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1977-78

MAIN REPORT.

1. ANNUAL PROGRESS REPORT OF THE AGRONOMIST/  
ASSISTANT PROFESSOR OF AGRONOMY, ALL INDIA  
CO-ORDINATED PROJECT FOR RESEARCH ON FORAGE  
CROPS FOR 1977--1978.

2. Project Code Number - CS - 002
3. Report Number 6
4. Location College of Agriculture  
Vellayani, Kerala.
5. Project Title Co-Ordinated Project  
for Research on Forage  
Crops.
6. Objective: To Carry out intensive research on  
Agronom'c aspects of promising forage  
crops.

7. Present Staff position .

Sl. No.	Post	Name of personnel	Date of joining.
1.	Agronomist/Assistant Professor of Agronomy (1)	G.Raghavan Pillai	4-12-1975
2.	Research Assistant/ Jr. Instructor (1)	M.Oommen	6-10-1976
3.	Grade I Agrl. Demonstrator (2)	K.Panki P.K.Davi	3-9-1977 8-3-1977
4.	Lower Dn. Clerk (1)	C.Suchetha	30-1-1976
5.	Lab.Attender (1)	P.V.Kumaran	22-9-1977
6.	Peon (1)	K.Sreedhara Panicker.	7-11-1977

8. Total Sanctioned grant for the centre.

Year	Recurring.	Non-recurring
1977-78	Rs.73,000.00	Nil.

9. Total amount Spent.

Year.	Recurring	Non-recurring.
1977-78	Rs.63,036.03	Nil.

BRIEF DESCRIPTION OF THE AREA.

Location:- The project is situated in the College of Agriculture, Vellayani, Kerala Agricultural University. Vellayani is located in an picturesque suburban area surrounded on 3 sides by the Vellayani Lake. The institution is about 11 km. away from the capital city of Trivandrum and less than 10 km. from the international tourist centre, the Kovalam Beach Resort. The road leading to the College is a deviation from the Trivandrum-Kovalam Road at Patchalloor. The main College building and farm area belonged to the Royal family of the erstwhile Travancore State.

Climate:- Vellayani is located  $8^{\circ}$  N latitude and enjoys a tropical climate. The altitude of the place is 29 ms. above MSL. The average rainfall is 2113 mm. distributed over a period of 92 rainy days. The monthly precipitation ranges between 18 mm in February to 375 mm in June. The N.E. Monsoon is uneven and usually the period from November to April are hot and dry. The maximum temperature ranges between  $30^{\circ}$  to  $35^{\circ}$ C and the minimum temperature ranges between  $21^{\circ}$  to  $23^{\circ}$ C. The average relative humidity is between 80 to 85 %. The region is blessed with abundant solar energy throughout the year with an average of 10 hours of Sun shine per day.

Soil:- The soil type is red loam. It is typically acidic in reaction with a pH of 5.6. The soil is very low in available nitrogen, medium in available phosphorus and moderate in available potash. The iron and aluminium content of the soil is rated high.

Crops:- Coconut, tapioca, banana, rubber, cashew, pulses, vegetables and other horticultural crops are being cultivated in the uplands and rice is confined to low lands.



SUMMARY SECTION.

The following experiments are included in the technical programme for 1977-78.

I. AGRONOMIC TRIALS.

A. Experiments on Perennial Fodder crops continued from Previous years.

(i) University Code No. Ag. 10-18.1.4

Comparative performance of Guinea and Hybrid Napier in coconut gardens and in the open under varying levels of nitrogen and cutting intervals.

(ii) University Code No. Ag.-10-18.1.5

Manurial trial on 3 promising Guinea grass types.

(iii) University Code No. Ag.-10-18.1.6

Fodder production potential trial.

(iv) University Code No. Ag.-10-18.2.1

Initial Evaluation trial of Hybrid Napier types for disease resistance and yield.

(v) University Code No. Ag.-10-18.2.4

Collection and evaluation of indigenous and exotic varieties of forage crops.

B. Kharif trials.

(vi) Ag.K-1. Comparative performance of cowpea varieties under different spacings and seed rates.

(vii) Ag.K-2. Response of Dinanath Grass to varying levels of N and P.

(viii) Ag.K-4. Response of Bajra varieties to varying levels of nitrogen.

(ix) Ag.K-5. Effect of nitrogen levels and low spacing on the yield and quality of Hybrid napier with and without legume.

C. Silvipasture experiments.

- (x) Ag-K-9 Effect of plant population on the yield and quality of koobabool.
- (xi) Ag-K-10 - Effect of sowing dates on growth, yield and quality of Koobabool and Desmenthes.
- (xii) Ag.-K-11 - Evaluation of production potential of grasses/legumes under varying combinations with forage trees.

D. Rabi Trials.

- (xiii) Seed viability of fodder crops.
- (xiv) Effect of Foliar spray of Urea for improving the quality and or quantity of fodder on Maize, Sorghum, Teosinte.
- (xv) Mixed Cropping in fodder crops
- (xvi) Effect of growth regulators on seed production of forage crops.
- (xvii) Effect of Cycocel on seed production potential of Sorghum
- (xviii) Influence of climatological parameters on seed production potential of Sorghum.

II. Khariff Breeding Trials.

- (xiv) K.B.T-1 Final evaluation trials on 16 Cowpea varieties.
- (xx) K.B.T-3 - Final evaluation trial on 14 varieties of Dinanath grass.
- (xxi) K.B.T- 5 - Final evaluation trial on 12 varieties of sorghum
- (xxii) K.B.T. 6 - Final evaluation trial on 8 varieties of Maize.
- (xxiii) K.B.T.9 Final evaluation trial on 5 varieties of Bajra.

RESEARCH PROGRAMMES UNDERTAKEN DURING  
1977-78 AND THEIR RESULTS.

The following experiments were conducted during the period under report.

(i) University Code No. Ag-10-18.1.4

Comparative performance of Guinea grass and Hybrid Napier in coconut gardens and in the open under varying levels of Nitrogen and cutting intervals.

Objective:- To find out the production potential of Guinea grass and Hybrid Napier when grown as an intercrop in coconut gardens as well as in the open under identical conditions of management practices.

Two sets of experiments with the following treatments were laid out one each in the existing coconut gardens and in the open field.

Treatments.

- |                          |     |                    |
|--------------------------|-----|--------------------|
| A. Crop varieties        | (2) | (i) Guinea Grass   |
|                          |     | (ii) Hybrid Napier |
| B. Levels of nitrogen    | (3) | (i) 150 kg. N/ha   |
|                          |     | (ii) 200 " "       |
|                          |     | (iii) 250 " "      |
| C. Intervals of harvests | (2) | (i) 30 days        |
|                          |     | (ii) 45 days       |

Design	-	Randomised Block Design
Replication	-	3 (Three)
Plot Size	-	4.8 x 4.8 ms.
Spacing	-	Guinea grass - 40 x 20 cm.
		Hybrid Napier - 60 x 30 cm.

Observations recorded.

(i) Green matter yield of fodder

Results:- The experiment was started in the later part of 1975-76. Regular harvests of grasses were started only from 76-'77 onwards. The yield data collected during the period are presented in table 1.

Table I.

Green matter yield of Fodder obtained.

Treatments	Experiment in the open.			Experiment in the Coconut Garden.		
	Yield in Ton/ha.			Yield in Ton/h.		
	I half	II half	Total	I half	II half	Total

Varieties.

Guinea grass	29.51	17.99	47.50	23.90	7.40	31.30
Hybrid Napier	20.77	11.71	32.48	15.82	4.60	20.42
C.D.	1.86	4.88	---	4.56	1.00	---

Levels of Nitrogen

150 kg. N/ha.	21.84	10.82	32.66	19.06	5.40	24.46
200 "	25.75	16.65	42.40	19.53	6.50	26.03
250 "	27.83	17.08	44.91	21.01	6.20	27.21
C.D.	2.27	5.98	---	NS.	1.00	---

Intervals of harvests.

30 days	25.24	11.52	36.76	17.11	4.90	22.01
45 days	25.03	18.18	43.21	22.61	7.20	29.81
C.D.	NS.	4.88	---	4.56	1.23	---

In Coconut Garden.

There was significant difference in green matter yield between the two varieties of grasses. Guinea grass proved to be superior by recording higher fodder yields. The green matter yield increased with increase in the level of nitrogen. Maximum yield recorded was by 250 kg. N/ha. With longer cutting intervals higher fodder yields were recorded. The difference between the two intervals were significant.

Experiment in the open field.

Significant difference in green matter yield was noted between the varieties. Maximum yield was recorded by Guinea grass. The green fodder yield increased with increase in the levels of nitrogen.

Maximum fodder yield was recorded by 250 kg. N/ha., the highest level tried in the experiment.

In the case of interval of harvest the same trend as observed in coconut gardens was recorded. Maximum yield per hectare per year was recorded by 45 days interval of harvest.

(ii) University Code No. Ag-10-18.1.5

Manurial trial on 3 promising Guinea grass types.

Objective:- From a preliminary previous study (Screening trial) on 30 types of Guinea grass, three types viz., FR-600, FR-599 and Mackuenii have been found to be very promising. This study is to assess the fodder production potential of these 3 Guinea grass types and to find out their nitrogen requirements.

Treatments.

- Varieties (3) (i) FR-600
- (ii) FR-599
- (iii) Mackuenii

Levels of nitrogen (3) 150, 200 and 250 kg. N/ha.

Design

Randomized Block Design

Replication

Three (3)

Plot size

4.8 x 4.8 MS.

Spacing

40 x 20 cm.

Observations recorded.

- (i) Green matter yield of fodder.

Results.

This experiment was started in 1976-77. The yield data collected from this experiment during the year under report are furnished. (table 2.)

Table 2

Manurial trials on 3 promising Guinea grass types.

Treatments.	<u>Green matter yield in tonnes/ha.</u>		
	I half 77-78	II half 77-78	Total.
<u>Varieties.</u>			
FR.600	12.22	6.80	19.02
FR 599	16.78	6.24	23.02
Mackunii	20.39	7.25	27.64
C.D.	NS.	N.S.	--
<u>Levels of Nitrogen.</u>			
150 kg.N/ha.	17.21	6.57	23.78
200 "	15.91	6.36	22.27
250 "	16.27	7.37	23.64
C.D.	NS.	NS.	

The results obtained show that there was no significant difference in green matter yield between varieties and levels of nitrogen. Maximum yield was recorded by Mackunii followed by FR.599 and FR.600. There was no significant increase in yield beyond the lower level of 150 kg. N/ha.

(iii) University Code No. AG.10-18.1.6

Fodder Production potential trial.

Objective:- To find out a suitable cropping pattern for fodder crops for obtaining high production per unit area per unit of time.

Treatments.

- (i) Guinea grass alone
- (ii) Hybrid Napier alone
- (iii) Hybrid Maize in June followed by Cowpea in October.
- (iv) Hybrid maize + Cowpea mixture in June followed by the same mixture in October.
- (v) Hybrid maize in June followed by hybrid maize in October.

TABLE - 3  
FODDER PRODUCTION POTENTIAL TRIAL.

Sl. No.	Treatments	Greenmatter Yield in Tonnes/ha			Drymatter Yield in Tonnes/ha			Leaf/Stem ratio		
		I Half	II Half	Total	I Half	II Half	Total	I Half	II Half	Mean
1.	Guinea grass alone	31.57	15.84	47.41	13.86	0.96	14.82	6.14	1.22	3.68
2.	Hybrid Napier alone	25.60	10.68	36.28	8.99	1.85	10.84	3.97	2.27	3.12
3.	Hybrid Maize followed by Cowpea	1.62	9.11	10.73	0.53	1.51	2.04	1.01	1.03	1.02
4.	Hybrid maize + Cowpea mixture followed by the same mixture	8.03	3.03	11.06	2.60	1.30	3.90	1.25	1.13	1.19
5.	Hybrid Maize followed by hybrid Maize.	3.03	8.46	11.49	1.08	2.53	3.61	1.12	4.00	2.56
	CD	--	3.80	--	--	--	--	2.44	1.05	--

Duration of the experiment - 3 years.  
 Design - Randomised Block Design  
 Replication 4 (Four)  
 Plot size 4.8 x 4.8 ms.

Observations recorded.

- (i) Green matter yield
- (ii) Dry matter yield
- (iii) Leaf/stem ratio

Results.

This experiment was started in 76-'77. The data collected during the year under report are presented in table 3. Guinea grass alone recorded the maximum green fodder yield indicating its superiority over other treatments. Hybrid Napier ranked second. The lowest yield was recorded by the treatment hybrid Maize followed by Cowpea. The dry matter yield followed the same trend as green matter yield. The highest leaf/stem ratio of 3.68 was recorded by Guinea grass.

(iv) University Code No. Ag. 10-18.2.1

Initial evaluation trial of hybrid Napier types for disease resistance and yield.

Objective:- It is observed that Hybrid Napier is susceptible to fungus disease in this area and it has become necessary to isolate varieties which are resistant to disease. In order to study the disease resistance and the comparative yielding ability of different types the present trial was undertaken.

Treatments.

Varieties - 17 Nos. of Hybrid Napier types.  
 Design Randomised Block Design  
 Replication 3 (three)  
 Plot size 3 x 1.5 MS.  
 Spacing 60 x 30 cm.

Observations.

- (i) Number of diseased clumps in each plot.
- (ii) Intensity of disease.
- (iii) Yield of Fodder.



TABLE - 4

INITIAL EVALUATION TRIAL OF HYBRID NAPIER TYPES FOR DISEASE  
RESISTANCE AND YIELD.

Sl. No.	Varieties	Green matter yield in tonnes/ha		
		I Half 1977-78	II half 77-78	Total
1.	Mysore	8.06	1.68	9.74
2.	IARI - BN-15	15.00	3.84	18.84
3.	Maharashtra	11.60	2.00	13.60
4.	HGA - BN-2	19.60	2.57	22.17
5.	Mercara	21.60	5.77	27.37
6.	NB-21	16.60	1.57	18.17
7.	HGA - BN-1	20.90	5.55	26.45
8.	BN-6	17.10	0.28	17.38
9.	BN 5/1	19.20	1.66	20.86
10.	IARI - BN-6	18.60	3.11	21.71
11.	P.G.N.	9.84	0.40	10.24
12.	BN-15	18.70	3.68	22.38
13.	P.G.N. Kulathupuzha	10.50	1.06	11.56
14.	IARI - 15	19.00	3.51	22.51
15.	Kamadhenu	23.77	3.68	27.45
16.	IARI - BN 5/1	17.90	2.55	20.45
17.	HGA - BN-5	27.55	2.82	30.37
	C.D.	N.S.	0.90	

Result:

The experiment with 17 different types of hybrid Napier was started during 1976-77. Regular harvests of Fodder started only during the year under report. The layout was so designed that the inter-space between two plots was planted with one row of disease susceptible variety. The susceptible variety included in the trial was Kamadhenu. But during the year under report the disease symptoms were not noted in any of these varieties which may be due to the low amount of rainfall received during the period. The greenmatter yield recorded are presented in Table - 4. Maximum yield was recorded by HGA - BN-5. Higher yields were also noted in the case of Mercara, Kamadhenu, and HGA - BN-1.

(v) University Code No. Ag.10-18-2-4.

Collection and evaluation of indigenous and exotic varieties of forage crops.

Objective:- To collect and to evaluate all the indigenous and exotic varieties of forage crops for their production capacity under Kerala conditions and also establish a forage museum at Vellayani.

Under this programme 80 types of different Fodder grasses 11 varieties of cereal fodders, 70 varieties of legumes and 14 varieties of fodder trees were collected. Further studies are in progress.

(vi) Ag. K-2. Response of Dinanath grass to varying levels of N and P.

Objective:- To find out the response of Dinanath grass to different levels of nitrogen and phosphorus.

Treatments:

- a) Variety (1) - PP - 15
- b) Nitrogen levels (4) - 0, 50, 100, 150 kg N/ha
- c) Phosphorus levels (3) - 0, 30, 60 kg  $P_2O_5$ /ha

Nitrogen application = 30%, 40% : 30% in split doses.

Spacing - 30 x 30 cm

Design - Randomised Block Design.

Replication- 3 (Three)

Plot size - 3.6 x 3 ms

Seed rate - 5 kg/ha

Observations:

- 1) Green fodder yield.
- 2) Dry fodder yield.
- 3) Dry matter percentage.
- 4) Height of plants.

Result:

This experiment was started during this year. The crop was harvested at 50% flowering stage. The data are presented in Table - 5. There was no significant difference in green matter yield between 4 levels of nitrogen, dry matter yield or leaf/stem ratio. However the greenmatter and drymatter yield increased with increase in the level of nitrogen. But significant difference in the height of the plants was noted by

N levels. The height of plants increased with increase in the levels of Nitrogen. The P levels did not influence the height of plants significantly. However maximum height was noted by the level 60 kg  $P_2O_5$ /ha.

TABLE - 5

Ag. K-2. Response of Dinanath Grass to varying levels of Nitrogen and Phosphorus.

Treatments	Greenmatter yield (Tonnes/ha).	Drymatter yield (Tonnes/ha)	Leaf/stem ratio	Height of plants cm.
<b>A. Nitrogen levels</b>				
Control	2.21	0.28	0.55	41.72
50 kg N/ha	2.93	0.28	0.99	63.76
100 kg N/ha	2.98	0.19	0.58	65.69
150 kg N/ha	3.76	0.28	0.62	66.71
CD	NS	NS		
<b>B. Phosphorus levels</b>				
Control	3.06	0.28	0.69	57.23
30 kg P <sub>2</sub> O <sub>5</sub> /ha	2.84	0.28	0.65	58.15
60 kg P <sub>2</sub> O <sub>5</sub> /ha	3.01	0.26	0.71	63.02
CD	NS	NS	NS	13.27

(vii) Ag. K-5. Effect of Nitrogen levels and row spacing on the yield and quality of Hybrid Napier with and without legume.

Objective: To assess the yield and quality of Hybrid Napier fodder grown with and without legumes under varying levels of Nitrogen and different row spacings.

Treatments:

- a) Row spacing - 1.0 x 0.5 ms  
 1.5 x 0.5 ms  
 2.0 x 0.5 ms

b) i) Control

ii) Inter cropping with Khariff velvet bean and rabi with cowpea.

iii) ii + 15 kg N/ha per cent.

iv) ii + 30 kg N/ha per cent.

Basal dose of 30 kg N for treatment ii, iii and iv applied 15 days after planting and 60 kg P<sub>2</sub>O<sub>5</sub> + 30 kg K<sub>2</sub>O/ha at plant.

Design - Randomised Block Design.

Replications - 4 (Four)

Plot size - 5.5 x 3 ms (16.5 sq. ms)

Observations:

- i) Plant stand count after 15 days of sowing.
- ii) Plant stand before harvest.
- iii) Green fodder yield per plot.
- iv) Dry fodder yield per plot.
- v) Dry matter percentage.

The experiment is in progress. Data will be presented in the next report.

viii) Ag. K-9. Effect of plant population on the yield and quality of Koobabool.

Objective:- To assess the effect of plant population on the yield and quality of Leuceana fodder.

Treatment:

- a) Row spacings (3) - 1.0, 1.5, 2.0 ms.
  - b) Plant spacings (3) - 10, 20, 30 cm.
- Design: - Randomised Block Design.  
Replication - 3 (Three)  
Plot size - 5 x 3.6 ms (18 sq. ms)

Cutting management:- First cut 150 days after seed sowing leaving 60 cm stubble height and second and third cuts at 40 days interval with stubble heights of 75 and 90 cm respectively. Rest of the cuts will also be taken at 40 days interval with 90 cm stubble height.

Fertilizer:- 3 Tonnes FYM before sowing and 50 kg  $P_2O_5$  and 20 kg N/ha.

Observation:-

- i) Plant height at the time of cutting.
- ii) crown diameter - two observations are to be taken perpendicular to each other
- iii) Greenmatter yield per plot.
- iv) Drymatter yield per plot.

This experiment laid out in coconut gardens is in progress.

ix) Ag. K-10. Effect of sowing dates on growth, yield and quality of koob-abool and Desmenthes.

Objective:- To find out the effect of sowing dates on the growth and quality of Leuceaena and Desmenthes.

Treatments:

- Crops - (i) Koobabool (ii) Desmenthes  
Treatments - 12 - (sowing will be done at monthly intervals)

- Design: - There will be no replications and this will be an observational trial.
- Spacing: - Between rows - 1.5 ms  
Between plants - 20 cms.

Observations:

- i) Green fodder yield of 365 days in each case will be compared after one year of establishment.
- ii) Plant population.
- iii) Plant height.
- iv) crown diameter.

This observational trial is in progress.

- x) Ag. K-11. Evaluation of production potential of grasses/legumes under varying combinations with forage trees.

Objective:- To evaluate the production potential of grasses/legumes under varying combinations with forage trees.

Treatments (13)

- A. Forage trees (3) - (i) Koobabool.  
(ii) Sesbania grandiflora.  
(iii) Sesbania aegyptiaca.
- B. Grasses (2) (i) Guinea  
(ii) Setaria
- C. Legumes (3) (i) Velvet bean  
(ii) Cowpea  
(iii) Rice bean or Dolichos lablab.

Design:- Split plot with forage trees x grasses as mainplots and legumes as sub-plots.

Replications:- 3 (Three)

Plot size - 4 x 3 ms.

Spacing:- For Trees - between rows - 3 m  
between plants 50 cm.

For legumes between rows - 50 cm.  
between plants 10 cm.

For grasses between rows - 50 cm  
between plants 25 cm.

Grasses and legumes are to be planted in alternate rows in each plot.

Observations:

- For trees - i) Plant population.  
ii) Height at the time of harvest.  
iii) crown diameter.  
iv) Greenmatter yield per plot.  
v) Drymatter yield per plot.

For Legumes/grasses:

- i) Green and drymatter yield.

This experiment was also laid out in coconut gardens and is in progress.

XI. Seed viability of fodder crops

Objective : To find out the seed viability of important fodder crops

crops : Maize, Sorghum, Bajra, Teosinte, Cowpea

<u>Treatments</u>	<u>Months after harvest</u>
1	One
2	Two
3	Three
4	Four
5	Five
6	Six
7	Seven
8	Eight
9	Nine
10	Ten
11	Eleven
12	Twelve

-----  
 Replication - 3 (Three)

Design: Randomised Block Design

Observation:

- i) Germination test in laboratory
- ii) climatological parameters

Note: 2 sets may be tried separately . ie one in desicator and the other in open atmosphere.

This experiment was also laid out in coconut gardens and is in progress.

(xii) Effect of cycocel on seed production potential of sorghum

Object: To study the effect of cycocel on seed production potential of sorghum.

Treatments (9)

--: 18 :--

1. Control - No spray
2. Control - Water spray
3. Spraying CCC 0.25 ai/ha
4. Spraying CCC 0.50 ai/ha
5. Spraying CCC 0.75 ai/ha

Time of spray

1. 45 days.
2. 60 days.

- Design: - Randomised Block Design.  
Replication - 4 (four)  
Plot size: - 4 x 3 ms  
Row spacing: - 25 cm.

Fertilizers:- Basal - 60 kg N, 30 kg P<sub>2</sub>O<sub>5</sub> and 30 kg K<sub>2</sub>O/ha

Top dressing: - 30 kg N - 21 days after sowing.

Observations:

1. Plant height in cm at the time of harvest.
2. Plant population.
3. Tiller count.
4. Seed yield per plot and per hectare.
5. Dry fodder yield/ha.
6. L/S ratio.
7. Weight of ear-head.
8. No. of grains/ear-head.
9. Weight of grains/ear-head.
10. 1000 grain weight.

This experiment is in progress.

(xiii) Influence of climatological parameters on seed production potential of sorghum.

Objective:- To study the influence of climatological parameters on seed production potential of sorghum.

A sorghum crop in an area of 2000 sq. ms be raised as per the standard practices. During the growth period the observations on the following climatological parameters are to be recorded.

1. Temperature - Maximum and Minimum.
2. Relative Humidity.
3. Rainfall.
4. Light intensity - Sunshine hours.

This experiment is in progress.

(xiv) KBT. 3 - Final Evaluation trial on 14 varieties of Dinanath grass.

Objective:- To evaluate the fodder production potential of Dinanath grass varieties.

Treatments (14)

- |                 |                           |
|-----------------|---------------------------|
| 1. IGFRI - 32-1 | 8. IGFRI - 3808           |
| 2. IGFRI - 43-1 | 9. PP - 3                 |
| 3. IGFRI - 852  | 10. PP - 5                |
| 4. IGFRI - 860  | 11. J.P - 12              |
| 5. IGFRI - 866  | 12. T.15 (Standard check) |
| 6. IGFRI - 869  | 13. P.S - 38 - White      |
| 7. IGFRI - 870  | 14. P.S. - 3 - Red        |

Design - Randomised Block Design.

Replications - 3 (Three)

Plot size - 3.6 x 3.0 ms.

Spacing: Between rows - 30 cm, between plants - 30 cm.

Rowlength - 3 ms      Seed rate - 5 kg/ha.

Fertilizers:- N - 30 kg/ha basal + 40 kg/ha top dressing  
30 days after sowing + 30 kg/ha top dressing  
60 days after sowing.

P - 50 kg/ha basal, K = 20 kg/ha basal.

Observations:-1. Date of harvest.

2. Green fodder yield.

3. Drymatter yield.

Result:- The data collected from the experiment is presented in Table 6.

The results show that difference in greenmatter yield between the varieties was significant. Maximum yield was recorded by PP-3 from a single cut followed by PP-5 and PS-38. Variety J.P-12 recorded the lowest yield.

In the case of drymatter yield, also the same trend was noted. Regarding the capacity to produce tillers the varieties were not significantly different. The maximum height was noted by variety IGFRI-43-1.

The varieties were significantly different in their leaf/stem ratio. The highest L/S ratio was recorded by IGFRI-869 and lowest by JP-12.



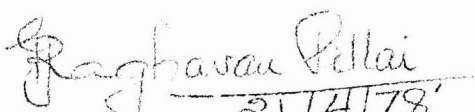
TABLE - 6


KBT-3. FINAL EVALUATION TRIAL ON DINANATH GRASS

Sl. No.	Varieties	Greenmatter Yield (kg/plot)	Drymatter Yield (kg/plot)	No. of tillers	Leaf/Stem ratio	Height of plants (cm)
1.	IGFRI - 32-1	10500	2528	38	0.446	92.53
2.	IGFRI - 43-1	10000	2315	44	0.432	92.23
3.	IGFRI - 852	8883	1602	33	0.955	93.23
4.	IGFRI - 860	10550	2241	36	0.488	110.53
5.	IGFRI - 866	10550	2343	26	0.775	93.10
6.	IGFRI - 869	11666	1852	39	1.165	96.10
7.	IGFRI - 870	7775	1731	42	0.485	92.76
8.	IGFRI - 3808	8883	1972	42	0.382	94.33
9.	PP - 3	18333	4074	21	0.688	93.86
10.	PP - 5	16108	3574	23	0.353	85.56
11.	J.P - 12	8333	1852	34	0.350	102.80
12.	T - 15	11666	2556	40	0.390	93.30
13.	PS - 38 - White	15000	3426	25	1.456	106.10
14.	PS - 3 - Red	12216	2620	38	1.356	72.23
	CD	4423	862	N.S.	0.248	15.58

TECHNICAL SUMMARY

Altogether 14 experiments were conducted during 1977-78. Of these 5 experiments on perennial fodder varieties were started during the previous year and being continued during the year under report. Two experiments were on Dinanath grass, one being an agronomic trial and the other a varietal evaluation trial. 3 experiments on Silvipasture system were also laid out in coconut gardens. One experiment on grass/legumes mixture viz., hybrid napier and cowpea and the other two experiments on seed viability and seed production potential of sorghum were also started. An observational trial on the effect of climatological parameters on seed production of sorghum was also laid out.

  
21/4/78  
DATE AND SIGNATURE OF  
AGRONOMIST/ASSISTANT  
PROFESSOR OF AGRONOMY.

  
21/4/78  
DATE AND SIGNATURE OF  
PROFESSOR OF AGRONOMY. /e

