 10. Weather parameters observed on Day 10 (19/20-04-04)

Time	DB	WB	RH	DPT	AVP	SVP	WS	WD	Cloud	Rain	Evap.
6:00	26.2	25.4	93	25.1	23.9	25.7	0	C	3	0	
7:00	27.6	26.1	88	25.5	24.5	27.8	0	C	3	0	
8:00	29.0	26.0	78	24.7	23.3	29.9	0	C	2	0	
9:00	30.0	26.1	72	24.5	23.1	32.0	2	NNW	4	0	
10:00	31.2	26.2	66	24.0	22.4	33.9	2	NNW	4	0	
11:00	32.0	26.0	60	23.3	21.5	35.8	0	C	4	0	
12:00	33.4	26.8	58	24.0	22.4	38.6	2	W	4	0	
13:00	34.0	26.4	53	23.0	21.1	39.8	12	W	1	0	4.2
14:00	33.5	26.0	53	22.7	20.7	39.1	12	W	0	0	
15:00	33.5	26.5	56	23.5	21.7	38.8	12	W	1	0	
16:00	32.7	26.7	61	24.2	22.7	37.1	6	SW	2	0	
17:00	32.0	26.4	63	24.0	22.4	35.5	8	NW	3	0	0.4
18:00	30.9	26.5	69	24.6	23.2	33.6	0	C	4	0	
19:00	29.5	26.2	76	24.8	23.5	30.9	0	C	3	0	
20:00	29.3	26.2	78	24.9	23.6	30.5	0	C	0	0	
21:00	29.0	26.5	82	25.5	24.5	30.0	0	C	0	0	
22:00	29.3	26.7	81	25.6	24.6	30.4	0	C	0	0	
23:00	28.0	26.4	87	25.7	24.8	28.5	0	C	5	0	
0:00	28.1	26.4	87	25.7	24.8	28.6	0	C	4	0	
1:00	28.1	26.4	87	25.7	24.8	28.6	0	C	5	0	
2:00	28.0	26.3	87	25.6	24.6	28.5	0	C	5	0	
3:00	27.4	26.2	90	25.7	24.8	27.5	0	C	2	0	
4:00	27.1	26.2	93	25.9	25.1	27.1	0	C	0	0	
5:00	26.8	26.0	93	25.7	24.8	26.6	0	C	0	0	

Table 11. Weather parameters observed on Day 11 (20/21-04-04)

Time	DB	WB	RH	DPT	AVP	SVP	WS	WD	Cloud	Rain	Evap.
6:00	26.5	25.9	95	25.6	32.8	34.5	0	C	3	0	
7:00	27.2	26.4	94	26.1	33.8	36.0	0	C	3	0	
8:00	28.7	26.6	84	25.8	33.2	39.5	0	C	3	0	
9:00	30.5	27.2	77	25.9	33.4	43.7	0	C	4	0	
10:00	31.8	27.2	69	25.3	32.2	46.7	0	C	3	0	
11:00	33.4	28.0	65	25.9	33.4	51.4	2	NW	5	0	
12:00	33.4	27.8	64	25.6	32.8	51.3	10	W	6	0	
13:00	34.4	27.6	67	24.8	31.3	46.7	14	W	6	0	
14:00	34.5	27.5	56	24.6	30.9	54.9	10	SW	4	0	3.9
15:00	34.2	26.5	53	23.1	28.3	53.9	6	SSE	4	0	
16:00	33.1	27.7	65	25.5	32.6	50.2	4	SW	3	0	
17:00	32.4	29.0	77	27.8	37.4	48.6	4	SW	2	0	
18:00	31.5	28.2	77	27.0	35.7	46.7	0	C	2	0	0.3
19:00	30.4	27.8	81	26.8	35.2	43.5	0	C	2	0	
20:00	30.0	27.5	82	26.6	34.8	42.4	0	C	0	0	
21:00	29.5	27.5	85	26.7	35.0	41.2	0	C	0	0	
22:00	28.3	27.2	88	26.6	34.8	39.5	0	C	5	0	
23:00	28.6	27.0	88	26.4	34.4	39.1	0	C	(drizzle)	0	
0:00	28.3	26.9	89	26.3	34.2	38.4	0	C	(drizzle)	0	
1:00	28.1	27.2	93	26.9	35.4	38.1	0	C	6	0	
2:00	28.0	27.3	95	27.1	35.9	38.0	0	C	5	0	
3:00	28.0	27.2	94	26.9	35.4	37.7	0	C	3	0	
4:00	27.7	27.0	95	26.8	35.2	37.2	0	C	3	0	
5:00	27.3	26.8	96	26.6	34.8	36.3	0	C	1	0	

Table 12. Weather parameters observed on Day 12 (21/22-04-04

Time	DB	WB	RH	DPT	AVP	SVP	WS	WD	Cloud	Rain	Evap.
6:00	27.1	26.6	96	26.4	34.4	35.8	0	C	2	0	
7:00	27.9	26.7	91	26.2	34.0	37.6	0	C	1	0	
8:00	29.7	27.0	80	26.0	33.6	42.0	0	C	1	0	
9:00	31.0	27.4	75	26.0	33.6	44.8	4	NW	4	0	
10:00	32.8	27.7	67	25.7	33.0	49.6	2	NW	4	0	
11:00	32.9	27.7	66	25.6	32.8	49.7	0	C	4	0	
12:00	34.2	28.5	64	26.3	34.2	53.9	8	W	4	0	
13:00	34.8	28.9	63	26.7	35.0	56.0	2	NW	4	0	
14:00	35.1	29.0	62	26.7	35.0	56.9	14	W	4	0	4.2
15:00	34.1	27.8	61	25.3	32.2	53.2	12	SW	2	0	
16:00	33.4	27.6	62	25.2	32.1	51.8	12	W	3	0	
17:00	32.0	27.3	69	25.4	32.4	47.3	8	NW	6	0	
18:00	30.9	27.2	74	25.7	33.0	44.6	4	W	6	0	1.6
19:00	30.2	26.0	77	24.2	30.2	39.2	0	SW	6	0	
20:00	29.9	26.9	78	25.8	33.0	42.6	0	C	8	(rainy)	
21:00	28.6	26.7	86	26.0	33.6	39.3	0	C	8	(rainy)	
22:00	27.3	26.4	93	26.1	33.8	36.3	0	C	8	(rainy)	
23:00	26.9	26.4	96	26.2	34.0	35.4	0	C	8	(rainy)	
0:00	26.5	26.2	98	26.1	33.8	34.7	0	C	8	(rainy)	
1:00	26.3	25.8	96	25.6	32.8	34.2	0	C	7	0	
2:00	25.8	25.1	94	24.8	31.3	33.3	0	C	7	0	
3:00	25.4	24.5	93	24.1	30.0	32.4	0	C	7	0	
4:00	25.0	24.3	94	24.0	29.8	31.7	0	C	6	0	
5:00	24.5	23.9	95	23.6	29.1	30.7	0	C	3	0	

Table 13. Weather parameters observed on Day 13 (22/23-04-04)

Time	DB	WB	RH	DPT	AVP	SVP	WS	WD	Cloud	Rain	Evap.
6:00	24.2	23.9	97	23.8	29.5	30.4	0	C	1	0	
7:00	24.5	24.0	96	23.8	29.5	30.9	0	C	2	0	
8:00	27.5	24.9	80	23.7	29.3	36.6	0	C	2	0	
9:00	28.9	25.7	76	24.3	30.4	40.0	0	C	1	0	
10:00	31.0	26.0	66	23.8	29.5	44.7	0	C	1	0	
11:00	31.9	26.4	64	24.1	30.0	47.2	0	C	1	0	
12:00	32.5	28.9	75	27.6	36.9	49.2	0	C	0	0	
13:00	33.9	29.2	70	27.5	36.7	52.8	2	S	0	0	
14:00	33.7	29.0	70	27.3	36.3	52.2	6	W	0	0	3.0
15:00	33.5	28.2	66	26.2	34.0	51.9	7	W	0	0	
16:00	32.3	27.5	68	25.6	32.8	48.2	10	WSW	1	0	
17:00	31.6	26.8	67	24.8	31.3	46.7	4	SW	2	0	
18:00	30.9	26.3	68	24.3	30.4	44.7	0	C	2	0	0.8
19:00	29.4	25.8	74	24.2	30.2	40.8	0	C	1	0	
20:00	28.0	26.0	85	25.2	32.1	37.8	0	C	1	0	
21:00	27.4	25.6	86	24.8	31.3	36.4	0	C	0	0	
22:00	27.0	25.3	87	24.6	30.9	35.7	0	C	0	0	
23:00	26.6	25.5	91	25.1	31.9	35.1	0	C	0	0	
0:00	26.5	25.3	90	24.8	31.3	34.8	0	C	0	0	
1:00	26.1	25.2	93	24.9	31.5	34.1	0	C	0	0	
2:00	26.0	25.1	93	24.8	31.3	33.8	0	C	0	0	
3:00	26.0	25.1	93	24.8	31.3	33.8	0	C	0	0	
4:00	25.6	25.0	95	24.7	31.1	32.7	0	C	2	0	
5:00	25.6	25.0	95	24.7	31.1	32.7	0	C	0	0	

Table 14. Weather parameters observed on Day 14 (23/24-04-04)

Time	DB	WB	RH	DPT	AVP	SVP	WS	WD	Cloud	Rain	Evap.
6:00	25.2	24.8	96	24.6	30.9	32.2	0	C	1	0	
7:00	26.9	25.5	89	24.9	31.5	35.4	0	C	3	0	
8:00	28.5	26.5	85	25.7	33.0	38.8	0	C	5	0	
9:00	29.6	26.8	79	25.7	33.0	41.8	0	C	4	0	
10:00	30.6	26.8	73	25.2	32.1	44.0	0	C	5	0	
11:00	31.9	26.9	66	24.8	31.3	47.4	0	C	4	0	
12:00	33.0	27.1	62	24.7	31.1	50.6	8	SW	5	0	
13:00	33.4	27.0	59	24.3	30.4	51.5	10	W	4	0	
14:00	33.5	27.1	59	24.4	30.5	51.7	6	W	4	0	
15:00	33.7	27.0	58	24.2	30.2	52.5	12	W	3	0	3.2
16:00	33.1	27.3	62	24.9	31.5	50.8	10	SW	2	0	
17:00	32.5	27.5	67	25.2	32.6	48.7	4	NNW	4	0	
18:00	31.0	27.3	74	25.9	33.4	45.1	4	NW	3	0	0.2
19:00	30.0	26.8	77	25.5	32.6	42.3	0	C	4	0	
20:00	29.7	27.2	82	26.2	34.0	41.7	0	C	5	0	
21:00	29.4	27.3	84	26.5	34.6	41.2	0	C	0	0	
22:00	28.9	27.2	87	26.6	34.8	40.0	0	C	1	0	
23:00	28.0	27.0	92	26.6	34.8	37.8	0	C	5	0	
0:00	28.0	26.7	90	26.2	31.0	37.8	0	C	5	0	
1:00	27.3	24.9	81	23.8	29.5	36.4	0	C	5	0	
2:00	26.9	24.9	84	24.0	29.8	35.5	0	C	7	0	
3:00	26.5	24.7	86	23.9	29.7	34.5	0	C	8	Drizzle	
4:00	26.4	24.8	87	24.1	30.3	34.5	0	C	6	0	
5:00	26.5	25.2	90	24.7	31.1	34.7	0	C	6	0	
6:00	25.4	24.8	95	24.5	30.7	32.3	0	C	8	Drizzle	

Table 15. Comparison of air temperature and relative humidity observed at Mulankunnathukavu and Vellanikkara

Date	Mulankunnathukavu				Vellanikkara			
	Max. temp	Min. temp	RH Morn	RH Even	Max. temp	Min. temp	RH Morn	RH Even
10/11-04-04	34.9	26.0	90	61	36.6	25.7	86	47
11/12-04-04	33.5	25.9	84	61	35.6	25.6	80	52
12/13-04-04	35.0	26.1	78	41	36.8	26.0	82	51
13/14-04-04	34.1	25.6	75	56	35.1	26.6	76	53
14/15-04-04	34.2	25.2	75	58	35.0	25.6	80	55
15/16-04-04	33.0	27.0	92	59	34.3	26.6	87	60
16/17-04-04	34.5	26.1	81	56	35.2	27.2	79	50
17/18-04-04	34.5	26.1	85	63	34.3	25.6	85	58
18/19-04-04	33.9	26.3	87	57	34.8	25.4	84	51
19/20-04-04	34.0	26.4	78	56	35.3	25.6	85	44
20/21-04-04	35.0	26.6	84	53	35.8	26.5	86	54
21/22-04-04	35.6	27.1	80	61	36.2	27.4	86	56
22/23-04-04	34.1	23.7	80	66	35.0	23.2	93	54
23/24-04-04	34.0	25.5	85	58	34.2	25.0	86	56

HUMAN

EFFECTS OF VEDIC RITUALS ON HUMAN BEINGS

VRUNDA J.P , Sundaram.C, Jaisri G, Mallikarjun
(Dept. of Holistic Cardiac Rehabilitation and Dept of Physiology, M.S. Ramaiah Medical Teaching Hospital & College, All India Yoga Vidya Pranic Healing Foundation Trust, Bangalore)

Background

The Sanskrit verb-root vid means to know, understand, perceive and learn. Derived from this root, Veda literally means knowledge, especially revealed knowledge. In general terms, it refers to the four sacred texts that constitute the very heart and center of the spiritual framework nowadays known as Hinduism. Another derivation of the root vid is the word vidya, which refers to learned knowledge or science. According to some, we can distinguish 4 sciences; (1) the Veda; (2) logic and metaphysics; (3) the science of government; and (4) the practical arts such as medicine.

Indian ancient and traditional medical science is known as vaidya, a direct derivative of the word vidya. This shows the intimate connection between the Veda and this specific science. To heal, on the other hand, is expressed through the verb-root sham. This root carries as primary meaning, 'to exert oneself, especially in performing ritual acts'. But also 'to pacify', 'to destroy', 'to sooth', 'to hurt or injure'. The word shama means healing, the alleviation or cure of disease. It can also be used in the sense of tranquility, rest and final happiness, the emancipation from all the illusions of existence.

Disease in a human being arises when an imbalance creates a gap or hiatus within the structure and process of the organism. This immediately produces disorder in the human system. Whether this hiatus is of a physical or a non-physical nature is not of immediate importance. The hiatus will result in an imbalance in the three doshas or humors in the human system. These humors are the life forces of vata, pitta and kapha. A physical problem can reveal itself first through the mind. And a psychological problem can express itself through the physical body. Vedic healing is in the first place non-dualistic and holistic. Causes and effects need not always be exactly established, although the deepest possible understanding of the origin and root of a problem will always be helpful to the process of healing.

Ancient Vedic healing applied three principles. They are (1) mani or gems, (2) mantra or sacred sound formulas and (3) aushadha or medicine, which could be either herbal or mineral. These three healing principles each relate to one of the koshas or sheaths, which together constitute the embodiment of the human being. They are Anandamaya kosha or the causal body; Manomaya kosha or the astral body: and Annamaya kosha or the physical body. We can also relate these three koshas to the three planes of being: the transcendental plane of pure consciousness, the subtle or astral plane of intellect and thought, and the gross plane of the emotional and physical body. Each of these planes will be affected in their own way by an imbalance or disease. And we will have to apply the healing process to each if we intend to effect a complete and total healing.

The Anandamaya kosha can be called the sheath of bliss. It forms the karana sharira, or causal frame. It constitutes the transcendental plane of being, the higher self or super consciousness. It is most likely to be vulnerable to imbalances relating to the transcendental or the divine plane. These express themselves on the human plane through the influences of the planetary forces, which can be read through the analysis of a person's horoscope. Negative planetary influences have been traditionally reduced with the help of appropriate gemstones. Each planetary power has its fitting gemstone, according to color and the crystal character. It should be worn fitted in the right metal as a ring or a pendant. According to the

individual case, the wearing of a particular stone should be advised for certain periods, or on a permanent basis.

The Manomaya kosha is called the sheath of intellect or will. It forms the sukshma sharira, or the subtle frame. It can be identified with what in the west is sometimes called the astral body. It acts as it were a bridge or connection between the transcendental and the physical planes of existence. It is therefore intimately connected with the power and functioning of the principle of mantra, or sacred sound formula. The word mantra literally means 'instrument of thought or mind'. In mantra, three power principles are integrated or synthesized. These are sound, meter and meaning.

Over the past few decades, the vibrations of sound have been extensively researched in a scientific context for both their positive as well as their negative influences. It has become an established fact that, for instance, plant growth can be either positively or negatively impacted through certain types of music. Classical Indian music based on ragas has been shown to have the most positive influence. Classical western music also has a positive influence, although less notable, whereas modern western rock music has an altogether negative impact on plant growth. Sound vibrations are momentarily also used for pest control in biological gardening and farming. And, even for the expulsion of rats in situations where they form a plague.

Yajnas are the most ancient and still surviving forms of organized God worship. Yagna is known to have beneficial effects contributing to a harmonious growth to the nation as well as an individual. Apthoaryama is the seventh and the largest among the seven *Samstha Yajnas*. It was a gigantic ritual spreading over ten to twelve days conducted at Trissur from 10th April '04 till 20th April '04.

Aim:

The purpose of this study was to the evaluate the effects of Vedic rituals on various physiological and bioenergy parameters of various subjects.

Scientific evaluation of effects of rituals on nature, man, animal and plant kingdom is a very important area for scientific research. It is the experience of our countrymen that Vedic rituals produce beneficial results. But they have not been scientifically evaluated, analysed, documented or studied.

Materials and Methods:

The study was carried out on 42 subjects, 24 were Ruthwik and purohits who recite the Vedas during the yaga on these 11 days & the rest those who are there in the yagna place but are not rithwick nor do they chant the Vedas. All purohits in age range of 17- 65 yrs were included for this study

In order to study the immediate effects of Yagna on general wellbeing, computerized ,Aura Photography , Emotional Balance , Blood Pressure and Lung Function readings were taken just before and after the Yagna at resting phase.

Aura Photography

Aura Photography is a instrument used for assessing the human Bio-energy field developed by Dr.Korotkov. This camera photographs the photons emitted during the Yagna period and stores the image in the memory of the computer. The computer has

Statistically significant improvements was noticed in higher charkas and more balancing of energy field in healthy subjects .Non significant changes in Emotional Balance.
General well being questionnaire revealed that baseline score of purohits was excellent as compared to the general persons.

Conclusion : This short term study suggest that Yagna appears helpful for improving various physiological parameters in the participants.

1. Wellbeing status
2. Lung Function,
3. Emotional Balance
4. Bioenergy field

Limitations of the study:
Short duration,
Small sample size.

It is very important to have Followup after every 3 months to document the delayed impact, duration of impact of Yaga

Data collected at baseline (prior to Yaga)

Parameter	No of subjects	
• wellbeing	42	
• Lung Function	23 purohits	13 others
• Emotional Balance	43	
• Aura Photography	23	08 Epileptic

Data collected after Yagna

Parameter	No of subjects
• Wellbeing	21
• Lung Function	23
• Emotional Balance	28
• Bioenergy field	12

We have tried our best but we face the limitations to interpret the tests because sample size who underwent the tests before the yaga does not match with those who came for the post Yaga testing., we have given the test data in detail in separate files.

a program for measuring various parameters pertaining to the captured bio- energy field. The software also provides for sectorial evaluation of the recorded digital aura from which the interpretation of the functioning of the individual chakra and organ systems (e.g. Circulatory system, respiratory system etc.) could be deducted. In this instrument there is provision to record the bio-energy of the fingertips. Further this applied electromagnetic field leads to emission of the photons by the fingertips; emitted photons are captured, and demonstrated in visual aura form.

Emotional Balance:

The Freeze-Framer is an entraining, educational tool designed to balance the emotions and mind—Heart.

It shows how the use of yagna affects the heart rhythms. Through observing changes in the heart rhythm, gives a picture of nervous system balance; which will be able to see the effects of yagna on the body and mind.

In general, a smoother heart rhythm pattern indicates a more balanced nervous system and a more irregular, jagged pattern indicates a less balanced nervous system.
The Institute of HeartMath's research, on which the Freeze-Framer is based, explores the physiological mechanisms by which the heart communicates with the brain, thereby influencing our perceptions, emotions and health. Over the years the Institute of HeartMath has experimented with many different types of psychological and physiological measures, but it was consistently the heart rate variability, or heart rhythm, that stood out as being the most dynamic and reflective of our inner states.

Spida 5 - PC Spirometry

Manufactured by Micro Lab Spida 5, a 32-bit PC based Spirometry software package. Up to 41 spirometry parameters are measurable,.

- A spirometer is a device used to assess lung function. Spirometry, the evaluation of lung function with a spirometer, is one of the simplest, most common pulmonary function tests and may be necessary to determine how well the lungs receive, hold, and utilize air

After taking a deep breath, a person forcefully breathes out into the spirometer as completely and forcefully as possible. The spirometer measures both the amount of air expelled and how quickly the air was expelled from the lungs. The measurements are recorded by the spirometer.

The normal, healthy values measured by the spirometer for the amount of air exhaled vary from person to person.. However, if the values fall below 85 percent of the average, it may indicate a lung disease or other airflow obstruction.

Results

Analysis of data showed that Yaagna was effective marginally in improving various lung functions parameters.

References:

1. **P. Vinod Bhattathiripad** Vedic Tradition of Namboothiris : *"Agni" by Frits Staal, Asian Humanities Press, Berkeley, 1983.*

2. J.E.M. Houben http://home.planet.nl/~j.e.m.houben "On the earliest attestable forms of the Pravargya ritual: Rg-Vedic references to the Gharma-Pravargya, especially in the Atri family book (book 5)", Indo-Iranian Journal 43 (2000):1-25.

3. J.E.M. Houben the Electronic Journal of Vedic Studies (http://www1.shore.net/~india/ejvs/) and an upcoming issue containing a report of the CNWS-Seminar on Soma/Haoma (July 3-4, 1999) and some additional papers deal with the Soma problem.

4. J.E.M. Houben "Pragmatics of a Vedic Hymn", Journal of the American Oriental Society, 120.4.

5. Arlo Griffiths: Third International Vedic Workshop, The Vedas: Texts, Language and Ritual

6. Mahadevan, T.P. (forthcoming), The Arrival of Vedism in South India. The Purvazikha and aparazikha Brahmans.

7. Besant A. and Das B. The Bhagavad Gita, The Theosophical Publishing House, Adyar, 1997

8. Frawley, D. Wisdom of the Ancient Seers, Mantras of the Rig Veda, Motilal Banarsidas Publishers, Delhi, 1994

9. Hinnells, J. A Handbook of Living Religions, John R. Hinnells and Penguin Books Ltd, 1994

10. Mahadevananda Giri, Swami. Vedic Culture, University of Calcutta, 1947. Narayanasvami Aiyar K. Thirty Minor Upanishads, Akay Book Corporation, Delhi, India, 1979

11. Satchidananda Murty K. Vedic Hermeneutics, Shri Lal Bahadur Shastri Rashtriya Sanskrit Vidyapeetha, New Delhi, 1993

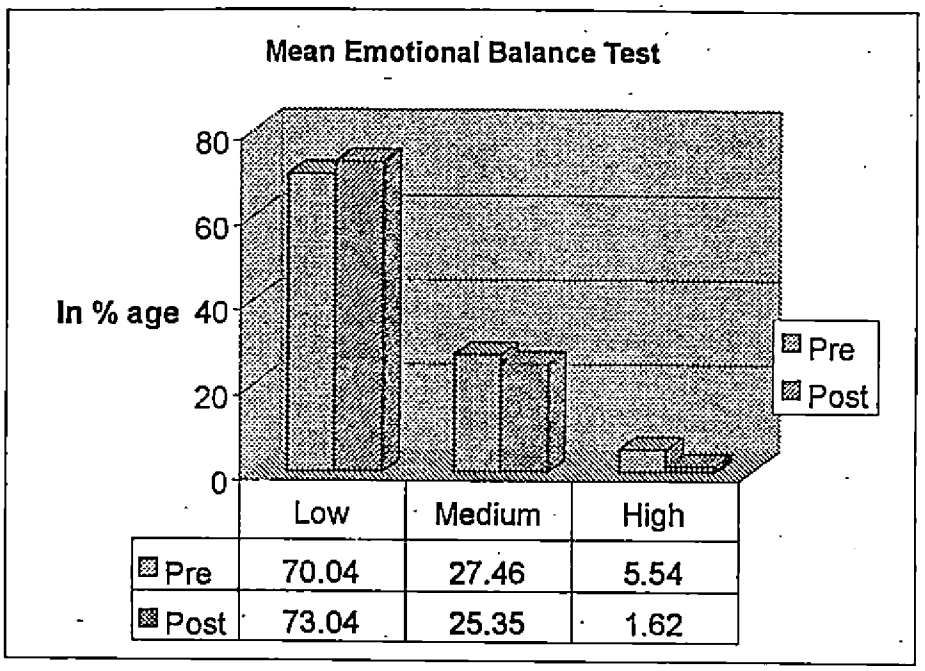
Pre and Post Readings taken at Trissur - 23 subjects

	FVC				FEV1				PEF			
	Pre1		% pred		Pre1		% pred		Pre1		% pred	
Lung Function Test	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post
	3.1	3.6	93.0	103.7	3.9	6.0	93.8	99.4	9.5	6.1	82.0	72.2
	EVC				MVV				PIF		IRV	
	Pre1		% pred		Pre1		% pred					
	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post
	3.3	3.4	79.3	81.5	97.7	107.7	93.7	102.5	3.9	4.5	33.7	1.4

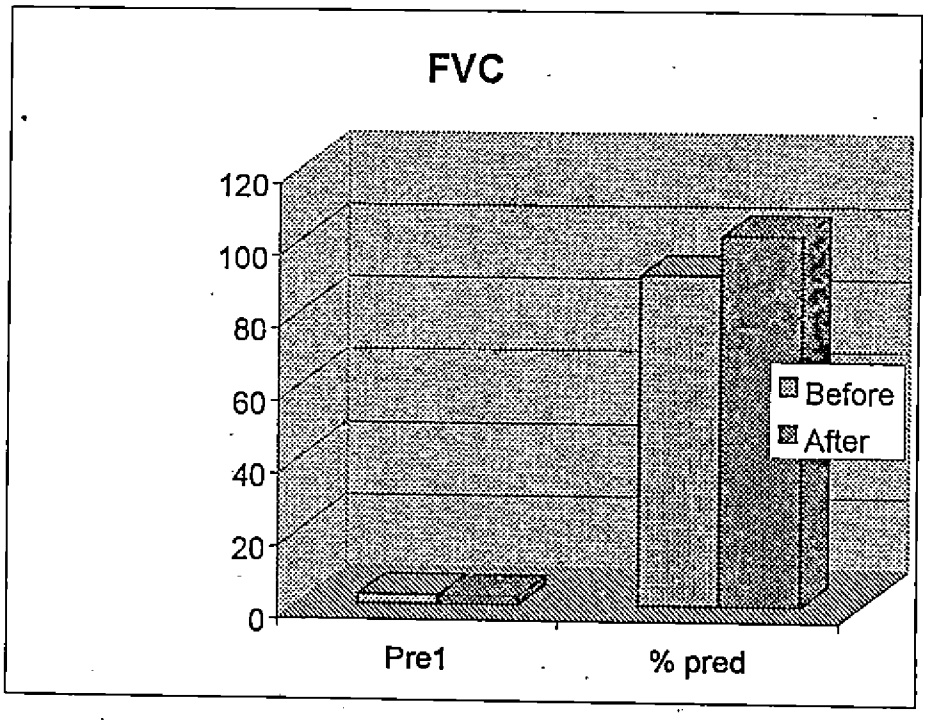
No: of subjects = 21	PRE			POST		
	Low	Medium	High	Low	Medium	High
Emotional Balance	62	30	8	72	26	2

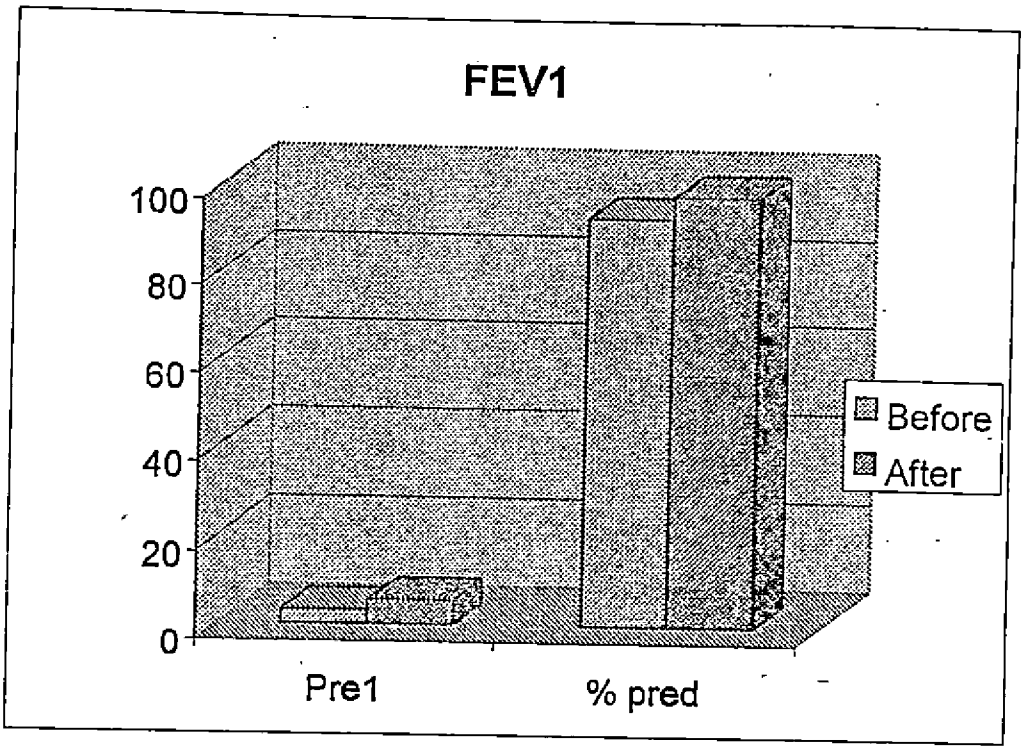
	PRE			POST		
Aura Photography Chakras	**Expanded**	**Decreased**	**Normal**	**Expanded**	**Decreased**	**Normal**
				Cr, Ajn, Heart & Navel	S.Plx, Thr, &Basic	

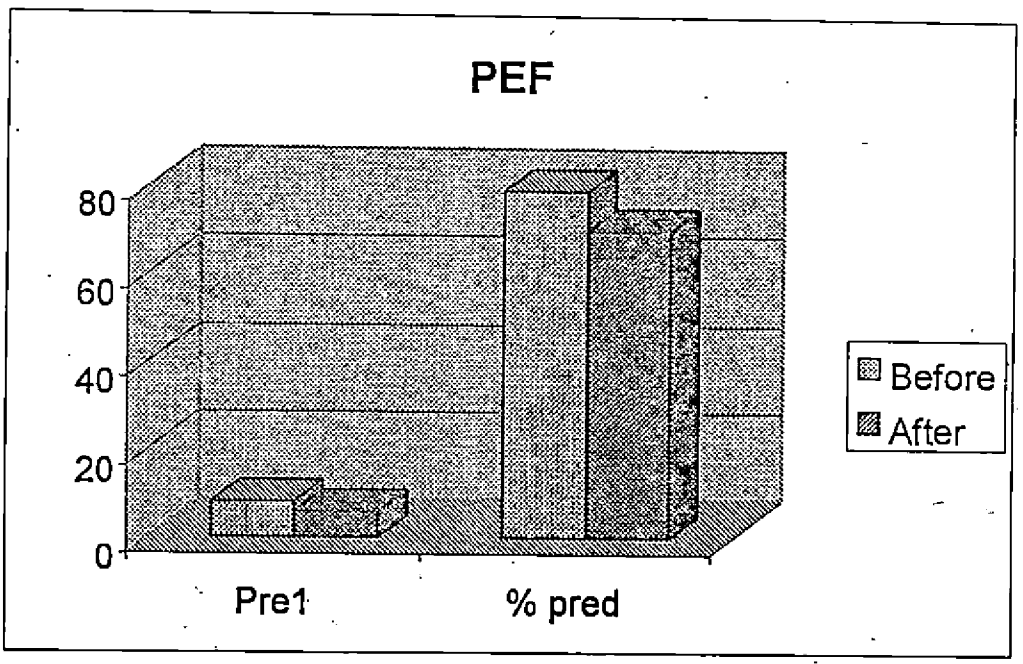
General Health Questionaire	Excellent	Good	Average	Excellent	Good	Average
	8	5	8	10	5	6

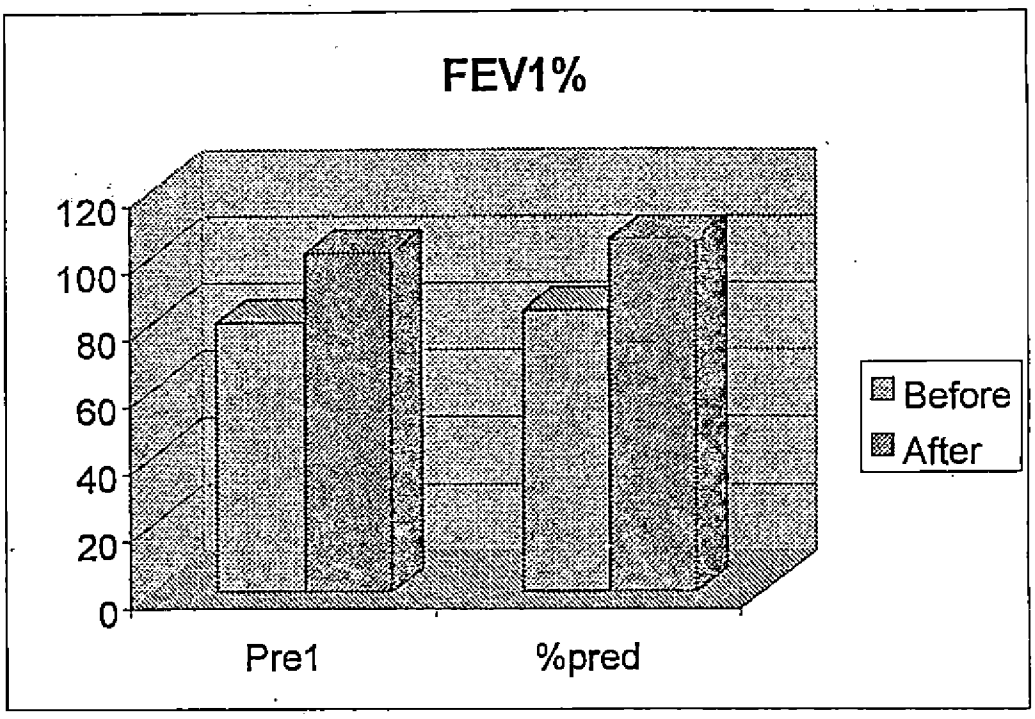


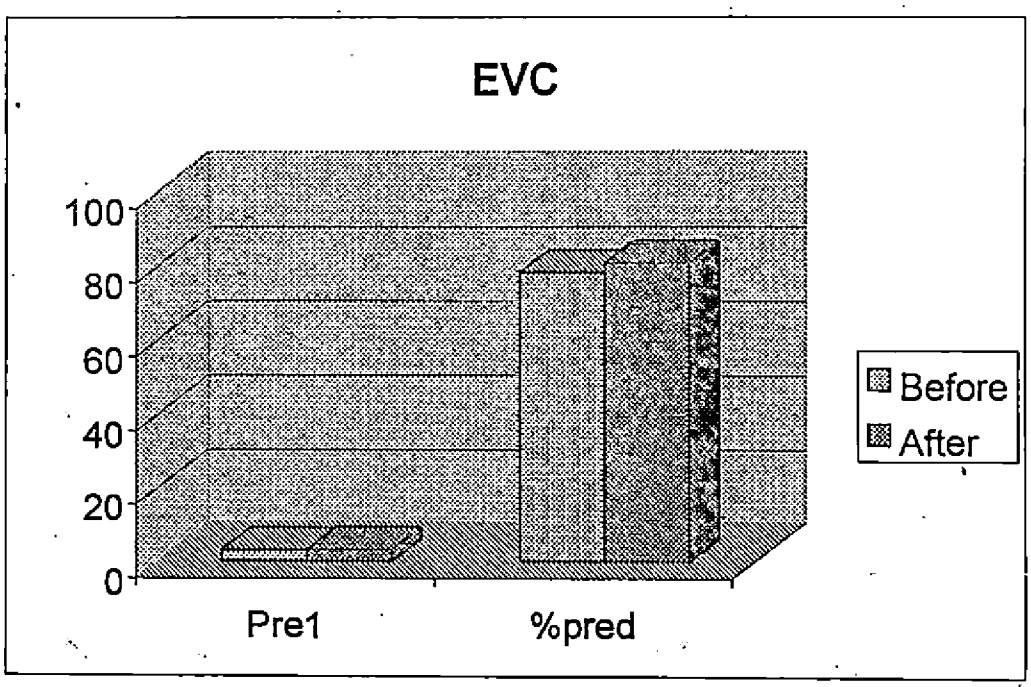
	Low	Medium	High
Pre	70.04	27.46	5.54
Post	73.04	25.35	1.62

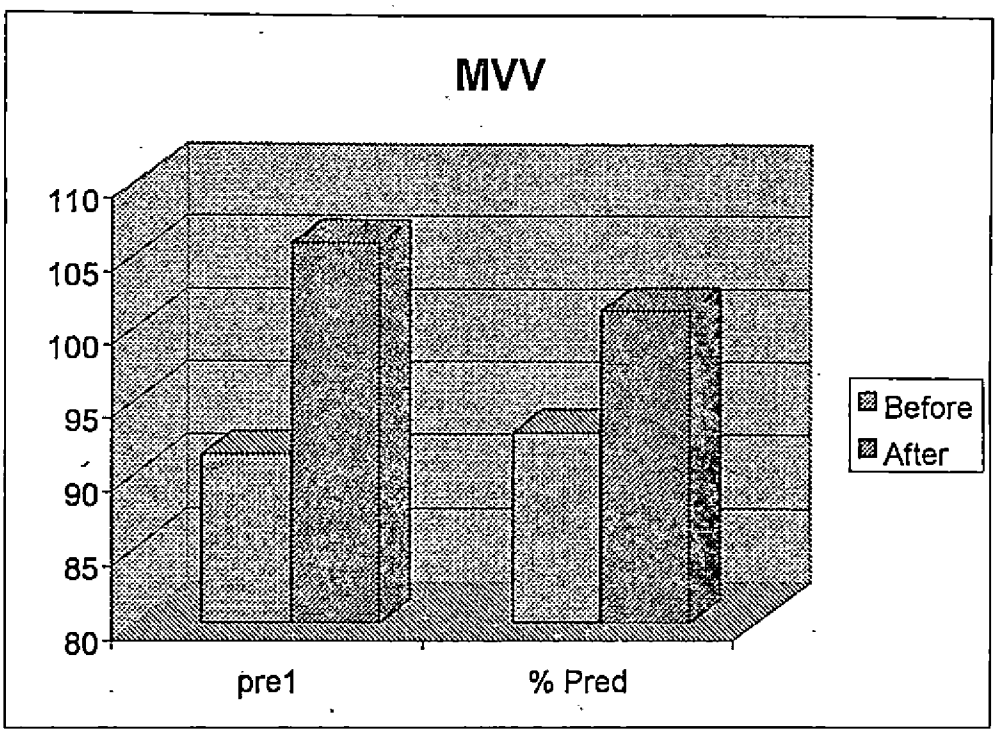


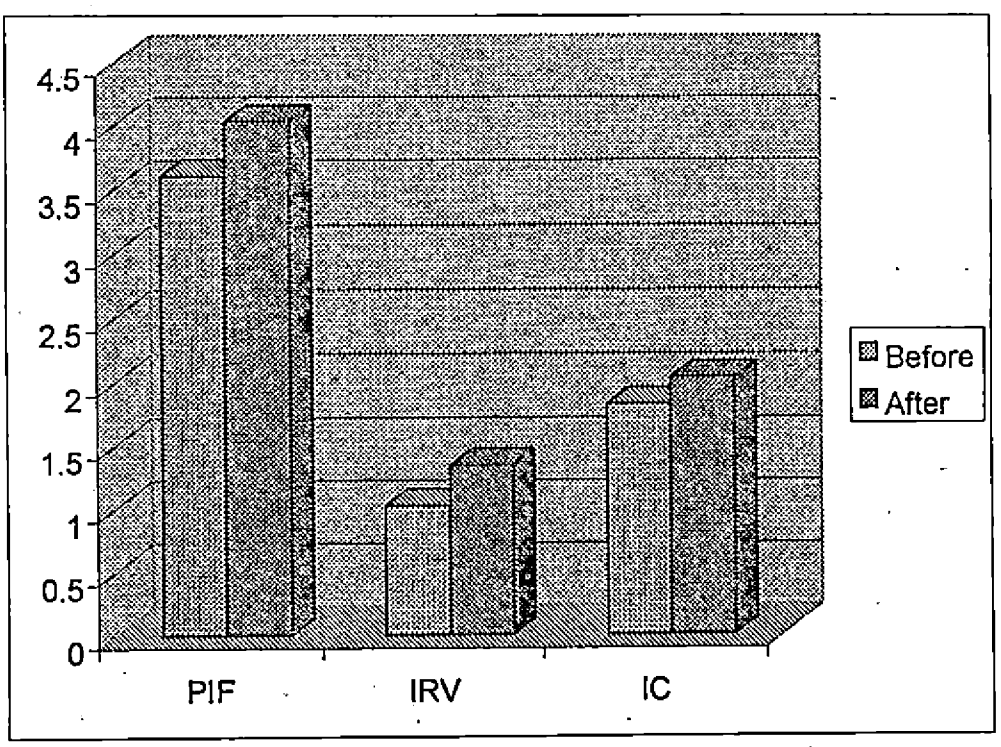

FEV1
100
80
60
40
20
0
Pre1
% pred
Before
After


PEF
80
60
40
20
0
Pre1
% pred
Before
After


FEV1%
120
100
80
60
40
20
0
Pre1
%pred
Before
After


EVC
100
80
60
40
20
0
Pre1
%pred
Before
After


MVV
110
105
100
95
90
85
80
pre1
% Pred
Before
After


4.5
4
3.5
3
2.5
2
1.5
1
0.5
0
PIF
IRV
IC
Before
After

Neuropsychological Assessment of Athoryama Soma Yagna Participants

Dr. Taranath Shetty
&
Dr. T.N. Sathyaprabha

(NIMHANS, Banglore)

The pre Yagna and Post Yagna assessment were conducted on the Yajamana Sri Deepak, Yajamana Patni, Smt. Deeksha and Sri. N. Puranik. The testing was not completed on Sri. Vasudeva. The results of the assessments are enclosed herewith.

There was an improvement on 16 of the 53 variables in Sri Deepak in the post Yagna assessment. The improvements were present in the domains of Visual memory, Verbal comprehension, Verbal learning and memory, Motor Speed, Mental Speed, and executive functions of Response Inhibition, Verbal Working Memory, Set Shifting. There was deterioration in planning.

There was an improvement on 22 of the 53 variables in Smt. Deeksha in the Post Yagna assessment. The improvements were present in the domains of Verbal learning and memory, Focused attention, Verbal Working memory, Set shifting and Planning.

There was an improvement on 17 of the 53 variables inSri. N. Puranik in the Post Yagna assessment. The improvements were present in the domains of Visual memory, Motor Speed, mental Speed, Focused Attention, Verbal Working Memory and Set shifting. There was deterioration in planning.

Assessments conducted after a span of six months are not expected to be influenced by practice effects. In the present study, the second assessment was conducted within a month of the first assessment. Hence there is a strong likelihood of practice effect being present. The improvements have to be viewed with caution.

Vasudeva		
Test Variab	Pre-test	Post-test
CFT Copy		
CFT IR		
CFT DR		
Token		
AVLT 1	67.5	75
AVLT 2	90	50*
AVLT 3	70	30*
AVLT 4	52.5	40
AVLT 5	50	22.5*

AVLT 6	2.5	2.5
AVLT IR	42.5	42.5
AVLT DR	75	25*
AVLT Hits	40	40
AVLT Error	10	2.5
LT% R	82.5	47.5*
Total		
FT r	3.3	26.7
FT l	6.7	6.7
DSST	23.1	25.6
DV (TT)		
DV (Error)		
CT1	54.3	16.5*
CT2	62	75.5
Stroop		
PF	78.9	97.4
AF	97.2	83.3
VM I	100	9.6*
VM I (Error)	100	7*
VM II	57.9	7.9*
VM II (Error)	15.8	5.3

WCST Trials taken
No. Correct
% Errors
% Perseverative Responses
% Perseverative Errors
% Non perseverative Errors
% Conceptual Level responses
No. Categories
Trials to complete 1st category
Failure to maintain set
TOL II MTT

Subject has not compare other tests
* Deterioration
° Improvement

Department of Neurophysiology, NIMHANS, Bangalore

The pulmonary function tests (PFT) and autonomic function (AFT) were studied in six subjects who performed YAGNA. The assessments were conducted before and after "APTHOARYAMA YAGAM".

Yajamana of this yagna, Sri. Deepak had normal PFT and AFT before and after yagna. The values of PFT was increased after yagna.

Yajamana Pathni Smt. Deeksha had mild restrictive abnormality in PFT before Yagna and normal PFT after Yagna and the values of PFT was increased after yagna. She had early involvement of AFT before yagna and it was normal AFT after Yagna.

Sri. Ganesh Joglekar normal PFT and AFT before and after yagna. The values of PFT was increased after yagna.

Sri Subramanya Bhatta had normal PFT and early involvement of AFT before yagna.

Sri. Vasudev Paranjape had normal PFT and AFT before and after yagna.

Sri. Nagananda had normal PFT before and after yagna and early involvement of AFT before and after yagna.

Report: There is definite improvement of Autonomic Function Tests and Pulmonary Function Tests in rithwiks who performed APTHOARYAMA YAGAM.

	Pulmonary Function Tests		Autonomic Function Tests	
No	Pre Yagna	Post Yagna	Pre Yagna	Post Yagna
Ganesh Joglekar	Normal	Normal	Normal	Normal
Deepak	Normal	Normal	Normal	Normal
Deeksha	Mild	Normal	Early involvement	Normal
Subramanya Bhatta	Normal	-	Early involvement	-
Vasudev Paranjape	Normal	Normal	Normal	Normal
Naganand	Normal	Normal	Early involvement	Early involvement

Any further information Contact Dr. Sathyaprabha ph 98452 98112
E mail sathya@nimhans.kar.nic.in

	ACTH (pg/ml		Cortisol (µg/ml)	
	Pre Yagna	Post Yagna	Pre Yagna	Post Yagna
Ganesh Joglekar	17.5	17.5	5.9	8.2
Deepak	14.5	<10.00	8	29.8
Deeksha	11.7	<10.00	12.6	10
Subramanya Bhatta	22.2		10.8	
Vasudev Paranjape	15.3	22.9	20.4	18.3
Naganand	14.8	<10.00	8.2	11.3

Any further information Contact Dr. Taranath Shetty 2699 5162
E mail tara@nimhans.kar.nic.in

PRE

First Name: Deepak	Date of Birth: 21.11.57	Age: 46
Date: 26.3.04	Sex: M	Weight (Kg): 70
ID: 638	Ethnic Corr:	Height (Cm): 172
Last Name:	Description: Yagnam	BSA (m^2):
Predicted:	Company:	Smoke:

Forced Vital Capacity:

Parameter	UM	Description	Pred.	SD	PRE #1	% Pred.	Post
Best FVC	1(btps)	Best Forced Vital Capacity	3.80	0.61	3.15	82.8	98.6
Best FEV1	1(btps)	Best Forced Vital Capacity	3.11	0.51	3.03	97.5	109.4
Best PEF	l/sec	Best Peak Expiratory Flow					112.4
PEFT	Msec	Time to PEF (10% to 90%)					
PIF	l/sec	Peak Inspiratory Flow			4.29		
FEV1/FCV%	%	FEV1 as % of FVC	78.9	7.2	96.2	121.9	114.9
FEF 25-75%	l/sec	Forced mid-expiratory flow	4.06	1.04	4.11	101.3	
MEF 75%	l/sec	Max Exp Flow @ 25% FVC	7.59	1.71	5.16	68.0	
MEF 50%	l/sec	Max Exp Flow @ 50% FVC	4.74	1.32	4.66	98.3	
MEF 25%	l/sec	Max Exp Flow @ 75% FVC	1.95	0.78	2.94	150.5	
FET 100%	Sec	Forced Expiratory Time			1.2		
VEXT	Ml	Extrapolated Volume					
IC	1(btps)	Inspiratory Capacity					
FIVC	1(btps)	Forced Insp. Vital Capacity					
BMI		Body Mass Index			23.66		

MED - 70 mm Hg
MIP - 36 mm Hg
Normal spirometry

Post Yagna
MED - 71 mm Hg
MIP - 36 mm Hg

Lung Volumes and Respiratory Pattern

Parameter	UM	Description	Pred.	SD	PRE #2	% Pred.	Post
EVC	l(btps)	Expiratory Vital Capacity	4.55	0.56	3.59	78.8	85.0
ERV	l(btps)	Expiratory Reserve Volume	1.31		0.93	70.8	70
IRV	l(btps)	Inspiratory Reserve Volume			2.27		
VE	l/min	Expiratory Minute Ventilation			13.99		
Rf	l/min	Respiratory Frequency			35.29		
Ti	Sec	Duration of Inspiration					
Te	Sec	Duration of Expiration					
Vt	l(btps)	Tidal Volume			0.39		
VT/Ti	--	Vt/Ti ration			0.52		
Ti/Ttot	--	Ti/Ttot ration			0.44		
IC	l(btps)	Inspiration Capacity			2.66		
BMI		Body Mass Index			23.66		

Maximum Voluntary Ventilation

Parameter	UM	Description	Pred.	SD	PRE #3	% Pred.	Post
MVV	l/min	Maximum Voluntary Ventilation	129.2		150.1	116.2	138.0
MRf	l/min	Maximum Respiratory Frequency			42.48		
MVt	l(btps)	Tidal volume during MVV					
BMI		Body Mass Index			23.66		

PRE

First Name: Deeksha	Date of Birth: 18.11.63	Age: 40
Date: 26.3.04	Sex: F	Weight (Kg): 65
ID: 637	Ethnic Corr:	Height (Cm): 150
Last Name:	Description: Yagnam	BSA (m^2):
Predicted:	Company:	Smoke:

Forced Vital Capacity:

Parameter	UM	Description	Pred.	SD	PRE #1	% Pred.	Post
Best FVC	l(btps)	Best Forced Vital Capacity	2.72	0.43	1.72	63.4	67.8
Best FEV1	l(btps)	Best Forced Vital Capacity	2.33	0.38	1.68	72.3	79.1
Best PEF	l/sec	Best Peak Expiratory Flow	5.94	0.90	3.69	62.1	120.4
PEFT	Msec	Time to PEF (10% to 90%)					
PIF	l/sec	Peak Inspiratory Flow			5.54		
FEV1/FCV%	%	FEV1 as % of FVC	81.5	6.5	97.7	119.8	122.7
FEF 25-75%	l/sec	Forced mid-expiratory flow	3.44	0.85	2.34	68.1	97.8
MEF 75%	l/sec	Max Exp Flow @ 25% FVC	5.43	1.35	3.38	62.2	113.3
MEF 50%	l/sec	Max Exp Flow @ 50% FVC	3.84	1.10	2.76	72.0	127.2
MEF 25%	l/sec	Max Exp Flow @ 75% FVC	1.69	0.69	1.45	86.1	
FET 100%	Sec	Forced Expiratory Time			1.1		
VEXT	Ml	Extrapolated Volume					
IC	l(btps)	Inspiratory Capacity					
FIVC	l(btps)	Forced Insp. Vital Capacity					
BMI		Body Mass Index			28.89		

MED - 30 mm Hg
MIP - 24 mm Hg
Rest. Abn. - Mild

Post Yagna
MED - 61 mm Hg
MIP - 49 mm Hg

Lung Volumes and Respiratory Pattern

Parameter	UM	Description	Pred.	SD	PRE #2	% Pred.	Post
EVC	l(btps)	Expiratory Vital Capacity	2.67	0.42	1.65	61.8	70/0
ERV	l(btps)	Expiratory Reserve Volume	1.05		0.15	14.4	17.0
IRV	l(btps)	Inspiratory Reserve Volume			1.15		
VE	l/min	Expiratory Minute Ventilation			10.43		
Rf	l/min	Respiratory Frequency			29.41		
Ti	Sec	Duration of Inspiration					
Te	Sec	Duration of Expiration					
Vt	l(btps)	Tidal Volume			0.35		
VT/Ti	--	Vt/Ti ration			0.39		
Ti/Ttot	--	Ti/Ttot ration			0.43		
IC	l(btps)	Inspiration Capacity			1.50		
BMI		Body Mass Index			28.89		

Maximum Voluntary Ventilation

Parameter	UM	Description	Pred.	SD	PRE #3	% Pred.	Post
MVV	l/min	Maximum Voluntary Ventilation	94.0		88.8	94.4	10.5
MRf	l/min	Maximum Respiratory Frequency					
MVt	l(btps)	Tidal volume during MVV					
BMI		Body Mass Index				28.89	

PRE

First Name: Nagandaha Puranek	Date of Birth: 15.07.62	Age: 41
Date: 25.3.04	Sex: M	Weight (Kg): 51
ID: 636	Ethnic Corr:	Height (Cm): 160
Last Name:	Description: Yagna	BSA (m^2):
Predicted:	Company:	Smoke:

Forced Vital Capacity:

Parameter	UM	Description	Pred.	SD	PRE #1	% Pred.	Post Yagna
Best FVC	l(btps)	Best Forced Vital Capacity	3.31	0.61	3.25	98.0	100.7
Best FEV1	l(btps)	Best Forced Vital Capacity	2.78	0.51	3.12	112.0	109.4
Best PEF	l/sec	Best Peak Expiratory Flow	8.21	1.21	5.38	65.5	65.0
PEFT	Msec	Time to PEF (10% to 90%)					
PIF	l/sec	Peak Inspiratory Flow			6.77		
FEVI/FCV%	%	FEVI as % of FVC	79.8	7.2	96	120.3	
FEF 25-75%	l/sec	Forced mid-expiratory flow	4.04	1.04	4.93	122.0	
MEF 75%	l/sec	Max Exp Flow.@ 25% FVC	7.08	1.71	4.74	67.0	
MEF 50%	l/sec	Max Exp Flow @ 50% FVC	4.44	1.32	5.33	120	
MEF 25%	l/sec	Max Exp Flow @ 75% FVC	1.77	0.78	3.07	173.4	
FET 100%	Sec	Forced Expiratory Time			1.3		
VEXT	Ml	Extrapolated Volume					
IC	l(btps)	Inspiratory Capacity			0.10		
FIVC	l(btps)	Forced Insp. Vital Capacity					
BMI		Body Mass Index			19.92		

MED - 36 mm Hg
MIP - 20 mm Hg
Normal spirometry

Lung Volumes and Respiratory Pattern

Parameter	UM	Description	Pred.	SD	PRE #2	% Pred.	Post
EVC	l(btps)	Expiratory Vital Capacity	3.96	0.56	3.53	89.1	93
ERV	l(btps)	Expiratory Reserve Volume	1.26		1.12	89.2	119
IRV	l(btps)	Inspiratory Reserve Volume			1.58		
VE	l/min	Expiratory Minute Ventilation			27.76		
Rf	l/min	Respiratory Frequency			33.27		
Ti	Sec	Duration of Inspiration					
Te	Sec	Duration of Expiration					
Vt	l(btps)	Tidal Volume			0.83		
VT/Ti	--	Vt/Ti ration			1.01		
Ti/Ttot IC	-- l(btps)	Ti/Ttot ration Inspiration Capacity			0.45 2.41		
BMI		Body Mass Index			19.92		

Maximum Voluntary Ventilation

Parameter	UM	Description	Pred.	SD	PRE #3	% Pred.	Post
MVV	l/min	Maximum Voluntary Ventilation	119.0		114.1	95.9	123.5
MRf	l/min	Maximum Respiratory Frequency			4.96		
MVt	l(btps)	Tidal volume during MVV					
BMI		Body Mass Index			19.92		

PRE

First Name: Subramanya V. Bhatta	Date of Birth: 18.01.60	Age: 44
Date: 25.03.04	Sex: M	Weight (Kg): 83
ID: 635	Ethnic Corr:	Height (Cm): 172
Last Name:	Description: Yagna	BSA (m^2):
Predicted:	Company:	Smoke:

Forced Vital Capacity:

Parameter	UM	Description	Pred.	SD	PRE #1	% Pred.	Post
Best FVC	l(btps)	Best Forced Vital Capacity	3.85	0.61	3.31	86.0	
Best FEV1	l(btps)	Best Forced Vital Capacity	3.16	0.51	2.94	93.1	
Best PEF	l/sec	Best Peak Expiratory Flow	8.82	1.21	6.65	75.4	
PEFT	Msec	Time to PEF (10% to 90%)					
PIF	l/sec	Peak Inspiratory Flow			6.93		
FEVI/FCV%	%	FEVI as % of FVC	79.3	7.2	88.8	112.0	
FEF 25-75%	l/sec	Forced mid-expiratory flow	4.14	1.04	4.08	98.4	
MEF 75%	l/sec	Max Exp Flow @ 25% FVC	7.65	1.71	5.40	70.6	
MEF 50%	l/sec	Max Exp Flow @ 50% FVC	4.80	1.32	6.08	126.5	
MEF 25%	l/sec	Max Exp Flow @ 75% FVC	2.01	0.78	1.97	98.2	
FET 100%	Sec	Forced Expiratory Time			2.0		
VEXT	Ml	Extrapolated Volume					
IC	l(btps)	Inspiratory Capacity					
FIVC	l(btps)	Forced Insp. Vital Capacity					
BMI		Body Mass Index			28.06		

MED - 60 mm Hg
MIP - 40 mm Hg
Normal spirometry

Lung Volumes and Respiratory Pattern

Parameter	UM	Description	Pred.	SD	PRE #2	% Pred.	Post
EVC	1(btps)	Expiratory Vital Capacity	4.61	0.56	3.37	73.1	
ERV	1(btps)	Expiratory Reserve Volume	1.34		1.00	74.6	
IRV	1(btps)	Inspiratory Reserve Volume			1.64		
VE	1/min	Expiratory Minute Ventilation			23.76		
Rf	1/min	Respiratory Frequency			32.54		
Ti	Sec	Duration of Inspiration					
Te	Sec	Duration of Expiration					
Vt	1(btps)	Tidal Volume			0.73		
VT/Ti	--	Vt/Ti ration			0.84		
Ti/Ttot IC	-- 1(btps)	Ti/Ttot ration Inspiration Capacity			0.46 2.37		
BMI		Body Mass Index			28.06		

Maximum Voluntary Ventilation

Parameter	UM	Description	Pred.	SD	PRE #3	% Pred.	Post
MVV	1/min	Maximum Voluntary Ventilation	130.8		104.4	79.8	
MRf	1/min	Maximum Respiratory Frequency			76.92		
MVt	1(btps)	Tidal volume during MVV					
BMI		Body Mass Index			28.06		

PRE

First Name: Ganesh Joglekar.	Date of Birth: 04.02.75	Age: 29
Date: 25.3.04	Sex: M	Weight (Kg): 68
ID: 634	Ethnic Corr:	Height (Cm): 160
Last Name:	Description: Yagna	BSA (m^2):
Predicted:	Company:	Smoke:

Forced Vital Capacity:

Parameter	UM	Description	Pred.	SD	PRE #1	% Pred.	Post
Best FVC	l(btps)	Best Forced Vital Capacity	3.59	0.61	3.44	95.9	9.67
Best FEV1	l(btps)	Best Forced Vital Capacity	3.09	0.51	3.03	98.1	101.3
Best PEF	l/sec	Best Peak Expiratory Flow	8.73	1.21	4.10	4.7	74.7
PEFT	Msec	Time to PEF (10% to 90%)					
PIF	l/sec	Peak Inspiratory Flow			7.78		
FEVI/FCV%	%	FEVI as % of FVC	82.0	7.2	88.1	107.4	112.2
FEF 25-75%	l/sec	Forced mid-expiratory flow	4.56	1.04	3.41	74.8	99.8
MEF 75%	l/sec	Max Exp Flow @ 25% FVC	7.43	1.71	3.80	51.2	86.0
MEF 50%	l/sec	Max Exp Flow @ 50% FVC	4.82	1.32	4.04	83.9	98.8
MEF 25%	l/sec	Max Exp Flow @ 75% FVC	2.08	0.78	2.47	118.6	
FET 100%	Sec	Forced Expiratory Time			2.0		
VEXT	Ml	Extrapolated Volume					
IC	l(btps)	Inspiratory Capacity					
FIVC	l(btps)	Forced Insp. Vital Capacity					
BMI		Body Mass Index			26.56		

MED - 35 mm Hg
MIP - 29 mm Hg
Normal spirometry

Lung Volumes and Respiratory Pattern

Parameter	UM	Description	Pred.	SD	PRE #2	% Pred.	Post
EVC	l(btps)	Expiratory Vital Capacity	4.30	0.56	3.53	82.1	8
ERV	l(btps)	Expiratory Reserve Volume	1.41		0.81	57.4	71
IRV	l(btps)	Inspiratory Reserve Volume			1.95		
VE	l/min	Expiratory Minute Ventilation			20.07		
Rf	l/min	Respiratory Frequency			26.01		
Ti	Sec	Duration of Inspiration			0.77		
Te	Sec	Duration of Expiration			0.71		
Vt	l(btps)	Tidal Volume			0.46		
VT/Ti	--	Vt/Ti ration			2.72		
Ti/Ttot	--	Ti/Ttot ration			26.56		
IC	l(btps)	Inspiration Capacity					
BMI		Body Mass Index					

Maximum Voluntary Ventilation

Parameter	UM	Description	Pred.	SD	PRE #3	% Pred.	Post
MVV	l/min	Maximum Voluntary Ventilation	128.8		157.0	121.9	
MRf	l/min	Maximum Respiratory Frequency			39.28		
MVt	l(btps)	Tidal volume during MVV					
BMI		Body Mass Index			26.50		

PRE

First Name: Vasudev	Date of Birth: 08.09.47	Age: 56
Date: 28.04.04	Sex: M	Weight (Kg): 55
ID: 683	Ethnic Corr: S. Indian	Height (Cm): 153
Last Name: Paranjape	Description: Yagna post	BSA (m^2): 1.5
Predicted: ERS - 93	Company:	Smoke: No

Forced Vital Capacity:

Parameter	UM	Description	Pred.	SD	PRE #1	% Pred.	Post
Best FVC	l(btps)	Best Forced Vital Capacity	2.62	0.61	2.62	99.8	
Best FEV1	l(btps)	Best Forced Vital Capacity	2.14	0.51	2.50	116.6	
Best PEF	l/sec	Best Peak Expiratory Flow	7.14	1.21	4.63	64.9	
PEFT	Msec	Time to PEF (10% to 90%)	7.14	1.21	4.63	64.9	
PIF	l/sec	Peak Inspiratory Flow			5.10		
FEVI/FCV%	%	FEVI as % of FVC	77.1	7.2	95.4	123.7	
FEF 25-75%	l/sec	Forced mid-expiratory flow	3.26	1.04	3.13	96.0	
MEF 75%	l/sec	Max Exp Flow @ 25% FVC	6.26	1.71	4.44	70.9	
MEF 50%	l/sec	Max Exp Flow @ 50% FVC	3.71	1.32	3.53	95.1	
MEF 25%	l/sec	Max Exp Flow @ 75% FVC	1.20	0.78	2.08	173.7	
FET 100%	Sec	Forced Expiratory Time			1.2		
VEXT	Ml	Extrapolated Volume					
IC	l(btps)	Inspiratory Capacity			1.72		
FIVC	l(btps)	Forced Insp. Vital Capacity					
BMI		Body Mass Index			23.50		

MED - 29 mm Hg
MIP - 18 mm Hg
Normal spirometry

Lung Volumes and Respiratory Pattern

Parameter	UM	Description	Pred.	SD	PRE #2	% Pred.	Post
EVC	l(btps)	Expiratory Vital Capacity	3.11	0.56	3.06	98.2	
ERV	l(btps)	Expiratory Reserve Volume	0.99		0.53	53.6	
IRV	l(btps)	Inspiratory Reserve Volume			2.06		
VE	l/min	Expiratory Minute Ventilation			10.11		
Rf	l/min	Respiratory Frequency			21.07		
Ti	Sec	Duration of Inspiration					
Te	Sec	Duration of Expiration					
Vt	l(btps)	Tidal Volume			0.47		
VT/Ti	–	Vt/Ti ration			0.37		
Ti/Ttot IC	– l(btps)	Ti/Ttot ration Inspiration Capacity			0.43 2.53		
BMI		Body Mass Index					

Maximum Voluntary Ventilation

Parameter	UM	Description	Pred.	SD	PRE #3	% Pred.	Post
MVV	l/min	Maximum Voluntary Ventilation	98.4		63.4	64.4	
MRf	l/min	Maximum Respiratory Frequency			1.21		
MVt	l(btps)	Tidal volume during MVV					
BMI		Body Mass Index					

AUTONOMIC FUNCTION LAB

Department of Neurophysiology
National Institute of Mental Health and Neuro Sciences
Hosur Road, Bangalore 560 029

Name : Deepak Age

Neuro No: Date

Normal values

		Pre Yagna 25.03.04	Post Yagna 22.04.04
1.	Resting parameters		
	Heart rate	66	70
	BP	112/82	94/74
2.	Respiratory sinus arrhythmia during deep breathing		
	E-1 (bpm/cycle)	18.22	12.89
	E-1	1.26	1.19
3.	HR response to Valsalva maneuver		
	VR	1.83	1.69
4.	HR & BP response to 60° head-up tilt		
	Max: Min (30:15)	1.18	1.04
	AHRmax	14.84	8.9
	AHRmin	12.93	4
	2nd min BP response	+4/+4	98/78 mmHg
	5th min BP response	+14/-2	108/72
5.	HR & BP response to standing from supine position		
	Max: Min (30:15)	1.35	1.14
	AHRmax	39	31.9
	AHRmin	26.79	9.2
	2nd min BP response	+2/+4	96/78 mmHg
	5th min BP response	+4/+6	98/80 mmHg
6.	HR & BP response to isometr...		
	HR response	+15	+15
	BP response	+18/+14	114/88 mmHg
7.	GSR		
REPORT :		Normal	Normal

For Dr. T.N. Sathyaprabha

AUTONOMIC FUNCTION LAB

Department of Neurophysiology
National Institute of Mental Health and Neuro Sciences
Hosur Road, Bangalore 560 029

Name : Deeksha Age :

Neuro No: : Date :

Normal values

	Pre Yagna 26.03.04	Post Yagna 22.04.04
1. Resting parameters		
Heart rate	64 bpm	66 bpm
BP	108/78 mmHg	104/62 mmHg
2. Respiratory sinus arrhythmia during deep breathing		
E-1 (bpm/cycle)	10.41	13.58
E-1	1.18	1.22
3. HR response to Valsalva maneuver		
VR	1.3	1.3
4. HR & BP response to 60° head-up tilt		
Max: Min (30:15)	0.96	0.93
AHRmax	1.78	-6.2
AHRmin	-0.18	-7.2
2nd min BP response	130/86 mmHg	106/78 mmHg
5th min BP response	124/82 mmHg	110/78 mmHg
5. HR & BP response to standing from supine position		
Max: Min (30:15)	1.58	1.40
AHRmax	36.5	31.5
AHRmin	42.3	33.4
2nd min BP response	124/86 mmHg	118/80 mmHg
5th min BP response	120/82 mmHg	118/78 mmHg
6. HR & BP response to isometric		
HR response	+9	+11
BP response	128/98 mmHg	124/92 mmHg
7. GSR		

REPORT Early involvement Normal

For Dr. T.N. Sathyaprabha

AUTONOMIC FUNCTION LAB

Department of Neurophysiology
National Institute of Mental Health and Neuro Sciences
Hosur Road, Bangalore 560 029

Name : Naganand Age :

Neuro No: : Date :

Normal values

		Pre Yagna 25.03.04	Post Yagna 06.04.04
1.	Resting parameters		
	Heart rate	63	60
	BP	104/64	106/74
2.	Respiratory sinus arrhythmia during deep breathing		
	E-1 (bpm/cycle)	13.58	9.24
	E-1	1.24	1.16
3.	HR response to Valsalva maneuver		
	VR	1.32	1.25
4.	HR & BP response to 60° head-up tilt		
	Max: Min (30:15)	1.32	1.25
	AHRmax	1.16	1.13
	AHRmin	10.46	14.5
	2nd min BP response	+6/+16	112/90 mmHg
	5th min BP response	+14/-2	108/88
5.	HR & BP response to standing from supine position		
	Max: Min (30:15)	1.27	1.34
	AHRmax	24.47	32.5
	AHRmin	19.1	14.8
	2nd min BP response	118/84	110/88 mmHg
	5th min BP response	120/86	112/90 mmHg
6.	HR & BP response to isometric		
	HR response	+7	+10.8
	BP response	126/82	112/90 mmHg
7.	GSR		

REPORT : Early involvement Early involvement

For Dr. T.N. Sathyaprabha

AUTONOMIC FUNCTION LAB

Department of Neurophysiology
National Institute of Mental Health and Neuro Sciences
Hosur Road, Bangalore 560 029

Name : Subramanya Age :

Neuro No: : Date :

Normal values

		Pre Yagna 25.03.04	Post Yagna 22.04.04
1.	Resting parameters		
	Heart rate	60 bpm	
	BP	130/88 mmHg	
2.	Respiratory sinus arrhythmia during deep breathing		
	E-1 (bpm/cycle)	10.29	
	E-1	1.19	
3.	HR response to Valsalva maneuver		
	VR	1.32	
4.	HR & BP response to 60° head-up tilt		
	Max: Min (30:15)	1.12	
	AHRmax	9.97	
	AHRmin	9.61	
	2nd min BP response	+8/+6	
	5th min BP response	+6/+6	
5.	HR & BP response to standing from supine position		
	Max: Min (30:15)	1.38	
	AHRmax	26.08	
	AHRmin	22.08	
	2nd min BP response	+10/+10	
	5th min BP response	+0/+2	
6.	HR & BP response to isometric		
	HR response	+10	
	BP response	+2/+2	
7.	GSR		

REPORT Early involvement

For Dr. T.N. Sathyaprabha

AUTONOMIC FUNCTION LAB

Department of Neurophysiology
National Institute of Mental Health and Neuro Sciences
Hosur Road, Bangalore 560 029

Name : Vasudev Paranjape Age : 57 years

Neuro No: : 03.04.04 Date : 28.04.2004

		Normal values	Pre Yagna	Post Yagna
1.	Resting parameters			
	Heart rate		66	84 bpm
	BP		118/80 mmHg	118/80 mmHg
2.	Respiratory sinus arrhythmia during deep breathing			
	E-1 (bpm/cycle)		12.48	15.97
	E-1		1.18	1.21
3.	HR response to Valsalva maneuver			
	VR		1.35	1.7
4.	HR & BP response to 60° head-up tilt			
	Max: Min (30:15)		1.03	1.01
	AHRmax		14.45	12.7
	AHRmin		7.1	7
	2nd min BP response		120/92 mmHg	124/88 mmHg
	5th min BP response		116/92 mmHg	126/86 mmHg
5.	HR & BP response to standing from supine position			
	Max: Min (30:15)		1.18	1.10
	AHRmax		24.6	18.3
	AHRmin		12.4	7.9
	2nd min BP response		126/90 mmHg	126/90 mmHg
	5th min BP response		124/90 mmHg	124/90 mmHg
6.	HR & BP response to isometric			
	HR response		+6	+6
	BP response		138/96 mmHg	136/94 mmHg
7.	GSR			
REPORT :			Normal	Normal

AUTONOMIC FUNCTION LAB

Department of Neurophysiology
National Institute of Mental Health and Neuro Sciences
Hosur Road, Bangalore 560 029

Name : Ganesh Joglekar Age : 30 years / M

Neuro No: : Date :

		Normal values	Pre Yagna	Post Yagna
1.	Resting parameters			
	Heart rate		59	57
	BP		130/86	120/78
2.	Respiratory sinus arrhythmia during deep breathing			
	E-1 (bpm/cycle)		20.32	21.16
	E-I		1.38	1.37
3.	HR response to Valsalva maneuver			
	VR		1.52	1.97
4.	HR & BP response to 60° head-up tilt			
	Max: Min (30:15)			0.96
	AHRmax			10.04
	AHRmin			6.6
	2nd min BP response		+10/+18	132/94 mmHg (+12/+16)
	5th min BP response		+10/+14	132/94 mmHg (+12/+16)
5.	HR & BP response to standing from supine position			
	Max: Min (30:15)		1.39	1.75
	AHRmax		42.73	39
	AHRmin		40.7	37.7
	2nd min BP response		+4/+4	130/94 mmHg (+10/+16)
	5th min BP response		+0/+4	128/92 mmHg (+8/+14)
6.	HR & BP response to isometric			
	HR response		+21	+14
	BP response		+10/+14	136/100 mmHg (+16/+20)
7.	GSR			
REPORT		Normal		Normal

AMRITA VISWA VIDYAPEETHAM

Amrita Institute of Medical Sciences &

Research Centre

Kochi – 682 026

Report on
A Psychological Study of Participants
Of
Apthoaryaama Soma Yagam
With
Garudachayan

By

Dr. C.P. Somasundaram
Shri. Sunidharan
(Clinical Psychologists, AIMS)
Ms. Sumithra (Biostatistician, AIMS)
&
Dr. R. Jagadambika
(Retd. Clinical Psychologist, Govt. Dist. Hospital Ernakulam)

Amrital Lane, Elamakkara .P.O., Kochi – 682 026
Tel: 91-484-280 1234 – Ext. 8082-8083
Fax: 91-484-280 2020
Email: akkunni@medical.amrita.edu

Tables

Page No.

A Psychological Study of Participants Of Apthoryaama Soma Yagam With Garudachayanam

INTRODUCTION

"Om Agnimeele Puroahitam yagnasya devamrutvijam Hoathaaram rathnadhaatamam" (Rig Veda: 1.1.1)

By the Grace of God, blessings of Mahatmas and good will and affection of all the people, the performance of Saagnichitya Sarvaprushta Sarvasthoama Apthoryaama Soama Yaga took place at Mulankunnathukavu, Trichur District, in Central Kerala from 10th to 20th April 2004.

The performance of this great Vedic ritual was being promoted by the Vedic yagna Parthishtan, Mulankunnathu Kavu & OmSanthi Dharma, Bangalore, with the co-operation of Sroutha Sasthra Pravishad, Trichur.

Some yagas are elaborate and complex Vedic rituals. The rituals of Apthoryaama Yaga spread over 10-12 days and round the clock on some days. The Vedic texts and manuals relating to yagna are voluminous. A large chunk of Rig Veda, Yajur Veda and Saama Veda is associated with yagna, as mantras to be utilized and their interpretations and as commandments, rules and procedural details.

Apthoryaama yaga is a gigantic vedic ritual. It is the seventh and the biggest of the seven important Soma Yaagas known as "Sapta Soma Samsthas" – the others being Agnistoama, Athyagnishtoama, Ukthya, Shoadasi, Vaajapeya and Athiraathra. Apthoaryaama Yaga encompasses performance of an enormous number of rituals and recitation of thousands of Rig-Veda and Yajur Veda mantras and changing of innumerable Saama Veda mantras. Mantras from Atharva Veda also utilized. Apthoaryaama

takes place only one in a few years. This may be due to the complexing and profundity of the yaga.

Garudachayana: This yagna has another important component, namely, Mahaagni Chayana or Garudachayana. The main Fire alter (Havana Vedi) for yagna is constructed with one thousand baked clay bricks. They are piled in 5 layers one over the other, each layer consisting of two hundred bricks. When completed, the alter assumes the shape of an eagle with outstretched wings. Many rituals and recitations and chanting of Veda mantras accompany the construction and consecration of this main alter.

Each brick or group of bricks is piled reciting the Veda Mantras. About one-third of Krishna Yajur Veda Taittiriya Samhita is utilized for these rituals. The glorious Sri Rudra and Chamaka are among the mantras utilized.

The Kerala Scenario and the Revival of the lost tradition

Nampoothiris in Kerala have been performing only two varieties of Somayaaga; Atni-Shtoama and Saagrichithya Athiraathra. But there is evidence to establish that Apthoaryaama also used to be performed in earlier days. The great Scholarand outstanding Sroutha Maestro, Erkara Raman Nampoodiri has stated in is book "Sroutha Karma Vivekam" on page 176 (Anadi. Books, Kunnankulam); that more than 200 years ago, Kaimukku Vaidikan, an eminent expert in Vedand Sroutha has written a palm-leaf grantha inSanskrit entitled "Prayoga Vrithi". Erkara states that the details of yajnas now being performed in Kerala (Agnishtoama and Athiraathra) as well as those, which were performed earlier, Viz. Shaodasi, Apthoaryaama, Southraamani etc., are given in the Kerala and Chennai and Bangalore to Trichur. Good hotel accommodation was available at Trichur. For local conveyance, taxi cars and autorikshaws were available.

The Yajamana for this yajna was Shri Deepak Apte and his Dharmapatni, Smt. Deeksha Apte from Goa. They had performed before two Soma Yaagas.

Sri Vasudeva Paranjype from Mysore, an erudite Scholar and expert in Poorva Meemamsa and the member of the Joglekar family from Gokarnam, who were reputed for their Sroutha expertise, provided the leadership. The calibers of the ruthviks were very high.

In conformity with the loyalty principles of Veda and as envisaged by great souls like Erkara Raman Nampoodiri, people from all sections of the society were involved in various activities and functions of the 'Yaina'.

Day to day programme:

First day – GANESH POOJA – ISHTA DEVATHA POOJA

Sadda Aahwaanam, Akkothyaavwedangam, Mahaa Sankalpam, Swasthi Punyaaha Vaachanam, Naandee Sraadham, Rithwik Varanam, Madhuparakam, Sabhaa Pooja, Yaaga-saala Pravesam, Agni Prathishta, Hothru Hoamam, Koosmanda Hoamam, Savithra Hoamam, Sambhaara Sambharanam, Ukha Sambharanam, Ishtaka Nirmanam, Yoopagrahanam – Measuring the Vedi, Vaayavya Yaagam, Mahaa Sankalpam for Apothaoryaama Yaagam, Idaahwaanam, Aayaathana Samskram, Agni Mathanam for Apthoaryaamam, Agni Pratishta, Aajya Samskaram, Samishta Yajur Hoamam, Yajamana and Pathni taking food, Apsudeeksha, Vapanam, Snaanam, Vasthra Dhaaranam, Navaneetha Abhyanjanam, Thoolaanjanam, Deekshaahuthi, Consecration of the Yajamana and Pathni, Deeksha Sambhara Parigraham, Preparation of Fire in Ukha, Ukha Sambarajeeya Ishti, Vishnu Kramanam, Mushteekaranam, Deekshithaavedanam, Vratha Doaham, Vratha Panam.

Second Day

Pilling of Garhapathya Chithi, Agni Prathishata in Garhapathya, Vaatsapra Upasthanam, Vratha Doaham Vratha Paanam, Sanihaaram, Rituals connected with the construction of Yaagasaala, Praayaneeya Ishti, Pada Grahanam, Soama Krayam, setting Soama on the Asandi, Agni Mathanam, Aathithyeshti, Thaanoo Napthram, Soamaapyaayanam, Nihnavanam, Avaanthra Deeksham, Preparation of Pravargya, Morning Pravargya, Upasad and Subrahmanya Aahwanam, Veedeekaranam, Ploughing the

site for Garuda Chithi, Foundation for the Garuda Chithi and pilling materials there. Pilling of the first layer of the Garuda Chithi, Afternoon Pravargya, Upasad and Subrahmanya Aahwanam,Vratha Doaha Vrahtha Paana.

Third Day

Vratha Doaha Vratha Paana, Morning Pravargya, Upasad and Subrahmanya Aahwanam, Piling of the second layerof the Garuda Chithi.

Afternoon Pravargya, Upasad and Subrahmanya aahwanam, Vratha Doaha Vrahtha Paana.

Fourth Day

Vratha Doaha Vratha Paana, Morning Pravargya, Upasad and Subrahmanya Aahwanam, Piling of the third layer of the Garuda Chithi.

Afternoon Pravargya, Upasad and Subrahmanya Aahwanam,Vratha Doaha Vratha Paana.

Fifth Day

Vratha Doaha Vratha Paana, Morning Pravargya, Upasad and Subrahmanya Aahwanam, Piling of the fourth layer of the Garuda Chithi.

Afternoon Pravargya, Upasad and Subrahmanya Aahwanam, Vratha Doaha Vratha Paana.

Sixth Day

Vratha Doaha Vratha Paana, Morning Pravargya, Upasad and Subrahmanya Aahwanam, Piling of half of the fifth layer of the Garuda Chithi, Afternoon Pravargya, Upasad and Subrahmanya Aahwanam Vratha Doaha Vratha Paana.

Seventh and Eighth Day

Vratha Doaha Vratha Paana, Morning Pravargya, Upasad and Subrahmanya Aahwanam, Completion of the fifth layer of the Garuda Chithi, Saahsra Proakshanam, Ishtaka Dhenukaranam, Ksheera Dhaara onCharmeshtaka with Goat's milk reciting Sree Rudram, Chithi Upasthanam, Chithi Parishekam, Mandooka Marjanam, Sarpaahuthi, gandharvaahuthi, Aavakaa Aachaadanam, Afternoon Pravargya, Upasad and Subrahmanya Aahwanam, Disposal of Pravargya Implements, Avaanthara Deekshaa Visargam, Agni Pranayanam (Carrying forward of Abhavaneeya Agni to Garuda Chithi), Vaisavakarma Hoama, Poornahuthi, Vaiswanara Ishti, Vasoardhaara (with ghee reciting Chamaka Manthra) Vaajaprasaveeyakam, Raashtrabhruth Hoamam, Rituals connected with setting up of Havirdhaana Mantapam and Dhishiniyas. Agneeshoama Pranayanam (Carrying forward Agni to Aagneedhara and Soama to Havirdhana) Agneeshoameeya Yaagam, Vasatheevareeparigraham Devasuvaam Haveemshi, Preparation for Suthya Day.

Ninth Day – Suthya Days

(Morning 3 A.M. onwards round the clock), Yajna Saarathi Saama, Praatharanuvaakam, Upamsu Graha Hoama (Before sunrise), Anthryaami Graha Hoama (After sunrise).

Praathassavanam

Praatharabhishavam, Collecting Soamam in Graham, Bahishpavamanasthuthi, Savaneeya Yaagam

Sthuthis, Sasthras and Soama Aahuthis

First Aajya Sasthra – Soama Aahuthi, First Aajya Sthuthi, Prauga Sashtra, Soama Aahuthi, Second Aajya Sthuthi, Second Aajya Sashtra, Soama Aahuthi, Third Aajya Sthuthi, Third aajya Sashtra, Soama Aahuthi, Fourth Aajya Sthuthi, Fourth Aajya Sasthra, Soama Aahuthis.

Madhyaandina Savana

Abhishavam, collecting of Soama in Grahas, Maadhyaandinia Pavamanna Sthuthi, Dadhi Gharma, Savaneeya Puroadaasa Hoama, Dahshina, Maruthwatheeya Sashtra, Soama Aahuthi, Abhishekam of Yajamana, Prushta Saama Sthuthis Nishkaivalya Sasthras, Soama Aahuthis.

Tenth Day – Thrutheeya Savanam:

Soama Abhishavam, collection of Soama in Grahas, Aarbhava Pavamaana Sthuthi, Anga Yaagam, Pitroapaasana, Savanamukha Yaaga, Mahaa Vaiswadeva Sashtram, Soama Aahuthi, Soumya Charu Yaaga, Bhakshanam, Yajnayanjeeya Sthuthi, Agni marutha Sasthra, Soama Aahuthi, Ukthya Sthuthis – I, II, III, Ukthya Sasthra – I, II, III, Soama Aahuthis, Shoadasi Sthuthi (When Sun is half set), Shoadasi Sasthra, Soama Aahuthi, Raathri Paryaaya Sthuthis (4), Raathri Paryaaya Sasthras (4), Soama Aahuthis, Aswina Sthuthi, Aswina Sasthra.

Eleventh Day

Continuation of Aswina Sasthra, Soama Aahuthi Athiriktha Stuthis (4), Athiriktha Sasthras (4), Soama Aahuthis, Anuyaaja Yajna Pucha, Haariyoajana, Sakhya visarjanam, Patneesamyaajas, Mahaa Praayaschitha, Avabhrutha Ishti, Avabrhutha Snaana, Udayaneeyeshti, Maithravarunee and Aameeksha, Sakthuhoama, Poornaahuthi, Asheervadam, Yajnamangalam, Return to residence.

The objectives of Yaga were:

1. To scientifically evaluate the effects of Vedic rituals on nature, human beings and plants with the help of eminent scientists and utilization of modern scientific equipment.

2. To revive, rehabilitate, rejuvenate and restore to deserving heights our Vedic and Srouthic traditions (Srotha is branch of knowledge dealing with Yajnaz).

3. To propagate the lofty principles and universality of Vedic culture and to bring Veda close to the people and people close to Veda.

4. To organize exhibitions, seminars, and assembly of scholars and experts from all parts of India and outside, for exchange of thoughts and information and to enlighten the people about Veda, Sroutha and related subjects.

Objectives of the present study

The organizers of Yoga, approached AIMS to participate in the scientific evaluation of the possible effects of Yaga on human beings – both physical and mental. In connection with this, a psychological study of impact of Yaga on participants before and after Yaga was proposed.

The main objective of this psychological study was to find out whether there was any difference in cognitive, personality functions, psychological well being, general health and coping mechanism after the interventions. With these objectives in mind, a study was undertaken.

Methods and Material

All the subjects of the study were participants of Apthormayama Yaga selected at random from Mulankunnathukavu, Trichur district of Kerala. The participants were not allowed to expose themselves to the environmental non-conducive situations, distractions, or other unwanted or unnecessary involvements. They wre seen abiding the principles and rules of the Yaga at all times during the period of intervention and standard psychological tests were administered to them before and after Yaga. The demographic data of the participants is as shown in Table 1 (Page 10). All the participants were given the same psychological tests before after Yaga. The details of the psychological tests are attached herewith (Pages 6,7).

1. Psychological Well-being Questionnaire (Bhogle & Prakash,1995)

This consist of 28 items of which 15 items measure positive well being and 13 items negative well being. The subject has to say yes/no to

each item and higher scores indicate greater well being. The internal consistency coefficient is 0.84 and split half coefficient is 0.91. Test retest reliability after 3 months was to be 0.72.

2. General Health Questionnaire (Goldberg & Hillier, 1979)

This is used to assess the presence of non-specific psychological distress. It consist of 28 items measuring four factors – somatic symptoms, anxiety and insomnia, social dysfunction and depression. There are 7 items for each factor and items are arranged factor-wise. It has been standardized in India.

3. Coping Checklist (CCL) (Rao, Subhakrishnan and Prabhu,1998)

Utilization of social support has studied as a coping style. It involves components of both problem focused and emotion focused coping. The CCL consist of 70 items covering a wide range of behaviours, emotional and cognitive responses that may be used to handle stress. It has 6 subscales. One of problem focused coping, Four of emotion focused coping (denial, distraction, faith, and acceptance) and one of social support seeking. Items are scored dichotomously in a yes/no format. Internal consistency 0.79 and test – retest reliability for a period of one month is 0.74.

4. Eysenk Personality Inventory

This inventory consist of 57 questions and measures how a person behaves, feels and acts answering 'yes' or 'no' to question.

5. Weschler memory scale

This consist of

1. Personal and current information
2. Orientation
3. Mental Control
4. Logical memory

5. Digit span – forward and reverse
6. Visual reproduction and recall
7. Associate learning

Memory span test is used to measure attention and concentration.

6. Bender-Gestalt

This is a drawing test consisting of 9 geometric designs chosen by Loureita Bender from patterns first devised by Werheimer. Nine patterns are presented to patients one at a time and he is asked to copy what he sees. The organization of the drawings, the page placement, distortion and elaboration in pattern size and other miscellaneous are used by an experienced interpreter to make inferences about personality functioning. The test is used to detect organic pathology, maturational level etc.

Results and Discussion

After pre and post psychological tests administration, the different data were subjected to statistical analysis and they are as shown in Tables II, III, IV (Pages 11, 12).

Continuous variables are reported as Mean, ± SD. Paired 't' test was used to analyse pre and post test variables. Correlation analysis was done to find the relationship between the variables. Regression coefficient was calculated to predict the memory quotient with other independent variables.

Statistical analysis was done using SPSS software

Table shows the variables, Mean, SDs and 't' value for the number of participants of the Yaga before and after the intervention. 't' was found significant at 0.05 level for 'faith' only in the coping checklist test. Faith is an "emotional focused coping", a strategy adopted to alleviate stress.

In personality dimensions the variable 'neuroticism' was found to be decreased after the intervention ('t' value 3.008). In cognitive functions, the

't' values were found significant for 'logical memory' digit forward and backward', 'associate learning' and 'mental control'. These are factors included in the calculations of memory quotient of the participants of the Yaga and it was found to have improved significantly after the intervention ('t' value 3.860).

In Bender-gestalt test, a test detecting organic pathology, maturational level and personality dysfunctions. It not only indicating the absence of these factors, but asserts that recall (one of the facets of the memory) to be significant ('t' value 2.254) in the post participants of Yaga.

A close perusal of the table showing the correlation coefficients of pre and post test on Bender-Gestlat and memory quotient indicated a negative correlation suggesting that when Bender-Gestait score is high the memory quotient is low and vice versa. Since in this study it was revealed that in the post intervention period memory was improved, we have to speculate that the participants of Yaga had neither organic pathology nor personality dysfunctions. Besides, in personality dimension, the variable 'neuroticism' was found to be decrease after intervention ('t' value 3.006).

Regression analysis tables showed that P value is significant for 'personal information', 'orientation', 'logical memory', digit forward and backward', 'visual reproduction' and 'associate learning'.

So statistical analysis indicated

Yaga has definitely changed memory of participants by improving the cognitive functions such as 'logical memory', 'digit forward' and 'backward', 'associate learning' and 'mental control' at 0.05 level of significance.

Recall, one of the facets of memory in Bender-Gestalt test is ('t' value 2.254) indicating improvement.

The correlation coefficients of 'on Bender-Gestalt and memory quotient was negative, indicating that Z score on Bender-Gestalt increased as the memory quotient was decreasing and vice versa.

In personality dimensions the variable 'neuroticism' is found to be decreased after the intervention.

In the regression analysis P value was found to be significant for 'personal information', 'orientation', 'logical memory', digit forward' and 'backward', 'visual reproduction' and 'associate learning'.

There is paucity of published work on similar studies, however, on meditation, healing power of the world (Manthras, if we say so), "manthra meditation" etc. Literature survey was possible.

Michael Murphy and Steven Donovan (cf. Monaghan et al., 1999) summarize the findings of over thousands scientific studies on meditation and classify them into three categories – physiological, psychological and spiritual.

Under psychological benefits, they stated that there may be:

- increase empathy
- enhance creativity and self actualization
- heightened perceptual clarity and sensitivity
- reduction of both acute and chronic anxiety

Prof. N.Lyubimor, one of the world's leading neuroscientist found that the meditative states creates a unique pattern of coherent activities in the brain's frontal cortex that indicated left and right synchronization. This enhanced activities during meditation correlates with greater creativity and produced a state of restful alertness and improved mental performances. Studies are also revealed that stress reducing nature of meditation has had a profound effects on variety of health condition. A study of 90 chronic pain sufferers showed that a ten week programme of meditation practice caused a significant reduction in pain, mood disturbance, anxiety and depression. The author observed the awareness the meditation brings about is a source of personal insight and self-understanding that can help mental health patients feels less anxious and more in control ..... and a more positive attitude towards life (Pennebacker, 1997).

In this study which can also be considered as a kind of meditation the following findings are evidenced:

1. There was a reduction of anxiety in the post Yaga participants
2. There was a greater creativity and production of a state of restful alertness and improved concentration and mental performance.
3. Well being was maintained intact throughout the Yaga by the participants.
4. In health condition memory improved significantly.
5. Recall was also improved as measured by Bender-Gestalt test
6. Memory quotient was found to increase as Bender-Gestalt decreased and vice versa.
7. P value was found significant for personal information, orientation, logical memory, digit forward and backward, visual reproduction, associate learning and mental control at 0.05 level of significance.

The findings of this pilot study suggest that participation Yagas would be beneficial just as doing meditation to get a feeling of well being, improved physical and mental conditions arrive at better ways to cope up with stresses in life and to improve our cognitive and personality functions. Probably this study may serve in this direction to inspire scientists to involve in further research studies.

Acknowledgement

We acknowledge Dr. Prem Nair, medical Director with an immeasurable debt of deep gratitude for his constant encouragement, help and assistance.

We place on record our deep appreciation and gratitude to Dr. D.M. Vasudevan, Principal, College of Medicine and Dean of Faculty of Medical Sciences, for the constant encouragement given to us throughout the study.

Words would fail to express our intense gratitude and appreciation to Dr. A.K.K. Unni, Professor & Co-ordinator of Research, for his valuable suggestions, guidance and supervision to get this study completed.

We are thankful to Dr. T.I. Radhakrishnan, MRCP; FRCP, President & Convenor General of Yaga and Dr.Gireesh Varma and participants of "Apthoryama Yaga" for all the help rendered to us for the completion of the study.

Last but not least thanks to all the doctors of this institution who extended their support for the conduct of the Yaga study.

We express our thanks to Mr. Krishna Swamy, Secretary to Dr. A.K.K. Unni for typing the manuscript in spite of his pressure of work.

References

1. Bodian, Stephan, Meditation for dummies. New York: IDG, 1999.
2. Boris Senko, Joan. Minding the body, mending the mind. New York. Bentam. 1988.
3. Monaghan, Patricia and Eleanor G. Viereck. Meditation: the complete guide: Novato C.A. New York Library, 1999.
4. Morrison, Morris R. Poetry as therapy. New York: Human Sciences, 1987.
5. Oster, Eileen F. The healing mind. Rockling C.A.: Prima 1996.
6. Pennebacker, James W. Opening up the healing power of expressing emotions. New York. Guilford 1997.

Acknowledgement

We acknowledge Dr. Prem Nair, Medical Doctor with an immeasurable debt of deep gratitude for his constant encouragement, help and assistance.

Words would fail to express my intense gratitude and appreciation to Dr. D.M. Vasudevan, Principal, College of Medicine and Dr. A.K.K. Unni, Prof. & Co-ordinator of Research for their valuable suggestions, guidance and supervision to get this study completed. I am thankful to Dr. T.I. Radhakrishnan, MRCP, FRCP, President & Convenor General of Yaga and Dr.Gireesh Varma and participants of "Apthoryama Yaga" for all the help rendered to us for the completion of the study. Last but not least thanks to all the doctors of this institution who extended their support for the conduct of the yaga studies. I express my thanks to Mr. Krishna Swamy, Secretary to Dr. A.K.K. Unni for typing the manuscript in spite of his pressure of work.

Demographic Data

Sl. No:	Name	Age	Brs	Srs	B. order	U/M/L	Occpn	Edn	P/M Illness	MS U/M/S/W	Chdn	H/R
1	Indira	40	4	3	2	M	Teacher	M.A. BEd	Allergy	M	2	--
2	Priya	18	1	Nil	2	M	Student	B.Sc.	--	U	--	Music
3	Sindu	30	1	1	3	M	Student	B.Com.	Gas. Pain	U	--	--
4	Ramachandran	54	2	Nil	3	M	Farmer	PDC	--	M	3	Reading
5	Ravisankar	17	1	Nil	1	M	Nil	+1	Arthristis	S	--	Music
6	Vibina	26	1	Nil	1	M	Nil	B.Sc., BEd	Headache	M	1	Reading
7	Mallika	46	1	2	2	M	Housewife	SSLC	Headache	M	3	Reading
8	Balakrishnan	63	2	Nil	1	L	Pensioner	PDC	Nil	M	3	Reading
9	Parameswaran	50	4	1	4	M	Millworker	PDC	Diabetes	M	2	Chess
10	Aswathi	18	1	1	2	M	Student	B.Sc.	Nil	S	--	View TV
11	Krishnan	50	3	2	2	M	Farmer	4th Std	Arthristis	M	3	Farming
12	Ayyappan	64	4	1	1	U	Farmer	SSLC	Diabetic	M	3	Farming
13	Rathi	34	1	1	3	M	Housewife	SSLC	Asthma	M	1	--
14	Abhini	15	Nil	1	1	M	Student	SSLC	Nil	S	--	Reading
15	Aneesh	15	Nil	1	1	M	Student	SSLC	Nil	S	--	--
16	Usha	36	2	1	1	M	Housewife	SSLC	Nil	M	2	--
17	Bhavani	64	6	2	3	M	Retd	SSLC	Mypertension	M	3	Cleaning
18	Jayasree	29	1	Nil	2	M	Nil	B.A.	Nil	M	1	Teaching
19	Meenakshi	70	2	2	3	M	Retd	SSLC	Leg pain	W	3	Reading
20	Valsala	45	2	2	2	M	Nil	6th Std	Rheumatic	M	3	Gardening
21	Sunitha	22	2	Nil	1	M	Nil	SSLC	Nil	M	1	TV view
22	Saraswathi	51	2	5	6	M	Nil	7th Std	Nil	M	2	Gardening
23	Thankamani	47	4	3	5	U	Housewife	SSLC	Numbness	M	1	Reading
24	Sathi	40	Nil	Nil	1	M	Housewife	SSLC	Nil	M	2	TV view
25	Krishnankutty	55	4	1	3	M	Nil	ITI	Diabetic	M	2	Cooking
26	Sruthi .K.	19	Nil	Nil	1	L	Student	B.Sc.	Head ache	S	--	Spiritual
27	Sanitha	20	Nil	1	1	M	Student	+2	Temper	S	--	Reading
28	Jyothi	21	1	1	1	M	Student	B.Com.	Nil	S	--	Music
29	Devaki Amma	78	3	Nil	2	M	Nil	4th Std.	Arthritis	M	5	Worship
30	Rachana	18	1	Nil	2	M	Student	B.Com.	Nil	S	--	Reading

Table II Shows mean SDS and 't' value

Variable	Mean		SD		N	't' value
	Pre	Post	Pre	Post		
Psychological well-being	11.43	11.57	1.851	1.995	30	0.308
General health						
Somatic symptoms	0.57	0.57	1.165	1.331	30	0.00
Anxiety	0.20	0.30	0.551	1.149	30	0.414
Social dysfunction	0.07	0.50	0.254	1.306	30	1.750
Depression	0.07	0.70	0.254	0.877	30	0.001
Total	0.90	2.03	1.561	3.952	30	1.533
Coping						
Problem solving	8.13	7.40	2.047	1.923	30	1.604
Denial	3.93	3.90	1.202	1.709	30	0.089
Distraction	8.80	7.50	2.265	2.403	30	1.951
Faith	7.13	6.10	1.737	1.845	30	2.345*
Acceptance	5.13	5.17	1.137	1.621	30	0.096
Social support	4.17	4.03	0.913	0.964	30	1.750
Personality						
Neurotism	13.30	10.73	4.078	3.331	30	3.008*
Extroversion	10.47	10.17	3.048	5.748	30	0.254
Cognitive function						
Personal information	5.20	5.67	1.031	0.844	30	1.911
Orientation	4.87	5.00	0.434	0.000	30	1.682
Logical memory	6.00	7.07	2.652	2.471	30	2.304*
Digit forward	5.43	5.90	1.040	0.960	30	2.379*
Digit backward	4.00	4.63	0.830	0.932	30	3.168*
Visual reproduction	7.87	8.93	2.488	3.362	30	1.539
Associative learning	11.53	18.57	4.869	4.392	30	7.694*
Mental Control	5.90	3.03	2.369	0.14	30	6.573*
Memory Quotient	85.30	103.0	18.359	14.135	30	3.860*
Bender – gestalt						
Z-score	52.47	48.10	15.162	15.588	30	0.843
Recall	6.76	7.53	2.587	1.479	30	2.254*

* significance at 0.05 level

Table III shows correlation coefficient of Pre & Post on Bender-Gestalt and Memory Quotient

Variable		Memory Quotient	
		Pre	Post
Bender-Gestalt	Pre	0.088	-0.069
	Post	0.069	-02.33

Table IV Shows Regression analysis of Pre & Post test – Memory Quotient with sub variables

Variables	B value		P value	
	Pre	Post	Pre	Post
Personal Information	8.550	6.581	0.01*	0.032*
Orientation	5.582	2.458	0.490	0.022*
Logical Memory	-2.885	2.458	0.038*	0.022*
Digit Forward	1.898	6.592	0.205	0.013*
Digit Backward	5.416	6.032	0.506	0.029*
Visual Reproduction	1.075	1.729	0.445	0.024*
Associate Learning	1.808	2.195	0.007*	0.000*
Mental Control	-1.781	1.208	0.269	0.853

Significance at 0.05 level

STUDY ON PEOPLE, ENVIRONMENT AND ATTITUDINAL SURVEY IN APTHORYAMA YAGAM 2004

Sri Surendra Rawat
Swamy Vivekananda Yoga Anusandhan Sansthana
Banglore

CHAPTER 1

INTRODUCTION

Yajña is the essence of Veda . The word "yajña " is a noun derived from the Sanskṛt verb root "yaj", which is usually translated as "to sacrifice". The basis of yajña is the pouring of food offerings or oblations into the sacrificial fire. The explanation set forth by the post-vedic literature is that the fire receives the oblations poured and carries them to the subtle cosmic levels for which the oblations are intended.

Vedic culture [10] evolved on the basis of yajña having primarily the purpose to create harmony. This harmony refers mainly to issues of nature and the place of human beings within the environment, but also to the harmony within the human body itself. Deities (gods) of the yajña were designated subtle cosmic instrumental in obtaining the harmony looked for by the human through the specific yajña. The archetypal and phenomenal, thought and action were integrated into a single reality and self-aware self-determination [4] yet, the human-Divine link played by the role of yajña was to obtain gods' favors either in the external world or in the internal (psychological) world of practitioners. The goals were to obtain benefits in the forms of good crop, cattle, good weather, progeny, good health, happiness of any kind, etc. Yet, besides the common goals during the entire Vedic period, yajña had specific characteristics pertinent to every Vedic era.

During the early Vedic period there were five great kinds of sacrifices to Brahman (the highest Reality), to devas, to ancestors, to human beings and to all living creatures respectively[19] The Śrouta rites were particularly attentive to the full details about the necessary objects and how they have to be used within

the sacrificial arena. Particular attention was given to how the actions were to be performed or how the participants had to behave during the time of ritualistic activities. The enclosure (vedi) of the sacrificial ground was systematically arranged in an arena suitable for that specific purpose according to what the ritualistic literature recommended. Some objects used were the woods sticks (araṇi or idhma) in order to help kindling the sacred fire by friction. Other objects were logs of wood (samidhā) as fuel, the offering spoon as sacrificial instrument/ utensil , the pressing-stone of soma stalks , the sacrificial vessel holding soma and food offering, the list of objects being quite long .

The very success of yajña was dependant on having the right set-up before the ceremony of chanting and offerings could start. One of the most elaborate of these Ceremonies was called Agnicayana, the "piling of Agni", or, simply, Agni (the fire) . This ritual originated around 1000 BC. During its performance, a large altar in the shape of a bird, dedicated to Agni (the fire) and itself also called Agni, was piled from thousand bricks. The sacrificial ground has to be set up in a proper manner, having the necessary articles and tools for the priests to start the offering into the fire along with their chanting.

The sacrificial fire is central to all Vedic rituals. It is usually lit inside a fire altar made of bricks and/or mud to exacting specifications. The construction of fire altars involved a high level of geometrical and mathematical knowledge. These matters have been studied extensively by Abraham Seidenberg [20]. Yajñas of increasing levels of complexity have an increasing number of fire altars. The main, bird-shaped offering altar consists of bricks of various rectangular & triangular shapes [21]. The total number of bricks is 1000:200 for each of the five layers.

In this Aptoryāma yajña another important feature was Garuda Chayana. The main Fire-Altar (Havana-Vedi) for yajña is constructed with one thousand baked clay bricks of different shapes and dimensions. They are piled in five layers one over the other, each layer consisting of two hundred bricks. When completed, the altar assumes the shape of an Eagle with outstretched wings. Many rituals and the recitation and chanting of Veda mantras accompany the construction and consecration of this main altar. Each brick or group of bricks is piled reciting Veda mantras. About one-third of Krishna Yajur Veda Taittirya Samhit is utilized for these rituals. The glorious Sri Rudra and Camaka are among the mantras utilized.

CHAPTER 2

LITERATURE REVIEW

In performing yajña, the heat from yajña fire and the sound of the chanting of the vedic mantras, are blended together to achieve the desired physical, psychological and spiritual benefits [26].

Studies on homa , a type of yajña has been carried out for various purposes. In Spain, Dr. Gloria Guzman Mandez , a specialist in eradicating the fungal disease Sigatoka Negra, which had been affecting larger extent of Banana plantation. They have found that Agnihotra ash is an excellent fertilizer. Also the practice of Agnihotra for improving germination and growth processes has become the common feature in plantation [11].

Perhaps the most systematic use of Agnihotra has been reported from the Akkalkota in Maharashtra . The practice started in a place called Shiva Kshetram, now called Tapovan. This place is supposed to have been the abode of the famous yogi Gorakhnath . The practice of Agnihotra in the Tapovan which had fallen into disuse has been revived recently by Sadguru Sri Gajanan Maharaj, Akkalkot [11,18&3].

In a study Agnihotra Effects on Bio-energetic Systems of Individual Microorganisms has shown the effect of Agnihotra on the bio energetic systems [13]

Therapeutic Effect of Agnihotra Ash

A strain of Staphylococci pyogenes isolated from a pus sample was selected for the study. It was observed that the plate exposed to Agnihotra (test plate) showed a tremendous reduction in the zone of haemolysis as against a wide zone of haemolysis in the control plate. Organisms from both the plates were then

subjected to coagulase test. The organisms from the test plate showed a negative coagulase test demonstrating their inability to produce coagulase. Finally, the organisms from both the plates were emulsified in one ml. of normal saline separately to give suspensions of equal strength. The suspensions were then injected intradermally into the thighs of an albino mouse. The mouse was kept under observation for five days. The test plate failed to produce any lesion in the mouse whereas the suspension from the control plate produced typical abscess. These results suggest that Agnihotrà played a pivotal role in controlling the metabolic activities of this micro organism[3].

Therapeutic Effect of Agnihotra Ash

An attempt was then made to study the therapeutic use of Agnihotra ash against scabies in rabbits. Agnihotra ash worked extremely well and the crust was detached on the third day of application—and that too with a single application. With benzyl benzoate and salicylic acid, it took five days for the crust to detach itself from the control rabbit. Another notable advantage of this was that the preparation was not irritating like benzyl bezoate or salicylic acid. The rabbits always lick that application because of irritation and the young ones die of poisoning. This risk could be avoided with Agnihotra ash.[13]

Chanting of Mantras

The chanting of mantras produces vibrations, which are some times stimulating also to human mind and all plants and animal life. These vibrations also help in spreading specific energy waves in the surrounding atmosphere while the oblations are offered [23&25].

Purification of Environment by Yajña

Experimental studies [23] show that the incidences of physical ailments, sickness and/or diseases become less in the houses where the yajña or Agnihotra is regularly performed because it creates a pure, hygienic, nutritional and healing atmosphere. It renews the brain cells, revitalizes the skin, purifies the blood and prevents growth of pathogenic bacteria. Agnihotra is basically a healing process. "Heal the atmosphere and the healed atmosphere will heal you", says Dr. Madhukar Gaikwad [5].

Purification of environment through the constituent electrically charged particles of the substances fumigated in yajña is an obvious byproduct of this process. The observations of some distinguished scientists (as reported in the reference nos. [22,25] are noteworthy in this regard. Particularly effective results with respect to the elimination or reduction in radiation were achieved through yajña's fire and ash. These observations are made by Dr. L. Matela Anatoninhowska of Poland after using P.S.I. techniques [22].

Removal of Bacteria

The antiseptic and antibiotic effects of the smoke of yajña have also been examined by conducting laboratory experiments on rabbits and mice and it has been established that smoke emitted in yajña is a powerful antibiotic. Agnihotra ash is also found to purify and cleanse the water, making it fit for drinking [5].

Effects on Plants and Vegetation

Several experiments have been conducted in the East European countries on the use of yajña ash in soil treatment. These, too, have shown positive effects and potential applications in agriculture [16].

Role of CO_2 generated in Yajña

In the slow combustion process that takes place in yajña, a small quantity of O_2 is utilized and CO_2 is emitted in a quantity that poses no threat to the environment. In fact whatever CO_2 is generated is readily absorbed by the surrounding plant life and vegetation and thus the CO_2 cycle is strengthened [25]. Another important fact is that CO_2 produced in yajña is not free CO2. It is mixed with the vapors of other aromatic oils and antiseptic products. It acts as a vehicle in transporting such products to the surroundings.

Results of some recent experiments:

A group of scientists led by Dr. Manoj Garg, Director, Environmental and Technical Consultants in association with the experts from the Uttar Pradesh Pollution Control Board had conducted experiments during the Ashwamedha Yajña at Gorakhpur, U.P. These experiments were set up at about 20 meters east of the Yajñashala. The samples of 100 ml each of water and air collected from the surroundings were analyzed, using high volume Envirotech APM-45 and other sensitive instruments for testing water and air pollution. Their results showed an average reduction by 75% in the level of Sulphur Dioxide and about 10% in Nitrus Oxide; and over 70% reduction in bacteria in water samples in the surrounding area [26].

Agnihotra ash and water soluble Phosphates

Agnihotra ash is found to release soluble phosphate from the soil. Dr.Tung Mung , a chemist from USA found that the Agnihotra ash when mixed with soil increases the soluble phosphate which is required by all the growing plants [9].

Recently many studies have been conducted with respect to Agnihotra (a type of yajna) Which have shown the Agnihotra has induced rapid seed germination in grape [1]

Mishra[14] conducted an experiment on wheat and rai seeds. Mishra observed in vivo an early germination with the grater weight and 30% greater crop yield in Agnihotra treated seeds as compared to traditional method. Another was study conducted by [7] by performing Agnihotra yajna at sunrise and sun set time during germination of rice seeds and compared with the controls: the one with out fire and another with fire. Vedic mantras were chanted during the yajna, it was observed that Agnihotra yajna promoted growth of seedling. Morphologically length and shoot were greater than the control and fresh weight of the seedling also showed considerable increase as compared to both the controls.

Modern Science is in a turning point[2]. Matter based approach is getting replaced by consciousness based approach says Goswami [6]. In recent times a paper on Scientific observations on the paranormal powers of Uri Geller [15] summarizes the research investigations that Uri Geller had the power to bend the metal objects by mind. Jahn [8] associates professor in Princeton University published papers in which the REG experiment have confirmed the possibility that each individual has the degree of psycho-kinesis.

Research using REG, done by T Mohan showed significance (12).

Another research using REG, done by Neha Racca as her project work under the guidance of Dr. H R Nagendra at (sVYASA) Bangalore also showed some significance (7). The research was conducted to study the effect of gayatri mantra in increasing the capacity to influence REG in normal people (all male) in

comparison to Random Thinking. In the experiments on human-machine interactions, Robert Jahn and Brenda Dunne [8] demonstrate that the distribution of impulses generated by a random event generator (REG) can be anomalously, marginally shifted from either locally or at a distance by active mental intention.

Yajña, thus, appears to be a promising scientific, cost effective, eco-friendly method to counter the ever-increasing deadly pollution of the environment and purify and enrich the environment with healthy ingredients.

Present study was aimed at examining the claims of Apthoryama yajña by modern scientific research. Four parts to this research include

1. Attitudinal survey
2. Measuring consciousness fields using REG,
3. Effect of Yajña on the counts of air borne bacteria
4. Analysis of ash for any anti bacterial activity and bacterial counts.

CHAPTER 3

OBJECTIVES

Objectives of the study was to find :

1. Attitude with which people participate in the yajña.
2. Finding reasons for people participating yajña
3. Does their life style match with their attitude?
4. To measure consciousness fields during the Āptoryāma yajña using random event generator.
5. To measure the effect of Āptoryāma yajña on the air borne bacterial counts
6. To analyze bacterial counts and any anti bacterial activity in the ash of the yajña

CHAPTER 4

METHODS

4.1 Attitudinal Survey

The yajña was performed in a village Mulankunnathukavu of Thrissur district Kerala.

4.1.1 Subjects

The number of subjects taken are about 700,

Sources – People participating in the Aptoryāma Yajan in Trichur.

Inclusion criteria :

Both male and female come for attending the Yajñas, between the age 15 and 70 years.

Exclusion criteria:

Those who can not read and write, Ṛtviks and their family members, organizer of the yajña .

Source of subjects:

People participating in the Aptoryāma soma yajña in, Mulanmuthakavu village, District Trichur , Kerala

Design

One time questionnaire was filled by the respondents at the time of Aptoryāma Yajñas. Then questionnaire consisted of three questions as to bring out the attitude towards this kind of spiritual activity.

All the questions were of multiple choices and the last question was multiple choices as well as open ended too.

4.1.2 ASSESSMENTS

Assessments were done by using Statistical package for Social Sciences (SPSS) version 10 package. Various percentages were calculated for ascertaining the portion of population opting for various choices. Pie charts were drawn for the various portions.

4.2 REG Experiment

4.2.1 SETTING

The yajña was conducted in a natural setting at Mulankunnathukavu, Thrissur district, Kerala.

4.2.2 DESIGN

Experiments were conducted in the premises of the ritual ground for eleven days during specific events. This involved conducting REG experiments before, during and after a specific event, every day for eleven days.

4.2.3 EQUIPMENT

What is Reg?

REG is Random Event Generator, a device that is connected to a computer to generate random numbers which are converted into a plot.

A field REG (Mindsong, Inc., USA) is a device equipped with many sophisticate failsafe and internal controls that guarantee the integrity of its performance well beyond the signal-to-noise precision required in this application. These are based on electronic Johnson noise produced in resistors, or quantum tunneling noise in solid state junctions. In this application the data are taken in continuous segments with a time stamped index identifying scheduled or unscheduled periods of particular interest. The behavior of the system provides a form of online controlled data. All data are subsequently searched for prolonged

segments of unusual behavior as indicated by extreme shifts in the out put means or protracted periods of study deviation. These anomalies are hypothesized to be indicative of some change in the prevailing information associated with the collective consciousness of the assembled group. In a sense the name ``filed REG'' thus acquired a double entendre i.e., the device has been diploid in a ``field'' situation to monitor changes in the consciousness ``field''.

A typical microelectronic REG comprises of an analog section based on a solid-state diode, a Johnson noise source, or a field effect transistor (FET), with output processed through a multi-stage amplification and clipping circuit. Components are selected to produce a white noise spectrum that is flat within $\pm$ 1 dB over a range from 500 to 30,000Hz. Such analog portions of an REG system are very sensitive to variations of design and construction, and must incorporate sophisticated shielding from environmental fields.

The digital and analog circuits of the REGs are electrically isolated from each other and they are active asynchronously. A separate external power supply has been used to minimize electromagnetic field interactions within the device. Further, although the REGs are protected by design against most internal and external sources of electromagnetic interference, they also have mu-metal or other shielding around the sensitive early stages of the analog circuit.

4.2.4 ASSESSMENT

How it works?

The question as to whether our will or intent or the very presence can break the random number generation process of REG is being tackled in this technique. If the curve (see Fig 1) goes on fluctuating within the parabola, this is an indication that the changes are all non significance ($p > .05$). If the will or intent or the

presence has a distinct capacity of psycho kinesis, the curve would move beyond the parabola.

What does it measure?

It measures the extent to which our state of consciousness can influence the REG. And hence it measures our psycho - kinetic power.

Whether the subjects can influence REG and bring a change in random number generation? It depends on the persons trying to influence the REG.

If the mean value is <101.00, then it is non-significant. That means the subjects have no significant influence on REG.

When the mean value is >101.00, the subjects have highly significant influence on REG indicating a capacity called psycho-kinesis.

What is Intent?

Intent is a conscious application of our will to influence the REG. Three types of intents are used in REG studies (19): High, Low and Neutral.

High : To move up the curve in positive direction to maximize the value i.e. to move the curve above the parabola as shown in figure.

Low : To move down the curve in negative direction i.e. to move the curve below the parabola curve as shown in figure.

Neutral : To keep the curve along the central line as shown in figure

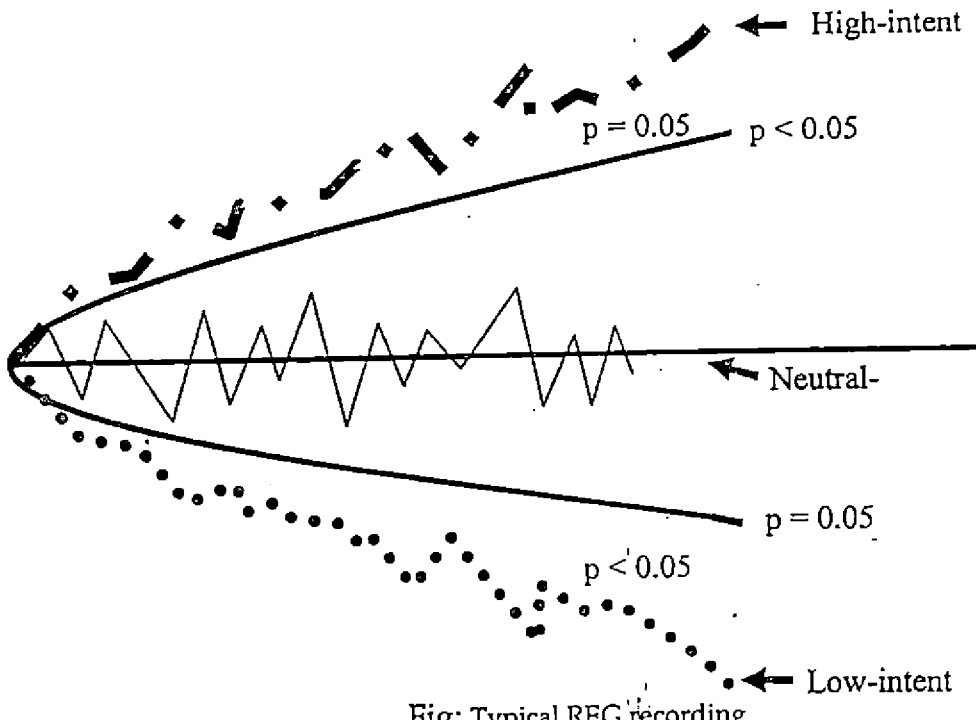


Fig: Typical REG recording

Legend: The figure shows high, low and neutral intent demonstrating influence on REG

No Intent : There have been studies in which the subjects did not have any intent to influence the REG (9). This would study the effect of the very presence of the subjects doing an activity on the REG. It is well known that some people by their very presence can bring calming effect on others and vice versa.

The data was taken underneath a shelter of asbestos sheets for protection from the sun. The operator used to sit from 8 am to 10 pm for taking the recording at the specific timing of the performance of the rituals in the yajña by using REG on the specific and different timing according to the programmes schedule of the yajña.

4.3 Effect of yajña on air borne bacterial counts

4.3.1 METHODS

The yajña was performed in a village Mulankunnathukavu of Thrissur district, Kerala.

1. To capture the air borne bacteria nutrient agar was used. The distance was measured from the centre of the yajña and circles were marked at three distances 20 m around the yajña and 40 m. The plates were kept at distance 3 ft above the ground to avoid the dust settling on the plates.
2. The experimental plates were opened for durations of about average of 4 minutes to allow the bacteria to settle down on the plate and were sealed back again for analysis . Only the control plate was not opened while moving around the circle to see the difference in the control and the experimental plate. Seven plates experimental and one control plates were used. Three such reading was taken one for pre, during and post.
3. Then the plate was closed and transported to the incubator. In this experiment speciation (identification of type) of bacteria was not attempted.

4.3.2 DESIGN

1. There was circle made at a radius of 20metres and 40 meter keeping yajña as the center.
2. It was taken care that hands were properly cleaned and covered with gloves after washing from and masks were used to prevent and bacteria going from the mouth.
3. Starting point was marked.
4. The plate was kept on hand and make a full round was made on both the circles (20 m and 40 meters) after exposing the plate to the atmosphere for settling down the bacteria on the plate.
5. The distance between the plates and ground was maintained at 3.5ft and were held parallel to the ground through out the experiment.
6. After exposing the plates for average time of 4minutes they were closed and transported to the incubator in the air tight container.
7. After the incubation of the plate the bacteria were counted.

4.4 Analysis of Ash

The yajña was performed in a village Mulankunnathukavu of Thrissur district, Kerala.

1. After the completion of yajña the about 200 grams of ash collected from the north east corner of the square yajña kunda at 3.30pm from the main yajña kunda.
2. The collected ash was kept inside the sterilized zip lock bag and put in air tight container.

3. 10gms of ash was weighed in physical balance and was mixed with 50mL of distilled water to make a solution. The mix was thoroughly shaken for few minutes to make it homogenous solution.
4. After 12 hrs the filtrate was taken and residue was separated.
5. 5 mL filtrate was taken for the analysis of bacterial growth.
6. The filtrate was also analyzed for anti bacterial activity.

DESIGN

1. The ash was collected from the place of yajña and from north east corner of the yajña kunda..
2. It was collected and put in sterilized zip lock bag. This bag was further put in an air tight container.
3. The temperature was maintained.
4. For the preparation of filtrate 10 gms ash was mixed with 50mL of distilled water. The solution thus made was thoroughly mixed
5. After 12 hrs the filtrate was taken out and filtrate was separated.
6. 5 mL ash filtrate was taken for the seeing any bacterial counts.

Care was taken that hands were properly cleaned and covered with gloves and masks were used to prevent and bacteria going from the mouth.

CHAPTER5

DATA ANALYSIS & RESULTS

5.1 Attitudinal Survey on people attending the yajña

Question 1

What is the main reason for your attending yajña ?

Table5.1: Frequency data on reasons people attendance

Options	Frequency	Percent (In %)
Curiosity	287	44.9
Spiritual reason	311	48.7

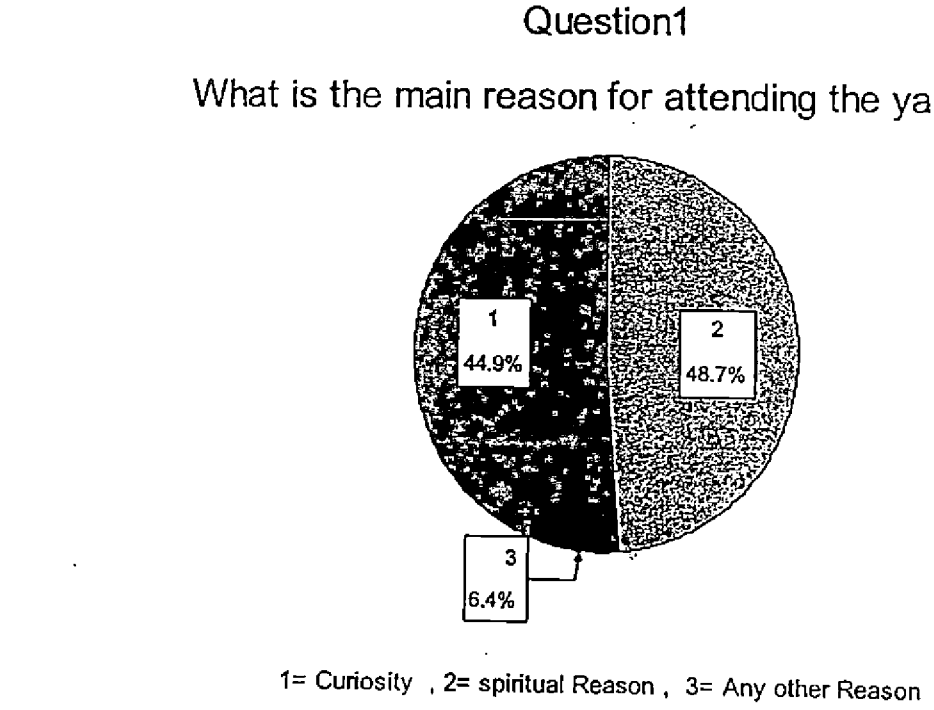


Fig1 : Frequency data on reasons people attendance

In this question we find that most of the people coming to yajña is out of the spiritual reasons then people for curiosity people are coming.

Question 2

Are the spiritual practices important for your life?

Table 5.2: Frequency data of rating of spiritual practices

Options	Frequency	Percent (In %)
Very Important	314	49.1
Quite important	297	46.5
Not important	28	4.4
	639	100

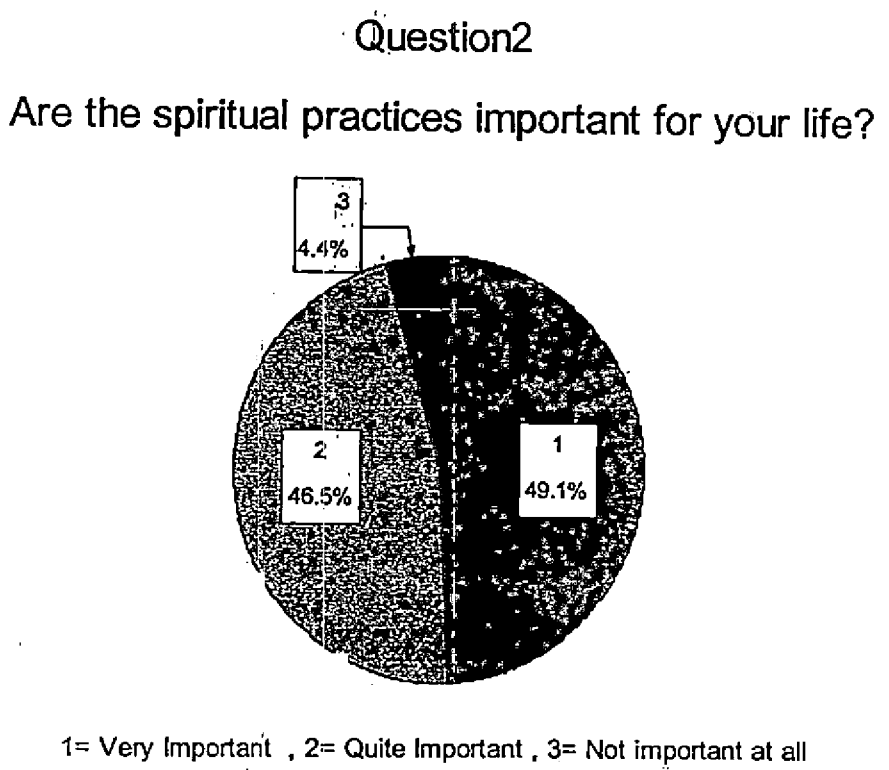


Fig2 : Frequency data of rating of spiritual practices

With this we find that people are giving much importance to the spiritual activity like yajña . And very less number of people is there who are saying that yaiña is not important at all.

Question 3:

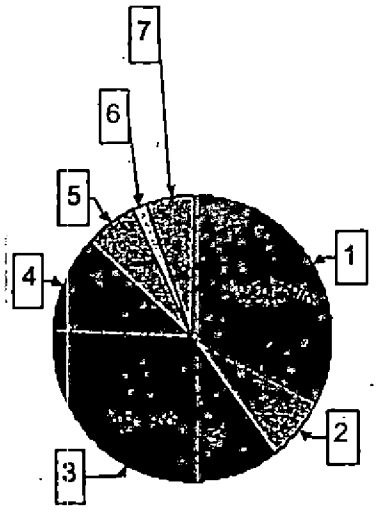
If the spiritual activity is important to you, have they changed any of the following?

Table 5.3: Frequency data of how people are affected by spiritual practices.

Options	Code	Frequency	Percent (In %)
Personal life	1	204	32.6
Job	2	47	7.4
Interaction with people	3	227	35.5
Health	4	74	11.6
All the above	5	39	6.3
Personal life , Job & Interaction with people	6	11	1.7
Personal life Job	7	33	5.2
		639	100

Question3

If spiritual practices are important to you, have they changed?



1=32.6% Personal Life; 2= 7.4 %Job; 3= 35.5% Interaction with people

4=11.6% Health ; 5 = 6.3 % ,1,2,3&4 ; 6 = 1.7% 1,2& 3; 7 = 5.2% 1 & 2

Fig3: Frequency data of much percentage people are changed

5.2 REG Experiment

Table 5.4 Mean and SD of readings of REG Experiment

DAYS	Mean	SD.
1	99.92	0.2074
2	100.0757	0.7604
3	99.9815	0.4017
4	100.0189	0.204
5	99.8913	0.2299
6	99.8367	0.1069
7	99.99	0.6577
8	100.0167	0.0766
9	100.1164	0.1647
10	100.0158	0.5984
11	100.0161	0.6369

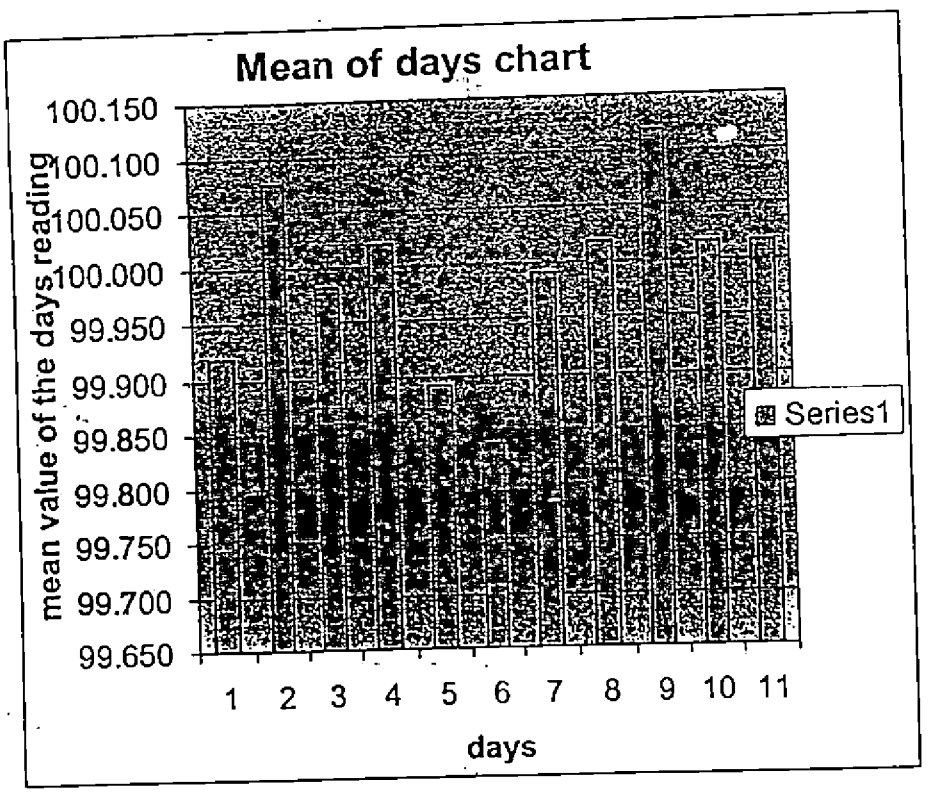


Fig 4: Mean of all the days data

Table5:5: Independent sample test between day one and day nine

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
SCORE	Equal variances assumed	.998	.325	-3.025	36	.005	-.1964	6.494E-02	-.3281	-6.47E-02
	Equal variances not assumed			-3.216	32.473	.003	-.1964	6.108E-02	-.3208	-7.21E-02

Significant change between day one and day nine ($p < 0.05$)

5.3 Air Borne Bacterial Counts

Table 5.5: Test of Normality of the data

Tests of Normality

		Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	condition	Statistic	df	Sig.	Statistic	df	Sig.
CFU	PRE	.126	12	.200*	.967	12	.818
	DURING	.156	12	.200*	.915	12	.315
	POST	.199	12	.200*	.867	12	.066

*. This is a lower bound of the true significance.

a. Lilliefors Significance Correction

Legend: - All the three groups Pre, during and Post are normal distributed

Table5.6: Multiple comparison tables of all combinations

Multiple Comparisons

Dependent Variable: CFU

Tukey HSD

(I) condition	(J) condition	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
PRE	DURING	-19.25*	3.39	.000	-27.60	-10.90
	POST	-21.83*	3.39	.000	-30.19	-13.48
DURING	PRE	19.25*	3.39	.000	10.90	27.60
	POST	-2.58	3.39	.729	-10.94	5.77
POST	PRE	21.83*	3.39	.000	13.48	30.19
	DURING	2.58	3.39	.729	-5.77	10.94

Based on observed means.

*. The mean difference is significant at the .05 level.

From table 5.6 there is significant increase in the bacterial counts from the pre to during and also between pre and post.

Table 5.7: Independent samples test between Pre 20m & Pre 40m

Independent Samples Test (PRE 20M VS PRE 40M)

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
CFU	Equal variance assumed	.227	.644	-2.655	10	.024	-5.83	2.20	-10.73	-.94
	Equal variance not assumed			-2.655	9.692	.025	-5.83	2.20	-10.75	-.92

From table5.7 there is significant difference between the two distances (20 M & 40M of PRE) with in the group

Table5.8: Independent samples test between During 20m & During 40m

Independent Samples Test (DURING 20M VS DURING 40M)

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
CFU	Equal variances assumed	6.123	.033	4.168	10	.002	-18.33	4.40	-28.13	-8.53
	Equal variances not assumed			4.168	6.940	.004	-18.33	4.40	-28.75	-7.91

From table no 5.8 there is significant difference between the two distances (20m v/s 40 m during) with in the group.

Table 5.9: Independent samples test between Post 20m & Post 40m

Independent Samples Test (POST 20M VS POST 40M)

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of th Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Uppe
CFU	Equal variand assumed	8.464	.016	-2.417	10	.036	-16.17	6.69	31.07	-1.26
	Equal variand not assumed			-2.417	7.955	.042	-16.17	6.69	31.61	-.73

From table 5.9 there is significant difference between the 20 m and 40 m post in the bacterial counts.

From the tables following can be deduced:

1. In both the distances 20 m and 40 m there is increase in counts of air borne bacteria after the yajña.
2. The bacterial counts at 40 m distance are more than the bacterial counts at 20 m in both the cases i.e., during and after the yajña.

5.4 Ash Analysis

1 ml of the filtrate was plated into plate of Blood Agar, Muller Hinton Agar for observing bacterial counts. These two Agars are the most commonly used in scientific experiments as they possess all nutrients which permits growth of all types bacteria. After 48 hrs number of bacterial growth was observed in both the culture plates. Varying concentration (5 micro liter, 10 micro liter and 20 micro liter) of the filtrate were absorbed on to sterile filter paper discs and these discs were placed on a Muller Hinton Agar plate with a standard ATCC strain of E coli lawn cultured on it.

After 48 hrs incubation at 37^0C no zone of inhabitation was observed around the discs. To increase the amount of the filtrate used in testing for the anti bacterial activity, a Muller Hinton Agar plate with lawn culture of ATCC strain of E Coli was used. Using a sterile punch, hole of 4 mm diameter were punched on the agar surface. Up to 50mili liter of the filtrate was pipetted into all these wells.

After incubation for 48 hrs at 37° C, no zones of inhibition were seen, around the wells.

CHAPTER 6

RESULTS AND DISCUSSIONS

6.1 Attitudinal Survey

The survey of the yajña indicates that reasons for people attending the yajña are spiritual reasons and their life is very much affected. Also spirituality has bearing upon their relationships

We find that out of 639 people who were given the questionnaire 287(44.9%) were found to be coming for the spiritual reasons and 311(48.7%) came for spiritual reason. And rest of the 41(6.4%) came for the yajña for other reason.

From the second question it's revealed that 314 (49.1%) people considered the spiritual practices to very important for their life, for 297(46.5%) spiritual practice are quite important and for 28 (4.4%) people spiritual practices are not all important.

From the third question i.e., If the spiritual activity is important to you, have they changed any of the following? 208 (32.6%) people opined that their personal life has changed, 227 (35.5%) people said that their interaction with people has changed. 47 (7.4%) people said that it has affected their job.

6.2 REG Experiment

Results of first and ninth day suggest that there is significant change ($p < .005$) there were significant trends of change in the REG values.

During a spiritual gathering i.e., while performing a Vedic ritual ``Apthoaryama yagam'', there was increase in the REG values.

Earlier studies suggest that REG appears to respond to coherence or resonance in groups of people. In a report from the PEAR group, ten applications in a variety of settings ranging from business meetings to religious ceremonies show a composite deviation with a probability against chance of 2×10^{-4}. The strongest effects appear when the groups become emotionally or cognitively coherent and share a group identity or resonance, and especially striking cases tend to have some unifying thematic or ceremonial aspect. For example, the most consistent anomalies among the ten applications are found in a long series of recordings at ritual gatherings of a religious group.

This can be more clearly seen on the ninth day (Suthya day or the main day) on this day yajña started at 3 am unlike other days and was round the clock. On this day soma juice is extracted , principal offering to the god is done with singing of hymns of Samveda followed by Rig Vedic chanting and whole day was full of spiritual activity

6.3 Air Borne Bacterial Counts

1. In both the distances 20 m and 40 m there is increase in counts of air borne bacteria after the yajña.
2. The bacterial counts at 40 m distance are more than the bacterial counts at 20 m in both the cases i.e., during and after the yajña.

Therefore the increase in bacterial count can be ascribed to yajña which could be the cause of inhibition of bacterial growth at shorter distance and growth at larger distance.

As we find no reference for this kind of study being previously done therefore it was not known to what to expect. Therefore it was difficult frame the hypothesis.

6.4 Ash Analysis

The ash filtrate tested negative for bacteria and was negative for anti bacterial activity against a standard strain. Similar results were found by experiments performed by Wg. Cdr. D. V. K. Rao and Col. S K. Tiwari Sr. Advisor , Medicine DIPAS, New Delhi

CHAPTER 7

SUMMARY AND CONCLUSIONS

7.1 Attitudinal Survey

The reasons for people attending the yajña are spiritual reasons and their life is very much affected.

It can be concluded

1. These results indicates that the people are concerned about the spiritual activity like yajña and it does commensurate with the life style
2. Spiritual activity is important in the life of people and this kind of spiritual gathering affect the life style of the people.
3. There are efforts towards the revival of the age old traditions which bring countrymen in a platform and bring harmony and peace.

7.2 Reg Experiment

Hence, the results of the present study suggest that during the Vedic ritual "Apthoaryama yajña", the 'collective consciousness' , chanting of mantras and people gathered may sufficient strength to make the random sequence non-random on the day .

Following can be concluded :

1. These results indicate that the yajña did bring about an enhancement in the power of psycho- kinesis in a session.
2. The results indicate a possibility of enhancement of the power of influencing the REG in yajña .

7.3 Air Borne Bacterial Counts

Following can be summaried:

In this study we find that there was increase in the bacterial counts at 20m and also at 40 meter distance. Also we find that as the yajña has progressed there was increase in bacterial counts.

CHAPTER 8

LIMITATIONS & SUGGESTIONS FOR FUTURE

8.1 Attitudinal Survey

The study was conducted in place where people are already having much faith in spiritual activities and all people were religious. The questionnaires used could be target to particular class or group of people. In questionnaires open ended question too can be asked.

8.2 REG Experiment

The study was conducted in a venue an very large and open venue from a single spot no other phenomenon of special nature was there. The study can be repeated where small yajña or Agnihotra are performed.

Suggestions for future

1. The affect of yajña can be studied in another major Yajñas.
2. Another study at different point in the venue could be done.
3. Through out the yajña recording have been done to find out when was the effect was noted.

8.3 Air Borne Bacterial Counts

1. Speciation should have been used to ascertain which types of bacteria are growing and which are getting inhibited in yajña.

2. The methodology used for collecting of the air borne bacteria can be improved. Next time standardized method of slit air sampler to measure bacterial counts in a specified volume can be used.
3. The exposure time of 3-5 minutes is too less for bacterial growth.

REFERENCES

1. Bhujbal B G, Research Officer Maharashtra State Grape Growers' Association, Poona, India (Satsang Vol. 8, No. 17, 1981)

2. Capra F, Turning Point, Bantum Books, New York 1984

3. Deshpande M and Potdar, M M : Agnihotra- a process for the purification of the Atmosphere, Institute for the studies in Vedic Sciences, Akkalkot, 1998

4. Frawley D. Wisdom of the Ancient Seers, Mantras of the Rig Veda, Motilal Banarsidas Publishers, Delhi, 1994

5. Gaikwad M P "Agnihotra: The Message of Time" Andheri, Mumbai. 1995

6. Goswami A , The self aware universe, Bantum Books, New York. 1993.

7. Heisnam J D ,Effect of Agnihotra on the germination of rice seeds, MBYR, Vivekananda Yoga Research foundation, Bangalore , India.2002

8. Jahn, RG, Dunne BJ, Nelson RD, Engineering anomalies research. J Sci Exploration, 1:21-50. 1987.

9. Lai T MD, Satsang, Colorado, Vol. 9, No. 20, 3rd April 1982

10. Giri M.Swami. Vedic Culture, University of Calcutta, 1947

11. Mendez Guzmam, B: Agnihotra as a science , Satsang , Vol 25 No. 7, New era 55, May 1998

12. Mohan T, Nagendra H R & Nagarathna R, Effect of emotional culture session on the capacity to influence the REG. Unpublished masters thesis, submitted to sVYASA Bangalore. 2003.

13. Mondkar A D , Satsang, Vol. 9, No. 20, 3rd April 1982

14. Mishra R , Impact of Agnihotra in crop production, US Satsang . Vol.15, No.4

15. Panati C ,The Geller Papers: Scientific Observations on the paranormal Powers of Uri Geller. Houghton Mifin: Houdhton. 1976.

16. Paranjape V R –Personal Communication (www.theromoline.com)

17 Racca N, Nagendra HR & Nagarathna R, The effect of gayatri mantra in increasing the capacity to influence REG in normal people (all male) in comparison to Random Thinking. Unpublished masters thesis, submitted to sVYASA Bangalore. 2003

18. Rajjimwale S G , Agricultural farming method , Institute for the studies in Vedic Sciences, Akkalkot, 1998

19. Satchidananda Murty K, Vedic Hermeneutics, Shri Lal Bahadur Shastri RashtriyaSanskrt Vidyapeetha, New Delhi, 1993 pp. 85-86

20. Staal F , and Mac Farland PAGNI: The Vedic Ritual of the Fire Altar. Vol. II. Asian Humanities Press, Berkeley. (1983).

21. StaalF, Somayajipad C V and Nambudiri M I R, AGNI: The Vedic Ritual of the Fire Altar. Vol. I. Asian Humanities Press, Berkeley . (1983).

22. "Fumigating Substances used in Yajña" .1996. Ashwamedha Yajña, Montreal, Canada

23. "The Integral Science of Yajña". 1998. Yug Nirman Yojna, Mathura.

24. "Yajña's Scientific Interpretation". 1996. Ashwamedha Yajña held in Montreal, Canada.

25. "Does Yajña Add to the Prevalent Pollution?" .1996. Ashwamedha Yajña held in Montreal, Canada

26. Selected Articles from Akhand Jyoti (Aug. '84, July & Aug. '92, March '93, Sept. '97). Publisher, Akhand Jyoti Sansthan, Mathura.

EFFECT OF APTHOARYAMA YAAGAM IN PERSONS WITH MEDICALLY REFRACTORY EPILEPSIES

Dr Rajesh B Iyer, Dr Radhakrishnan K, Jayachandran D, Mohandas G*

Department of Neurology, SCTIMST, Trivandrum

*Yoga center for health Research, Attingal, Trivandrum

Background:

Approximately 15% of patients with epilepsy continue to have epileptic seizures despite optimal antiepileptic drugs (AEDs) and only about 5% of epilepsy patients are potential surgical candidates. About 10% of patients are refractory to all modalities of treatment and yearn for more effective AEDs or other forms of cost effective adjuvant therapies. Non pharmacological measures like yoga-meditation have been found to beneficial in patients with epilepsy.

Aim:

The aim of the present study was to evaluate the effect of apthoaryama yaagam in persons with medically refractory epilepsies (MRE).

Materials and Methods:

Ten patients with MRE were recruited for the study. The inclusion criteria were:
1)Should have had atleast >3 seizures in the preceding three months
2)Should have been on optimal dose of appropriate AEDs with good compliance
3)The AED regimen should have remained unchanged for the preceding 6 months and must be willing to keep it same throughout the study period
4) Should be willing to attend the yaagam on all days for atleast 6 hours per day
Patients with progressive neurological disorders were excluded.

Parameters assessed:

1)Seizure frequency: The baseline seizure frequency, occurrence of seizures during the yaagam and seizure frequency in the 3 month period after the yaagam were evaluated.

2)Electroencephalogram(EEG): EEG was done before the yaagam, 3- 4 days following the yaagm and after 3 months. Sixteen EEG was done using standard 10-20 international system of electrode placement by a trained technician at the same center (Ansar Hospital, Perumpilavu, Trichur Dist). The back ground activity, presence of slowing, interictal epileptiform discharges (IEDs) and electrographic seizures were analyzed independently by 2 experienced neurologist having experience in electroencephalography. Differences were sorted out by a third neurologist. The EEGs of one of the patients were not considered for analysis because of very frequent IEDs .

3) Quality of life (QOL) was assessed using the QOLIE 31 questionairre. This is a validated standard questionnaire used for assessing the QOL in persons with epilepsy. The patients filed the QOLIE 31 proforma before the yaagam, on the day of termination of the Yaagam and 3 months later.

The data obtained before the yaagam, immediately after the yaagam and after three months were compared. The patient and one companion were reimbursed their travel expenses.

Results:

All ten patients completed the study strictly adhering to the protocol. One patient with very frequent seizures had a daily seizure frequency of 3.5 and was excluded from the analysis. This patient had no change in the seizure frequency. The mean seizure frequency per month at base line was 10.33 in the other nine patients.

The mean seizure frequency per month after the yagam was 6.22 ($p=0.049$) in these 9 patients which was statistically significant. The mean number of IEDs in the EEG before yaagam was 167, at the end of the yaagam was 70 and after 3 months was 364. The difference in the number of IEDs immediately after the yaagam and after 3 months was not statistically significant ($p=0.45$ and $p=0.38$ respectively).

Table1- showing seizure frequency and number of IEDs in the EEG before and after the yaagam

Patient.No	Sex/age	Seizure frequency for 3 months before yaagam	Seizure frequency for 3 months after yaagam	IEDs before yaagam	IEDs immediately after yaagam	IEDs 3 months after yaagam
1	M42	4	4	5	6	0
2	M12	36	30	131	14	338
3	F24	5	3	0	28	21
4	F45	17	1	7	0	0
5	M58	9	4	20	11	0
6	M45	7	5	4	0	0
7	M38	4	7	0	11	5
8	M26	6	0	0	0	0
9	F14	5	2	0	0	0
10	M10	315	320	-	-	-

When the individual patients were considered, a seizure reduction greater than 50% was observed in 4 patients whereas in the remaining 6 patients no significant difference was observed. Quality of life assessment showed no significamnt change immediately after the yaagam or after three months.

Discussion

This is the first study of its kind where the effect of a spiritual exercise, namely apthoaryama yaagam, was analyzed in persons with epilepsy. All our patients had MRE. All the patients adhered to the protocols. The data of one of the patient (Patient 10) was

excluded from the analysis of the group because of very high seizure frequency and very frequent IEDs in the EEG. There was a sustained effect on seizure frequency. A significant seizure reduction (more than 50%) was observed in 4 patients. Although there was a statistically significant reduction in seizure frequency for the whole group, the interpretation cannot be generalized as the sample size was small and in one patient there was an increase in the seizures and there was no change in one another patient. The protocols of the study were such that confounding effects due to modification in AEDs were excluded by keeping the AEDs unchanged throughout the study. However a placebo effect cannot be totally excluded. There was a relative decrease in the number of IEDs in the EEG done immediately after the Yaagam, but this was not significant. The relative increase in the number of IEDs in the EEGs done after 3 months was also not significant. Thus, there could be an effect of the yaagam on the EEG as noted by these changes, but as these observed changes were not statistically significant, further clarification is required. Changes in QOL often correlates with seizure control. There was no significant difference in the overall quality of life either immediately or 3 months after the yaagam. However these assessments were done within a short time span wherein a drastic change in the QOL may not occur.

Conclusions:

Effect of spiritual exercises like "yaagam" have not been evaluated previously. The present study happens to be the only one as far as epilepsy patients are concerned. We observed a significant reduction in the seizure frequency in 40% of the patients, but the sample size was very small. Further studies in larger patient population are worthwhile.

INFLUENCE OF YAGAM ON MENTAL HEALTH

DR.ANANDAN.K.R.
(Psychiatrist)

DR.PRAVEENLAL
(Professor of psychiatry)

&

AJITHA
(statistician)

Government .Medical College, Thrissur

AIM:

To assess general mental health of persons attending the yagam.

MATERIALS AND METHODES:

Standardised12-item questionnaire (GHQ-Q12) was administered to 18 volunteers daily. (Questions with 4 graded answers with score of 0-1). Volunteers of age group 13-22 yers (averag 17)and educational standard of 8th-Btech Engineering students.

RESULTS:

Questionnaires completed by all, 2-9 days.2 scoring samples were selected,(one on initial day13-4-04 and next on last day20-4-04).

Sample 1 score:

2.25, 3, 1.75, 1.75, 2, 1.25, 2.75, 0.5, 0.75, 1, 1.5, 1, 3.5, 3, 2.75, 1.25, 2.75, 3.5

Sample 2 score:

2, 3, 1.75, 0.5, 0.5, 0.75, 0.25, 0, 2.25, 0, 1.5, 1.5, 2.25, 4.75, 1.5, 1.25, 1.5, 1.25

T test was applied and P Value decided. P = 0.015 (significant but not very significant)

DISCUSSION

18 Volunteers self reported their general mental state daily using a questionnaire. Scores on initial and final day showed differences, both on positive and negative side but more on positive side. (ie, better mental state). Results were statistically analysed. Changes noted was significant but not very significant. As it was uncontrolled study and other factors were not considered,the effect of yagam cannot be concluded.

ANIMALS

EFFECT OF APTHORYAMA YAGAM ON CERTAIN PHYSIOLOGICAL PARAMETERS IN ANIMALS

Ramnath,V, Girish Varma,G, Sreekumar K.P, Sethu Nair,C and Philomina,P.T.

Dept of Physiology

College of Veterinary and Animal Sciences,

Mannuthy-680651,Thrissur.

Introduction:

Cellular and biochemical parameters of blood reflect the health and physiological status of an animal. Endogenously produced antioxidants are having an important role in the biological system as they scavenge free radicals. A high level of oxidative stress is imposed on animals when they are exposed to extreme environmental condition, ionizing radiation, insecticides, excessive sunlight (UV rays), toxic environmental pollutants in food and water and xenobiotics ;all lead to the formation of Reactive Oxygen Species (ROS) and free radicals within the body. If body's capacity to neutralise excessive free radicals becomes inadequate then they will bring about extensive damage to the biological system by way of oxidation or oxidative stress.

This study was undertaken to find out the effect of Yagam on certain cellular and biochemical traits, including anti oxidative status of animals housed in the near vicinity of Yagasaala.

Materials and Methods:

Animals: Six numbers of 12 months old male rabbits and six ruminants (four cows, above 4 years age and two goats, above 1 year age) were utilised for this study. Animals were brought two days ahead of Yagam and stationed for 14 days in an animal shed

attached to Yagasaala. Rabbits were kept in individual well ventilated cages and fed with concentrates, green fodder and water *ad lib*. Cows and goats were fed with standard ration and drinking water *ad lib*.

Blood samples were collected in vials with and without anticoagulants. Bleeding of each and every animal was done at 0800 hrs on five occadions during the period of study, namely 2 days before Yagam, 1st day, 5th day and 10th day of Yagam and 2 days after Yagam.

Whole blood was utilised for the estimation of haemoglobin content (Hb), haematocrit (PCV), total WBC count, catalase activity and superoxide dismutase activity (SOD). The serum separated was utilised for total protein and albumin estimation as well as for reduced glutathione (GSH) content and lipid peroxidation levels.

All the estimations were done on the day of collection itself. The results were statistically analysed using student t test for finding any significance.

RESULTS

Effect of Yagam on RBC's catalase activity:

In ruminants, the erythrocytes catalase activity increased during the course of Yagam from 0.17 ± 0.05 U/g of Hb (before) to reach a peak value of 0.66 ± 0.27 U/g of Hb (1st day). But a significant ($P<0.01$) increase was observed only after 2 days of Yagam (0.41 ± 0.04 U/g of Hb), (Table 1).

In Rabbits, the erythrocytes catalase activity increased during the course of Yagam from 0.95 ± 0.07 U/g of Hb (before) to reach a peak value of 1.65 ± 0.35 U/g of Hb (5th day). But a significant ($P< 0.05$) increase was observed only after 2 days of Yagam (1.49 ± 0.17 U/g of Hb), (Table 1).

Effect of Yagam on RBC's SOD activity

In ruminants, the erythrocytes SOD activity increased during the course of Yagam from 923.2 ± 103.22 U/g of Hb (before) to reach a peak value of 1172.8 ± 68.69 U/g of Hb (1st day). But significant changes could be observed by 10th day (1495 ± 124.45 U/g of Hb) of Yagam and after 2 days of Yagam (2350 ± 267.92 U/g of Hb), (Table 2).

In Rabbits, the erythrocytes SOD activity increased during the course of Yagam from 1476.7 ± 144.16 U/g of Hb (before) to reach a peak value of 1780.8 ± 272.98 U/g of Hb (10th day). But a significant ($P < 0.05$) increase was observed only after 2 days of Yagam (2286.7 ± 249.63 U/g of Hb), (Table 2).

Effect of Yagam on serum reduced glutathione content.

In ruminants, the serum content of reduced glutathione increased during the course of Yagam from 238.3 ±11.39 nmol/ml (before) to reach a peak value of 397.5 ± 9.47 nmol/ml (10th day). Highly significant ($P<0.01$) increase in GSH content was observed on 1st day (185.2 ± 9.27 nmol/ml) as well as on 5th day (389.2 ± 8.00 nmol/ml) of Yagam also.But there was no significant change observed after 2 days of Yagam (263.3 ± 36.57 nmol/ml), (Table 3).

In Rabbits, the serum reduced glutathione content increased during the course of Yagam from 255.0 ± 8.45 nmol/ml (before) to reach a peak value of 410.8 ± 9.88 nmol/ml (10th day).Similarly highly significant ($P<0.01$) increase in GSH content was observed on 1st day (208.3 ± 8.33 nmol/ml) as well as on 5th day (405.0 ± 19.27 nmol/ml) of Yagam also. But only a significant ($P< 0.05$) increase was observed after 2 days of Yagam (221.7 ± 11.96 nmol/ml), (Table 3).

Effect of Yagam on serum lipid peroxidation level.

In ruminants, there was no significant change in the serum lipid peroxidation level during the course of Yagam which changed from 4.82 ± 0.63 nmol of malonaldehyde formed (before) to reach a value of 4.04 ± 0.59 nmol of malonaldehyde formed (after 2 days), (Table 4).

In Rabbits, there was no significant change in the serum lipid peroxidation level during the course of Yagam which changed from 4.93 ± 0.94 nmol of malonaldehyde formed (before) to attain 4.13 ± 0.57 nmol of malonaldehyde formed (after 2 days), (Table 4).

Effect of Yagam on certain haematological traits of rabbits.

In Rabbits, there was no significant change in haemoglobin level during the course of Yagam which varied from 12.22 ± 0.38 g/dl (before) to 11.67 ± 0.73 g/dl (after 2 days), (Table 5).

Similarly, there was no significant change in PCV (%) level during the course of Yagam which varied from 35.8 ± 1.22% (before) to 33.5 ± 2.37% (after 2 days),(Table 5). There was also no significant change in WBC count/µl of blood during the course of Yagam which varied from 8650 ± 1029/µl (before) to 8916 ± 1505/µl (after 2 days), (Table 5).

Effect of Yagam on serum protein profile of rabbits.

In Rabbits, the total serum protein level significantly ($P<0.05$) increased during the course of Yagam from 5.73 ± 0.09 g/dl (before) to reach a peak value of 6.08 ± 0.09 g/dl (5^{th} day). But there was no significant change observed on 10^{th} day of Yagam (5.683 ± 0.08 g/dl) as well as on 2 days after Yagam (5.45 ± 0.14 g/dl), (Table 6).

Similarly, the serum albumin level increased significantly ($P<0.01$) during the course of Yagam from 3.77 ± 1.22 g/dl (before) to reach a peak value of 4.28 ± 0.86 g/dl (1^{st} day). But there was no significant change observed on 10^{th} day of Yagam (3.97 ± 1.71 g/dl) as well as on 2 days after Yagam (3.52 ± 2.37 g/dl), (Table 6).

In Rabbits, the serum globulin level increased during the course of Yagam from 1.97 ± 0.07 g/dl (before) to reach a peak value of 1.93 ± 0.05 g/dl (after 2 days). But significant ($P<0.05$) increase was observed only on 10^{th} day of Yagam (1.72 ± 0.07 g/dl), (Table 6).

Discussion

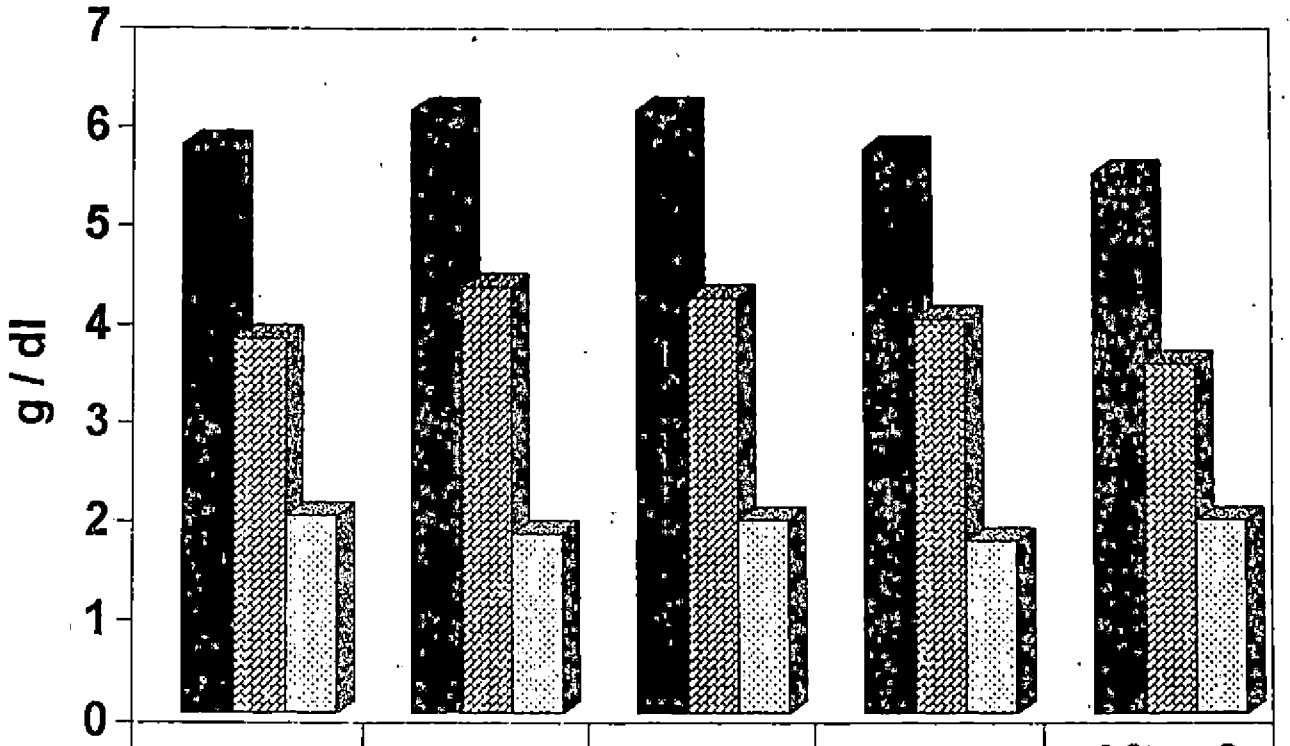
The present study indicated that in ruminants, the endogenous antioxidant enzymes activity in erythrocytes, such as catalase (CAT) and superoxide dismutase (SOD) and reduced glutathione (GSH) level in serum were found to be increased during the course of Yagam. It reveals that antioxidant enzymes are greatly utilised to quench the reactive oxygen species (ROS) formed during the course of Yagam. Similarly, in rabbits the endogenous antioxidant enzymes activity in erythrocytes was also found to be increased during the course of Yagam. So also the reduced glutathione (GSH) level in serum. This again reveals that during the course of Yagam animals experience oxidative stress, which is effectively neutralised by host antioxidant defence mechanisms.

In ruminants and rabbits, the unaltered serum lipid peroxidation level during the course of study indicated that, there was no formation of peroxy radicals during the course of Yagam by ROS species. In rabbits, the haemoglobin level, PCV and WBC count per microliter of blood showed no significant changes during the course of Yagam,

which indicates that experimental animals are not neither experience anaemia nor dehydrated and infected.

In rabbits, the total serum protein, albumin and globulin were found to be increaed during the course of Yagam indicating that, the hepatic functional status of animals were improved.

Effect of YAGAM on serum protein profile of rabbits.



	Before	First day	Fifth day	Last day	After 2 days
Total proteins	5.73	6.07	6.08	5.68	5.45
Albumin	3.77	4.28	4.17	3.97	3.52
Globulin	1.97	1.78	1.92	1.72	1.93

Table-1. Effect of Yagam on RBC's catalase activity.

(U / g of Hb)

Sl.no	Reference with Yagam	Ruminants	CVT	Rabbits	CVT
1	Before	0.17 ± 0.05		0.95 ± 0.07	
2	1st day	0.66 ± 0.27	1 vs 2 = 1.77 NS	0.56 ± 0.25	1 vs 2 = 1.54 NS
3	5th day	0.19 ± 0.02	1 vs 3 = 0.39 NS	1.65 ± 0.35	1 vs 3 = 1.97 NS
4	10th day	0.47 ± 0.25	1 vs 4 = 1.18 NS	1.67 ± 0.41	1 vs 4 = 1.73 NS
5	After 2 days	0.41 ± 0.04	1 vs 5 = 4.35 **	1.49 ± 0.17	1 vs 5 = 3.02 *

Student 't' test for testing significance. (Mean ± SE). (n=6).

CVT – calculated value of 't'.

** - Significant at 1% level (P< 0.01).

* - Significant at 5% level (P< 0.05).

NS – Non significant

Table-2. Effect of Yagam on RBC's SOD activity.

(U / g of Hb)

Sl.no	Reference with Yagam	Ruminants	CVT	Rabbits	CVT
1	Before	923.2 ± 103.22		1476.7 ± 144.16	
2	1st day	1172.8 ± 68.69	1 vs 2 = 2.01 NS	1642 ± 246.45	1 vs 2 = 0.58 NS
3	5th day	1074.2 ± 59.67	1 vs 3 = 1.27 NS	1139.2 ± 128.78	1 vs 3 = 1.75 NS
4	10th day	1495 ± 124.45	1 vs 4 = 3.54 **	1780.8 ± 272.98	1 vs 4 = 0.99 NS
5	After 2 days	2350 ± 267.92	1 vs 5 = 4.97 **	2286.7 ± 249.63	1 vs 5 = 2.81 *

Student 't' test for testing significance. (Mean ± SE). (n=6).

CVT – calculated value of 't'.

** - Significant at 1% level (P< 0.01).

* - Significant at 5% level (P< 0.05).

NS – Non significant.

Table-3. Effect of Yagam on serum reduced glutathione content.

(nmol per ml)

Sl.no	Reference with Yagam	Ruminants	CVT	Rabbits	CVT
1	Before	238.3 ± 11.39		255.0 ± 8.45	
2	1st day	185.2 ± 9.27	1 vs 2 = 3.62 **	208.3 ± 8.33	1 vs 2 = 3.93 **
3	5th day	389.2 ± 8.00	1 vs 3 = 10.84 **	405.0 ± 19.27	1 vs 3 = 7.17 **
4	10th day	397.5 ± 9.47	1 vs 4 = 10.76 **	410.8 ± 9.88	1 vs 4 = 11.99 **
5	After 2 days	263.3 ± 36.57	1 vs 5 = 0.65 NS	221.7 ± 11.96	1 vs 5 = 2.28 *

Student 't' test for testing significance. (Mean ± SE). (n=6).
CVT – calculated value of 't'.
** - Significant at 1% level (P< 0.01).
* - Significant at 5% level (P< 0.05).
NS – Non significant.

Table-4. Effect of Yagam on serum lipid peroxidation level.

(nmol of MDA formed)

Sl.no	Reference with Yagam	Ruminants	CVT	Rabbits	CVT
1	Before	4.82 ± 0.63		4.93 ± 0.94	
2	1st day	3.85 ± 0.82	1 vs 2 = 0.93 NS	3.67 ± 0.89	1 vs 2 = 0.98 NS
3	5th day	4.47 ± 0.78	1 vs 3 = 0.35 NS	4.83 ± 0.33	1 vs 3 = 0.10 NS
4	10th day	4.12 ± 0.52	1 vs 4 = 0.86 NS	5.33 ± 0.43	1 vs 4 = 0.39 NS
5	After 2 days	4.04 ± 0.59	1 vs 5 = 0.90 NS	4.13 ± 0.57	1 vs 5 = 0.78 NS

Student 't' test for testing significance. (Mean ± SE).(n=6).

CVT – calculated value of 't'.

NS – Non significant.

Table-5. Effect of Yagam on certain haematological traits of rabbits

Sl. no	Reference with Yagam	Haemoglobin (g/dl)	CVT	PCV (%)	CVT	WBC (per µl)	
1	Before	12.22 ± 0.38		35.8 ± 1.22		8650 ± 1029	
2	1st day	12.52 ± 0.31	1 vs 2 = 0.61 NS	37.2 ± 0.86	1 vs 2 = 0.89 NS	8905 ± 904	1 vs 2 = 0.19 NS
3	5th day	11.57 ± 0.23	1 vs 3 = 1.47 NS	34.5 ± 0.57	1 vs 3 = 0.99 NS	6583 ± 754	1 vs 3 = 1.62 NS
4	10th day	12.08 ± 0.53	1 vs 4 = 0.20 NS	35.8 ± 1.71	1 vs 4 = 0.00 NS	7133 ± 634	1 vs 4 = 1.25 NS
5	After 2 days	11.67 ± 0.73	1 vs 5 = 0.67 NS	33.5 ± 2.37	1 vs 5 = 0.87 NS	8916 ± 1505	1 vs 5 = 0.89 NS

Student 't' test for testing significance. (Mean ± SE). (n=6).
CVT – calculated value of 't'.
** - Significant at 1% level (P< 0.01).
* - Significant at 5% level (P< 0.05).
NS – Non significant.

Table-6. Effect of Yagam on serum protein profile of rabbits

Sl. no	Reference with Yagam	Total serum protein(g/dl)	CVT	Serum albumin (g / dl)	CVT	Serum globulin (g / dl)	CVT
1	Before	5.73 ± 0.09		3.77 ± 1.22		1.97 ± 0.07	
2	1st day	6.07 ± 0.07	1 vs 2 = 2.80 *	4.28 ± 0.86	1 vs 2 = 3.85 **	1.78 ± 0.07	1 vs 2 = 1.89 NS
3	5th day	6.08 ± 0.09	1 vs 3 = 2.60 *	4.17 ± 0.57	1 vs 3 = 2.86 *	1.92 ± 0.05	1 vs 3 = 0.58 NS
4	10th day	5.68 ± 0.08	1 vs 4 = 0.40 NS	3.97 ± 1.71	1 vs 4 = 1.86 NS	1.72 ± 0.07	1 vs 4 = 2.49 *
5	After 2 days	5.45 ± 0.14	1 vs 5 = 1.67 NS	3.52 ± 2.37	1 vs 5 = 1.66 NS	1.93 ± 0.05	1 vs 5 = 0.38 NS

Student 't' test for testing significance. (Mean ± SE). (n=6).

CVT – calculated value of 't'.

** - Significant at 1% level (P< 0.01).

* - Significant at 5% level (P< 0.05).

NS – Non significant

BEHAVIOURAL AND PHYSIOLOGICAL CHANGES IN ELEPHANTS DURING RELIGIOUS RITUALS

Saseendran.P.C., Anil K.S., Subhash.C.K,
Cijo K Joseph, Sathasivam S. & Deepak Mathew D.K.
Department of Livestock Production Management
College of Veterinary & Animal Sciences
Mannuthy

Introduction

Religious rituals are being performed to soothen the over strained nerves of the individual and bring peace and stability to the mind. The response of human beings towards rituals is biased depending upon the degree of faith and belief of a particular individual towards this religious ceremony. To get an unbiased response to the religious rituals, psychologically untuned animals response to this ritual will have to be recorded. With that objective in mind the present behavioural study of elephants was carried out during the apthorma yagham conduct at mulankunnathukavu.

Materials and method

A 10-year-old male elephant maintained at the site of yagham. Elephant was tethered under a banyan tree about 50m from the yagham site in the temple compound. Elephants position is so placed to have an unobstructed view and audibility of the

yagham proceedings to the elephants and approachable accessibility of the devotees visiting the temple and yagham.

Ethogram of elephant were classified into

- General alertness behaviour
- Stress related behaviour
- Investigative behaviour
- Docile behaviour
- Aggressive behaviour

General alertness behaviour classified into grooming toying the feed, public orient, sniffing response and body temperature.

Stress related behaviour classified into loud snort, trumpet, trunk curl and trunk up.

Investigative behaviour classified into friendly gesture, inspection of surrounding, Inspect of urine or faeces and blessing gesture

Docile behaviour classified into obeying command and lifting of legs.

Aggressive behaviour classified into head high.

These behaviour were observed one day prior to yagham to know the normal range of behaviour and used as a control. Yagham period was divided into initial and final period. Initial period is characterized by limited chanting of mantra and Pooja and lasted for first 3 days. Where as final period is characterized by continuous chanting of mantra and Pooja and lot of visitors and confined to the last 3 days period.

Behavioural observation during this 3 periods were recorded using time lapse direct observation.

Result and discussion

General alertness behaviour are given in the Table1.

The average General alertness behaviour frequencies occurred during final yagham period was increased from final yagham period (32.7) over the control period (26.0). This shows that the yagham activity has made the elephants more active in comparison to pre yagham. (Control) period. This General alertness behaviour is seemed to be associated with improvement in investigative nature of behaviour. Investigative behaviour recorded is given in the Table2. But contrary to general belief there was a slight increase in the stressful behaviour of the animal which is presented in Table 3.This stressful behaviour might be associated with the unfamiliar surroundings and incessant increased decibel due to the continuous chanting of mantra through the microphone in the speaker and increase number of visitors who approached the elephant for its blessings However there was significant reduction in aggressiveness of animal exhibited by lower frequencies of head high position and higher frequencies of obedience behaviour are depicted in the Table4.

General alertness behaviour (Table 1)

Behaviour	Grooming	Leaf twitching	Public orient	Sniffing	Mean
Control period	3.0	11.0	5.0	7.0	26.0
Initial yagham period	2.7	7.0	4.3	5.0	19.0
Final yagham period	7.0	6.3	11.0	8.3	32.7

Investigative behaviour (Table 2)

Behaviour	Friendly gestures	Inspect	Inspect/Urine Or faeces	Blessing gestures	Mean
Control period	0	9	0	1	11
Initial yagham period	1.0	6.3	1.0	0.7	9.7
Final yagham period	7.7	9.3	8.7	7.0	34.0

Stress related behaviour (Table 3)

Behaviour	*Loud snort*	*Trumpet*	*Trunk curl*	*Trunk up*	*Mean*
Control period	*0.0*	*1.0*	*5.0*	*12.0*	*18.0*
Initial vagham period	*0.7*	*1.3*	*9.7*	*4.3*	*16.0*
Final vagham period	*1.7*	*1.3*	*4.7*	*4.3*	*12.0*

Aggressive behaviour (Table 4)

Behaviour	*Head high*
Control period	*5.0*
Initial vagham period	*4.0*
Final vagham period	*2.3*

REPORT ON BEHAVIOURAL STUDIES OF SELECTED SPECIES OF MAMMALS DURING THE APTHORYAMA YAGAM 2004

P. PADMANABHAN
Scientist
Wildlife Biology Discipline
Division of Forest Ecology and Biodiversity Conservation
Kerala Forest Research Institute
Peechi, Thrissur, Kerala 680 653
padmanabhan@kfri.org

INTRODUCTION

Yajna as a concept was developed by our ancient seers with a view to achieving the 'highest' in all types of human endeavor. Every activity was conceived thinking, studying, speaking, serving, mediating, performing etc as a Yajna. What is striking in this concept is that the rishis in their wisdom, also designed, defined and described different stages, procedures and processes of each Yajna along with the respective formulae that are to be applied. The prime goal of all Yajnas, both at the micro and macro levels, is to accomplish lasting peace, progress and prosperity while one exists in this world, as also to become eligible for the highest gains in the brighter world.

Out Vedic lore is replete with the philosophy, programmes, principles, procedures and processes related to Yajnas. Hence Yajnas have thousands of years of history behind them. Among the four Vedas, the Yajurveda contains of the methodology to perform Yajnas. It has the 'know-how'. It deals with the appropriate hymns, procedures and processes. The other Vedas – the Rig, Sama and the Atharva Vedas – also consist of relevant hymns to perform Yajnas. The ancient Indian Society, during the Vedic Period, could boast of experts to shoulder the responsibility of providing guidance and support to

those interested in these programmes. They are collectively known as Ritwiks and they formed an integral part of our ancient society. With the lapse of time, we have to day, very few experts capable of taking a leading role in the performance of Yajnas. It is equally a Herculean Task to search and identify such scholars at present.

Many people continue, even today, to repose their confidence in the Yajnas. They believe that Yajnas are capable of ushering in the era of universal peace, progress and prosperity and the mankind, as a whole will enjoy the fruits of Yajnas for a long time. The combination of will power, knowledge power and action power will pave way for the achievement of Human Welfare with divine blessings. It is against this backdrop an attempt has been made to provide basic information regarding the Apthoryama Soma Yaga, the rest of its kind.

The study of animal behaviour starts with the publication of Tinbergen's the study of instinct (1951)-the first textbook of modern ethology is called 'An attempt at a synthesis'. The study of Dance language and orientation of Bees by Nobel laureate Von Frisch (1967) is an excellent example of animal behaviour study and recently the studies of sexual selection in Peacock by Marion Petrie (2004) in Germany is of great importance. The behavioural parameters used in our study is based Altman (1974). Behavioural aspects are studied at different levels; social, species-wise, cellular, molecular and genetic level in at recent times.

Time immemorial, Yagas are conducted in our country for the well being of human beings, society and environment. Apthoryama is a gigantic Vedic ritual encompassing hundreds of ritual activities and utilization of Veda mantras from all Vedas. The Yajna is considered to affect the nature favorably in many ways. Therefore

we intend to analyze its effects through scientific evaluation on animals, which kept near Yagasala.

Behavioural studies are of great importance in increasing our understanding and appreciation of animals. In addition to providing knowledge about the diversity and complexity of behaviour in nature, it also provides information crucial to improve in the welfare of animals maintained in laboratories, agricultural settings and zoos etc.

OBJECTIVE

1. To study the Environmental parameters like habit, habitat, social and physical environment.
2. To study the stimulus (environmental, social and biological) and adaptations.
3. To study the behavioural responses based on behavioural parameters.
4. To study the impact of Yaga on animal behaviour.

MATERIALS AND METHODS

Scientific behavioural activity patterns of animals like rabbits, rats, squirrels, cow, elephant, horse, donkey, goat and bats housed near the yaga sala were observed during the yaga period (1-20th April, 2004) at timely intervals of one hour from 4 AM to 10 PM every day and data recorded.

OBSERVATION

Observed the activities like feeding, resting, sleeping, chewing, grooming, Investigative and agonistic behaviours were observed and statistical analysis were conducted to study the impact of yaga on animals behaviours.

CONCLUSIONS AND RECOMMENDATIONS

1. There is an prominent increase in Resting and Feeding behaviour of animals during due course of yaga.
2. There is marked decrease in Agonistic and Investigative behaviour in all the animals.

3. There is a decreased dispersel activity of bats during the yaga period.
4. The environmental parameters like temperature, light intensity, climatic changes, energy flow, social organizations etc. are to be incorporated in this study.

5. The study of stimulus – response system and difference in behaviour pattern are yet to be studied in details in relation to the impact of aromatic plants and its burnings, and chanting of mantras, energy flow etc. and its relationship in ecological, physiological, psychological impacts and behavioural changes of animals including human beings are to be analysed.

6. Though the observation of bats, elephants and horse are limited to few hours, a meaningful conclusion can be derived based on an available data and further analysis.

7. The limitations of continued video recording for 24 hours and lack of acoustic and sexual behaviour studies and circadian rhythms are to be under taken.

REFERENCES

Altman.J (1974) Observation study of behaviour: sampling methods. Alice laboratory of animal behaviour, University of Chicago, Illinois, U.S.A

Anonymous (2003) Guidelines for the treatment of animals in behavioural research and teaching, *Animal behaviour* 2003, 65,249 – 255.

Broom, D.M.1991 Animal welfare: concepts and measurement. *J. Anim. Sci.* 69:4167 - 4175.

Griffin, D.R. (1958) Listening in the dark. New Haven. Yale University, Paris.

REPORT ON THE SPECIES COMPOSITION AND ABUNDANCE OF BIRD COMMUNITY IN THE APTHORMA YAAGAM AREA AND THE SURROUNDINGS, THRISSUR

C. Sivaperuman
E.A. Jayson

Division of Forest Ecology and Biodiversity Conservation
Kerala Forest Research Institute
Peechi, Thrissur - 680 653
Kerala

REPORT ON THE SPECIES COMPOSITION AND ABUNDANCE OF BIRD COMMUNITY IN THE APTHORMA YAAGAM AREA AND THE SURROUNDINGS, THRISSUR

C. Sivaperuman
E.A. Jaysor

Division of Forest Ecology and Biodiversity Conservation
Kerala Forest Research Institute
Peechi, Thrissur – 680 653

Introduction

Birds are one of the best indicators of the health of an ecosystem. They are highly mobile and easily observed indicators of change in the environment (Holmes *et al.*, 1986). Counting of bird species in an area is much valuable, when it is related to a habitat that is responsible for bird occurrence or abundance (Cody, 1985 and Wiens, 1989). Any changes in the environment will be represented in the bird community also. The present study is intended to examine the bird community changes in the Apthorma Yaagam area and the surroundings during the Yaagam period.

Objectives

To determine the species richness, abundance and diversity of birds in the Apthorma Yaagam area and the surroundings during the Yaagam.

Methods

Direct observational methods were employed to monitor the bird community (Altman, 1974). Observations and census of birds were recorded from 6.00 AM to 8.00 AM in the morning and 4.00 PM to 6.00 PM in the evening and the studies

were carried out from 10.04.04 to 20.04.04. Diversity indices like Shannon Index and Simpson Index were calculated using the computer programme SPDIVERS.BAS in STATECOL (Ludwig and Reynolds, 1988).

Results

Forty seven taxa of birds were recorded from the Apthorma Yaagam area, which belonged to 32 Families under 12 Orders (Table 1). Highest number of birds were recorded from the Order Passeriformes followed by Ciconiiformes. Of the recorded species, forty four were residents and three were local migrants namely Pied Crested Cuckoo, Asian Paradise-Flycatcher and Ashy Drongo. The species of birds recorded were usually occurring in the paddy fields. During the period of study, Brahminy Kite (Garudan) was recorded twice. The first observation was on the fifth day of the Yaagam and the second sighting was on the last day of the Yaagam. List of the birds recorded on each day is given in the Appendix I-VIII.

Table 1. Species of birds recorded from the Yaagam area and the surroundings

Sl. No.	Common name	Scientific name	Status*
	Pelecaniformes		
	Phalacrocoracidae		
1.	Little Cormorant	*Phalacrocorax niger* (Vieillot)	R
	Ciconiiformes		
	Ardeidae		
2.	Indian Pond-Heron	*Ardeola grayii* (Sykes)	R
3.	Cattle Egret	*Bubulcus ibis* (Linnaeus)	R
4.	Little Egret	*Egretta garzetta* (Linnaeus)	R
5.	Purple Heron	*Ardea purpurea* Linnaeus	R
	Falconiformes		
	Accipitridae		
6.	Brahminy Kite	*Haliastur indus* (Boddaert)	R

Table 1. contd.

Sl. No.	Common name	Scientific name	Status*
	Gruiformes		
	Rallidae		
7.	White-breasted Waterhen	*Amaurornis phoenicurus* (Pennant)	R
	Charadriiformes		
	Charadriidae		
8.	Red-wattled Lapwing	*Vanellus indicus* (Boddaert)	R
	Columbiformes		
	Columbidae		
9.	Blue Rock Pigeon	*Columba livia* Gmelin	R
10.	Spotted Dove	*Streptopelia chinensis* (Scopoli)	R
11.	Indian Ring Dove	*Streptopelia chinensis* (Gmelin)	R
	Psittaciformes		
	Psittacidae		
12.	Rose-ringed Parakeet	*Psittacula krameri* (Scopoli)	R
	Cuculiformes		
	Cuculidae		
13.	Pied Crested Cuckoo	*Clamator jacobinus* (Boddaert)	LM
14.	Asian Koel	*Eudynamys scolopacea* (Linnaeus)	R
15.	Greater Coucal	*Centropus sinensis* (Stephens)	R
	Strigiformes		
	Strigidae		
16.	Spotted Owlet	*Athene brama* (Temminck)	R
	Apodiformes		
	Apodidae		
17.	House Swift	*Apus affinis* (J.E. Gray)	R
	Coraciiformes		
	Alcedinidae		
18.	Small Blue Kingfisher	*Alcedo atthis* (Linnaeus)	R
19.	Stork-billed Kingfisher	*Halcyon capensis* (Linnaeus)	R
20.	White-breasted Kingfisher	*Halcyon smyrnensis* (Linnaeus)	R
	Meropidae		
21.	Small Bee-eater	*Merops orientalis* Latham	R
	Coraciidae		
22.	Indian Roller	*Coracias benghalensis* (Linnaeus)	R
	Upupidae		
23.	Common Hoopoe	*Upupa epops* Linnaeus	R
	Bucerotidae		
24.	Common Grey Hornbill	*Tockus birostris* (Scopoli)	R

Table 1. contd.

Sl. No.	Common name	Scientific name	Status*
	Piciformes		
	Capitonidae		
25.	White-cheeked Barbet	*Megalaima viridis* (Boddaert)	R
	Passeriformes		
	Hirundinidae		
26.	House Swallow	*Hirundo tahitica* Gmelin	R
	Motacillidae		
27.	Large Pied Wagtail	*Motacilla maderaspatensis* Gmelin	R
	Pycnonotidae		
28.	Red-vented Bulbul	*Pycnonotus cafer* (Linnaeus)	R
	Irenidae		
29.	Common Iora	*Aegithina tiphia* (Linnaeus)	R
	Turdinae		
30.	Oriental Magpie-Robin	*Copsychus saularis* (Linnaeus)	R
	Timaliinae		
31.	White-headed Babbler	*Turdoides affinis* (Jerdon)	R
32.	Common Babbler	*Turdoides caudatus* (Dumont)	R
	Sylviinae		
33.	Plain Prinia	*Prinia inornata* Sykes	R
34.	Ashy Prinia	*Prinia socialis* Sykes	R
35.	Common Tailor Bird	*Orthotomus sutorius* (Pennant)	R
	Monarchinae		
36.	Asian Paradise-Flycatcher	*Terpsiphone paradisi* (Linnaeus)	LM
	Dicaeidae		
37.	Tickell's Flowerpecker	*Dicaeum erythrorhynchos* (Latham)	R
	Nectariniidae		
38.	Purple Sunbird	*Nectarinia asiatica* (Latham)	R
	Estrildidae		
39.	White-throated Munia	*Lonchura malabarica* (Linnaeus)	R
	Sturnidae		
40.	Common Myna	*Acridotheres tristis* (Linnaeus)	R
	Oriolidae		
41.	Black-headed Oriole	*Oriolus xanthornus* (Linnaeus)	R
	Dicruridae		
42.	Black Drongo	*Dicrurus macrocercus* Vieillot	R
43.	Ashy Drongo	*Dicrurus leucophaeus* Vieillot	LM
	Artamidae		
44.	Ashy Woodswallow	*Artamus fuscus* Vieillot	R

Table 1. contd.

Sl. No.	Common name	Scientific name	Status*
	Corvidae		
45.	Indian Treepie	*Dendrocitta vagabunda* (Latham)	R
46.	House Crow	*Corvus splendens* Vieillot	R
47.	Jungle Crow	*Corvus macrorhynchos* Wagler	R

* R = Resident, LM = Local Migrant

Species richness and abundance

Species richness and abundance of the birds were highest on the second day of the Yaagam and the ninth day of the Yaagam (Fig. 1).

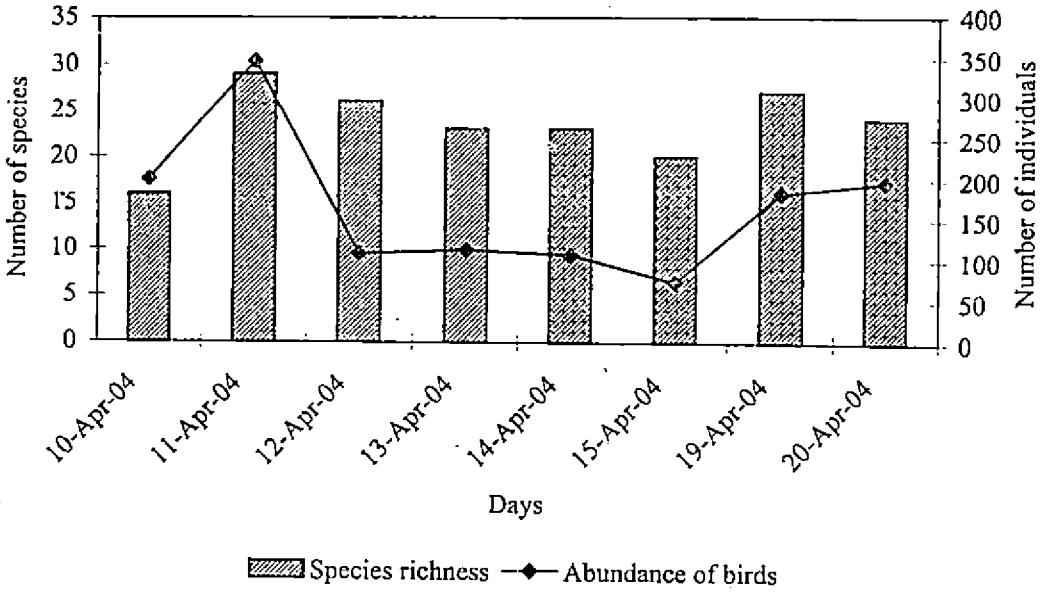


Fig. 1. Species richness and abundance of birds in the Yaagam and the surrounding areas

Diversity Indices

Highest diversity Index (H') of birds was recorded on the third day of the Yaagam (12.04.04) followed by ninth day (19.4.04). Species Richness Index like R1 and R2 were highest on the third day and lowest on the first day (Table 2).

Table 2. Bird diversity parameters recorded in the Yaagam and the surrounding areas

Days	Richness Indices		Diversity Indices		Hill's Number		Evenness	
	R1	R2	Simpson	Shannon	N1	N2	E1	E2
10.04.04	2.83	1.13	0.20	1.98	7.25	5.09	0.71	0.45
11.04.04	4.79	1.56	0.16	2.48	11.98	6.14	0.74	0.41
12.04.04	**5.34**	**2.50**	**0.07**	**2.89**	**17.98**	**14.91**	**0.89**	**0.69**
13.04.04	4.65	2.16	0.09	2.65	14.20	10.73	0.85	0.62
14.04.04	4.71	2.22	0.08	2.73	15.37	13.16	0.87	0.67
15.04.04	4.43	2.34	0.09	2.59	13.39	10.92	0.87	0.67
19.04.04	**4.99**	**2.00**	**0.08**	**2.74**	**15.55**	**11.90**	**0.83**	**0.58**
20.04.40	4.35	1.71	0.11	2.51	12.28	8.98	0.79	0.51

Discussion

The appearance of the Brahminy Kite (Garudan) on the fifth day and the last day is worth mentioning.

Acknowledgements

We are indebted to Dr. J.K. Sharma, Director, KFRI for constant encouragement and support.

References

Altman, J. 1974. Observational study of behaviour sampling methods. *Behaviour* 49: 227-267.

Cody, M.L. (Eds.) 1985. Habitat Selection In Birds. Academic Press, New York. 410 p.

Holmes, V.R., T.T. Cable and V. Brack Jk 1986. Avifauna as indicators of North Indiana. *Indiana Acadamy of Science* (*Zool.*) 95: 523-528.

Ludwig J. A. and J. F. Reynolds 1988. Statistical Ecology, A premier on methods and computing. A Wiley-Interscince publication. 337 p.

Wiens, J.A. 1989. The Ecology of Bird Communities Vol. I. Foundations and Patterns. Cambridge University Press, Cambridge. 539 p.

Appendix - I

Species of birds recorded from the Yaagam area and the surroundings on 10.04.04

Sl. No.	Common name	Number of individuals
1.	Indian Pond-Heron	2
2.	Cattle Egret	12
3.	Little Egret	1
4.	Red-wattled Lapwing	8
5.	Blue Rock Pigeon	34
6.	Spotted Dove	2
7.	Indian Ring Dove	2
8.	House Swift	41
9.	White-breasted Kingfisher	4
10.	Small Bee-eater	6
11.	House Swallow	2
12.	Common Myna	10
13.	Black Drongo	2
14.	Ashy Woodswallow	4
15.	House Crow	70
16.	Jungle Crow	1
Total		**201**

Appendix – II

Species of birds recorded from the Yaagam area and the surroundings on 11.04.04

Sl. No.	Common name	Number of individuals
1.	Indian Pond-Heron	34
2.	Cattle Egret	11
3.	Little Egret	6
4.	White-breasted Waterhen	22
5.	Red-wattled Lapwing	8
6.	Blue Rock Pigeon	23
7.	Spotted Dove	1
8.	Indian Ring Dove	2
9.	Pied Crested Cuckoo	2
10.	Asian Koel	10
11.	Greater Coucal	4
12.	House Swift	24
13.	Small Blue Kingfisher	2
14.	White-breasted Kingfisher	8
15.	Small Bee-eater	6
16.	Red-vented Bulbul	2
17.	Oriental Magpie-Robin	2
18.	Common Babbler	12
19.	White-headed Babbler	6
20.	Asian Paradise-Flycatcher	2
21.	Tickell's Flowerpecker	2
22.	Purple Sunbird	2
23.	Common Myna	9
24.	Black-headed Oriole	2
25.	Black Drongo	9
26.	Ashy Drongo	2
27.	Ashy Woodswallow	4
28.	Indian Treepie	2
29.	House Crow	128
Total		**347**

Appendix – III

Species of birds recorded from the Yaagam area and the surroundings on 12.04.04

Sl. No.	Common name	Number of individuals
1.	Little Cormorant	1
2.	Indian Pond-Heron	10
3.	Purple Heron	1
4.	Cattle Egret	2
5.	Little Egret	4
6.	White-breasted Waterhen	4
7.	Red-wattled Lapwing	3
8.	Blue Rock Pigeon	4
9.	Rose-ringed Parakeet	2
10.	Asian Koel	6
11.	Stork-billed Kingfisher	1
12.	White-breasted Kingfisher	4
13.	Common Grey Hornbill	1
14.	White-cheeked Barbet	2
15.	Large Pied Wagtail	2
16.	Red-vented Bulbul	2
17.	Oriental Magpie-Robin	2
18.	White-headed Babbler	12
19.	Purple Sunbird	2
20.	White-throated Munia	12
21.	Common Myna	4
22.	Black-headed Oriole	2
23.	Black Drongo	3
24.	Ashy Drongo	2
25.	Indian Treepie	2
26.	House Crow	18
Total		**108**

Appendix – IV

Species of birds recorded from the Yaagam area and the surroundings on 13.04.04

Sl. No.	Common name	Number of individuals
1.	Indian Pond-Heron	12
2.	Cattle Egret	1
3.	Little Egret	4
4.	White-breasted Waterhen	2
5.	Red-wattled Lapwing	2
6.	Blue Rock Pigeon	12
7.	Spotted Dove	2
8.	Rose-ringed Parakeet	2
9.	Asian Koel	2
10.	House Swift	12
11.	White-breasted Kingfisher	2
12.	Small Bee-eater	2
13.	Common Hoopoe	1
14.	Large Pied Wagtail	4
15.	Red-vented Bulbul	2
16.	Oriental Magpie-Robin	2
17.	Common Babbler	12
18.	Purple Sunbird	2
19.	Common Myna	4
20.	Black-headed Oriole	2
21.	Ashy Woodswallow	2
22.	Indian Treepie	2
23.	House Crow	25
Total		**113**

Appendix – V

Species of birds recorded from the Yaagam area and the surroundings on 14.04.04

Sl. No.	Common name	Number of individuals
1.	Indian Pond-Heron	14
2.	Cattle Egret	3
3.	Brahminy Kite	1

4.	White-breasted Waterhen	10
5.	Red-wattled Lapwing	2
6.	Blue Rock Pigeon	10
7.	Asian Koel	6
8.	Stork-billed Kingfisher	1
9.	White-breasted Kingfisher	6
10.	Red-vented Bulbul	2
11.	Common Iora	1
12.	Oriental Magpie-Robin	2
13.	White-headed Babbler	4
14.	Plain Prinia	1
15.	Ashy Prinia	2
16.	Purple Sunbird	2
17.	Common Myna	17
18.	Black-headed Oriole	2
19.	Black Drongo	3
20.	Ashy Drongo	3
21.	Indian Treepie	2
22.	House Crow	12
23.	Jungle Crow	1
Total		**107**

Appendix – VI

Species of birds recorded from the Yaagam area and the surroundings on 15.04.04

Sl. No.	Common name	Number of individuals
1.	Little Cormorant	1
2.	Indian Pond-Heron	5
3.	Cattle Egret	12
4.	White-breasted Waterhen	7
5.	Red-wattled Lapwing	2
6.	Asian Koel	2
7.	Greater Coucal	1
8.	White-breasted Kingfisher	3
9.	Common Iora	1
10.	Oriental Magpie-Robin	1
11.	Plain Prinia	2
12.	Ashy Prinia	2
13.	Purple Sunbird	2

14.	Common Myna	2
15.	Black-headed Oriole	4
16.	Black Drongo	5
17.	Ashy Woodswallow	2
18.	Indian Treepie	2
19.	House Crow	16
20.	Jungle Crow	1
Total		**73**

Appendix – VII

Species of birds recorded from the Yaagam area and the surroundings on 19.04.04

Sl. No.	Common name	Number of individuals
1.	Little Cormorant	1
2.	Indian Pond-Heron	12
3.	Cattle Egret	6
4.	White-breasted Waterhen	8
5.	Red-wattled Lapwing	12
6.	Blue Rock Pigeon	24
7.	Rose-ringed Parakeet	2
8.	Asian Koel	2
9.	Greater Coucal	4
10.	House Swift	17
11.	White-breasted Kingfisher	2
12.	Small Bee-eater	2
13.	Indian Roller	1
14.	White-cheeked Barbet	1
15.	House Swallow	22
16.	Red-vented Bulbul	2
17.	Oriental Magpie-Robin	2
18.	Ashy Prinia	2
19.	Common Tailor Bird	2
20.	Purple Sunbird	2
21.	White-throated Munia	4
22.	Common Myna	12
23.	Black-headed Oriole	2
24.	Black Drongo	3
25.	Ashy Woodswallow	2
26.	Indian Treepie	2
27.	House Crow	32
Total		**183**

Appendix VIII

Species of birds recorded from the Yaagam area and the surroundings on 20.04.04

Sl. No.	Common name	Number of individuals
1.	Indian Pond-Heron	14
2.	Cattle Egret	32
3.	Brahminy Kite	1
4.	White-breasted Waterhen	5
5.	Red-wattled Lapwing	12
6.	Blue Rock Pigeon	35
7.	Pied Crested Cuckoo	2
8.	Asian Koel	2
9.	Greater Coucal	2
10.	Stork-billed Kingfisher	1
11.	White-breasted Kingfisher	7
12.	Small Bee-eater	2
13.	Common Hoopoe	1
14.	Common Grey Hornbill	1
15.	Red-vented Bulbul	8
16.	White-headed Babbler	12
17.	Common Tailor Bird	2
18.	White-throated Munia	2
19.	Common Myna	2
20.	Black-headed Oriole	2
21.	Black Drongo	2
22.	Ashy Woodswallow	2
23.	Indian Treepie	9
24.	House Crow	39
Total		197

AGRICULTURAL ORNITHOLOGICAL STUDY OF APTHORYAMA YAGAM

DR. MANI CHELLAPPAN
Associate Professor
Department of Entomology
College of Horticulture
Vellanikkara, Thrissur, Kerala

Agricultural Ornithology

A study was proposed during the *Apthoryama Yagam* in the agricultural fields around the Site related to birds. Following were the activities.

S. No	Activity particulars
1.	Species diversity of birds
2.	Feeding behaviour
3.	Nesting behaviour
4.	Roosting behaviour
5.	Diurnal/nocturnal activities
6.	Any other unusual behaviour (distress/ excitation/ alarm calls, etc.)

Results

Observations were recorded from 5th April 2004 to 30th April 2004 in and around the Yagam Site.

In the rice field harvested stubbles were present. Due to the summer showers, the shed grains started sprouting in the field. Throughout the study the following birds were recorded.

S. No.	Name of the bird	Bird observed					
		Pre Yagam		During Yagam		Post Yagam	
		No.	RA (%)	No.	RA (%)	No.	RA (%)
1.	House crow	32	29.1	130	58.3	102	52.85
2.	Cattle egret	10	9.1	14	6.25	15	7.79
3.	Black drongo	2	1.8	4	1.79	5	2.59
4.	Red wattled lapwing	2	1.8	2	0.89	2	1.04
5.	Blue rock pigeon	10	9.1	12	5.38	12	6.22
6.	Sparrow hawk	1	0.9	2	0.89	-	
7.	Flycatcher	1	0.9	2	0.89	2	1.04
8.	Swift	15	13.6	20	8.97	22	11.40
9.	Heron	15	13.6	14	6.28	12	6.22
10.	Common myna	8	7.3	4	1.79	7	3.63
11.	Little cormorant	1	0.9	1	0.45	1	0.52
12.	Lark	4	3.6	4	1.79	2	1.04
13.	Kite	1	0.9	2	0.89	1	1.04
14.	Spotted dove	3	2.7	1	0.45	2	1.04

15.	Bee eater	2	1.8	2	2.69	6	3.11
16.	White breasted king fisher	1	0.9	1	0.45	1	0.54
17.	Wag tail	3	2.7	4	1.79	4	2.07

Interestingly, the number of cattle egrets and the house crow populations were more during the period of study. They were present throughout the day. It was the case with other insectivorous bids also. The birds were picking stubbles. On close observation, it was clear that the stubbles harbouring plenty of lepidopteran larvae. Later the larva was identified as the young ones of the swarming caterpillar of rice. Variously aged and sized larvae could be observed in the stubbles indicating overlapping population of the insect in the field. Adult moth could lay an average of 2000 eggs and laid in masses with grey hair covering. Incubation period lasts for 2-5 days and the larval period 17-32 days. The characteristic feature of the insect is that they appear suddenly in the fields in swarms of thousand and march from one field to other fields as an army.

During the per-yagam period, the population of the insectivorous birds was low compared to the population during yagam and afterwards (Table 2). The dominant species being the house crow, swift, cattle egret, heron and the blue rock pigeon.

Inference

Based on the observations, the following conclusions can be drawn.

1. Due to the preparatory activities, the light might have attracted the adult swarming caterpillar towards the fields surrounding the yagam site
2. the moist (due to the summer showers), warm and calm condition around the yagam site favored the moths migrate from dist sources
3. the length of the life cycle of the swarming caterpillar ideally coincided the yagam period that's why many larvae could be seen even during day time

4. the availability of plenty of protein food (as many as 30 larvae/m^2) attracted many insectivorous birds like the crows, egrets, swifts and so on
5. as the population of the larvae started declining there was a drop in the bird population also during the post yagam period

A REPORT ON THE ACTIVITY OF BEES AND OVIPOSITION BY MOSQUITOES IN SIMULATED OVIPOSITION SITES AT THE APTHORYAMA YAGAM SITE AT MULANGUNNATHUKAVU

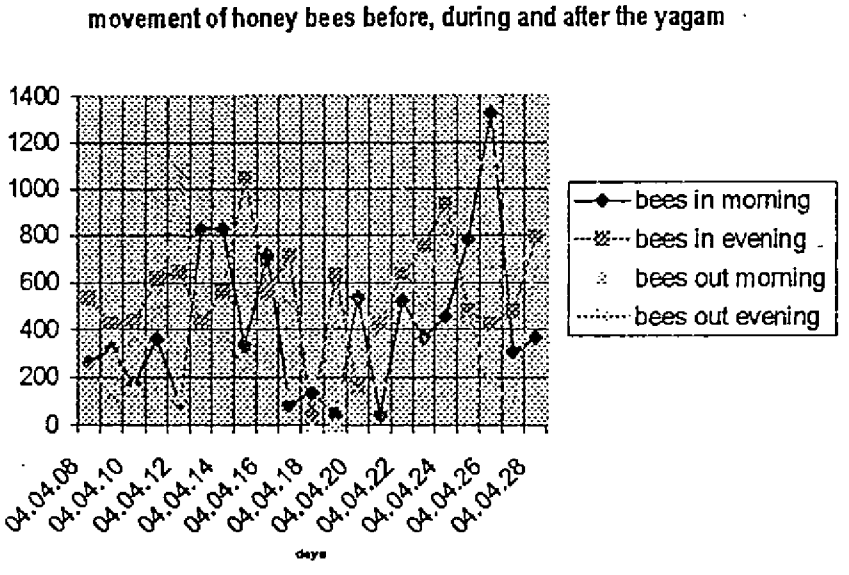
Dr. A. M. Ranjith
Associate Professor
Department of Entomology
College of Horticulture
Vellanikkara, Thrissur

Materials: A colony of small bee (*Trigona* sp.?). The bees were examined for their activity by observing the number of bees that go out and those that get inside, for a duration of half an hour just at dawn and by dusk.

Activity of bees:

8, 9, 10th of April:

The bee activity is low. More bees' are inside than outside. During the morning, more bees come inside than that go out. This must mean that most of them return faster than normal and take more rest. This could, however, also be due to good availability of food. The bees are complacent. In the evening also, the same trend was seen



11th April

Increased activity. From around 1200, the activity has gone up to 200 bees. In and out are equal. More bees go out in the morning. They start their day early. Less numbers go out during the evening. That is, they go out early to work, and finish off early.

12th April

The activity is more or less same. More numbers go out than those coming in. They have become more active. More foraging. Morning activity in and out is the same, but total level of activity is low. But during evening, the level of activity has gone up. More of activity was found towards the evening. This may be due to transient weather.

13th April

The activity has gone up from 2000 to 2500. The numbers of bees that go out and that come in have become more or less same. The numbers that go in and out in the morning is also almost same. The same is applicable in the evening also. But during the morning, the numerical abundance is more. We should assume that they have finished off heir work early in the evening.

14,15th April

Activity is still at around 2500. More bees come in than that go out. More bees go out in the morning and more bees return in the evening than those coming in.

16th April

The highest activity during the yagam period is recorded today. Incidentally, today is the day when there was an influx of energy in the village. More bees are going out than those coming in. There is increased activity outside the hive. They are spending more time outside. More numbers come back in the evening than that go out.

17th April

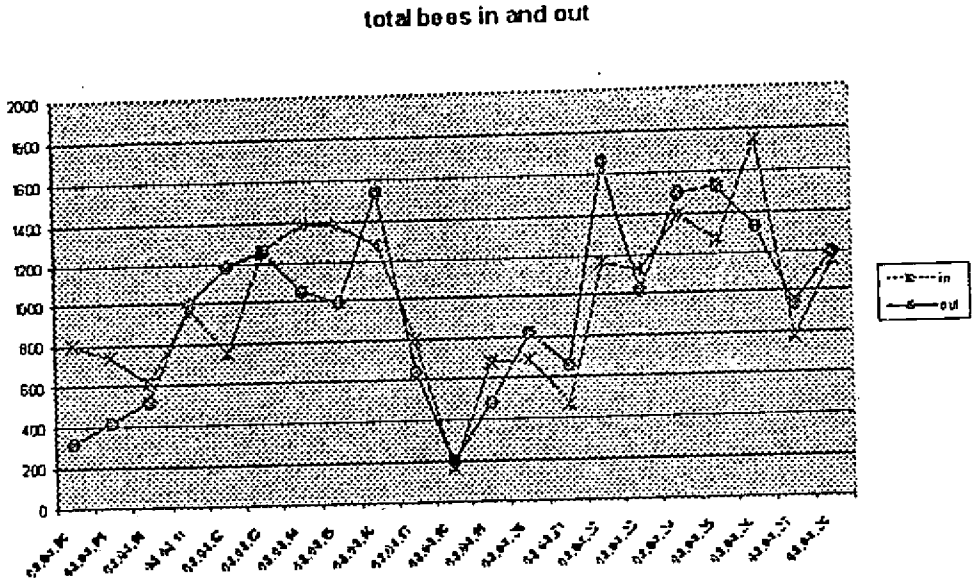
There is a drastic drop in activity. The second influx of energy has come today. The level of activity is as though they are going in for hibernation. The bees are very inactive in the morning. By evening, some activity has picked up.

18th April

The bees have gone in for an acutely low activity, similar to *yoga nidra*? But the numbers that go in and out are almost the same. Ther is adifference, however, that among the hours, there was some activity in the morning, but by evening, the activity has slowed down.

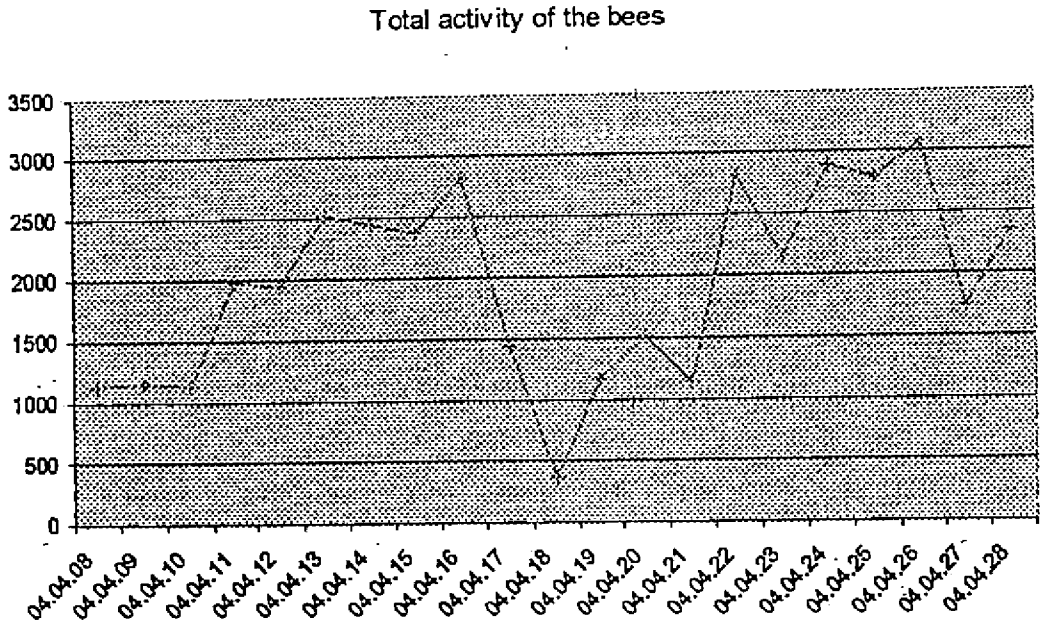
19, 20 and 21rt April

The level of activity has started picking up and has reached the pre-yagam levels.



22 April onwards

The level of activity in general has been enhanced. It could be surmised that there has been an energisation of the whole colony and that they are responding at higher activity levels. The bees go out in large numbers from morning onwards and return in around equal numbers. Every bee may have become active in the colony. It is possible that there could be increased collection of honey and pollen.



Demerits of the present study and suggestions for improvement:

- We do, not have the data pertaining to a control colony, outside the immediate precincts of the yagasala, to compare the results with that.
- What we have taken is the activity during dawn and dusk only, and for better interpretation, there has to be a correlation with the rituals that are performed in the yagam. This means that we should have a continuous record at least hourly, of the activity
- No data on the production of honey by the bees (post and pre-data) is available.
- There is also no information collected on the number of individuals in the colony or the colony strength.
- Ideally, we should have had colonies of *Apis cerana indica*, installed at least a couple of months ahead at the experimental site and the control site. We had to observe the behaviour of the colonies regularly after the acclimatisation period.

PLANT, SOIL & OTHERS

Effect of Yaga On Seed Quality

Dr. T. Girija and Dr. K. Nandini
Department of Plant Physiology
College of Horticulture

Introduction

As per the ancient scripts yagas and rituals are done for the welfare of the universe. They claim that these rituals have a positive influence on animals humans and plant life. The rains observed after the rituals are quoted as the expression of such positive influences. In this context a trail was undertaken at Mulankunnathukavu, where Aptomaya yaga was performed from 10 to 22 May 2004.The objective of the trail was to understand the effect of the yaga on the viability, vigour and stress tolerance of seeds which were exposed to the rituals and placed at different distances away from the yaga site and to compare the performance of the seeds with the control which was kept at the college of horticulture which is 15km away from the yaga site.

Materials and Methods

1kg seeds of turmeric, rice, green gram and 100g of bajra seeds were collected from a single seed lot and divided into four equal quantities and placed in bamboo baskets of equal size and covered with a muslin cloth. The samples were then kept at different distances away from the site of the yaga
T1- In the yaga pandal
T2-20m away from the site
T3-100m away from the yaga site
T4- In the laboratory at the college of horticulture.
After the yaga the samples were collected and preserved at the college of horticulture. Observations were taken within two weeks of yaga and after 3 months of storage.
The different parameters studied included

1. Germination percentage
2. Seeds germinated under each treatment were counted and expressed as percentage

3. Seed vigour

After soaking the seeds were germinated using roll towel method
Observations were taken for shoot length and total seedling length, and vigour index was estimated as per the formula given

Vigour index = Total seedling length x germination percent

4. Stress tolerance potential of seed

For drought studies PEG6000 was used at a concentration of 0.6MPa.25 seeds of paddy was soaked in the solution and kept for 30 mts.25 seeds soaked in water was maintained as control for all the treatments.

Vigour index of stressed seedlings

$$\text{Vigour index} = \frac{\text{VI of stressed seedlings}}{\text{VI of control}} \times 100$$

$$\text{Germination Stress Index} = \frac{\text{Ger \% of stressed seeds}}{\text{Ger \% of control seeds}} \times 100$$

Promptness Index = nd2 (1.00) + nd4 (0.75) +nd6 (0.50) + nd8(0.25)

Where nd2, nd4, nd6 and nd8are the germination% on 2nd 4th 6th and 8th day.

Results and Discussion

Assessment of the germination per cent, total seedling length, vigour index and the dry matter content of the seedling 10 days after germination indicated a higher value for the sample kept in the yaga pandal. However the result was not statistically significant.(Table1&2).After 3 months of storage there was a progressive decline in the viability and vigour of seed, which is the normal behaviour of seeds when kept exposed.The rate of decline has been reduced by exposing the seeds to yaga.

Table 1 Effect of Yaga on Seed Germination and Seedling Characters of rice after 2 weeks

Treatment	Shoot length	Root length	Total seedling length	Vigour Index	Dry matter content	Germination %
T1	4.42±0.43	18.00±0.27	22.42±2.78	2152	0.258	96
T2	4.31±0.48	14.80±0.31	19.11±3.26	1605	0.320	84
T3	4.65±0.48	16.00±0.31	20.65±3.43	1817	0.241	88
T4 (Control)	4.60±0.43	17.00±2.7	21.60±4.01	1987	0.254	92

Table 2. Effect of Yaga on Seed Germination and Seedling Characters of rice after 3 Month

Treatment	Shoot length	Root length	Total seedling length	Vigour Index	Dry matter content	Germination %
T1	4.39±1.27	7.61±2.69	12±3.96	792	0.232	66
T2	3.68±0.65	5.38±0.87	9.06±1.52	598	0.262	66
T3	1.83±0.14	3.93±0.03	5.76±0.12	345	0.219	60
T4 (Control)	3.19±0.32	6.37±0.27	9.56±0.46	507	0.197	53

A similar trend was observed in the case of greengram also (Table 3& 4) .In both the cases the seeds were infested with insects. This may be due to the exposure of seeds.

Table 3. Effect of Yaga on Seed Germination and Seedling Characters of Greengram after 2 weeks

Treatment	Shoot length	Root length	Total seedling leng	Vigour Index	Dry matter content	Germination %
T1	18.75±8.88	15.03±3.31	33.78±11.05	3235	0.416	96
T2	15.67±7.41	14.30±4.30	29.97±9.00	2997	0.331	100
T3	17.22±5.23	12.37±3.35	29.59±8.25	2959	0.319	100
T4 (Control)	17.10±11.49	9.73±6.56	26.83±17.58	2414	0.312	90

Table 4 Effect of Yaga on Seed Germination and Seedling Characters of Greengram after 3 Months

Treatment	Shoot length	Root length	Total seedling length	Vigour Index	Dry matter content	Germination %
T1	6.93±0.50	8.17±0.62	15.10±4.81	1404	0.493	93
T2	5.50±.54	8.74±0.67	14.24±3.75	1224	0.462	86
T3	6.47±0.59	8.75±0.73	15.22±5.89	1308	0.459	86
T4 (Control)	6.64±0.52	8.56±0.65	15.20±7.52	1003	0.344	66

The stress studies revealed that seeds kept 20m away in the observatory performed better than T1 and Control for both rice and greengram. Keeping the seeds exposed in open condition may have contributed to an overall improvement in seed hardiness.(Table5&6) In turmeric also T2 has given better performance than all other treatments (Table7)

Table 5 Effect of Stress Induction On the Germination %Pronptness index an d Germination Stress Index of Rice

Treatment	Control		Stress Seedling		
	Ger%	PI	Ger%	PI	GSI
T1	96	86	90	61	70.93
T2	84	75	88	67	89.30
T3	88	76	86	67	88.15
T4 (Control)	92	81	86	62	76.54

Table 6 Effect of Stress Induction On the Germination % Pronptness index an d Germination Stress Index of Greengram

Treatment	Control		Stress Seedling		
	Ger%	PI	Ger%	PI	GSI
T1	96	89	82	68	76.40
T2	100	99	94	79.5	80.30
T3	100	99	78	67.5	68.18
T4 (Control)	90	86	87	68	79.10

Table 7.Effect of yaga on germination% and seedling characters of turmeric

Treatment	Germination%	Seedling height(cm)	No. of leaves
T1	75	26.82	6.4
T2	85	35.18	9.8
T3	75	27.74	9.8
T4(Control)	80	27.36	6.8

Conclusive results can be drawn only after conducting the experiment in similar environment with more replications. Exposing the seeds to the chanting of mantras and also to C02 and other gases observed in the yaga site can also be maintained as control for more conclusive results.

METABOLITE ANALYSIS OF PLANT MATERIALS USED IN APTHORYAMA YAGAM 2004

Dr. K. Pushpangadan
National Botanical Research Institute
Lucknow
UP

Apthoaryaama yaaga
April 10-20, 2004
Mulamkunnathukavu, Thrissur

1. Plants collected for the study from Natural habitat (Around 100 met.)

S.N.	Plants	Parts for study
5	*Adhatoda vasica* Nees	Leaves
11	*Ficus religiosa* L.	Leaves, bark
12	*Heliotropium keralense* Sivarajan & Manilal	Whole plant
9	*Mangifera indica* L.	Leaves,
2	*Mimosa pudica* L.	Whole plant
6	*Moringa oleifera* Lam.	Leaves, bark
10	*Nerium indicum* Mill.	Leaves
8	*Piper nigrum* L.	Leaves, stem
3	*Scoparia dulcis* L.	Whole plant
1	*Tephrosia purpurea* Pers.	Aerial part
7	*Tinospora cordifolia* (L.) Mill.	Stem
4	*Urena lobata* L.	Aerial part

2. Plants placed near yaaga sala for study (in pots)

i. *Ocimum tenuiflorum* L.
ii. *Phyllanthus fraternus* Webs.
iii. *Curcuma longa* L.
iv. *Zingiber officinale* Rosc.
v. *Coleus amboinicus* Lour.

3. Samples collection

Date & time of collection
First collection (before starting of Yaaga) : 09.04.2004 & 11.30 AM
Second collection (Middle of Yaaga) : 15.04.2004 & 10.30 AM
Third collection (Last day of Yaaga) : 20.04.2004 & 02.30 PM

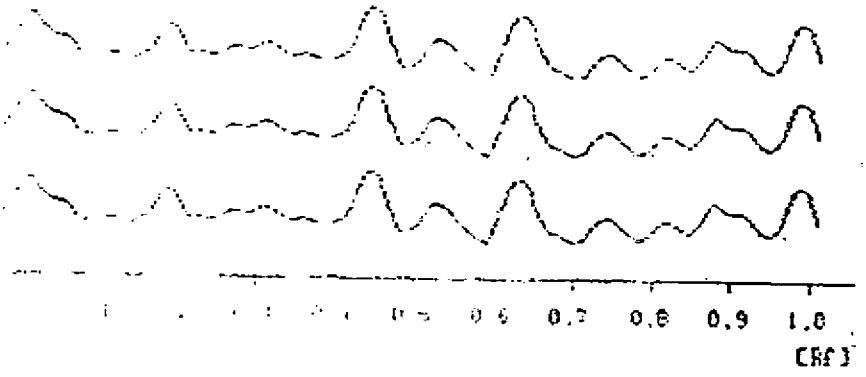
4. Laboratory work carried out:
Three sets of all the samples that were collected during the yaga were first authenticated to identify the correct species of the plant, it was later dried at room temperature and subsequently powdered. The powdered plant material was extracted by cold percolation with 50 % hydroalcoholic extract. The extract was then subjected to high performance thin layer chromatography to find out the difference in the presence of secondary metabolites present in these plants that were collected before and after the yaga.

Results indicated no applicable changes in the major constituents. It is proposed that to carry out investigation on certain minor constituents, particularly those having some anti oxidant activity.

The HPTLC of the 50% aqueous alcoholic extract from the samples obtained was performed in HPTLC Silica gel F254 plates in the solvent system Toluene: Ethyl acetate (80: 20). The spots were applied with the help of Linomat IV applicator. The finger print profile of HPTLC were obtained with CAMAG Video Documentation unit.

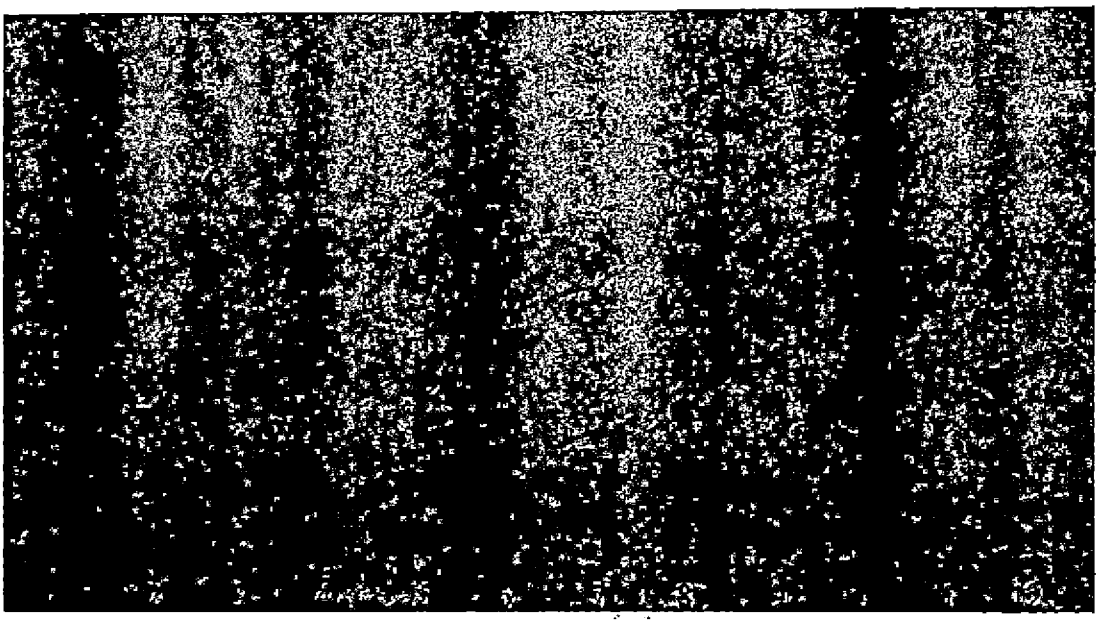
Example for one of the plants collected during this study is presented here.
Plant : *Tinospora cordifolia*

HPTLC Finger print profile of *Tinospora cordifo....*



Solvent system: Ethyl acetate: Methanol: Water (13:2:1)

HPTLC fingerprint profile of different plants collected during the yagam (Under UV 254)



1. *Curcuma longa* before yagam
2. *Curcuma longa* after yagam

3. *Phyllanthus fraternus* before yagam
4. *Phyllanthus fraternus* after yagam

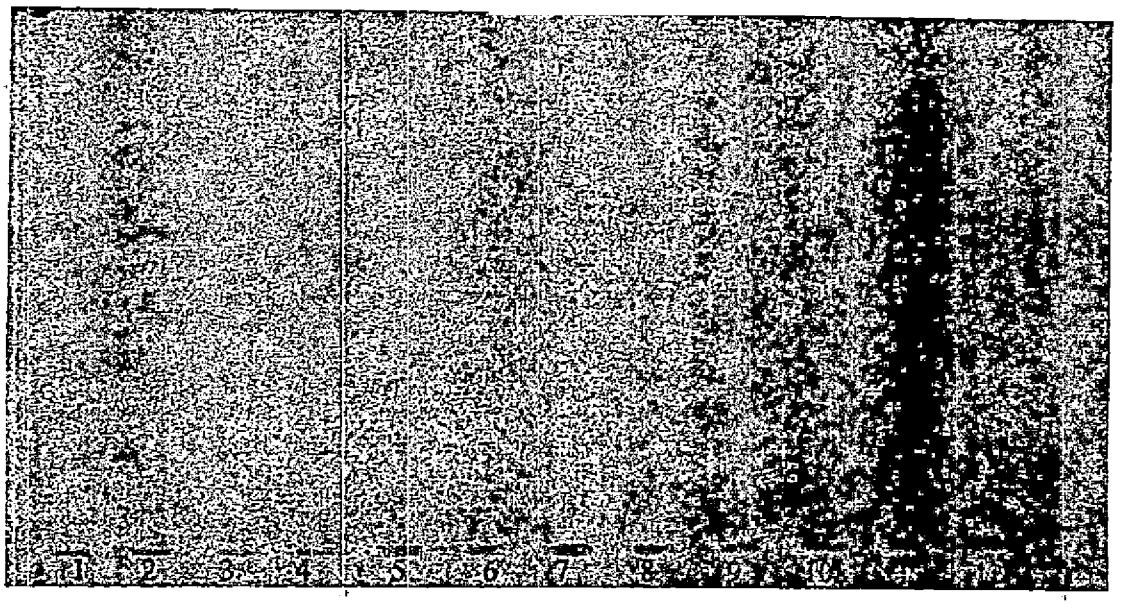
5. *Mangifera indica* before yagam (leaf)
6. *Mangifera indica* after yagam (leaf)

7. *Ficus religiosa* after yagam
8. *Ficus religiosa* before yagam

9. *Mangifera indica* before yagam (bark)
10. *Mangifera indica* after yagam (bark)

11. *Piper nigrum* after yagam
12. *Piper nigrum* before yagam

HPTLC fingerprint profile of different plants collected during the yagam (Under UV 254)



1. *Mimosa pudica* before yagam
2. *Mimosa pudica* after yagam

3. *Zingiber officinale* before yagam
4. *Zingiber officinale* after yagam

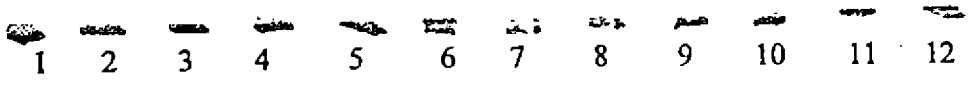
5. *Scoparia dulcis* before yagam
6. *Scoparia dulcis* after yagam

7. *Ficus religiosa* before yagam
8. *Ficus religiosa* after yagam

9. *Tephrosia purpurea* before yagam
10. *Tephrosia purpurea* after yagam

11. *Adhatoda vasica* before yagam
12. *Adhatoda vasica* after yagam

HPTLC fingerprint profile of different plants collected during the yagam (after derivatization)



1. *Curcuma longa* before yagam
2. *Curcuma longa* after yagam

3. *Phyllanthus fraternus* before yagam
4. *Phyllanthus fraternus* after yagam

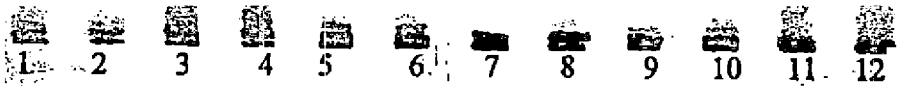
5. *Mangifera indica* before yagam (leaf)
6. *Mangifera indica* after yagam (leaf)

7. *Ficus religiosa* after yagam
8. *Ficus religiosa* before yagam

9. *Mangifera indica* before yagam (bark)
10. *Mangifera indica* after yagam (bark)

11. *Piper nigrum* after yagam
12. *Piper nigrum* before yagam

HPTLC fingerprint profile of different plants collected during the yagam after derivatization)



1. *Mimosa pudica* before yagam
2. *Mimosa pudica* after yagam

3. *Zingiber officinale* before yagam
4. *Zingiber officinale* after yagam

5. *Scoparia dulcis* before yagam
6. *Scoparia dulcis* after yagam

7. *Ficus religiosa* before yagam
8. *Ficus religiosa* after yagam

9. *Tephrosia purpurea* before yagam
10. *Tephrosia purpurea* after yagam

11. *Adhatoda vasica* before yagam
12. *Adhatoda vasica* after yagam

5. Photochemilumenescence assay of the yagam samples

Photochemiluminsesence assay for the determination of the integral antioxidative capacity (AC) of the lipid soluble substances in extracts, the method of photochemiluminscence (PCL) was used. Apparatus used was Photochem® with Standard kit ACW (Analitik jena AG), where the luminol plays a double role of photosensitizer as well as the radical detecting agent. Lyophilized extracts was measured at 1 µg/ml concentration. A standard plot was plotted and the results were calculated in trolox equivalents (nmol/ g).

Plants collected for the study from Natural habitat (Around 100 met.)

S.N.	Plants	Chemiluminescence assay (nmoles/g trolox equivalents)		Remarks
		Before yagam	After yagam	
1.	*Adhatoda vasica*	2.005	1.948	No significant difference
2.	*Ficus religiosa*	3.232	3.177	No significant difference
3.	*Heliotropium keralense*	9.053	6.971	Significant difference
4.	*Mangifera indica*	11.175	10.787	No significant difference
5.	*Mimosa pudica*	2.445	2.048	No significant difference
6.	*Piper nigrum*	3.950	3.524	No significant difference
7.	*Scoparia dulcis*	4.259	3.832	Slight difference
8.	*Tephrosia purpurea*	5.243	5.168	No significant difference
9.	*Tinospora cordifolia*	6.776	6.578	No significant difference

Plants placed near yaaga sala for study (in pots)

S.N.	Plants	Chemiluminescence assay (nmoles/g trolox equivalents)		Remarks
		Before yagam	After yagam	
1.	*Ocimum tenuiflorum*	5.525	5.448	No significant difference
2.	*Phyllanthus fraternus*	6.095	5.155	No significant difference
3.	*Curcuma longa*	3.058	3.022	No significant difference
4.	*Zingiber officinale*	7.268	6.911	No significant difference

6. Conclusion

Based on our study, we did not find any significant difference in the plants collected before and after the yagam.

Plants used in Apthoaryaama yaaga

S.N.	Botanical name	Family	Sanskrit name	Malayam name	Part used	Chemistry	Uses
1	*Ficus religiosa* L.	Moraceae	Aswatha	Arayaal	Wood, twigs	Tannins	Asthma, ulcer, boils, fever, sores
2	*Aegle marmelos* (L.) Corr.	Rutaceae	Bilva	Koolakam	Wood, twigs	Coumarins, phenolic alkaloids	Stomach disorders, diarrhea, dysentery, wounds
3	*Ficus bengalensis* L.	Moraceae	Nygrodha	Peraal	Wood, twigs	Tannins and phenolics	Insanity, cholera, cough, diarrhea, skin disease
4	*Acacia chundra* Willd. syn. *A. sundra* DC.	Mimosacea e	Khadira	Karingli	Wood, twigs	Tannins and terpenoids	Boils, ulcer, toothache, leucoderma
5	*Butea monosperma* (Lamk.) Taub. syn. *B. frondosa* Roxb.	Fabaceae	Palasa	Palaasu	Wood, twigs, leaves	Phenolics	Diuretic, inflammation, cooling, anthelminitic
6	*Ficus racemosa* L. syn. *F. glomerata* Roxb.	Moraceae	Udumbara	Athi	Twigs	Tannins	Diabetes, bronchitis, fever, dysentery
7	*Prosopis* cineraria (L.) Druce syn. *P. spicigera* L.	Mimosacea e	Vahni (sami)	Vahnni	Twigs	Alkaloids and flavanoids	Astringent, demulcent, and checking miscarriage
8	*Crataeva nurvula* Buch. –Ham. syn. *C. religiosa* Hk. f. & Th.	Capparacea e	Varnam	Neermaatha la	Wood, twigs	Terpenes	Fever, sores, stomach disorders, tonic, wounds
9	*Tamarindus indica* L.	Caesalpinia ceae	Vrikshaa mla	Puli	Wood, twigs	Tannins	Cold, cough, dropsy, fever
10	*Cedrus deodara* (Roxb.) Loud.	Pinaceae	Devadaru		Wood	Phenolics	Ulcers, rheumatism, diuretic, skin disease
11	*Cynodon dactylon* (L.) Pers.	Poaceae	Dub ghass		Whole plant	Phytol and sitosterol	Dysentery, headache, piles, tonic

12	*Veteveria zizanioides* (L.)Nash.	Poaceae	Raamacham	Raamacham	Root	Flavanoids	Epilepsy, fever, anthelmintic, headache
13	*Calotropis gigantea* (L.) Br.	Asclepidiaceae	Arkapatra	Erukkulia	Leaves	Flavanoids and glycosides	Asthma, antifertility, dropsy, dysentery
14	*Sarcostemma acidum* (Roxb.) Voigt. syn. *S. brevistigma* Wt.	Asclepidiaceae	Soma		Whole plant	Disaccharide and glycosides	Antifertility, boils, bone fracture, snake bite
15.	*Imperata cylindrica* (L.) Beauv.	Poaceae	Darbaghass	Vidulam	Leaves	Terpenoids	Fever, piles, tonic, snake bite
16.	*Flacourtia sp.*	Flacourtiaceae	Vikankata	Vayyankatha	Twigs	Tannins and phenolics	Cholera, dysentery, liver disorders, rheumatism
17	*Nelumbo nucifera* Gaertn.	Nelumbonaceae	Amba	Marutandu	Seeds	Terpenoids and flavanoids	Diarrhoea, dysentery, cholera, tonic,
18	*Triticum aestivum* L.	Poaceae	Yava	Yavam	Seeds	Sugars and flavanoids	Food
19	*Vigna mungo* (L.) Hepper syn. *Phaseolus mungo* L.	Fabaceae	Masha	Uzhunnu	Seeds	Fatty acids and sterol	Rheumatism, nervous diseases, hepatic diseases, diuretic
20	*Oryza sativa* L.	Poaceae	Vreehi		Seeds	Sugars	Food
21	*Cicer arietinum* L.	Fabaceae	Chanaka	Priyangu	Seeds	Proteins	Jaundice, tonic
22	*Macrotyloma uniflorum* (Lamk.) Verd *syn. Dolichos biflorus* Baker	Fabaceae			Seeds	Saponins	Dysentery, dysuria, leprosy, toothache

Above mentioned plant/ parts are collected during Yaaga and authenticated by comparison with our crude drug museum samples.

Plants used in Apthoaryaama yaaga for worship

i. *Cynodon dactylon* (L.) Pers. (whole plant)
ii. *Imperata cylindrica* (L.) Beauv. (leaves)
iii. *Tabernaemontana divaricata* (L.) Br. ex. R. & S. (flower)
iv. *Ixora* sp. (flower)
v. *Musa paradissica* L. (leaves, fruits)
vi. *Piper betle* L. (leaves)
vii. *Areca catechu* L. (fruits)
viii. *Vitis vinifera* L. (fruits)
ix. *Citrus reticulata* Blanco (fruits)
x. *Mangifera indica* L. (leaves)
xi. *Ficus religiosa* L. (twigs, wood)
xii. *Nelumbo nucifera* Gaertn. (leaves)
xiii. *Cocos nucifera* L. (fruit)
xiv. *Oryza sativa* L. (grains)

Yaaga pandal is mainly made up of leaves of *Cocos nucifera* and woods of *Areca catechu* and *Dendrocalamus* sp. (bamboo)

MEDICINAL PLANTS USED IN APTHORYAMA YAGAM 2004

Held from 10-04-2004 to 20-04-2004
At SN Puram, Mulankunnathukavu, Thrissur, Kerala

Dr. M.N.B. Nair
FRLHT, Banglore

ARKA

BOTANICAL NAME: *Calotropis procera*

FAMILY: ASCLEPIADACEAE

SYNONYMS:
Pushpi,Viksira,Vikirana, Jambhala, Kshiraparni, Aasphota, Bhaskara, Ravi adityapushpika, alarka, alarkah, arka, arkah, arkaparna, arkavrikshaha, asphota, bhanu, bimbora, dirghpushpa, ganarupaka, kashthila, ksiraparna, mandara, pratapa, rajarka, raktarka, ravi, rupika, sadapushpa, sadapushpi, shambhu, sharkarapushpa, shitakarka, shuklaphala, shveta, shvetarka, tapana, tulaphala, vasuka, vedha, vrittamallika, pi

PARTS USED: Rootbark, latex, flower, leaf

PROPERTIES:

- **Rasa:** Katu[DHN], Tikta[BN]
- **Guna:** Sarakam
- **Veerya:** Usna[DHN]
- **Vipaka:** No referance
- **Karma:** Agni dipanam,
- **Dosha karma:** Vata Haram(DHN)
- **Dhatu karma:** No reference
- **Indication:** Shotha,Vrana,Kandu,Plihavridhi,Krimiroganashana

USES:
Used In Ayurveda, Tibetian, Homeopathy, Unani, Sidha and Folk.
Bark yields a fibre which is white, silky, strong and durable, used for fishing nets and lines, bow strings and twine. Seeds yield a fixed oil. Leaves are rubbed on the skin of elephants for treatment of Kesarayer disease.Root bark used for Leprosy.Wood yields gunpowder charcoal.

ASU VRHI

BOTANICAL NAME: Oryza sativa L.

FAMILY: POACEAE

SYNONYMS: Bilvaja, Dhanya, Dhanyah, Garuda, Hima, Jiraka, Kacoraka, Kalama, Kalmasa, Kapinjala, Khanjarita, Magadhi, Mahasali, Nivara, Pita, Raktabhasali, Raktasali, Rukmavanti, Sali, Sastika, Saugandhi, Shali, Sukala, Tandula, Tandulam, Vara, Vilavasin, Ahi

MORPHOLOGY:
An annual or perennial grass with tuft of fibrous roots and swollen nodes; leaves simple with sheathing bases, long and narrow, slightly pubescent with spiny hairs on the margins; flowers spikelets in terminal compound panicles, lemma punctate or granulate without wing on the back, lemma and palea surrounding the kernel, golden yellow, reddish purple, brown or smoky black becoming straw-coloured on ripening, grains narrowly oblong, free within the lemma and palea.

PARTS USED: roots, grains

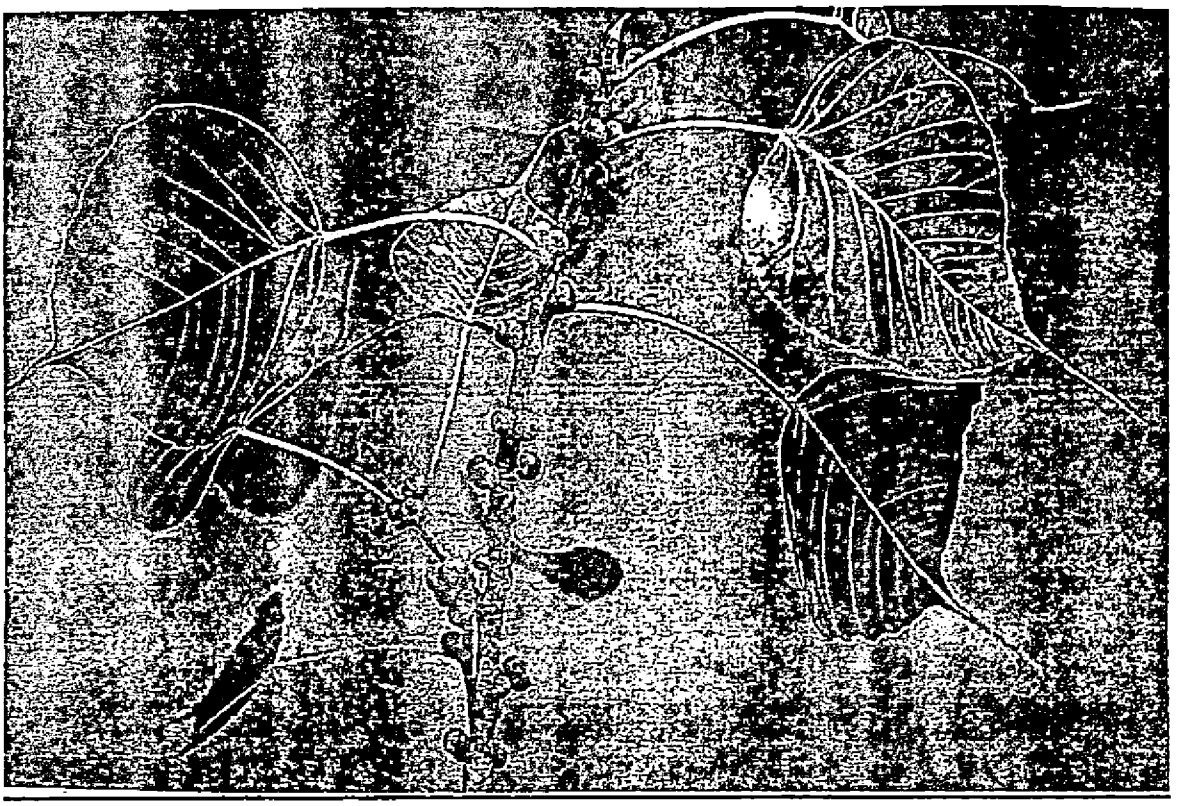
PROPERTIES: Atyusnam, Bahu Vin mutra, Tridoshalam.

USES:
The roots are cooling, diuretic and febrifuge, and are useful in burning sensation, dipsia, bilious fever, strangury and diabetes. The grains are sweet, acrid, oleaginous, aphrodisiac, diuretic, carminative, antidysenteric and tonic. They are useful in vitiated conditions of pitta, pneumonosis especially pulmonary consumption, diarrhoea and colonopathy.

ASVATTHAH

BOTANICAL NAME: *Ficus religiosa*

SYNONYMS
Keshvavasa, Chalapatra, Pavitraka, Shyamala, Gajashana, Vipra, Shubada, Grahyapatra, Sevya, Satya, Shuchidruma, Dharmavrksha, Shreemaan



MORPHOLOGY:
A large deciduous tree with few or no aerial roots, often epiphytic, the drooping branch lets bear long-petioled ovate, cordate, shiny leaves which produce a characteristic rustling sound when the wind blows; leaves bright green, the apex produced into a linear-lanceolate tail about half as long as the main portion of the blade; the receptacles occurring in the pairs, axillary, depressed globose, smooth, purplish when ripe.

The bark is grey or ash-coloured with thin or membranous flakes and is often covered with crustose lichen patches; the outer bark is not of uniform thickness, the middle bark in sections appears as brownish or light reddish brown, the inner part consists of layers of light yellowish or orange brown granular tissue.

PARTS USED: Bark, leaf, fruit, bud and seed (tender shoots and latex)

PROPERTIES:

- **Rasa:** No reference
- **Guna:** No reference
- **Veerya:** Sitalam [NIR]
- **Vipaka:** No reference

- **Karma:** Hrdyam [NIR]
- **Dosha karma:** Pitta haram [NIR]
- **Dhatu karma:** Rakta haram [NIR]

USES:

The bark is astringent, sweet, cooling and aphrodisiac, and an aqueous extract of it has an antibacterial activity against staphylococcus aureus and Escherichia coli. It is used in the treatment of gonorrhoea, diarrhoea, dysentery, haemorrhoids and gastrohelcosis. A paste of the powdered bark is a good absorbent for inflammatory swellings and good for burns. Leaves and tender shoots have purgative properties and are also recommended for wounds and skin diseases. Fruits are laxative and digestive; the dried fruit pulverized and taken in water cures asthma; seeds are refrigerant and laxative. The latex is good for neuralgia, inflammations and haemorrhages.

INDICATION: Visa, daha, Vanti, Sosam, Aruci [NIR]

BILVA

BOTANICAL NAME: *Aegle marmelos*

SYNONYMS: BILVA, SALATU, SANDHILA, HRDYAGANDHA, MAHAPHALA, SAILUSA, SRIPHALA, SRYAHAVA, KARKATAH, PUTIMARUTA, LAKSHMIPHALA, GANDHAGARBHA, SATYKARMA, DURARUHA, VATASARA, ARIMEDAH, KANTAKADHYAH, SITANANA, BHILVAH, SALATUH, SAILUSAH, MALURAHH, SADAPHAAH, LAKSHMIPHALAH, GANDHPHALAH, SANDILYAH, KANTAKI, SANDILYA, SAILUSA, MALURA, SRIPHALA

FAMILY: RUTACEAE

MORPHOLOGY

It is a small to moderate-sized tree with branches armed with strong axillary spine 1-3 cm long. **Bark** dark grey, slightly corky, leaves alternate, 3-foliate, rarely 5-foliate. **Flowers** greenish-white, sweet scented. **Fruits** globose, grey or yellowish, shell woody. **Seeds** numerous, oblong, compressed, with a woolly mucous testa, embedded in a clear mucilage and a mass of yellow or orange-coloured sweet aromatic mealy pulp.

PARTS USED: FRUITS, LEAVES, AND ROOTS

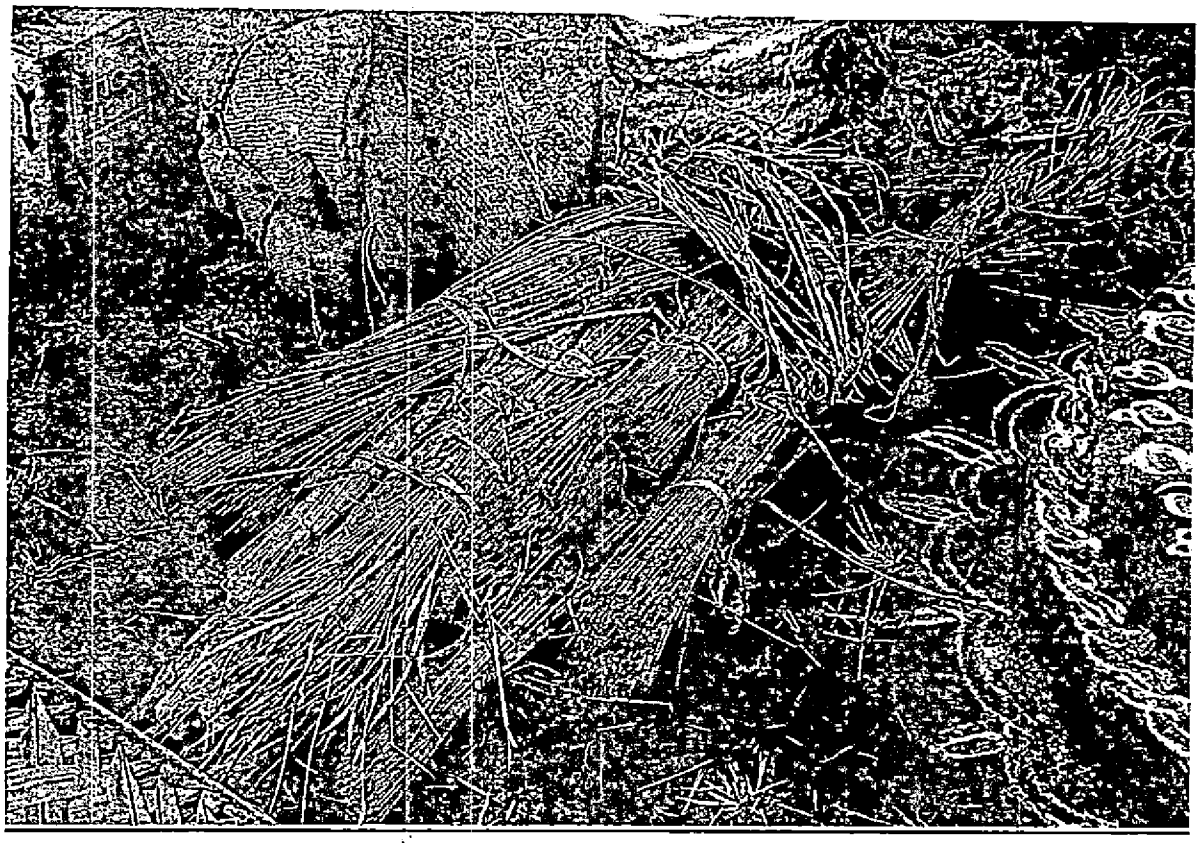
PROPERTIES:

- **Rasa:** MADHURA [DHN] KASAYA, KATU [MPN] TUVARA, TIKTA [BPN] MADHURA, KASAYA [RJN]
- **Guna:** LAGHU [DHN] RUKSA, LAGHU [BPN] GURU [RJN]
- **Veerya:** USNA [MPN] USNA [BPN]
- **Vipaka:** NO REFERANCE
- **Karma:** GRAHI, DIPANA, PACANA, HRDYA [MPN] GRAHI, AGNIKARA, BALYA, PACANA [BPN] HRDYA, RUCIKRT, DIPANA [RJN]
- **Dosha karma:** TRIDOSAGHNA [DHN] PITTAKRT, VATAKAPHA HARA [BPN] KAPHAPITTA HARA [RJN]
- **Dhatu karma:** NO REFERANCE

Uses .
The fruit, leaves and root of Bilva is used in the form of powder, juice and decoction to treat diarrhoea, sprue, piles, oedema, jaundice, vomiting, obesity, deafness, eye diseases, paediatric diseases, fever and as a rejuvinative.

INDICATION: CHARDI [DHN] JWARA, ATISARA [RJN]

DARBHA



BOTANICAL NAME: ***Imperata cylindrica,***
desmostachya bipinnata(Linn.)stapf
(Eragrostis Cynosuroides(Retz.) P.Beauv)

SYNONYMS: Mrdudarbha,Kusha,Barhi,Shuchicir,Suvrttika, Darbhappullu

MORPHOLOGY:

A tuffed perenial grass with a thick scaly root-stock which sends out creeping rhizomes in all directions; leaves many, upto 50cm long and 1 cm broad at the base with filform tips and hispid margins, sheaths glabrous; panicle erect, narrowly pyramidal clothed from the base with sessile imbricating spikelets; grains 0.5-0.6 mm long, obliquely ovoid, trigonous and laterally compressed.

PARTS USED: whole plant

PROPERTIES:

- **Rasa:** Madhuram Tuvaram [BPN] Madhura, Tuvara [NIR]
- **Guna:** Snigdha [NIR]
- **Veerya:** Sitala [DHN] Himam [BPN] Sita [NIR]
- **Vipaka:** No referance
- **Karma:** Rucya [NIR]
- **Dosha karma:** Kevala Pitta Nasana [DHN] Pitta Kapha Hara [MPN] Tridoshaghnam [BPN] Kapha kara, Pitta hara [NIR]
- **Dhatu karma:** AsraHara [MPN] Sukra suddhikara, Rakta suddhi kara [NIR]

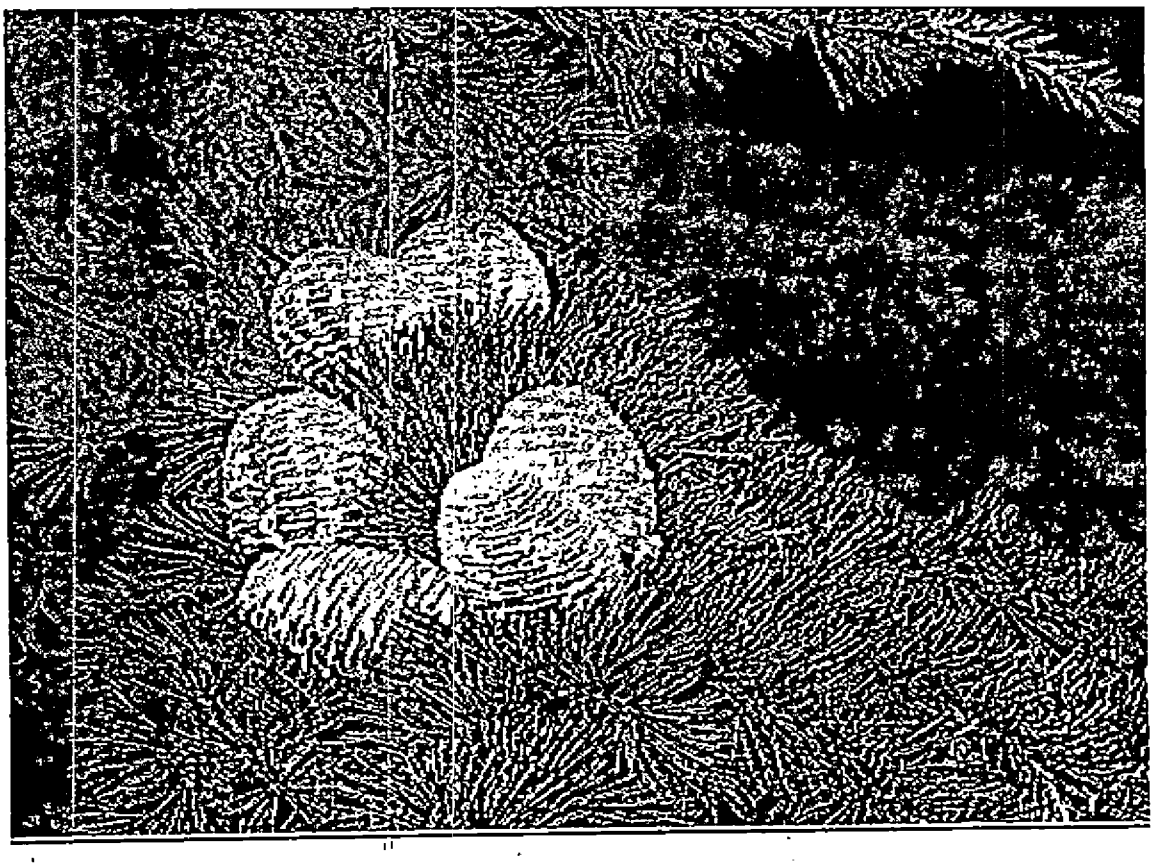
USES:

The roots are bitter, sweet, cooling, diuretic, emollient, astringent and galactagogue, and are useful in asthma, jaundice, vitiated conditions of pitta, hyperdipsia and hemopathy. The culms are sweet, diuretic, stimulant, acrid and aphrodisiac and are useful in dysentary, menorrhagia, jaundice, asthma, strangury, uropathy and skin eruptions.

INDICATION:

Mutrakrcchra, Raktapitta [DHN] Mutrakrcchra, Asma, Trt, Vasti Roga [MPN] Mutra Krcchra, Asmari, Trsna, Vastiruk, Pradara, AsraRogas [BPN] Rakta pittam, Svasam, Trsa, Mutrakrcchram, Vasti sula, Kamala, Pradara, Visarpa, Chardi, Murccha, Asmari [NIR]

DEVADARU



BOTANICAL NAME: *Cedrus deodara*

FAMILY: PINACEAE

SYNONYMS: DEVADARU, DARU, SURAHVAM, KILIMAM, SNEHAVIDDHAM, MAHADARU, BHADRADARU, INDRADARU, DEVEKASTHAM, BHADRAKASTHAM, PUTIKASTHAM, SUDARU, SURADARU, INDRAVRKSA, AMARADARU, SURADRUMAH, BHADRAKASTHAM, SNEHAVRKSAH, KRMILAM, SAKRADARU, DARUBHADRA, MASTADARU, DRUKILINAM, KILIMAM, SURABHURUHAH, DARUKAM, SNIGDHADARU, AMARADARU, BHADRADARU, SIVADARU, SAMBHAVAM, BHUTAHARI, BHAVADARU, RUDRADARU

MORPHOLOGY:

A large evergreen tree grows 60 m in height and 10 m in girth. **Bark** thick, furrowed vertically and cracked transversely. **Branches** horizontal or slightly ascending or descending not whorled but arising irregularly. **Leaves** 2.5-5 cm, dark green, three sided, glaucous or silvery, sharply pointed. **Male** and **Female** cones appear on separate branches. **Female** cones barrel-shaped, borne singly at the tip of dwarf shoots; **Male** cones solitary at the end of the dwarf shoots, cylindrical, 2.5-4.5 cm long. **Seeds** triangular with a broad wing.

PARTS USED: Leaves, Heartwood And Oil

RJN Says Devakastha Is Tikta, Usna, Ruksa, Vatakaphahara, Bhutadosahara When

Applies On The Body.Former Is Called Snigdhadaru And Later Is Kasthadaru. [RJN].

PROPERTIES:

- **Rasa:** TIKTAM [DHN] KATU, TIKTA [MPN] TIKTA [BPN] TIKTA [RJN]
- **Guna:** SNIGDHA [DHN] SNIGDHA, LAGHU [MPN] LAGHU, SNIGDHA [BPN] SNIGDHA [RJN]
- **Veerya:** USNA [DHN] USNA [MPN] USNA [BPN] USNA [RJN]
- **Vipaka:** KATU [BPN]
- **Karma:** AMA HARA [MPN] VIBANDHA, AMA HARA [BPN] AMA, VIBANDHA HARA [RJN]
- **Dosha karma:** SLESMAVATA HARA [DHN] KAPHAVATA HARA [MPN] KAPHAVATA HARA [BPN] SLESMAVATA HARA [RJN]
- **Dhatu karma:** ASRAJIT [BPN]

USES:

The leaves are bitter, acrid and thermogenic and are useful in inflammations and tubercular glands. The heartwood is bitter, acrid thermogenic, emollient, anodyne, anthelmintic, digestive, carminative, cardiotonic, galacto-purifier, anti-inflammatory, diuretic, expectorant, diaphoretic, antiseptic, laxative and febrifuge and is useful in inflammations, dyspepsia, cephalalgia, haemorrhoids, insomnia, epilepsy,

Hiccough, bronchitis, tubercular glands, diabetes, urethrorrhea, renal and vesical calculi, elephantiasis, fever, cardiac disorders, luecoderma, skin diseases, proctoptosis and vitiated conditions of vata and kapha. The oil is antiseptic, diaphoretic, depurative and diuretic, and is useful in leprosy, syphilis, skin diseases, wounds and ulcers.

INDICATION: AMA DOSA, VIBANDHA, ADHMANA, PRAMEHA [DHN] ADHMANA, JWARA, SOTHA, HIKKA, KANDU [MPN] VIBANDHA, ADHMANA, SOTHA, TANDRA, HIKKA, JWARA, PRAMEHA, PINASA, KASA, KANDU [BPN] AMA DOSA, VIBANDHA, ARSA, PRAMEHA, JWARA [RJN]

IMPORTANT FORMULATION

- AMRTA DARU (CS, C, 21/130) Curna DEVADARU, GUDUCI after cleaning chopped into pieces and pounded well, 1/2 cup of it is boiled with 4 cups of water and reduced to 1 cup, it is filtered. It is administered internally for Granthi visarpa in a dose of 5-10gms 2-3 times a day, on empty stomach

- Boil ½ cup of Devadaru (1 cup=150 ml) in 4 cups of water and reduce to 1 cup. Filter it and used internally in a dose of 40-50 ml thrice a day for HIDHMA, SVASA (Associated with pipasa)(AS, C, 6/29)

DIRGHAVANSHA

Botanical Name: Lobelia nicotianaefolia ROTH. EX. R. & S.

Family: LOBELIACEAE

Used In: Ayurveda, Folk and Sidha.

SYNONYMS:

BIBHISHANA, CHHIDRANTA, DEVANALA, DHAMANA, DIRGHAVANSHA, KICHAKA, KUKSHIRANDHRA, LALAVANSHA, MAHANALA, MALA, MRIDUCHHADA, MRIDUPATRA, MRITYUPUSHPA, NADA, NALOTTAMA, NARTTAKA, NATA, NATI, POTAGALA, SHUNYAMADHYA, STHULADANDA, STHULANALA, SURADRUMA, SURANALA, VANSHAPATRA, VANYA

USES:

A rich source of alkaloids of lobeline group, substituted for L.inflata Linn.
Plant used as an antiseptic.

Godadhi **(Curds)**

PROPERTIES AND USES:

***Guna* (properties)**

Guna: Snigdham

Vipaka: Madhura

Karma: Dipanam, Bala vardhanam, Pavitram, Ruci pradam.

Dosha karma: Vata haram

- Is madhura (sweet) and kashaya (astringent) in taste
- Is guru (heavy) and snigdha (unctuous)
- Is usna in veerya (hot in potency)
- Amlapaaki (sour at the end of digestion)
- Pitta kara (increases pitta) and kaphakara (increases kapha)
- Is balya (strengthening), dipana (appetizer), sothakara (induces swelling), svasakara (induces dyspnoea)

Good for persons suffering from mutrakrchhra (difficulty in micturition), pratisyaya (running nose), atisara (diarrhoea), aruci (anorexia) and karsya (emaciation)

GODUGDHA

***Goksira* (cows milk):**

SYNONYMS:

Ksiram, Payas, Svadu, Rasayana, Samasrayam, Saumyam, Prsravanam, Stanyam, Balasatmyam, Jivitam.

PROPERTIES AND USES:

- **Rasa:** Madhuram (Sweet in taste)
- **Guna:** Snigdham, Guru (Heavy to digest)
- **Viryam:** Sitam (Cold in potency)
- **Vipakam:** Madhuram
- **Karma:** Pathyam, rasayanam, Balyam, Hrdyam, Medhyam, Ayushyam, Pumsatva karakam, Pranadam, Abhishyandam, Jivaniyam.
- **Dosha karma:** Pitta rakta haram. *Pitta nasaka* (Alleviates *vata* and *pitta)*
- **Roga haratvam**: Vata rakta pitta vikaram
- **Dhatu karma:** *Jivaniya* (Sustainer of life), *rasayana* (rejuvenator), *balya* (strengthening), *medya* (improves intelligence), laxative, *stanya vardhaka* (makes for increase of breast milk), *varnya* (enhances complexion)

Good for persons suffering from *karsya* (emaciation), *srama* (fatigue), *murchha* (giddiness), *trsna* (excessive thirst) *ksud* (hunger) and *mutrakrchhra* (difficulty in micturition)

GOGHRTAM

Goghrta **(fat/ghee):**

PROPERTIES AND USES:

Guna **(properties)**

Viryam: Sitam

Vipaka: Madhuram

Dosha karma: Vata pitta syamaka

Karma: - Smrti, Medha, Agni, Bala, Ayu, Sukra – Vardhanam, Cakshushyam, Bala Vrddha Praja Kanti Saukumarya sithara karakam, Ksata Ksina Parisarpa Sastra Agni pitaatmanam, Visha haram.

- Is sita (cold in potency)
- Guru (heavy to digest)
- Madhura paaki (sweet at the end of digestion)
- Tridosha nasaka (alleviates all the three doshas)
- Is vrsya (aphrodisiac), ojokara (helps in maintaining the essence of all tissues) and caksu (good for vision)
- Is dipana (appetizer), medya (improves intelligence), vaya sthapana (maintaining long life), kanti kara (enhances complexion) and rucya (improves taste)

Is good for persons suffering from karsya (emaciation), unmada (insanity), visarpa (herpes) and alaxmi nasaka (inauspiousness)

***Goksira* (cows milk)**
***Guna* (properties)**

- *Madhura* (Sweet in taste)
- *Guru* (Heavy to digest)
- *Sita* (Cold in potency)
- *Vata pitta nasaka* (Alleviates *vata* and *pitta)*
- *Jivaniya*(Sustainer of life),*rasayana*(rejuvinator), *balya* (strengthening), *medya* (improves intelligence), laxative, *stanya vardhaka* (makes for increase of breast milk),*varnya* (enhances complexion)
- Good for persons suffering from *karsya* (emaciation), *srama*(fatigue), *murchha*(giddiness),*trsna* (excessive thirst),*ksud* (hunger) and *mutrakrchhra* (difficulty in micturition)

***Goghrta* (fat/ghee)**
***Guna* (properties)**

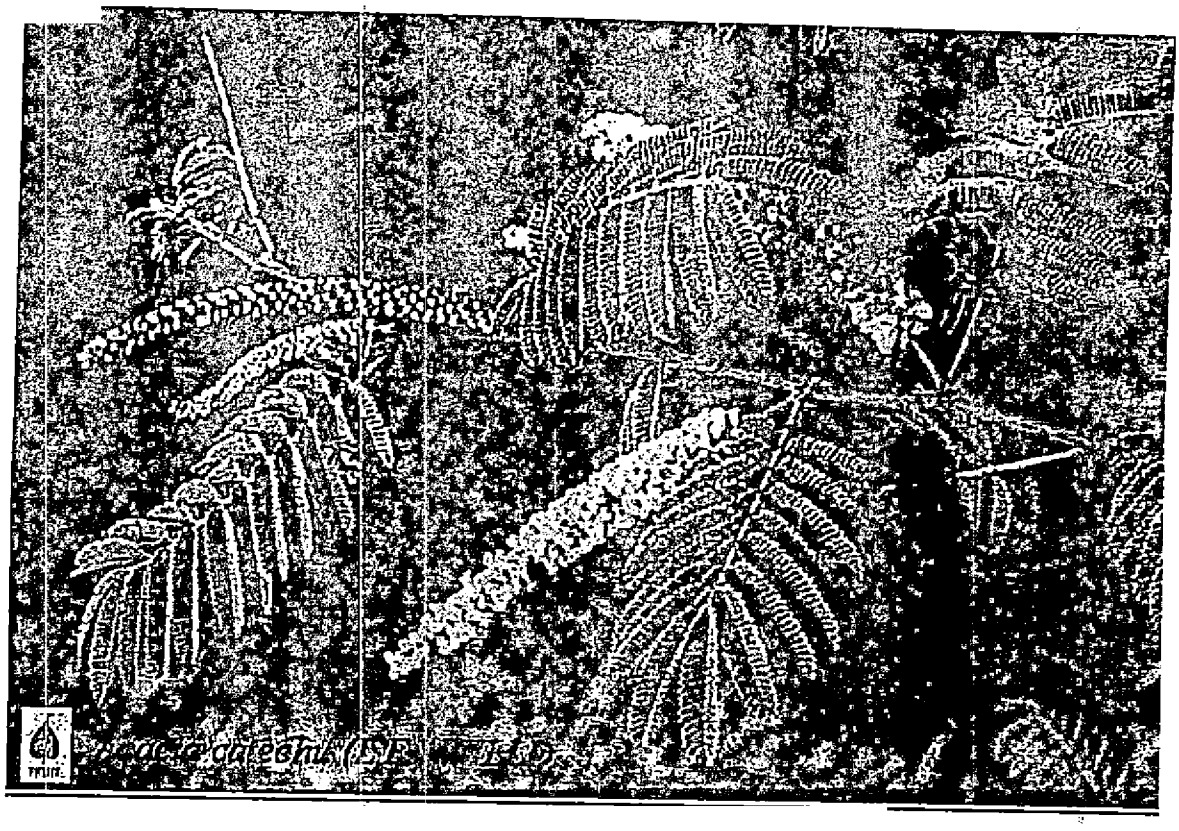
- Is sita (cold in potency)
- Guru (heavy to digest)
- Madhura paaki (sweet at the end of digestion)
- Tridosha nasaka (alleviates all the three doshas)
- Is vrsya (aphrodisiac),ojokara (helps in maintaining the essence of all tissues) and caksu (good for vision)
- Is dipana (appetizer),medya (improves intelligence),vaya sthapana (maintaining long life),kanti kara (enhances complexion) and rucya (improves taste)
- Is good for persons suffering from karsya (emaciation),unmada (insanity),visarpa (herpes) and alaxmi nasaka (inauspiousness)

***Godadhi* (Curds)**
***Guna* (properties)**

- Is madhura (sweet) and kasaya (astringent) in taste
- Is guru (heavy) and snigdha (unctuous)
- Is usna in veerya (hot in potency)
- Amlapaaki (sour at the end of digestion)
- Pitta kara (inereases pitta) and kaphakara (increases kapha)
- Is balya (strenghthening),dipana(appetizer),sothakara(induces swelling),svasakara (induces dyspnoea)

Good for persons suffering from mutrakrchhra (difficulty in micturition), pratisyaya (running nose),atisara (diarrhoea),aruci(anorexia) and karsya (emaciation)

KHADIRA



BOTANICAL NAME: *Acacia catechu*

SYNONYMS: KHADIRAH, RAKTASARA, DANTADHAVANA, KANTAKI, BALAPATRA, JIHMASALYA, KSATAKSAMA, KHADIRA, RAKTASARAH, GAYATRI, BALAPATRAKA, KHADIRA, RAKTASARA, GAYATRI, KANTAKI, BALAPATRA, BAHUSALYA, YAJNIYA, KHEDYA, PATRA, KSITI, KSAMA, SUSALYA, VAKRAKANDA, YAJNANGA, JIHMASALYA, KANTI, SARADRUMA, KUSTHARI, BAHUSARA, MEDHYA

MORPHOLOGY:

A moderate sized deciduous **tree,** 9-12 m in height with dark grayish or brown rough **bark** and hooked short **spines, Leaves** bipinnately compound,

Leaflets 30-50 pairs, main rachis pubescent with a large conspicuous gland near the middle of the rachis; **flowers** pale yellow, sessile in peduncled axillary spikes; **Fruits** flat brown pods, shiny and with a triangular beak at the apex and narrowed at the base; **Seads** 3-10 per pod.

The gummy extract of the wood is commercially known as 'Kath' or 'Cutch'. The cutch available in the market is brittle of different shapes and dark brown in color. On breaking, it is found to be shinny and forms crystal-like pieces.

PARTS USED: ROOT, HEARTWOOD AND FLOWERS, BARK

PROPERTIES:

- **Rasa:** TIKTA [DHN] TIKTA, KASAYA [BPN] TIKTA [RJN]
- **Guna:** NO REFERANCE
- **Veerya:** HIMA [DHN] SITALA [MPN] SITALA [BPN] SITALA [RJN]
- **Vipaka:** NO REFERANCE
- **Karma:** AMA HARA [DHN] DANTYA, AMA HARA DANTYA, AMA HARA [BPN] PACANA [RJN
- **Dosha karma:** PITTAKAPHA HARA [DHN] PITTAKAPHA HARA [MPN] PITTAKAPHA HARA [BPN] PITTAKAPHA HARA [RJN]
- **Dhatu karma:** RAKTA DOSA HARA [DHN] RAKTA DOSA HARA [MPN] MEDOHARA, RAKTA DOSA HARA [BPN] RAKTA DOSA HARA [RJN]

USES:
The bark is useful in melancholia, conjunctivitis and haemoptysis. The heartwood is bitter, astringent, acrid, cooling, depurative, anthelmintic, antiseptic, antidysenteric, antipyretic, appetizer, haemosatic, hematinic, anti-

inflammatory and tonic. It is useful in vitiated conditions of kapha and pitta. catarrh, cough, pruritus, leprosy, leucoderma, skin diseases, helminthiasis, anorexia. diarrhea. dysentery, foul ulcers and wounds, haemoptysis, haematesis. haemorrhages. intermittent fever, inflammations, odontopathy, anaemia, diabetes, splenomegaly and pharyngodynia.

The Kath is acrid, bitter, thermogenic, digestive, appetizer, aphrodisiac, vulnerary, anthelmintic, depurative ant tonic. It is useful in vitiated conditions of kapha and vata, laryngopathy, flatulence, anorexia, ulcers, wounds, helminthiasis, luecoderma, leprosy, skin diseases, urorrhea, colporrhagia. erysipelas and odontopathy.

INDICATION: KUSTHA, KASA, KANDU, KRMI [DHN] KRMI, MEHA, JWARA, VRANA, SVITRA, SOTHA, PANDU, KUSTHA [MPN] KANDU, KASA, ARUCI, KRMI, MEHA, JWARA, VRANA, SVITRA SOPHA, PANDU, KUSTHA [BPN] KUSTHA, KASA, SOPHA, KANDU, VRANA [RJN]

MADHU

SYNONYMS:

Ksudra, Maksikam, Kusumasavam,, Puspasavam, saragham, Puspa rasam.

PROPERTIES:

- **Rasa:** Madhuram, Kashayam (Anurasanm)
- **Guna:** Ruksa, Laghu
- **Virya:** Sitam
- **Vipaka:**
- **Karma:** DIpanam, Lekhanam, Balyam, Vrana ropanam uttamam, Cakshushyam, Svaryam, Hrdyam, Sandhanam, Grahi

- **Dosha karma**: Tridosha haram
- **Dhatu Karma:**
- **Roga hartvam:** Chardi, Hikka, Visha, Svasa, Kasa, Sosa, Atisaram, Rakta pitta, Krni, Trnba Moham.

USES:

As per Ayurveda the therapeutic applications of Honey include Fever, Haemorrhagic Diseases, Thirst, Cough, Hoarseness of voice, Vomiting, Cardiac Disorders, Diabetes, Dysuria, Anemia, Haemorhoids, Stomatitis, wounds, Tumors, Erysepales, suppurated Diseases of Penis, Diseases of Oral Cavity, Female Genital Tract, Cystic Swellings, Syphills and Improves Vission.

MASAH

BOTANICAL NAME: ***Vigna Mungo (Linn.) Hepper (Phaseolus Mungo Linn.)***

FAMILY: Fabaceae

SYNONYMS: Kuruvinda, Vrsha Karam, Mamsala, Baladhya, Pitrya, Pitrjottama

MORPHOLOGY:

An erect hairy annual with long twining branches; leaves trifoliate, leaflets ovate, entire; flowers small, yellow on elongating peduncles; fruits cylindrical pods, hairy with a short, hooked beak; seeds 1-4 per pod, generally black with a white hilum protruding from the seed.

PARTS USED: Roots, Seeds.

PROPERTIES:

- **Rasa:** Madhura
- **Guna:** Snighda, Guru

- **Virya:** Ushna
- **Vipaka:** No Reference
- **Karma:** Vrshya, Brmhanam, Balya, Bahu mala Karakam.
- **Dosha Karma:** Vata haram
- **Dhatu Karma:** Meda mamsabala prada

USES:
The roots are narcotic and are used for ostalgia, abscess and inflammations. The seeds are sweet, emollient, thermogenic, diuretic, nervine tonic. They are useful in dyspepsia, anorexia, strangury, constipation, vitiated conditions of vita, haemorrhoida, hepatopathy, neuropathy and agalactia. They are used in the form of decoction, powder, paste etc.

MOUNJI GRASS

BOTANICAL NAME: ***Saccharum munja(saccharum arundinaceum Retz.)***

FAMILY: POACEAE

SYNONYMS: Ksura,Stuladarba,Banahva,Bramhamekhal

MORPHOLOGY:
A gigantic tuffed grass found along river banks and water logged areas. Stems glabrous, smooth, internodes very long; leaves deep green, upto 1.5m long; inflorosence large, upto 60cm long, pink, white or silvery; spikelets in pairs, one sessile and the other pedicelled.

PARTS USED: Roots, stems

PROPERTIES:

- **Rasa:** Madhura, Tikta [DHN]
- **Guna:** No referance

- **Veerya:** Kosna [DHN]
- **Vipaka:** No referance
- **Karma:** Balya, Virya Karaka [DHN]
- **Dosha karma:** Kapha Hara [DHN]
- **Dhatu karma:** No referance

USES:
Roots are demulcent and diuretic. The stem is sweet, astringent, depurative, refrigerant and aphrodisiac, and is useful in burning sensation, haemopathy, vitiated conditions of kapha and pitta, erysipelas, dipsia and uropathy.

INDICATION: Bhranti, mada [DHN]

NAVA DHANYA

1.SALI (PADDY)

Botanical Name	Oryza sativa L.
Family	POACEAE
Used In	Ayurveda, Folk, Tibetian, Unani and Sidha
Synonyms	Bilvaja, Dhanya, Dhanyah, Garuda, Hima, Jiraka, Kacoraka, Kalama, Kalmasa, Kapinjala, Khanjarita, Magadhi, Mahasali, Nivara, Pita, Raktabhasali, Ahi Raktasali, Rukmavanti, Sali, Sastika, Saugandhi, Shali, Sukala, Tandula, Tandulam, Vara, Vilavasin.

Hindi: Dhan, chaval; **Beng:** Chal; **Mar:** Tandulua, Dhan, bhat;
Guj: Dangar, choka; **Tel:** Vadlu, Varidhaanyamu, biyyamu;
Tam: Nellu, arisi; **Kan:** Nellu, bhatta, akki; **Mal:** Nellu, ari.

Properties	**Paddy** (Atyusnam, Bahu Vin mutra, Tridoshalam.)
Rasa	Madhura (Sweet), Kashaya (Astringent) anurasa (Subtaste)
Guna	Laghu (Light), Snighda (Unctuous)
Virya	Sitala (Cold)
Vipaka	Madhura (Sweet), Laghu (Light)
Prabhava	No Reference
Karma	Hrdya (Cordial), Rucya (Enhances taste), Baddha alpa varcas (Mild Laxative), Brmhana (Strengthens), Ati mutralam (Diuretic), Balya (Tonic), Svarya (Promotes Voice)
Dosha karma	Pittaghnam (Reduces Pitta), Alpa Anila kapha hara (Reduces mild Kapha and Anila)
Dhatukarma	Vrshya (Aphrodisiac)
Roga haratva	Jvara. (Fever)

MORPHOLOGY:
An annual or perennial grass with tuft of fibrous roots and swollen nodes; leaves simple with sheathing bases, long and narrow, slightly pubescent with spiny hairs on the margins; flowers spikelets in terminal compound panicles, lemma punctate or granulate without wing on the back, lemma and palea surrounding the kernel, golden yellow, reddish purple, brown or smoky black becoming straw-coloured on ripening, grains narrowly oblong, free within the lemma and palea.

PARTS USED: roots, grains

USES:
The roots are cooling, diuretic and febrifuge, and are useful in burning sensation, dipsia, bilious fever, strangury and diabetes. The grains are sweet, acrid, oleaginous, aphrodisiac, diuretic, carminative, antidysenteric and tonic. They are useful in vitiated conditions of pitta, pneumonosis especially pulmonary consumption, diarrhoea and colonopathy.

NIRVARAH

BOTANICAL NAME: Hygroryza aristata NEES

FAMILY: POACEAE

SYNONYMS: Rasika, Tapasa, Aranyadhanya, Aranyajali, Munidhanya, Nirvarah, Neevara, Nivara, Prasadhika, Trinadhanya, Trinodbhava, Trunanna, Vanavrihi

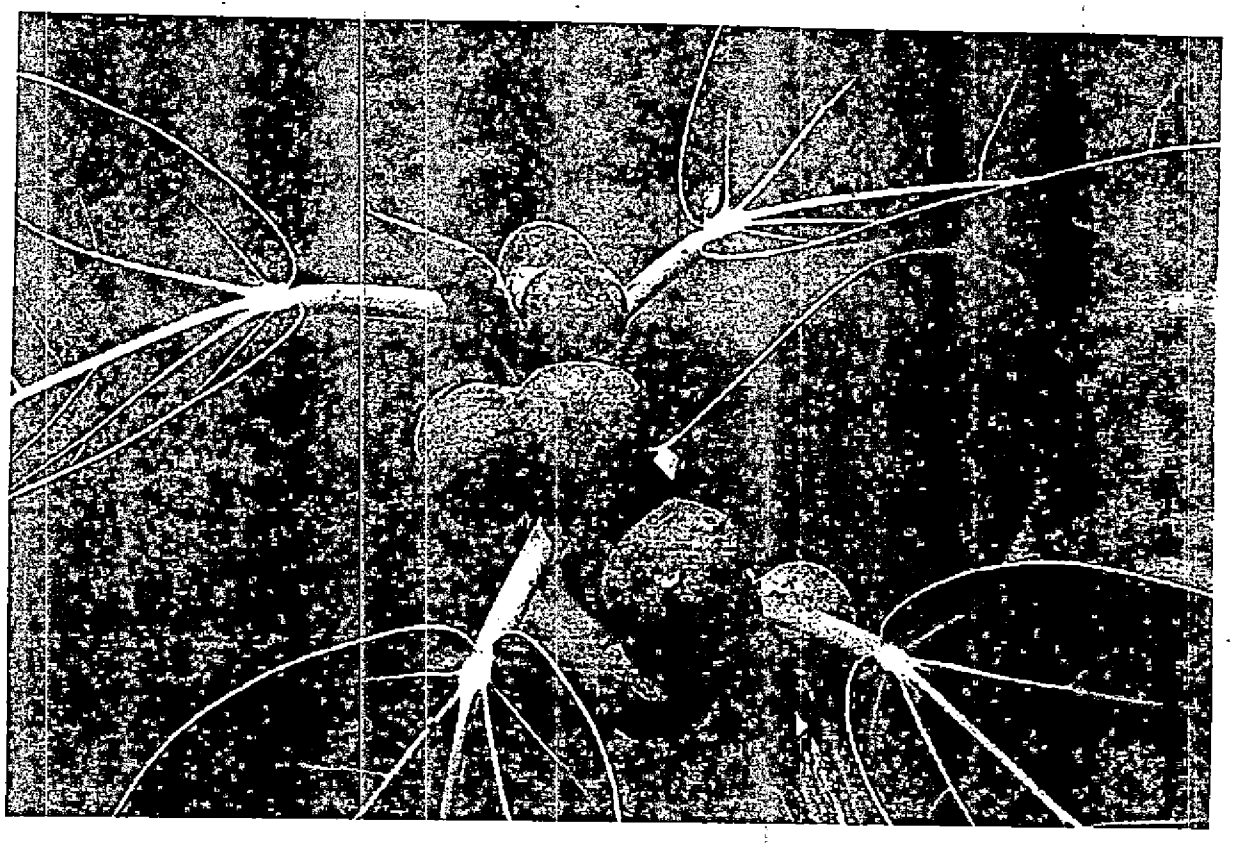
MORPHOLOGY:
A floating glabrous aquatic grass with culms 30-45cm long, diffusely branched, rooting in dense masses at the nodes, leaves linear or ovate-oblong, obtuse with smooth or slightly scaberulous margins, base subcordate, sheaths smooth, inflated, somewhat auricled at the mouth with ciliate margins, ligule narrow, membranous, spikelelts in panicles, rachis and branches, slender, stiff, floral gloom lanceolate with 5 strong nerves, tapering into awn; grains narrowly oblong, free within the lemma and palea.

PARTS USED: Roots, Seeds

PROPERTIES: Madhura, Snigdha, Pavitra, Pathyada And Laghu.

USES:
The roots and seeds are sweet, acrid, cooling, diuretic, emollient, galactagogue, constipating and tonic. They are useful in strangury, diarrhoea, otopathy, vitiated conditions of pitta, burning sensation, hyperdipsia, fatigue and general debility.

NYAGRODHAH



BOTANICAL NAME: *Ficus bengalensis*

SYNONYMS:
Raktaphala,Shringi,Nyagrodha,Dhruva,Ksheeri,Vaishravanvasa,Bahupada,Vanaspathi

MORPHOLOGY:
A very large tree up to 30 m in height with widely spreading branches bearing many aerial roots functioning as prop roots, bark greenish white, leaves simple, alternate, often in clusters at ends of branches, stipulate, 10-20 cm long and 5-12.5 cm broad, broadly elliptic to ovate, entire, coriaceous, strongly 3-7 ribbed from the base; the fruit receptacles are axillary, sessile, in pairs, globose, brick-red when rip, enclosing male, female and gall flowers; fruits small, crustaceous achenes, enclosed in the common fleshy receptacles.

The young bark is somewhat smooth with longitudinal and transverse rows of lenticels. In older barks the lenticels are numerous and closely spaced,

outer bark easily flakes off. The fresh cut-surface is pink or flesh-colored and exudes plenty of latex; the innermost part of the bark adjoining the wood is nearly white and fibrous.

PARTS USED: Aerial Root, Bark, Leaves, Buds, Fruits, And Latex
PROPERTIES:

- **Rasa:** Kashaya [DHN] Kashaya [BPN] Kashaya, Madhura [RJN] Kashaya, Madhura [RAV]
- **Guna:** Ruksa [DHN] Guru [MPN] Guru [BPN] Ruksa [DHN] Guru [MPN]; Guru [BPN];
- **Veerya:** Sita [DHN Sita [MPN] Sita [BPN] Sita [RJN] Sita [DHN] Sita [MPN] Sita [BPN] Sita [RJN] Sita [RAV]
- **Vipaka:** No referance
- **Karma:** Stambhana [DHN] Grahi [MPN] Grahi, Varnya [BPN] Stambhanam [DHN] Grahi [MPN] Grahi, Varnya [BPN] KaphaPitta hara [RAV]
- **Dosha karma:** Kapha Pitta Hara [MPN]; Kapha Pitta Hara [RJN]; Kapha Pitta Hara [MPN]; Kapha Pitta Hara [BPN]; Kapha Pitta Jit [RJN]
- **Dhatu karma:** No referance

USES:
All parts of the plant are astringent, acrid, sweet, refrigerant, anodyne, vulnerary, depurative, anti-inflammatory, ophthalmic, styptic, antiarthritic, diaphoretic, antidiarrhoeal, antiemetic and tonic.

The aerial roots are useful in obstinate vomiting and leucorrhoea and are said to be used in osteomalacia of the limbs. The bark is useful in burning sensation, haemptysis, haemorrhages, and diarrhoea, dysentery, diabetes, enuresis, ulcers, skin diseases, gonorrhoea, leucorrhoea and hyperdipsia. The leaves are good for ulcers, leprosy, allergic conditions of the skin, burning sensation and abscesses. The buds are useful in diarrhoea and dysentery. The fruits are refrigeran tonic and are useful in vitiated conditions of pitta.

The latex is useful in neuralgia, rheumatism, lumbago, bruises, nasitis, ulorrhagia, ulitis, odontopain, haemorrhoids, gonorrhoea, inflammations, cracks of the sole and skin diseases.

INDICATION: Trsha, Chardi, Murcha, Raktapitta [DHN] Vrana [MPN] Visarpa, Daha, Yoni Dosha [BPN] Jvara, Daha, Trsna, Moha, Vrana, Sotha [RJN] Trsna, Chardi, Murccha, Raktapitta [DHN] Vrana [MPN] Vrana, Visarpa, Daha, Yonidosha [BPN] Jvara, Daha, Trsna, Moha, Vrana, Sopha [RJN] Jvara, Daha, Trsa, Moha, Vrana, Sopha [RAV]

PALASAH

BOTANICAL NAME: *Butea frondosa monosperma(Lam,)Taub.*

SYNONYMS: Vatapotha, Raktapushpa, Yagnik, Triparna, Putadru, Brahmavrkshaka, Ksharashreshta ,Beejasneha ,Samidvar

MORPHOLOGY: **A medium sized deciduous tree, very conspicuous when in flower. 12-15m in hieght with gum-containing grey bark exfoliating in irregular pieces, and some what crroked trunk;** leaves **3-foliate,** leaflets **coriaceous. obtuse. glaborous above when old, finely silky and conspicuiosly reticulately veined beneath:** flowers **bright orange red, large, in rigid racemes;** fruits **pods,thickened at the suture,containing a single.**

PARTS USED: Root, leaves, petioles, flowers ,seeds and exudate

PROPERTIES:

- **Rasa:** Katu, Tikta [BPN] Kashaya [RJN] Kasaya [SAN] Tuvara, Tikta [NIR]
- **Guna:** Sara [DHN] Sara [MPN]; Sara, Snigdha [BPN] Sara, Singdha [NIR]
- **Veerya:** Usna [MPN] Usna [BPN] Usna [RJN] Usna [SAN] Usna [NIR]
- **Vipaka:** No referance
- **Karma:** Samgrahi, dipana, Krmighna [DHN] Dipanam, Sandhaniyam, Vrsyam [MPN] Ropana, Sandhaniyam, Vrsyam [BPN] Vrsya, Diptikara, Grahaka, Bhagna sandhana karaka. [NIR] Netracchandhyapuspa jit (Mula Svarasa).Krmividhvamsi (Bijam). Rasayanahitaha (Kanda). [SOT] Grahi, Svedatinirgamam.(Niryasa) [ATS]
- **Dosha karma:** Vata Slesma Nasaka [DHN] VataHaram [BPN] Vata hara, Kapha hara, Pitta hara [NIR]
- **Dhatu karma:** No reference

USES:

The bark is acrid, bitter, astringent, thermogenic, emollient, aphrodisiac, appetiser,digstive, constipating, anthelmintic and tonic.It is useful in vitiated condtions of *pitta* and *Kapha*; anorexia,dyspepsia,diarrhoea, dysentery, haemorrhoids, intestinal worms, bone fractures, rectal diseases, dysmenorrhoea, gonorrhoea, hepatopathy, ulcers, tumours, hydrocele and diabetes.

The leaves are astringent, anti-inflamatory, anodyne and aphrodisiac and are useful in pimples, boils, flatulence, colic, worm infestations, inflammations, arthralgia and haemorrhoids.

The flowers are astringent,sweet ;cooling, constipating, aphrodisiac, haemostatic. Diuretic, febrifuge, depurative and tonic.They are useful in vitiated conditions of pitta and kapha, diarrhoea, haemorroids,menorrhagia, strangury, fever, leprosy, skin diseases, swellings, hyperdipsia, haemptysis, arthritis, burning sensation, bone fractures and are very efficacious in birth control.

The seeds are purgative, opthalmic, anthelmintic, rubefacient, depurative and tonic.They are useful in herpes, skin diseases, ring worm , optholmopathy, epilepsy, round worm, arthritis, flatulence,constipation and diabetes.

The gum known as Bengalkino or Buteakino is astringent, constipating, aphrodisiac, haemostatic, depurative and tonic, and is useful in diarrhoea, haemorroids, haemptysis, haematemesis,diabetes,leprosy, skin diseases, ulcer,pharyngodynia, general debiltiy, hyperacidity, dyspepsia and fever. The ash of the tender branches is useful in abdominal disorders such as flatulence,

INDICATION: Pliha, Gulma, Grahani, Arsas [DHN] Vrana, Gulma, Bhagna, Grahani, Arsas, Krmi [MPN] Vrana, Gulma, Guda Roga, Bhagna, Grahani, Arsas, Krmi [BPN] Krmi [RJN] Pama, Kandu, Tvakdosa (Bija) [SAN] Vrana, Gulma, Krmi, Pliha, Sangrahani, Arsa, Yonirujam. [NIR] Grahani, Mukharoga, Kasa. (Niryasa). [ATS]

PLAKSHA

BOTANICAL NAME: *Ficus lacor*

FAMILY : **MORACEAE**

SYNONYMS: Kapitan,Shringi,Charudarshan,Plavak,Gardabhand,Kamandalu, Vataplava

MORPHOLOGY:
A glabrous tree or shrub without aerial roots and with pale smooth bark; leave simple, alternate, subcoriaceous; broadly ovate, base cordate, apex shortly caudate-acuminte, margin entire, lateral main nerves 5-7 pairs, stipules ovate-lanceolate, reddish brown when dry; receptacles globose in pairs or clusters from tubercles in the axils of fallen leaves, male flowers few, sessile, near the mouth of the receptacles, gall and fertile indistinguishable; fruits achenes.

PARTS USED: Bark and leaves

PROPERTIES:

- **Rasa:** Katu, Kashaya [DHN] Kashaya [BPN] Katu, Kashya [RJN]; Katu, Kashaya [SAN]
- **Guna:** No referance
- **Veerya:** Sitala [DHN] Sita [MPN] Sita [BPN] Sitala [RJN] Sita [SAN]
- **Vipaka:** No referance
- **Karma:** No referance
- **Dosha karma:** Kapha Pitta Hara [MPN]; Pitta Kapha Haram [BPN];
- **Dhatu karma:** Asra Hara [BPN]]; Rakta hara [SAN];

USES:
The bark is astrmgent: sweet, sour , refrigerant, emollient, aphrodisiac, depurative, demulcent, urinary astringent and constipating. It is useful in

vitiated conditions of vata and pitta, skin diseases, leprosy , pruritus, scabies, wounds, diabetes, burning sensation, vaginopathy, inflammation and diarrhoea.

INDICATION: Raktapitta , Murccha, Srama, Pratapa visesataha [DHN] Vrana, Sotha, Visarpa [MPN] Vrana, Yonigada, Daha, Sotha, Raktapitta [BPN] Murccha, Bhrama, Pratapa [RJN] Murccha, Bhrama, Pralapa [SAN]

BOTONICAL NAME: ***Ficus microcarpa Linn.f.***

FAMILY: Moraceae

SYNONYMS:gajapadapa, kantalaka, ksavataru, kuberaka, kuni, Kunjarapadapa, nandivriksha, plaksah, sthalivrksa, tunna

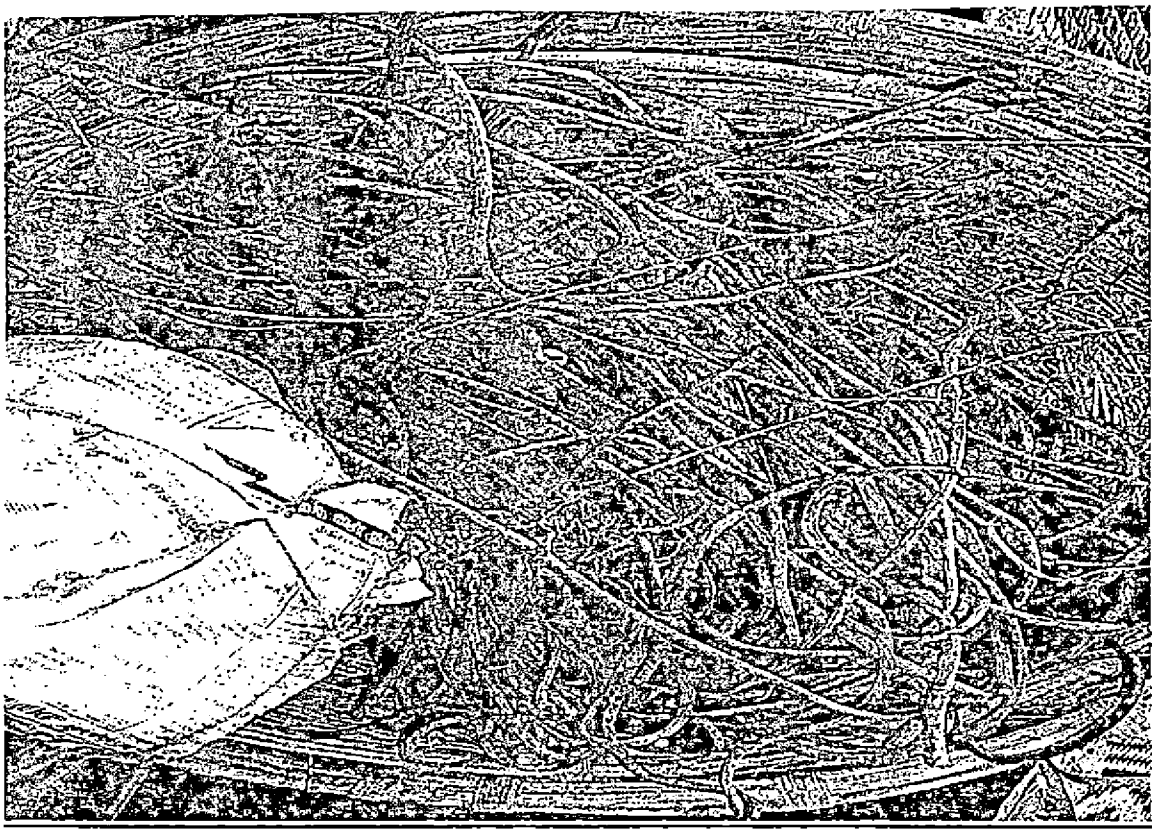
MORPHOLOGY:
A large glabrous evergreen tree with few aerial roots; leaves short-petoled, 5-10cm long, 2-6cm wide, apex shortly and blunty apiculate or slightly emarginate, main lateral nerves not very prominent, stipules lanceolate; fruit receptacles sessile and globose occuring in axillary pairs yellowish when ripe without any charecteristic smell.

Bark dark grey or brown with a smooth surface except for the lenticles, outer bark corky and crustaceous, thin, firmly adherent to inner tissue, inner bark light, flesh- coloured with fibrous texture.

PARTS USED: Roots,Bark and leaves

PROPERTIES AND USES:
The aerial roots are used to treat dental caries and odontalgia. The bark and leaves are astringent, refrigerant, acrid and stomachic. They are useful in wounds, ulcers, bruises, flatulent cilic, hepatopathy, diarrhoea, dysentery, diabetes, hyperdidpsia, burning sensation, haemorrhages, erysipelas, dropsy, ulcerative stomatitis, haemoptysis, psychopathy,leucorrhoea and colporrhagia.

SOMA



BOTANICAL NAME: ***Sacrostemma acidum*** **(Voigt) Voigt.**

FAMILY: ASCLEPIADACEAE

SYNONYMS:
Somalata,Somavalli,Somakshiri,Dvijapriya[BPN],Hambukalli,Somam.

MORPHOLOGY:

A perennial leafless, joined shrub with green, cylindrical, fleshy glbrous, twinging branches having milky white latex; leaves reduced to scales, opposite; flowers white or pale greenish white , frangrant, in umbels on branch extremities; fruits follicles, tapering at both ends; seeds flat, ovate, comose.

PARTS USED: whole plant (Stem)

PROPERTIES:

- **Rasa:** Katu, Madhura [RJN]
- **Guna:** No referance
- **Veerya:** Sita [RJN]
- **Vipaka:** No referance
- **Karma:** Pavani, YagnaSadhana [RJN]
-
- **Dosha karma:** Pitta Hara [RJN]
- **Dhatu karma:** No referance

USES:

The plant is bitter, acrid, cooling, alterant, narcotic, emetic, antiviral and rejuvenating. It is useful in vitiated conditions of pitta, dipsia, viral infection, hydrophobia, psychopathy and general debility.

INDICATION: Daha, trsna, Visosa [RJN]

SYAMAKA

BOTANICAL NAME: Setaria italica (L.) BEAUV

FAMILY: POACEAE

SYNONYMS:
Chinaka, dhanyapriyangu, kangaka, kangu, kanguh, kanguka, kanguni, kangunika, kanku, pitatandula, priyangu, priyanguka, shyamaka, syamaka

MORPHOLOGY:
A herbaceous or robust annual with erect, tufted, fasciculated and prominently joined culms, 0.6-1.5 m in height; leaves linear or lanceolate – linear, acuminate, sheath density ciliate on margin and mouth; flowers in spikelets which are oval and borne on abbreviated branch lets of the panicle; grain oblong or ellipsoid and of various colours tightly enclosed in the hardened lemma and palea.

PARTS USED: Grains

PROPERTIES:

- **Rasa:** Madhura, kashayam
- **Guna:** Snigdha, Laghu
- **Virya:** sita
- **Vipakam:** No reference
- **Karma:** Sangrahi
- **Dosha Karma:** vata vardhakam, kapha pitta haram
- **Dhatu Karma:** No reference
- **Roga haratavam:** Visha vikaram

USES:
The grains are sweet, acrid, astringent, cooling, aphrodisiac, diuretic and laxative and are useful in rheumatism, burning sensation, fractures and for alleviating the pain of parturition.

UDUMBARAH

BOTANICAL NAME: ***Ficus glomerata Ficus Racemosa***

FAMILY : MORACEAE

SYNONYMS:
Ksheeravrksha,Hemadughda,Sadaphala,Apushpaphalasambanda,Yajanga,Sitavalkala, bhadrodumbara, hemadugdha, jantrphala, mashaki, sadaphala,sadaphalah, udumbara, udumbarah, yojynanga, yajnodumbara

MORPHOLOGY:

A moderate to large sized spreading laticiferous, deciduous tree without much prominent aerial roots; leaves dark green, ovate or elliptic; fruit receptacles 2-5cm in diameter, subglobose or pyriform in large clusters on short leafless branches arising from main trunk or large branches. Figs are smooth or rarely covered with minute soft hairs, when ripe, they are orange, dull reddish or dark crimson. They have a pleasant smell resembling that of cidar apples.

The bark is astringent, rusty brown with a fairly smooth and soft surface, the thickness varies from 0.5-2 cm according to the age of the trunk or bark, surface with minute separating flakes of whitish tissue, texture homogenous leathery.

PARTS USED: Bark, fruit, latex, Roots, Leaves.

PROPERTIES:

- **Rasa:** Kashaya [DHN] Madhura, Kashaya [BPN] Kashaya [RJN] Madhura, Tuvara [NIR]
- **Guna:** Guru [MPN] Guru, Ruksa [BPN] Ruksa, Guru [NIR]
- **Veerya:** Sita [DHN] Sita [MPN] Sita [BPN] Sita [RJN] Sitala [NIR]
- **Vipaka:** Madhura [DHN]; Madhura [RJN];
- **Karma:** Krmikrt [DHN] Ropana [MPN] Varnyam, Vrana, Sodhana, Ropana [BPN] Garbha sandhana karakam, Vrana ropana, Asthisandhana krt, Varnya. [NIR];
- **Dosha karma:** Pitta Hara [DHN] Kapha Pitta Hara [MPN] Pitta Kapha Hara [BPN] Pitta Hara [RJN] Kapha Pitta hara.
- **Dhatu karma:** Rakta Dosha Hara [DHN] Rakta Dosha Hara [MPN] Rakta Dosha Hara [BPN] Rakta Dosha Hara [RJN]

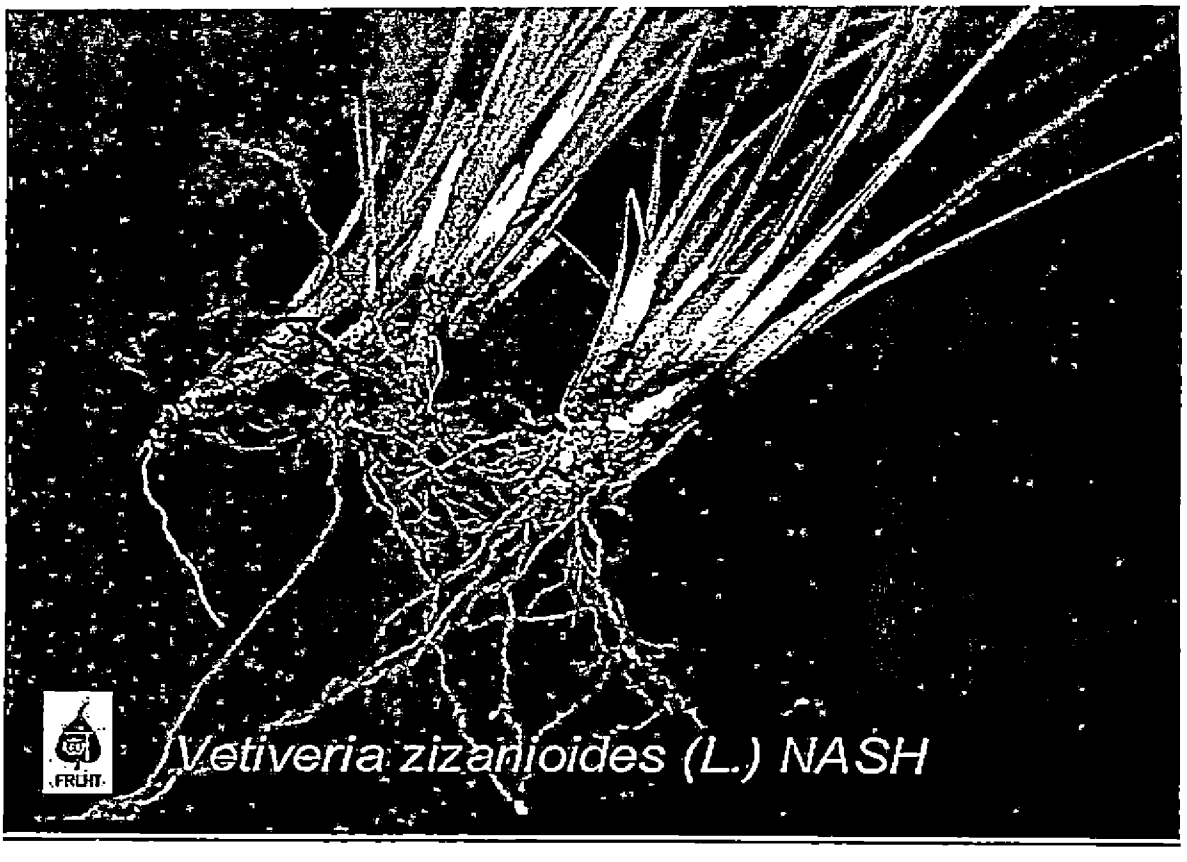
USES:

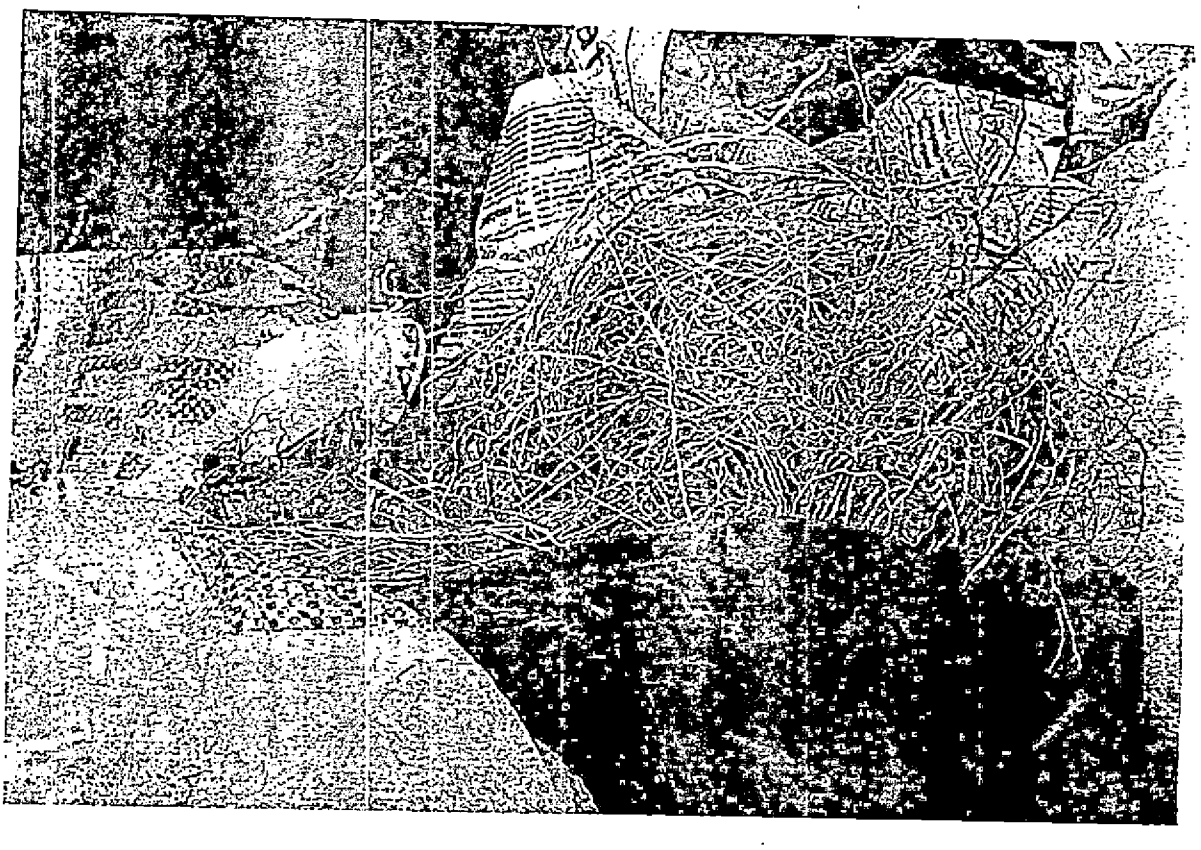
Used in Ayurveda, Folk, Tibetian, Unani and Sidha

The roots are useful in treating dysentery. The bark is astringent, antidiabetic, refrigerant and useful as a wash for wounds, highly efficacious in threatened abortions and also recommended in uropathy. Powdered leaves mixed with honey are given in vitiated conditions of pitta, diarrhoea, dyspepsia and haemorrhages. The ripe fruits are astringent, stomachic, refrigerant and carminative, and are useful in menorrhagia and haemoptysis. The latex is aphrodisiac, and is administered in haemorrhoids and diarrhoea.

INDICATION: Murccha, Daha, Trsna, Raktapitta [DHN] Vrana [MPN]; Murccha, Daha, Trsna [RJN]; Atisara, yonirujam [NIR]

USHIRA





BOTANICAL NAME: *Vetiveria zizanioides*

FAMILY: **Andropogon muricatus**

SYNONYMS:

Usiram, Mrnalam, Abhayam, Samangandhikam, Subharam, Ranapriyam, Virataru, Viram, Viranamulakam, Sevyam, Iranamulika, Viranam, Virataru, Vira, Bahumulakam, Amrnalam, Jayavasam, Haripriyam, Mrnalamyam, Viranam, Balakam, Samagandhikam, Ranapriyam, Varitaram, Sisiram, Sitimulakam, Venigamulakam, Jalamodam, Sugandhikam, Sugandhimulakam, Grahabhuhvayam

MORPHOLOGY :

A densely tufted perennial grass, with aromatic roots and rhizomes; leaves narrow, linear, erect, sheaths compressed, ligules reduced to a scarious rim,

midrib slender, lateral nerves close, spike lets grey, green or purplish in a panicle of numerous slender racemes, sessile spike lets linear- lanceolate, glabrous, pedicelled spikelets 2-flowered; fruits oblong, grains, slightly oblique at the apex.

PARTS USED: Roots

PROPERTIES:

- **Rasa:** TIKTA[DHN]TIKTA,MADHURA [BPN]TIKTA[RJN]
- **Guna:** SNIGDHA [DHN] LAGHU [BPN]
- **Veerya:** SITALA[DHN]SITA[MPN]SITA[BPN]SITALA[RJN]
- **Vipaka:** NO REFERANCE
- **Karma:** SVEDADAOURGANDHYA HARA [DHN] PACANA, STAMBHANA [MPN] PACANA, STAMBHANA [BPN]
- **Dosha karma:** VATAGHNAM, PITTAGHNA [DHN] KAPHAPITTA HARA [MPN] KAPHAPITTAHRT [BPN]
- **Dhatu karma:** RAKTA VIKARA HARA [DHN] ASRAJIT [MPN] ASRAJIT [BPN]

USES:

The roots are bitter, sweet, acrid, refrigerant, aromatic, diaphoretic, depurative, digestive, carminative, stomachic, antiemetic, constipating, haematinic, haemostatic, expectorant, diuretic, febrifuge, stimulant, anthelmintic, emmenagogue, alexeteric, soporific, anti-spasmodic and tonic. They are useful in vitiated conditions of pitta and vata, hyperdipsia, burning sensation, ulcers, skin diseases, nausea, obstinate vomiting, dyspepsia, flatulence, colic, anaemia, haemorrhages, haemoptysis, cough, asthma, hiccough, strangury, bilious fever, gout, lumbago, sprains, halitosis, cephalalgia, spermatorrhoea, hysteria, insomnia, diarrhoea, hyperhidrosis, amentia, cardiac debility, amnenorrhoea, dysmenorrhoea, helminthiasis, spasmodic affections, erysipelas, emaciation and general debility.

INDICATION: DAHA, KLANTI, JWARA, TRT, MEHA [DHN] TRSNA, VISA, VISARPA, DAHA, KRCCHRA, VRANA [MPN]

JWARA, VANTI, MADA, TRSNA, VISA, VISARPA, DAHA, KRCCHRA VRANA [BPN] DAHA, SRAMA, PITTAJWARA, ARTI [RJN]

VAHNI(SAMI)

BOTANICAL NAME: ***Prosopis spicigera***

SYNONYMS:
Shankuphala,Tunga, Keshahantri, Shivaphala, Ishaani, Shankari,Laxmi, Mangalya, Paapnashini.

Hindi: Jand, chaunkra,khar, khejra; **Beng:**Shami; **Mar:** Shemri,saunder; **Guj:**Sami,Semru, Khijado, hamra, kandi;**Tel:**Jammi chettu; **Oriya:**shami. **Tam:** Perumbay, jambu; **Kan:** Banni, perumbai; **Mal:** Parampu,tambu;

PARTS USED: Leaves ,fruit

PROPERTIES:

- **Rasa:** Madhuram [DHN] Tikta, Katu, Kashaya [BPN] Kashaya [RJN]; Tuvara, Tikta, Katuka [SAN]
- **Guna:** Guru Ruksa [DHN] Laghu [MPN] Laghu [BPN] Ruksa [RJN] Ruksa, Laghu [SAN]
- **Veerya:** Usna [DHN] Sita [MPN] Sita [BPN] Sita [SAN]
- **Vipaka:** No referance
- **Karma:** Kesa Nasanam [DHN] Sara [MPN] Recana [BPN] Recani [SAN]
- **Dosha karma:** Kapha Hara [MPN] Kapha Hara [BPN] Kapha hara [SAN]
- **Dhatu karma:** No referance

USES: Used In Ayurveda, Tibetian and Sidha

INDICATION:
Svasa, Kustha, Arsas [MPN]; Kasa Bhrama, Svasa, Kustha, Arsas, Krmi [BPN]; Raktapitta, Atisara [RJN]; Raktapitta, Atisara, Kustha, Arsa, Svasa, Kasa, Bhrama, Krmi, Kampavata, Srama [SAN]

VARUNA

BOTANICAL NAME: ***Crataeva religiosa, crataeva magna(Lour.)DC (C.nurvala Buch,-Ham.)***

SYNONYMS: Shvetapushpa,Tiktashak,Kumarak,Shvetadruma,Gandhavrksha,Tamala,Marutapaha

MORPHOLOGY: A medium sized decidous, much branched tree; leaves digitately 3-foliate,leaflets ovate, lanceolate or obovate, glaborous on both surfaces, pale beneath, lateral leaflets oblique at the base; flowers large, greenish white, polygamous, in dense terminal corymbs, stamens spreading, longer than the petals, gynophore about 5 cm long; fruit fleshy,ovoid berry with a hard rough rind; seeds brown embedded in pulp.

PARTS USED: Bark,leaves

PROPERTIES:

- **Rasa:** Kasaya, Madhura, Tikta, Katu [BPN] Tikta, Katu [DHN] Katu [RJN]
- **Guna:** Ruksa, Laghu [BPN]; Sita [DHN] Snigdha [RJN]
- **Veerya:** Ruksa, Laghu [BPN]Sita [DHN] Snigdha [RJN]

- **Vipaka:** No referance

- **Karma:** Bhedi, Agni Dipana [BPN]; Sita Nasaka [DHN]; Bhedi, Dipana [MPN] Dipana [RJN]

- **Dosha karma:** Slesma Hara, Pittala [BPN] Vataghna [DHN] Pittala, Slesmavata Hara [MPN] Vata Hara [RJN]

- **Dhatu karma:** Rakta Dosa Hara [DHN] Asrajit [MPN] Rakta Dosa Hara [RJN]

USES:

The bark and leaves are astringent; bitter, acrid, thermogenic, carmiantive, anthelmintic, digestive, stomachic, laxative, diuretic, lithontripic, stimulant, detergent, expectorant, demulcent, depurative, anti-periodic and tonic, and are useful in vitiated conditions of vata and kapha, dyspepsia, colic flatulence, helminthiasis, strangury, renal and vesical calculi, cough, asthma, bronchitis, pruritus, skin disease, tubercular glands, pectoral diseases intermittent fevers, viscermegaly, scrofula, inflammations and hepatopathy.

INDICATION: Krcchra Amamaruta, Gulma, Vatarakta, Krmi [BPN] Vidradhi, Jantu [DHN] Krchra, Gulma, Vatarakta, Krmi, Sotha [MPN] Sirsavatahara, Vidradhi [RJN]

VIKANKATA

BOTANICAL NAME: ***Flacourtia ramontchi L'Herit***

FAMILY : FLACOURTIACEAE

SYNONYMS:
Mrduphala, Grantila, Svadukantaka, Gopakanta, Kakapada, Vyagrapada, Kinkini[DHN]

MORPHOLOGY: A small decidous thorny shrub; leaves simple, elliptic, acute or acuminate, coarsely crenate or serrate, glabrous flowers greenish yellow, in short simple or branched tomentose racemes; fruits globose, dark purple drupes with juicy pulp and hard endocarp, seeds 8–16.

PARTS USED: Bark,root, leaves, fruits

PROPERTIES:

- **Rasa:** Madhur,amla kashaya[MPN]
- **Guna:** No referance
- **Veerya:** Sheetal[MPN]
- **Vipaka:** No referance
- **Karma:** Deepan, pachan, Vranalutavinashana [MPN]
- **Dosha karma:** Kapha pittahara [MPN]
- **Dhatu karma:** No referance

USES:
The roots are sweet, refrigerant, depurative, alexipharmic and diuretic. They are useful in vitiated conditions of pitta and vata, aphthae, poisonous bites, skin diseases, pruritus, ervsipelas, strangury, nephropathy and psychopathy. The leaves are useful in pruritus and scabies.the fruits are sweet, apetiser, digestive and diuretic and are useful in strangury, jaundice, gastropathy and splenomegaly.

INDICATION: Shofa, asravikara, kamala nasana[MPN]

BOTANICAL NAME: Flacourtia jangomas (LOUR.) RAEUSCH.

FAMILY: FLACOURTIACEAE

SYNONYMS: pracinamalaka, sruvavrksah, vikankatah

MORPHOLOGY:
A large decidous shrub and small spreading tree upto 9m in hieght often armed low down with stout sharp decomposed spines on the trunk, bark smooth, pale brown, blaze pale yellow freckled with yellowish brown, darkening on exposure;leaves simple, oblong or ovate, accuminate, crenate or serrate, glabrous, dark green and shining surfaces; flowers small, in glabrous racemes (not on the thorns); fruits ovoid, green , turning brownish purple on rippening.

PARTS USED: bark, leaves, fruits

PROPERTIES AND USES:

The bark and leaves are astringent , acrid , sour, refrigerant, stomachic and diaphoretic. They are useful in vitiated conditions of pittta, ulcmorrhagia, odontalgia, diarrhoea, haemorrhoids, stomatitis and debility of the extremities.

The fruits are sweet , sour , astringent, acrid, refrigerant, digestive,stomachic, alexipharmic, anti- inflammatory, depurative , urinary astringent and liver tonic. They are useful in vitiated conditions of pitta and kapha, hyperdipsia, rheumatism, nausea, dyspepsia, flatulence, colic, inflammations, skin diseases, diabetes, jaundice and tumours.

VRKSHAAMLA

BOTANICAL NAME: *Tamarindus indicus*

FAMILY: CAESALPINIACEAE

SYNONYMS:
Chuktrika,Chuktra,Amla,,Shukta,Shuktika,Chinchika,Chincha,Thintidika

MORPHOLOGY:
A large to very large evergreen tree upto 30 m in hieght with dark grey bark having longitudinal fissures and deep cracks; leaves parpinnate upto 15cm long, rachis slender, channelled, leaflets 10-20 pairs, subsessile, oblong; flowers yellow, striped with red in lax, few flowered racemes at the ends of the brachlets; fruits pods, bronish ash coloured, slightly curved, subcompressed, with a shallow oblong pit on each side of the flat faces; seeds enveloped by a tough leathery membrane and pulpy mesocarp, testa shining , hard.

PARTS USED: Fruits,leaves and seeds

PROPERTIES:

- **Rasa:** Amla [DHN] Amla [BPN] Madhura Ala [RJN]
- **Guna:** Laghu [DHN] Guru [MPN] Guru [BPN]
- **Veerya:** No refernce
- **Vipaka:** No referance
- **Karma:** Raktadushyakara astisodhaka [DHN] Dipana [BPN]; Daha Rakta karaka [RJN]
- **Dosha karma:** Pitta Vardhaka, Vata Syamaka [DHN] Vata Hara, Pitta Kapha Jit [MPN] Vvata Hara [BPN] Vata nasaka, Pitta Karaka Kapha Karaka [RJN]
- **Dhatu karma:** Asrajit [MPN]

USES:

The root bark is astringent, costipating, emmenagogue an dtonic and is useful in diarrhoea, asthma , amenorrhoea, gingivitis and ulcers. The leaves are sour, astringent, thermogenic, anthelmintic, anodyne, anti-inflammatory, antifungal, diuretic, febrifuge, aperient and opthalmic. They are useful in vitaited conditions of vata, sellings , fever, scalding of urine, gastropathy, helminthiasis, wounds, ulcers, jaundice, scabies, tumours, ringworm, boils, smallpox, otalgia and conjctivitis. The fruits are sour, sweet, refrigerant, digestive, carminative, laxative, antiscorbutic, antiseptic, opthalmic and febrifuge. They are useful in gastropathy, bilious vomting, Datura poisoning, alchoholic intoxination, dipsia, scabies, pharyngitis, pharyngodynia, stomatitis, constipation, haemorrhoids and opthalmopathy. The seeds are astringent, cooling, aphrodisiac, stomachic, constipating and tonic. They are useful in stomachalgia, diarrhoea, dipsia, burning sensation, haematuria, giddiness, vertigo, hepato pathy, inflammations, chronic ulcers, abscess, haemorrhoids, vaginopathy, metroptosis, diabetes and general debility.

INDICATION: Paka Phala is madhura Amla Saraka Vistambhi, Vata Syamaka. Tvak is Kashaya, Usna, Kapha Vata Syamaka [DHN] Pakva Phala is Suska, Laghu, Sara, Rucya, Vahni Vasti Sodhani, Hrdya, and good for Bhrama, Bhranti, Trsna, Klama [MPN] Pakva Phala is Ruksa, Sarosna, Dipana, Kapha Vata Nut [BPN] Pakva Phala is Madhura, Amla, Mala Bhedana, Vistambha, Vata Jit [RJN]

Yava

Botanical Name: ***Hordeum vulgare***

Synonyms: Akshath and TiksnashukYavani, Dipyaka, Dipya, Yavasahvaya, Yavagraja, Ugragandha, Dipaniya, Dipani.YavaniYavani, Tivra, turuska, Madakarini [DHN]

Family: Poaceae

Morphology:

An annual herb. Culms ca 75 cm tall, erect, tufted. Leaves 15-30 cm long, soft, with well developed auricles; sheaths glabrous, loose; ligules 1.5-2 mm long, membranous. Inflorescences a terminal spike. Spikelets 1-flowered, 3 at each node, falling together at maturity, all spikelets fertile, the triads arranged in 6 longitudinal rows of fertile spikelets in each spike. Glumes linear-lanceolate, 5-6 mm long, hairy, awned. Lemma 7-10 mm long, 5-nerved, hairy on keel; awn 5-7 mm long, hairy, awned. Lemma 7-10 mm long, 5-nerved, hairy on keel; awn 5-7 mm long, scabrid. Fruits (Caryosis) cream-coloured, 8-9 mm long.

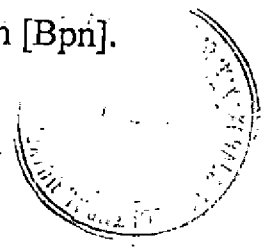
Parts used: Fruit,whole plant

Properties:

- **Rasa:** Madhura
- **Guna:** Ruksa, Sarakam
- **Veerya:** Sita
- **Vipaka:**
- **Karma:** Vid karakam, Vrshyam, Stahirya karakam,
- **Dosha karma:** Vata vardhakam, Pitta kapha haram
- **Dhatu karma:** Mutra meda haram
- **Roga haratvam:** Pinasa, Svasa, Kasa, Uruistambha, Kantha tvag amayam.

Rasa: Katu, Tikta [[Dhn].
Guna: Tiksna, Laghu [Bpn].
Veerya: Usna [Dhn].

Vipaka: No Referance.
Karma: Pacana, Rucyam, Dipanam, Sulaghnam [Bpn].
Doshakarma: Vata Slesma Haram [Dhn].



USES:

The Grains are astringent , sweet, acrid, refrigenrant, emollient, diuretic, intellect promoting, aphrodisiac, mucilaginous, digestive and tonic. They are useful in vitiated conditions of kapha and pitta, cough, asthma, strangury, amentia, fever, bronchiotitis, urocystitis, urethrititis, dyspepsia, gastropathy, ulcers, burns, cephalalgia, anaemia and in the diet of invalids.

Indication:

Udara, Anaha, Gulma, Pliha, Krmi [BPN].

Important Formulation:

Wounds which are painful hard stiffened and non-discharging shold be pasted frequently with barley powder mixed with ghee (CS.Ci.25.111)

Edibles prepared of barley should be taken regularly in kusta(SS.Ci.10.5)