

**A STUDY OF THE TRADITIONAL BELIEF  
SYSTEM IN DAIRY HUSBANDRY AMONG  
TRIBALS OF ATTAPPADY**

**By  
SUNIL G.**

**THESIS**

**Submitted in partial fulfilment of the  
requirement for the degree of**

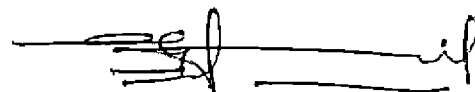
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## DECLARATION

I hereby declare that this thesis entitled "A STUDY OF THE TRADITIONAL BELIEF SYSTEM IN DAIRY HUSBANDRY AMONG TRIBALS OF ATTAPPADY" is a bonafide record of research work done by me during the course of research and that the thesis has not previously formed the basis for the award to me of any degree, diploma, associateship, fellowship or other similar title, of any other University or Society.

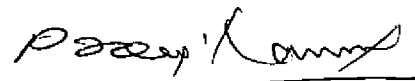
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## **CERTIFICATE**

Certified that this thesis entitled "**A STUDY OF THE TRADITIONAL BELIEF SYSTEM IN DAIRY HUSBANDRY AMONG TRIBALS OF ATTAPPADY**" is a record of research work done independently by **Sri. Sunil, G.**, under my guidance and supervision and that it has not previously formed the basis for the award of any degree, fellowship or associateship to him.



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***Dedicated To My Family***

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# ***Introduction***

## INTRODUCTION

Rural societies over centuries have nurtured a vast fund of indigenous knowledge existing as traditional beliefs in the field of farming. These traditional beliefs also often called as traditional wisdom, folk wisdom, indigenous technical knowledge (ITK), traditional farm technology (TFT) are handed over from generation to generation through folklore aphorisms, myths etc. They are by and large unwritten and are only recorded in the memory of human minds. As far as the rural folk are concerned, these beliefs serve as the package of practices from which they select the appropriate ones for adoption. Scientists and extensionists have rather ignored the worth of many such beliefs.

Vijayalekshmi (1995) opined that in the traditional farm sector the 'Vrikshayurveda' and 'Mrigayurveda' had provided relevant science and technology which still remain as genuine explorable vistas for the curious modern agricultural researcher. Icamina (1993) claims that more and more researchers on sustainable agricultural development are taking a serious look at the TFT. They can hardly avoid doing so since TFT is like a thread running through the peasant community, touching on biodiversity, climate, cultural practices, natural resource management, animal management and countless other activities.

As the scientists have turned their eyes into sustainable development, those beliefs which are considered as primitive leftovers of the past have gained much significance. These age old time tested beliefs are not only environment friendly but also cost effective. The treasure of these information which were transferred from generation to generation orally have every possibility of being lost unless sincerely documented.

The imperative of indigenous technical knowledge and its documentation and validation has been a major theme for discussion and research quite recently (Atte, 1989; Gomez, 1993; Gupta, 1993). The supplementary - complementary 'give and take' interface between traditional beliefs and modern research, helping us to inch closer to sustainable and equitable development has also been highlighted. Sikana (1994) regarded the indigenous knowledge of the farmers as entry points for future scientific work.

Warren (1989) explained that information gained over a period of time was passed on from generation to generation by word of mouth. This knowledge in today's parlance is called local knowledge, traditional knowledge or simply indigenous knowledge. Indigenous knowledge is dynamic, it changes through indigenous creativity as well as through contact with other knowledge systems.



Goldman (1991) defined local knowledge as reflecting climatic and socio-economic factors, embedded as they are in social organisations, cultural traditions and preferences and even more fundamentally in the conceptual system in which the individual members of society have learned to think, and in terms of which they imperceptibly interpret their society and environment.

Traditional beliefs are unique to a culture and society, and hence the former are compatible with the latter and adoption is the maximum. Local environmental factors and cultural conditions govern the evolution of indigenous knowledge. So much so, beliefs vary between countries, between regions and even from farm to farm.

Traditional beliefs of any society cannot be in toto regarded as scientific. The tendency of romanticizing traditional beliefs should be critically viewed as it fails to accept the relevant scientific and technological advances. Haverkort (1991) observed that a weakness of farm experimentation by farmers may be based on limited scientific understanding of the process involved and may lead to wrong attribution of performance. The rationality, nonetheless, should be established and only those scientific and viable beliefs should be accepted by the scientific world and propagated. At the same time, the adoption of superstitious

beliefs shall be discouraged as practicing them would, undoubtedly entail great risks and economic loss.

Similarly superstitious practices would block technological diffusion, thereby retarding social change of any society. In this sense, the influence of belief system in a tribal society is more pertinent and draws increased attention as tribal societies are by and large traditional and backward.

Based on the aforesaid facts, a study of the traditional belief system in dairy husbandry among tribals of Attappady was conducted with following objectives.

1. Inventorying the traditional beliefs related to dairy husbandry.
2. To determine the strength and rationality of traditional beliefs.
3. To identify the traditional beliefs that could be either facilitators or blockers of technological diffusion.
4. To study adoption of traditional beliefs.

5. To study the relationship between characteristics of tribal dairy farmers and the degree of belief and extent of adoption.

### **Scope of the study**

Empirical studies to understand traditional beliefs, especially in the field of dairy husbandry are conspicuous by their absence. What little studies made in the past were those pertaining to crop husbandry, and they mostly dealt with non-tribal population. Therefore, any idea generated in this area would be novel and of immense use to scientists, decision makers, and dairy farmers at large. A proper knowledge about the various facets of this research problem that are intended to be studied such as inventorying the traditional beliefs, awareness about them, rationality, adoption, the relationship between characteristics of believers and their degree of belief and adoption of belief etc., would enable scientists and extension workers to formulate a more acceptable package of dairy management practices by melding indigenous knowledge with modern knowledge.

### **Limitations of the study**

1. Although rationality decision is based on opinion of the scientists/experts from the field of veterinary and

animal husbandry, ayurveda, ethnobotanists, etc., yet it cannot be the final word as the experts rated them within their knowledge limitations.

Clinical studies/trials are warranted wherever that is feasible before those beliefs rated to be rational are being recommended for wider application.

2. There was profound paucity of literature. Relevant literature, nonetheless, has been incorporated.

## ***Review of Literature***

## REVIEW OF LITERATURE

A review of literature indicated that there has been only limited attempts of empirical studies in the field of traditional beliefs related to animal husbandry and veterinary practices, in our country. Nevertheless, an earnest attempt was made to review whatever literature is available pertaining to work done both in India and abroad related to traditional beliefs in animal husbandry besides those from the field of agriculture and human health.

Jain and De (1964) reported 14 species of plants used by tribals of Purulia who are Santals, Bhumjis and Kora.

Shah and Joshi (1971) reported 80 medicinal plants associated with the people of Kumaon. This include certain oral contraceptives used by them.

Viswanathan (1975) reported a contraceptive used by Paniyar tribe of Kerala. It was identified as *Solanum incanum* which contained a glyco-alkaloid, a raw material, for production of steroidal hormones.

Raghunathan (1976) collected and reported 93 species of plants used as medicine and food by tribals of Nilgiris who are Todas, Kotas, Irulas, Paniyars, Kurumbas and Kattunayakas. This included *Bambusa arundinaceae* which was reported to be

used as an abortifacient by the Kurumbas of Mavinahalla and Irulas of Anaikatty.

Abraham (1978) reported 74 species of plants associated with the life of Irulas, Kotas and Todas of Nilgiri.

Hemadry et al. (1980) reported folklore uses of 80 plant species based on a survey conducted among the people of Andhra Pradesh.

Ramachandran and Nair (1981) made many observations on ethnobotany associated with Irulas of Tamil Nadu.

Joshi (1982) reported ethnobotanical uses and superstitions associated with plants among the Bhils of Rajasthan.

John (1984) documented a total of 100 indigenous drugs commonly used by elders of the Kanikar tribe of Thiruvananthapuram region.

Pushpangadan and Atal (1984) conducted investigation among the primitive tribals of Western Ghats and reported a variety of herbs used by them in treating various human ailments.

Shah and Gopal (1985) reported information associated with medicinal uses of some common plant species prevalent among the tribal inhabitants of North Gujarat.

Pushpangadan (1986) identified and reported about a herb locally called as 'arogyapacha' (*Trichopus zeylanicus*) used by the Kanikar tribes inhabiting the foothills of Agasthyar peak in Thiruvananthapuram district. This herb is being used as a rejuvenator.

Selvanayagam (1986) studied 50 traditional beliefs among the dryland farmers of Tamil Nadu along with their strength and rationality. The study identified certain strongly held superstitious beliefs that could be blockers of technological diffusion.

Mathur (1987) studied ethnomedicine of Irula tribe of Attappady and reported a detailed account of human illness and treatment.

Gnanadeepa (1991) reported traditional practices of rice farmers of Tamil Nadu. The relationship between characteristics of the farmers, their degree of belief and extent of adoption was also reported.

Kokate and Tyagi (1991) reported dairy farming practices of the tribals of Thane. This included calf rearing



practices, management, feeding and treatment. They found that inspite of tremendous development in modern medicine, people were still relying on indigenous system of treatment.

Kalaivany (1992) reported 62 traditional beliefs of dry land farmers of Tamil Nadu and their strength and rationality were measured. The effect of traditional belief on adoption of innovations were tested and reported.

Gnanadeepa and Seetharaman (1993) reported that beliefs which had positive effect act as facilitators in the adoption behaviour and beliefs which had negative effect would act as obstacles in the adoption behaviour.

Goromela (1993) reported certain indigenous animal husbandry practices from the Central Tanzania used by Wagogo and Wamasai farmers. This included certain methods of control of ectoparasites, preservation of milk and medicine used for treating ailments of poultry.

Gujariyabhai (1993) reported an alternative plant recipe used by tribals of Dediapada for protecting their flock of birds from certain killer diseases.

Aminuddin et al. (1994) conducted an ethnomedicinal survey among santal tribe of Hazaribagh district of Bihar

state and information on medicinal uses of 35 plant species were recorded.

Borthakur and Sarma (1994) recorded 32 ethnoveterinary practices prevalent among Nepalis of Assam. On scrutiny only some of these practices were found to be rational.

Jaipuriar (1994) conducted a medico-ethnobotanical study in Taimara tribal region of Ranchi and traditional medicine used by the tribes in treating various human ailments were reported.

Lal et al. (1994) reported 50 plant species used by the 'Gaddis' of Western Himachal Pradesh in various animal and human ailments.

Rajendran and Merhotra (1994a) reported 60 species of plants used by tribals of Nilgiri in treating various human ailments.

Rajendran and Merhotra (1994b) conducted an ethnomedicinal survey among tribals of Parambikulam and reported 18 species of plants used by them in treating various human ailments.

Aref (1995) reported the medicinal uses of some desert plants collected from the Bedouin areas of Israel. This

included drugs used for enhancing conception rate in sheep and goats.

Sahoo and Mudgal (1994) reported 900 uses of 236 plant species used for food, fodder, veterinary medicine and human medicine by people of Phulbani district (Orissa).

Satapathy and Brahmam (1994) reported some important medicinal plants used by tribals of Sundergarh district of Orissa. This included plants used for curing cracked neck and indigestion of cattle.

Sikawar (1994) reported 35 plant species used by the tribal and non tribal people of Morena district (Madhya Pradesh) for treating various ailments of domestic animals.

Davis *et al.* (1995) reported five species of plants and two mineral salts used by Pashtun Koochi refugees from Afghanistan as veterinary medicine.

Iyyappan (1995) reported certain indigenous drugs used by farmers of Tamil Nadu for treating animal ailments. This included those used to increase conception rate of goats, to expel placenta and for curing bloody diarrhoea in cattle.

Somasundaram (1995) reported 217 indigenous practices in dairy husbandry among the farmers of Tamil Nadu. The awareness, adoption and rationality of these practices were

studied and reported. Out of 19 characteristics studied six characteristics like farm size, family type, occupational status, annual income, social participation and mass media exposure had no association with awareness of indigenous practices.

Singh and Singh (1995) reported medicinal properties of 21 species of plants used by nomadic tribes of Kashmir, Ladakh and Haryana for treating animal ailments.

Karthikeyan and Chandrakandan (1996) reported 66 indigenous practices in agriculture which were prevalent among tribals of Nilgiri hills, that could be used for generating ecologically compatible and socially accepted technology.

Rollefson and Rathore (1996) studied ethnoveterinary knowledge of 'Raikas' a caste specialised in camel and sheep breeding and well known for its expertise in all aspects of animal husbandry.

Singh et al. (1996) based on an ethnopharmacological survey among the medicine-men and local-healers of Gonda district of Uttar Pradesh reported 52 species of plants used by them in treating both animal and human ailments.

Dinesh (1997) documented traditional knowledge related to important plant-resources in Bastar district of Madhya Pradesh

and hoped that these findings might sensitize the scientific community to the wealth of knowledge that tribal people of Bastar had regarding the utilization of forest based plant resources.

Jogappa (1997) reported certain plants used by farmers of Tamil Nadu in treating ailments of cattle like displacement of uterus, respiratory diseases and maggot wound.

Reddy et al. (1997) based on surveys and scrutiny of ancient as well as contemporary literature, enlisted 750 species of plants of Gujarat having medicinal value.

Tripathi et al. (1997) reported 170 traditional veterinary practices among the people of northern plains of Uttar Pradesh and found many of these beliefs to be scientific. They felt that this would help in integrating indigenous knowledge system with formal research system in developing appropriate technologies.

### **The concept of belief**

Encyclopaedia Britannica (1957) defines belief as a mental attitude of acceptance or assent towards a proposition without the full intellectual knowledge required to guarantee its truth.

Webster (1966) - Belief is a state or habit of mind in which trust confidence or reliance is placed in some person or thing. The belief signifies mental acceptance or assent to something offered as true with or without certainty.

Sillis (1968) - Belief is any simple proposition, conscious or unconscious, inferred from what a person says or does capable of being preceded by the phrase, 'I believe that'.

Hornby and Parn Well (1969) - Belief is the feeling that strength is real and true.

Theodorson and Theodorson (1970) - Belief is a statement about reality that is accepted by an individual as true.

Michael (1971) - Belief is a commitment either intellectual or emotional or both, to something such as a proposition, a position, a procedure or a person. In the scale of attitude it is located above surmise or conjecture and below knowledge.

Back et al. (1977) - Belief is the attribution of a cognition to an object.

Ghorpade (1980) - belief is an acceptance of some proposition or statement.

Whiting and Child (1980) - belief is a response which symbolizes the relationship between events.

According to Harding (1954) each belief is conceived to have (1) A cognitive component (2) An affective component and (3) Behavioural component.

David and Philip (1977) - Beliefs do not occur randomly in a society. They are organized and systematically related, eventhough some belief may appear to contradict or even exclude other beliefs they are held at the same time.

Milton (1966) identified five classes of beliefs which are (1) Primitive beliefs, 100 per cent consensus (2) Primitive beliefs, zero consensus (3) Authority beliefs (4) Devived beliefs (5) Inconsequential beliefs.

Theodorson and Theodorson (1970) classified beliefs into scientific and non scientific beliefs.

Hunter and Whitten (1977) classified beliefs into instrumental and transcidental beliefs.

Nand and Kumar (1980) classified the folk belief regarding agriculture into two viz. (1) Non technical and socio cultural beliefs. (2) Technical beliefs.

Shanmughasundaram (1982) classified beliefs into 2 categories viz. (1) Rational belief (2) Superstition.

## ***Methodology***



## **METHODOLOGY**

This chapter embodies the research design in terms of plan, structure and strategy. Therefore, the methods and procedures followed for the selection of the area, respondents vis-a-vis sampling criteria, data collection procedures, variables studies and their operationalisation, empirical measurement and the analytical procedures used are discussed. The chapter is presented under four major sections as mentioned below.

- \* Research setting
- \* Theoretical orientation
- \* Sampling design
- \* Data collection and statistical analysis

### **3.1 Research setting**

#### **3.1.1 Area of study**

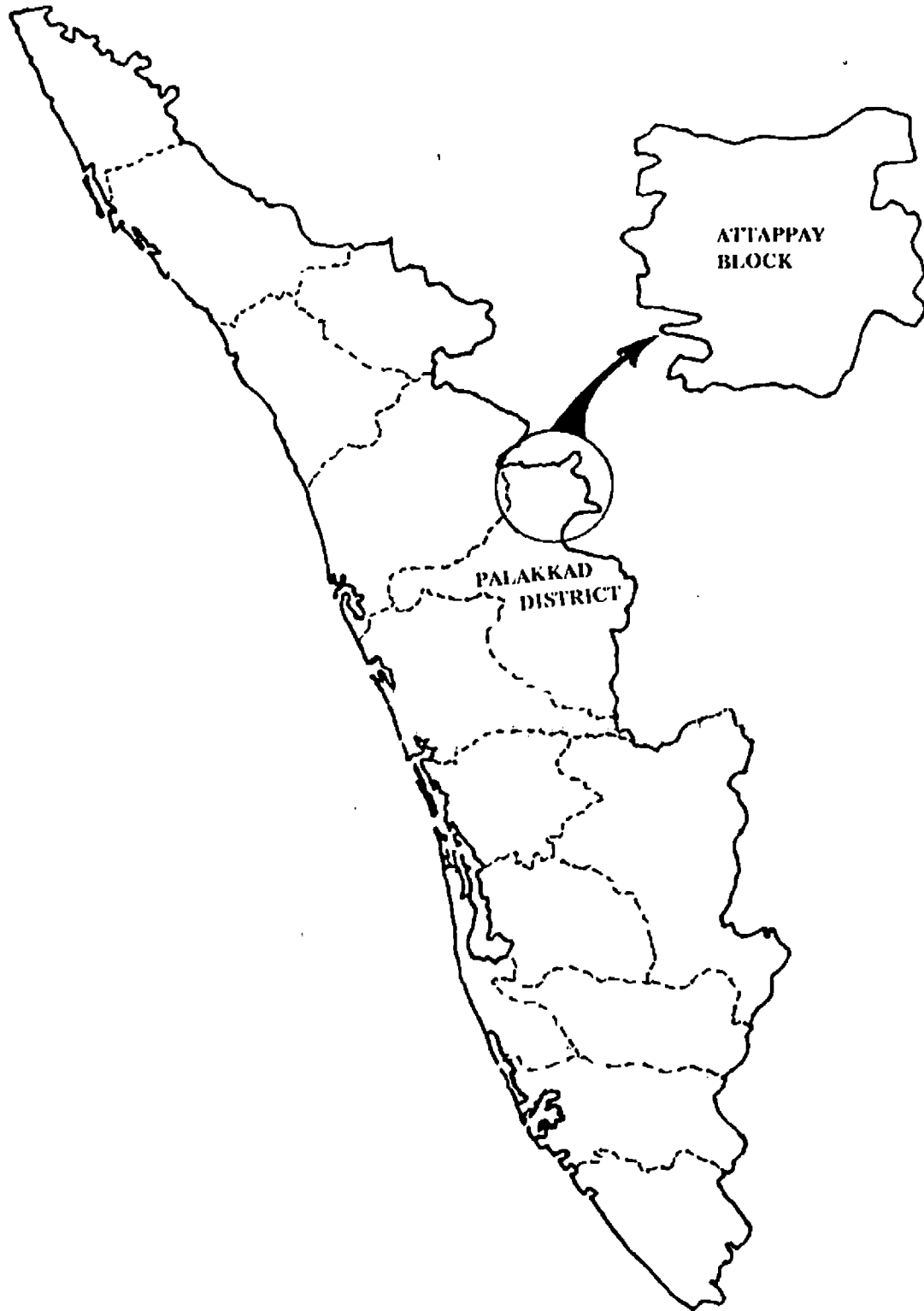
The area chosen for the study was Attappady rural development block of Mannarghat taluk in Palakkad district of Kerala. It is a part of the Nilgiri biosphere with an annual rainfall ranging from 950 mm to 3000 mm. The average elevation of the area is about 500 metre above sea level. Attappady block has about 745 sq km area with a human

population of 62033 as per the latest census. Attappady is the second largest tribal settlement area of Kerala with a tribal population of 24192. The general literacy rate is 58.33 per cent.

Silent valley national park with noted biodiversity is in the western border of Attappady. Places adjoining Silent Valley receives a fairly good rainfall of 4000 mm and is comparatively fertile with a temperature ranging from 13°C to 23°C. The eastern side of Attappady is bordered by Tamil Nadu and is a rain shadow area receiving an annual rainfall below 900 mm with temperature often exceeding 35°C. Attappady was once a thick forest and later denuded due to human intervention. The soil has lost its organic coat due to erosion and is only fit for cultivating coarse cereals and cotton. Three rivers flow through this area, but scarcity of water is the major problem affecting agriculture.

Majority of the tribals of Attappady are Irulas followed by Mudugas and Kurumbas in that order. Irulas live in 171 hamlets, Mudugas in 24 and Kurumbas in another 17. When the forests were denuded by human invasion in the past, tribal life which earned subsistence from forest was in peril. Consequently, the tribals became agricultural labourers in their own land. Most of the tribals as a subsidiary occupation keep desi cattle which thrive well in drought

**MAP OF KERALA SHOWING POSITION OF ATTAPPADY**



climate and they practice extensive system of cattle rearing. Cattle are kept mainly for draft purpose.

### **3.2 Theoretical orientation**

This section deals with the operationalisation and measurement of variables. Commensurate with the scope and objectives, variables were identified and included in this study. The independent variables selected were those hypothesised to precede the dependent variables and under this presumption the independent variables were conceived as antecedents in this ex-post-facto investigation.

#### **3.2.1 Variables and their measurement**

The comprehensive list of variables studied is presented in table 1. The technique of measurement of variables is also shown against each.

##### **Independent variables**

###### **A. Socio-personal**

X<sub>1</sub> Age

This referred to the chronological age of the respondent at the time of study. The tribal respondents were categorised into three groups as given below:

Table 1. Variables and their measurement

Variables	Measurement
<b>Independent</b>	
<b>A. Sociopersonal</b>	
X <sub>1</sub> Age	Structured schedule
X <sub>2</sub> Literacy*	-do-
X <sub>3</sub> Experience in dairying	-do-
X <sub>4</sub> Livestock owned	-do
X <sub>5</sub> Occupation*	-do-
<b>B. Psychological</b>	
X <sub>6</sub> Man-nature orientation	Scale developed by Sankariah and Riethmuller (1977)
X <sub>7</sub> Economic motivation	Supe's scale (1969) as modified by Dana (1987)
X <sub>8</sub> Innovativeness	Singh's scale (1977)
X <sub>9</sub> Progressivism-traditionalism	Sinha's scale (1963)
X <sub>10</sub> Scientific orientation	Supe's scale (1969) as modified by Somasekharan (1980)
<b>C. Communication</b>	
X <sub>11</sub> Traditional media exposure	Structured schedule
X <sub>12</sub> Mass media exposure	-do-
X <sub>13</sub> Extension agency contact	-do-
X <sub>14</sub> Personal localite exposure	-do-

Contd.

Table 1 (Contd.)

Variables	Measurement
<b>D. Belief based</b>	
X <sub>15</sub> Awareness about belief	Structured schedule
X <sub>16</sub> Strength of belief	Method adopted by Nand and Kumar (1980)
X <sub>17</sub> Rationality of belief	Method adopted by Nand and Kumar (1980)
<b>Dependent</b>	
Y <sub>1</sub> Degree of belief in the selected traditional beliefs	Method adopted by Nand and Kumar (1980)
Y <sub>2</sub> Adoption of beliefs	Method adopted by Ramkumar (1987)

\* Not subjected to correlation analysis

Age group -----	Age -----
Young	30 and below
Middle	31-50
Old	Above 50

### X, Literacy

It meant the level of literacy of the tribal dairy farmer. Accordingly they were classified either as literate or illiterate and the scoring procedure was followed as:

Literate	1
Illiterate	2

### X, Experience in dairying

This referred to the number of years that the respondent was in dairying at the time of study. Three groups of respondents were drawn on the basis of number of years in dairying. They were:

High	Above 34 years
Medium	10-34 years
Low	Below 10 years

#### X<sub>4</sub> Livestock owned

This referred to the total number of dairy cattle owned by the respondent. On the basis of the number of adult cattle and the mean, the respondents were grouped as low group (<mean) and high group (>mean).

#### X<sub>5</sub> Occupation

This referred to the tribal respondents major economic activity to earn a livelihood. The respondents were categorised on the basis of the main occupation.

### B. Psychological

#### X<sub>6</sub> Man-nature orientation

Man-nature orientation scale enables ordering respondents in a continuum, from those oriented to live subjectively to nature to those oriented to have mastery over nature. To measure this variable the four item man-nature orientation scale developed by Sankariah and Riethmuller (1977) was used. There were four statements in the scale and the responses had to be recorded either as agree or disagree bearing scores 1 and 2 respectively. Therefore the minimum and maximum scores a respondent could attain were respectively 4 and 8. The respondents were categorised into two groups as follows:



High	Score 7-8
Low	Score 4-6

#### X<sub>7</sub> Economic motivation

It referred to profit maximisation and relative value placed by the respondent on economic ends in terms of dairy farming. This variable was measured with the help of scale developed by Supe (1969) and as modified by Dana (1987). There were six items out of which five were positive and one negative. The rating however was made in a three point continuum ranging from agree (3) to disagree (1) and the mid point being undecided (2). The total score of the respondents and their mean was taken. Using standard deviation as measure the respondents were classified as

High ( $>\text{mean} + \text{S.D}$ ) Medium ( $\text{Mean} \pm \text{S.D.}$ ) and Low ( $<\text{mean} - \text{S.D.}$ ).

#### X<sub>8</sub> Innovativeness

It meant the degree to which a dairy farmer is relatively earlier in adopting innovations. To measure this variable the scale developed by Singh (1977) was used. For a respondent the score that could be obtained in this scale was either 3, 2 or 1 and the respondents were categorised as high, medium and low groups respectively.

#### X<sub>9</sub> Progressivism - Traditionalism

It referred to the receptivity of modern values and practices to the dairy farmer. In order to measure this variable scale developed by Sinha (1963) was used. It comprised of three statements and the respondents were asked to rate their agreement on three point continuum viz., agree, undecided and disagree with scores 3, 2 and 1 respectively. The minimum and maximum score one could get were three and nine respectively. The respondents on the basis of mean score were categorised either as low (<mean) and high (>mean) group.

#### X<sub>10</sub> Scientific orientation

It was conceptualised as the degree to which a tribal dairy owner was oriented to the use of scientific methods, in decision making.

To measure this variable the scale developed by Supe (1969) and as modified by Somasekharan (1980) was used. There were in all six items out of which 5 were positive and one was negative. However, in this study the items were rated in a three point continuum viz. agree to disagree the middle being undecided. The score were like agree (3), undecided (2) and disagree (1). Based on total scores and mean the respondents were categorised as either low (<mean) or high (>mean) groups.

### C. Communication

#### X<sub>1,1</sub> Traditional media exposure

It meant exposure to traditional communication media like drama, folk songs, puppetry, villupattu etc. The number of occasions exposed during the year preceding the date of interview was counted and on this basis the respondents were grouped as low (<mean) and high (>mean) groups.

#### X<sub>1,2</sub> Mass media exposure

This meant the exposure of the respondents to media such as newspaper, radio, TV, literature as magazines, bulletins, leaflets, etc., in relation to dairy husbandry. Scoring as 3, 2 and 1 is made respectively in a three point continuum viz., regular exposure, occasional exposure and no exposure at all.

#### X<sub>1,3</sub> Extension agency contact

It referred to the frequency of contact with various extension/development agents, in connection with dairy husbandry, in the year preceding the date of interview. The number of times contacted is added and on the basis of mean the respondents were categorised as low (<mean) and high (>mean) groups.

#### X<sub>14</sub> Personal-localite exposure

It meant the respondents contact with personal and localite sources of information, regarding dairy husbandry, such as neighbours, friends, relatives, milk men, local healer, middle men in purchase/sales, trader, milk co-operative employee, etc. Scoring was done in a five point continuum viz., always, often, sometimes, rarely and never with corresponding weightages as 5, 4, 3, 2 and 1. Depending on the total score and mean the respondents were categorised as low (<mean) and high (>mean) groups.

#### D. Belief based

##### X<sub>15</sub> Awareness

This meant whether the respondent had heard about the belief selected for the study. Awareness was worked out in terms of respondent's awareness about all the beliefs. Accordingly respondents were categorised as low, medium and high group. This was done on the basis of total score, mean and standard deviation.

Respondent	low	(<mean - S.D.)
	Medium	(mean ± S.D.)
	High	(>mean + S.D.)

### X<sub>16</sub> Strength of belief

It indicated the strength of each and every belief selected for the study in terms of respondent's weak or strong feeling towards the same. In other words, it denoted how strongly a belief is held by the respondent. To measure this parameter, the method adopted by Nand and Kumar (1980) was applied. The beliefs were individually rated over all the respondents on a five point continuum viz., strongly agree, agree, undecided, disagree and strongly disagree with respective weightages of 5, 4, 3, 2 and 1. Every belief was later categorised either as a strong belief or weak belief depending on the mean score.

Category -----	Score -----
Strong belief	$\geq 4$
Weak belief	$\leq 3$

### X<sub>17</sub> Rationality of belief

It indicated the prima facia opinion of the scientific community based on empirical/scientific evidence about every belief regarding its scientific validity. To measure this parameter the method adopted by Nand and Kumar (1980) was applied. The beliefs were individually rated by 30 judges on

a five-point continuum viz., strongly agree, agree, undecided, disagree and strongly disagree with weightages 5, 4, 3, 2 and 1 respectively. Every belief then was classified either as rational or irrational belief depending on the mean score.

Category -----	Score -----
Rational belief	$\geq 4$
Irrational belief	$\leq 3$

### **Dependent variable**

Y<sub>1</sub> Degree of belief in the selected traditional beliefs

Degree of belief was conceptualised as the level of agreement or disagreement of the respondent towards the selected beliefs that the respondent was aware of. To measure this variable the method adopted by Nand and Kumar (1980) and as used to measure the strength of belief in the present study was again made use of. The respondents were categorized as either high level believer or low level believer according to the total score and mean that every respondent had obtained over all the selected belief that he had heard of.

Category -----	Score -----
High level believer	$> \text{mean}$
Low level believer	$\leq \text{mean}$

## Y, Extent of adoption

Extent of adoption was measured in terms of adoption quotient. Adoption quotient was calculated for each individual in order to correlate with independent variable.

Adoption quotient was calculated as follows:

$$\text{Adoption quotient} = \frac{\text{Total no. of beliefs adopted (symbolic + practice)}}{\text{Total number of beliefs studied}} \times 100$$

However, the number of persons adopting symbolically and by actual practice were added for every belief. This was to know those beliefs which were adopted by most and least respondents.

### 3.2.2 Definition of concepts

For the purpose of the present study the following concepts were defined as mentioned.

1. Traditional beliefs - It is the fund of indigenous knowledge often also called as traditional wisdom or folk wisdom in the field of dairy husbandry prevailing among the tribals of Attapady and which were learnt from the past generation.

2. Rational belief - It is a belief related to dairying that is scientific according to expert/scientist opinion.
3. Irrational belief - It is a belief related to dairying that is unscientific or superstitious according to expert/scientific opinion.
4. Strength of belief - How strongly a belief related to dairying was held by the tribal dairy farmer respondents denoted the strength of that particular belief.
5. Degree of belief - It is the degree of agreement of a tribal dairy farmer with the selected traditional beliefs related to dairying that he was aware of at the time of study.
6. Adoption of belief: It is either mental decision to practice the belief at an appropriate occasion in future (symbolic adoption) or its present practice (practice adoption). In other words it is symbolic and practice adoption put together.
7. Awareness of belief - It meant whether the tribal dairy farmer respondent has heard or not about a belief selected for the study.



Table 2. Selection of dairy farmers on the basis of proportionate random sampling technique

Sl. No.	Name of milk co-operative	Total no. of dairy farmers	Sample
1.	Kuravanpady (APCOS)	107	11
2.	Palliyara (APCOS)	103	11
3.	Pettickal (APCOS)	113	12
4.	Mukkaly	61	7
5.	Thavalam	89	9
6.	Boothivazhy	118	12
7.	Sholayar	136	14
8.	Kottathara	130	14
9.	Pudur	18	2
10.	Mundanpara	79	8
Total		954	100

### 3.3 Sampling design

#### 3.3.1 Selection of dairy farmers

The tribal dairy animal owners chosen for this study belonged to Attappady block of Mannarghat taluk of Palakkad district. The total respondents selected were one hundred. This sample was selected as follows.

A list of tribal dairy farmers residing in the jurisdiction of 10 milk co-operatives in Attappady block was prepared with the help of the staff of milk co-operatives. This list was prepared considering two criteria.

1. Families rearing dairy animals traditionally and
2. Families keeping more number of dairy animals.

Applying proportionate random sampling technique tribal dairy owners from each of the milk co-operatives were selected.

#### 3.3.2 Selection of judges

In order to judge the rationality of beliefs 30 scientists/experts were chosen. The judges were chosen from among senior practicing veterinarians, veterinary scientists cum teachers in the disciplines of veterinary medicine, veterinary pharmacology, veterinary therapeutics, veterinary

surgery, senior ayurvedic practitioners, ethno-medical specialists and botanists. A mix of expert judges were chosen to eliminate any bias of judgement.

### **3.4 Data collection and statistical analysis**

#### **3.4.1 Identification of traditional beliefs**

Action research or small groups research technique was resorted to collect the prevailing traditional beliefs. The researcher visiting the different localities of the block area had discussion with small groups of tribal dairy farmers regarding the traditional beliefs. A total of 200 beliefs were mentioned in all these discussions and that were recorded.

#### **3.4.2 Collection and identification of herbal plants**

A total of 26 herbs were mentioned in the discussions with tribals which were used in disease conditions of livestock. Taking help from local experts, samples of these plants were collected and later got identified from the Botany division of Kerala Forest Research Institute, Peechi, Trichur. The local names of these herbs and as called by the tribals were also recorded.

The plants thus identified were as mentioned below:

Table 3. Plants identified for the study with their scientific name and popular name

Sl. No.	Scientific name	Popular/local name
1.	<i>Cissus quadrangularis</i>	Changalam paranda parandai
2.	<i>Vanilla aphylla</i>	Gundunjarali, Vanilla
3.	<i>Acalypha indica</i>	Kuppameny
4.	<i>Jatropha curcas</i>	Kadalavanakku, Kottai
5.	<i>Acacia leucophloea</i>	Velamaram, vellavelu
6.	<i>Plumbago zeylanica</i>	Vellakoduvely, Ottai
7.	<i>Carmona retusa</i>	Tharali, Kattuvettila Kuranguvettila
8.	<i>Holygarna arnottiana</i>	Cheru
9.	<i>Datura stramonium</i>	Ummam
10.	<i>Dillenia pentagyna</i>	Punna
11.	<i>Leucas aspera</i>	Thumba
12.	<i>Croton bonplandianus</i>	Shirukottathalu
13.	<i>Sida cordata</i>	Palampazhythala Vallikurunthotty
14.	<i>Lippia javanica</i>	Parala
15.	<i>Corallocarpus epigaeus</i>	Kilimookku Kizhangu Kattukoval
16.	<i>Pongamia pinnata</i>	Ungu, Poongumaram
17.	<i>Phyllanthus debilis</i>	Keezharnelly
18.	<i>Bauhinia racemosa</i>	Aathy

Contd.

Table 3 (Contd.)

Sl. No.	Scientific name	Popular/local name
19.	<i>Trianthema portulacastrum</i>	Mookaratai
20.	<i>Euphorbia thirukally</i>	Thirukally
21.	<i>Pergularia daemia</i>	Velipparuthy
22.	<i>Achyranthes aspera</i>	Naykolly, Kadalady
23.	<i>Randia dumetorum</i>	Karamaram
24.	<i>Coccinia</i> sp.	Appakovai
25.	<i>Mimosa pudica</i>	Thottavady
26.	<i>Bambusa</i> sp.	Illy, Mula
27.	<i>Azadirachta indica</i>	Veppu, Neem
28.	<i>Tribulus terrestris</i>	Njerinjil, Naringi
29.	<i>Areca catechu</i>	Pakku, Arecanut

### 3.4.3 Selection and categorization of Traditional beliefs

Out of the originally collected 200 beliefs a total of 73 beliefs were selected for the study (Appendix-1). Further, the selected beliefs were grouped under 14 categories. The selection as well as the categorisation of beliefs were done after taking opinion of experts in the field of veterinary and dairy husbandry of Kerala Agricultural University.

The categorization of the selected 73 number of beliefs was as given in table 4.

### 3.4.4 Survey procedure

To survey and collect data on independent and dependent variables interview schedule technique was applied. The interview schedule prepared was pretested before the actual survey and certain modifications were made. The final survey was conducted in the november and december months of 1997.

### Statistical tests

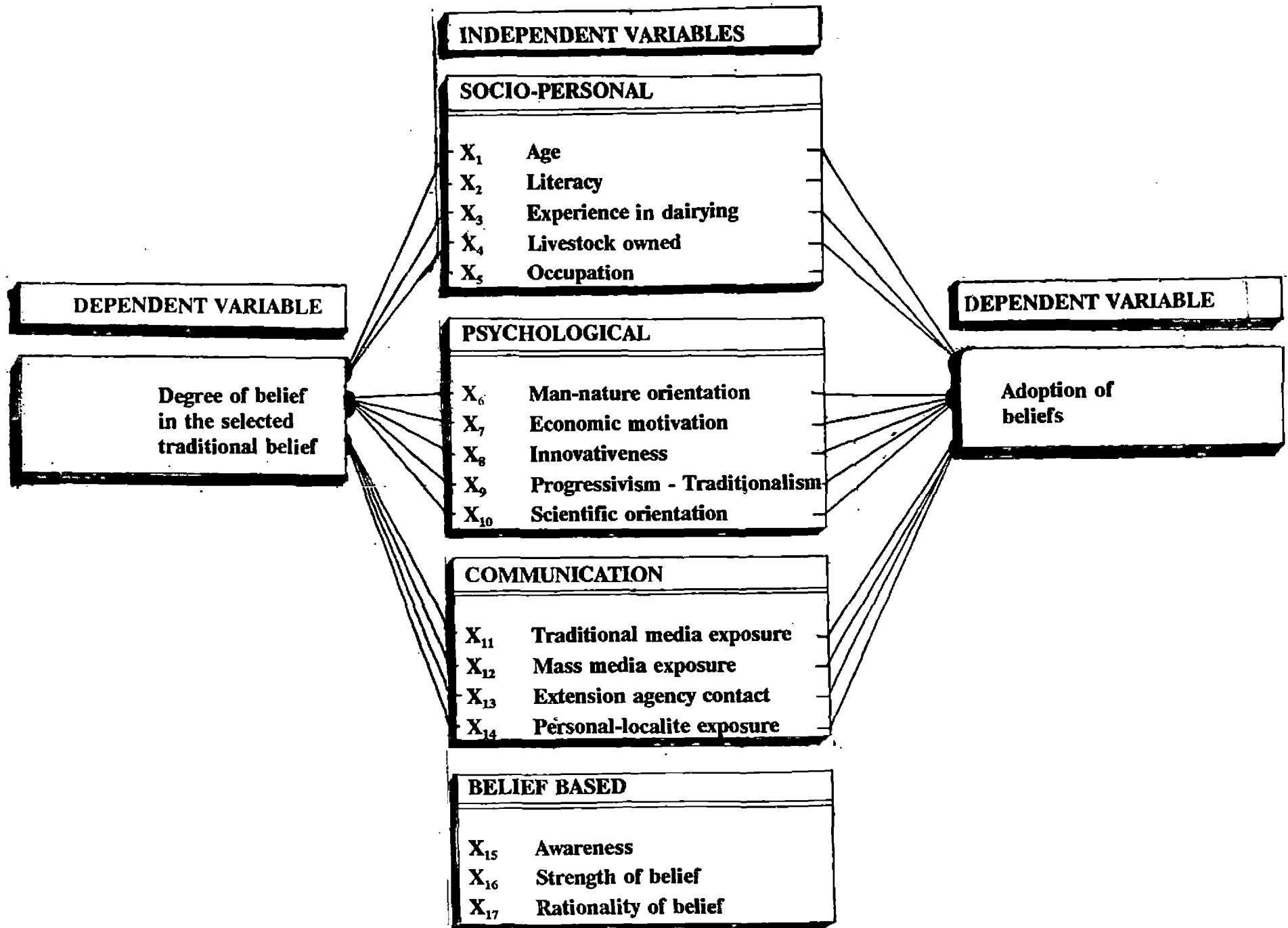
The data collected were subjected to the following statistical tests.

1. Percentage analyses
2. Mean and standard deviation
3. Simple correlation

Table 4. Categorization of beliefs

Sl: No.	Category	Number of beliefs	Percentage
1.	Beliefs on digestive disorders	10	13.69
2.	Beliefs on foot and mouth and black quarter	8	10.95
3.	Beliefs on wound	11	15.06
4.	Beliefs on poisoning	4	5.40
5.	Beliefs on ecto and endoparasitism	5	6.80
6.	Beliefs on urinary ailments	2	2.70
7.	Beliefs on abscess	2	2.70
8.	Beliefs on fracture	3	4.10
9.	Beliefs on mastitis and udder oedema	3	4.10
10.	Beliefs on improving milk production and general health	7	9.50
11.	Beliefs on eye ailments	3	4.10
12.	Beliefs on retention of placenta	4	5.40
13.	Beliefs on general disease conditions	6	8.20
14	Miscellaneous beliefs	5	6.80
Total		73	100.00

# CONCEPTUAL MODEL OF THE STUDY





## ***Results and Discussion***

## **RESULTS AND DISCUSSION**

Results and discussion have been presented under four major sections, viz.,

1. Profile of tribal dairy farmers in relation to degree of belief and extent of adoption of beliefs.
2. Strength and rationality of traditional beliefs.
3. Awareness about the traditional beliefs.
4. Traditional beliefs acting as techno-cultural obstacles.

### **4.1 Profile of tribal dairy farmers in relation to degree of belief and extent of adoption**

#### **4.1.1 Age**

Based on age, the respondents were categorised as old (>50 years), middle aged (30-50 years) and young (<30 years). Twenty per cent were old age respondents, 55 per cent were middle aged and the remaining 25 per cent were young. In both old and middle age categories there were more strong believers than weak believers. Whereas among the young, there were more of weak believers (72%) than strong believers (26%).

Table 5. Age

Category	Strong believer	Weak believer	Overall	Degree of belief	Extent of adoption
Old >50	13 (65.0 )	7 (35.0 )	20 (20)		
Middle 30-50	29 (52.72)	26 (47.27)	55 (55)	0.264**	0.245*
Young <30	7 (28.0 )	18 (72.0 )	25 (25)		
Total	49	51	100		

\*\* 1 per cent level

\* 5 per cent level

The table 5 also revealed that age was significantly and positively related to degree of belief and extent of adoption. This finding was in consonance with the findings of Kalaivany (1992) and Gnanadeepa (1991), but was contrary to the findings of Selvanayagam (1986).

Further the extent of adoption was positively and significantly related to age which was in consonance with the findings of Somasundaram (1995).

The above positive and significant relation between age and degree of belief as well as extent of adoption of belief could be due to the fact that comparatively older generations had more faith in traditional beliefs than young.

## 4.1.2 Literacy

Table 6. Literacy

Category	Strong believers	Weak believers	Overall
Literate	8 (27.58)	21 (72.41)	29 (29.00)
Illiterate	41 (57.74)	30 (42.24)	71 (71.00)
Total	49	51	100

Figures in parenthesis indicate percentage

There were more of illiterates (71%) than literates (29%) in the sample (Table 6). Among the literates weak believers were predominant (72.41%) and strong believers were less (27.58%). But among illiterates more than half of the respondents were strong believers (57.74%) and the rest were weak believers (42.24%). Among literates there were more weak believers than strong believers, as against illiterates among whom there were more strong believers than weak believers, indicated that literates had comparatively lesser faith in traditional beliefs than illiterates.

## 4.1.3 Experience

Table 7. Experience in dairying

Category	Strong believer	Weak believer	Overall	Degree of belief	Extent of adoption
High >34	10 (66.66)	5 (33.33)	15 (15.00)		
Medium 10-34	31 (47.70)	34 (52.30)	65 (65.00)	0.253*	0.268**
Low <10	8 (40.0 )	12 (60.0 )	20 (20.0)		
<b>Total</b>	<b>49</b>	<b>51</b>	<b>100</b>		

\*\* 1 per cent level

\* 5 per cent level

Depending on the experience in dairying in years (Table 7), the respondents were divided into three categories viz., high, medium, low. Out of the sample respondents 15 per cent belonged to highly experienced category (>34 years), 65 per cent belonged to medium (10-34 years) and rest 20 per cent belonged to low category (<10 years). Among the highly experienced group in dairying strong believers were more (66.66%) than weak believers (33.33%). But among the less experienced group the situation was just the reverse as there were more weak believers (60%) than strong believers (40%). In the middle level group too there were more weak believers (52.30%) than strong believers (47.7%).

The relationship between experience in dairying and degree of belief was positive and significant. This agrees with the findings of Gnanadeepa (1991) and Kalaivany (1992) but was contrary to the findings of Selvanayagam (1986).

The extent of adoption was highly significantly and positively correlated to experience. This agrees with the findings of Somasundaram (1995).

The above positive correlation could be because more experienced dairy farmers had comparatively more faith in traditional beliefs. Further experience accumulates with age of the farmer which was also found to be positively correlated with degree of belief and extent of adoption.

#### 4.1.4 Livestock owned

Table 8. Livestock owned

Category	Strong believer	Weak believer	Overall	Degree of belief	Extent of adoption
Low ≤4.45	29 (47.50)	32 (52.45)	61 (61)	0.016	-0.041
High >4.45	20 (51.28)	19 (48.71)	39 (39)		
Total	49	51	100		

A perusal of the table 8 revealed that based on the number of livestock owned, the respondents were divided into

two categories low and high. Out of the sample respondents representing low group, 47.5 per cent were strong believers and 52.45 per cent weak believers. In the high group 51.28 per cent were strong believers and 48.71 per cent were weak believers.

The degree of belief was positively and non significantly correlated with number of livestock owned.

The extent of adoption, nevertheless, was negatively and non significantly correlated to the number of livestock owned. This observation agreed with that of Somasundaram (1995).

It can be concluded that though those who kept more livestock had more faith in the beliefs yet adopted comparatively less of beliefs and, however, the latter relation was statistically non-significant.

#### 4.1.5 Occupation

Table 9. Occupation

Category	Strong believers	Weak believers	Overall
1. Agricultural and other labourers	46 (54.76)	38 (45.23)	84 (84.00)
2. Employees of government and non-government	3 (18.75)	13 (81.25)	16 (16.00)
Total	49	51	100

Figures in parenthesis indicate percentage

Based on occupation the respondents were categorized as agricultural and other labourers, and employees of governmental and non-governmental organisations (Table 9). The former category was pre-eminent (84%) than the latter (16%). Among the agricultural and other labourers strong believers were more (54.76%) than weak believers (45.23%). On the contrary, among the employees weak believers were more (81.25%) than strong believers (18.75%).

It is amply clear from the above results that agricultural and other labourers perceived the traditional beliefs more important than employees of government and non-government organisations. This could be because former are more involved in dairy husbandry than the later.

#### 4.1.6 Man-nature orientation

Table 10. Man-nature orientation

Category	Strong believer	Weak believer	Overall	Degree of belief	Extent of adoption
Low (4-6)	41 (57.74)	30 (42.25)	71 (71.00)	-0.278**	-0.333**
High (7-8)	8 (27.58)	21 (72.41)	29 (29.00)		
Total	49	51	100		

\*\* 1 per cent level

\* 5 per cent level



The table 10 revealed that majority (71%) had only low man-nature orientation. Out of these 57.7% were strong believers and 42.2 per cent were weak believers. In the high category 27.5 per cent were strong believers and 72.4 per cent were weak believers.

The results moreover showed that man-nature orientation had negative and significant correlation with both degree of belief and extent of adoption of beliefs. This was suggestive of the fact that more the dairy farmer was subjugated to nature more faith he had in the beliefs.

#### 4.1.7 Economic motivation

Table 11. Economic motivation

Category	Strong believer	Weak believer	Overall	Degree of belief	Extent of adoption
High >15.67	11 (57.14)	10 (42.85)	21 (21.00)		
Medium 15.67- 10.34	24 (38.09)	39 (61.90)	63 (63.00)	-0.133	-0.141
Low <10.34	13 (81.25)	3 (18.75)	16 (16.00)		
Total	49	51	100		

The respondents (Table 11) were categorised as high, medium and low groups on the basis of economic motivation. In the high group there were more strong believers (57.14%) than weak believers (42.85%). In the medium group there were more weak believers (61.90%) than strong believers (38.09%). In the low group the number of strong believers were considerably more (81.25%) than weak believers (18.75%).

The degree of belief showed a negative and non significant correlation with economic motivation, this agrees with the findings of Selvanayagam (1986).

The extent of adoption also showed a negative and non significant correlation with economic motivation.

The above finding sufficiently indicated that more the economic motivation of dairy farmers less the faith in traditional beliefs.

## 4.1.8 Innovativeness

Table 12. Innovativeness

Category	Strong believer	Weak believer	Overall	Degree of belief	Extent of adoption
High	11 (39.28)	17 (60.71)	28 (28.00)		
Medium	21 (46.60)	24 (53.30)	45 (45.00)	-0.225*	-0.277**
Low	17 (62.96)	10 (37.03)	27 (27.00)		
Total	49	51	100		

\*\* 1 per cent level

\* 5 per cent level

As shown in the table 12 the respondents were divided into three categories viz., high, medium, and low group. In the high group there were more weak believers (60.71%) than strong believers. In the low group there were more strong believers (62.96%) than weak believers. Nonetheless, the difference in the percentages of strong and weak believers in the medium group was not much.

The degree of belief showed a negative and significant correlation with innovativeness which agreed with the findings of Somasundaram (1995) but was contrary to the findings of Selvanayagam (1986).

The extent of adoption was also negatively and significantly correlated with innovativeness.

The above finding was indicative of the fact that more an individual was innovative lesser was his degree of belief and extent of adoption of beliefs.

#### 4.1.9 Progressivism traditionalism

Table 13. Progressivism traditionalism

Category	Strong believer	Weak believer	Overall	Degree of belief	Extent of adoption
High ≥6.79	25 (41.66)	35 (58.33)	60 (60.00)	-0.175	-0.146
Low <6.79	24 (60.00)	16 (40.00)	40 (40.00)		
Total	49	51	100		

Table 13 revealed that majority of the respondents (60%) belonged to the high group. Those falling in the low group were 40 per cent. In the high group there were more weak believers (58.3%) than strong believers. In the low group there were more strong believers (60%) than weak believers.

It was also observed that the degree of belief as well as extent of adoption of beliefs were negatively and non significantly correlated with progressivism-traditionalism

indicating that when the individual was more progressive, lesser was his degree of belief and extent of adoption of beliefs.

#### 4.1.10 Scientific orientation

Table 14. Scientific orientation

Category	Strong believer	Weak believer	Overall	Degree of belief	Extent of adoption
High ≥13.26	19 (38.77)	30 (61.22)	49 (49.00)	-0.263**	-0.293**
Low <13.26	30 (58.82)	21 (41.17)	51 (51.00)		
Total	49	51	100		

\*\* 1 per cent level

The Table 14 revealed that 49 per cent of the respondents were whose scientific orientation was high and 51 per cent were whose scientific orientation was low. There were more weak believers (61.22%) than strong believers in the high group and on the contrary there were more strong believers (58.82%) than weak believers in the low group.

It was also observed that both the degree of belief and extent of adoption were negatively and significantly correlated with scientific orientation. This explained that more the scientific orientation lesser the degree of belief and their adoption.

Though these findings agreed with the findings of Kalaivany (1992), yet these were contrary to the findings of Selvanayagam (1986) and Gnanadeepa (1991).

As was the case with innovativeness, more scientifically oriented individuals tended to have lesser degree of belief as well as extent of adoption of traditional beliefs.

#### 4.1.11 Traditional media exposure

Table 15. Traditional media exposure

Category	Strong believer	Weak believer	Overall	Degree of belief	Extent of adoption
High 26 ≥5.99	26 (53.06)	23 (46.93)	49 (49.00)	0.096	0.059
Low <5.99	23 (45.09)	28 (54.90)	51 (51.00)		
Total	49	51	100		

There were 51 per cent members in the low group and 49 per cent members in the high group classified on the basis of traditional media exposure (Table 15).

In the high traditional media exposure group there were 53.06 per cent strong believers and 46.93 per cent weak believers. In the low traditional media exposure group there were 54.90 per cent strong believers. The degree of belief

and extent of adoption showed a positive and non significant correlation with traditional media exposure. This is contrary to the findings of Selvanayagam (1986).

The results revealed that respondents with more traditional media exposure had comparatively higher degree of belief and extent of adoption of traditional beliefs.

#### 4.1.12 Mass media exposure

Table 16. Mass media exposure

Category	Strong believer	Weak believer	Overall	Degree of belief	Extent of adoption
High ≥7.28	13 (34.21)	25 (65.78)	38 (38.00)	-0.294**	-0.350**
Low <7.28	36 (58.06)	26 (41.93)	62 (62.10)		
Total	49	51	100		

\*\* 1% level

It is evident from table 16 that 62 per cent of the respondents had only low mass media exposure. Whereas 38 per cent of the respondents had high exposure to mass media.

In the low exposure group there were more strong believers (58.06%) than weak believers (41.93%). In the high exposure group there were 65.78 per cent weak believers and 34.21 per cent strong believers.

The degree of belief was negatively and highly significantly correlated to mass media exposure. This agrees with the findings of Gnanadeepa (1991) and Kalaivany (1992), but in contrary to the findings of Selvanayagam (1986).

Further the extent of adoption was negatively and significantly correlated to mass media exposure, which is contrary to the findings of Somasundaram (1995).

It can be ascertained that more an individual gets exposed to mass media, lesser was his degree of belief and extent of adoption of traditional beliefs.

#### 4.1.13 Extension agency contact

Table 17. Extension agency contact

Category	Strong believer	Weak believer	Overall	Degree of belief	Extent of adoption
High ≥5.1	17 (47.22)	19 (52.77)	36 (36.10)	-0.142	-0.140
Low <5.1	32 (50.00)	32 (50.00)	64 (64.00)		
Total	49	51	100		

A perusal of the table 17 showed that a majority of respondents (64%) had only low level of contact with extension agencies. Those who had a high level of extension agency



contact were only 36 per cent. Among those having less of extension agency contact, strong and weak believers were equal viz., 50 per cent each. Whereas among those having high level of extension agency contact more respondents were weak believers (52.77%) than strong believers (47.22%).

The degree of belief was negatively and non significantly correlated with extension agency contact. This finding agreed with that of Gnanadeepa (1991) and Kalaivany (1992) but contradicted with the findings of Selvanayagam (1986).

The extent of adoption of traditional beliefs showed a negative and non significant correlation with extension agency contact, which agreed with the findings of Somasundaram (1995).

It was implicit in the findings that more the extension agency contact lesser the degree of belief and extent of adoption of traditional beliefs, though the relationship was not significant statistically.

## 4.1.14 Personal localite exposure

Table 18. Personal localite exposure

Category	Strong believer	Weak believer	Overall	Degree of belief	Extent of adoption
High ≥28	24 (60.00)	16 (40.00)	40 (40.00)	0.162	0.221*
Low <28	25 (41.66)	35 (58.33)	60 (60.00)		
Total	49	51	100		

\* 5% level

It is evident from the table 18 that there were more individuals in the low personal localite exposure group than in the high group i.e., 40 per cent and 60 per cent respectively. In the high group there were more strong believers (60%), but in the low group there were more weak believers (58.33%).

The degree of belief showed a positive but non significant correlation with personal-localite exposure, which agreed with the findings of Selvanayagam (1986), but contrary to that of Kalaivany (1992).

The extent of adoption showed a positive and significant correlation with personal localite exposure.

It was evident from the above observations that more the personal localite exposure, more the degree of belief and extent of adoption.

## **4.2 Strength and rationality of beliefs**

### **4.2.1 Beliefs on digestive disorders**

A perusal of the table 19 revealed that 80 per cent of the beliefs were strongly held and rational beliefs. The rest 20 per cent though strongly held were irrational beliefs (belief nos. 4 and 10). Belief no. 7 is the use of plant *Cissus quadrangularis* to treat anorexia of cattle, which was a strongly held and rational belief and was adopted by just more than one fifth of the dairy farmers (81%). The least adopted belief was belief no.10 which was a strongly held irrational belief. Besides belief no.10, ie. putting a knot in the tongue of cattle to cure anorexia, belief no.4 ie. oral administration of wild pig's fat to cure anorexia of cattle was also a strongly held irrational belief which was adopted by 62 per cent of the respondents. These irrational beliefs could definitely block using of scientific remedial measures.

### **4.2.2 Beliefs on foot and mouth and black quarter**

All the eight beliefs on foot and mouth and black quarter diseases were strongly held, and 75 per cent of them were

Table 19. Beliefs on digestive disorders

	Farmers mean score	Strength	Scient- ists mean score	Ration- ality	Adop- ters
1. For treating digestive disorders Changalamparanda ( <i>Cissus quadrangularis</i> ) can be ground well and orally given.	4.07	S	3.79	R	60
2. For treating diarrhoea in cattle Palampazhythala ( <i>Sida cordata</i> ) leaf and stem along with butter milk is made into a paste and orally given.	4.02	S	3.6	R	43
3. An extract of Gundunjaraly ( <i>Vanilla aphylla</i> ) if given orally can cure digestive disorders.	4.02	S	3.32	R	44
4. As a cure for digestive disorders fat of wild pig is orally given.	3.95	S	2.64	IR	62
5. Kuppameny ( <i>Acalypha indica</i> ) leaf and stem if given orally can cure constipation in cattle.	3.97	S	3.6	R	35
6. <i>Lippia javanica</i> leaves and stem if crushed well and orally given can cure diarrhoea.	3.85	S	3.36	R	38
7. For treating anorexia of cattle 'Changalamparanda' ( <i>Cissus quadrangularis</i> ) stem is crushed well and given orally.	4.06	S	4.04	R	81
8. For treating anorexia of cattle Gundunjaraly ( <i>Vanilla aphylla</i> ) stem is crushed and given orally.	4.16	S	3.44	R	44

Contd.

Table 19 (Contd.)

		Farmers mean score	Strength	Scient- ists mean score	Ration- ality	Adop- ters
9.	Kuppameny ( <i>Acalypha indica</i> ) leaf and stem if made into a paste and if orally given can cure anorexia.	3.92	S	3.4	R	26
10.	For curing anorexia of cattle a knot is made on the tongue.	3.81	S	2.08	IR	12

Strong belief - 100%

Weak belief - Nil

Strong belief

a. Irrational 20%

b. Rational 80%

S - Strong, R - Rational, IR - Irrational

Table 20. Beliefs on foot and mouth disease and black quarter

	Farmers mean score	Strength	Scient- ists mean score	Ration- ality	Adop- ters
1. For oral ulcers of foot and mouth disease plantain fruit and fat of wild pig are mixed well and applied.	4.07	S	3.64	R	58
2. For foot lesions cattle is left in the mud for some time.	3.8	S	2.56	IR	44
3. To cure foot and mouth disease cattle is left in the running water for some time.	3.71	S	2.58	IR	40
4. For foot lesions of FMD small fishes are ground and made into a paste and is applied to the foot lesions.	3.98	S	2.6	IR	50
5. To cure foot and mouth disease fish washed water is poured on the lesions.	4.13	S	2.6	IR	35
6. For curing foot and mouth lesions neem leaves are made into a paste and applied.	3.93	S	4.08	R	26
7. Snake skin ground with fat of wild pig can be applied with a feather to cure foot lesions of F.M.D.	4.00	S	2.96	IR	28
8. For curing B.Q. the affected part of thigh is cauterized with red hot iron.	3.97	S	2.56	IR	42

Strong belief - 100%

Weak belief - Nil

Strong belief

a. Rational 25%

b. Irrational 75%

S - Strong, R - Rational, IR - Irrational

irrational. Belief no.1 ie. applying a mixture of plantain fruit and wild pig fat was adopted by more respondents (58%) and this belief was strongly held and rational. Least adoption (26%) was for belief no.6, ie. applying neem leaf paste in the foot and mouth lesions which was also a strongly held and rational belief.

Table 20 further revealed that all the irrational beliefs were strongly held by the dairy farmers and such beliefs could block acceptance of scientific practice. The pre-eminent dependency on irrational traditional beliefs to treat foot and mouth and black quarter diseases pointed out to the weak extension and modern veterinary medical support system available in the area.

#### 4.2.3 Beliefs on wound

As table 21 indicated all the beliefs on wound were strongly held and rational. The most adopted belief was belief no.3 ie., using powdered bark of *Acacia leucophloea* to heal wounds, which was adopted by just half of the respondents. The least adopted was belief no.6 ie. using the bark of *Dillenia pentagyna* to cure maggot wound, which was adopted by one-fourth of the respondents.

Table 21. Beliefs on wound

	Farmers mean score	Strength	Scient- ists mean score	Ration- ality	Adop- ters
1. For healing wounds of cattle 'Koduvely' ( <i>Plumbago zeylanica</i> ) leaf and stem are made into a paste and applied.	4.37	S	3.6	R	33
2. Kadalavanakku ( <i>Jatropha curcas</i> ) bark made into a paste if applied can heal wounds.	3.96	S	3.88	R	43
3. Powdered bark of Velamaram ( <i>Acacia leucophloea</i> ) can be used for healing wounds.	3.82	S	3.53	R	50
4. Tharali ( <i>Carmona retusa</i> ) leaf paste can be applied for healing the wound of cattle.	3.7	S	3.26	R	30
5. Crushed bark of 'Cheru' ( <i>Holygarna arnottiana</i> ) if fed orally can expel maggots from a wound.	3.73	S	3.04	R	28
6. Punna ( <i>Dillenia pentagyna</i> ) bark if made into a paste and applied on maggot wound of cattle, can cure it.	3.78	S	3.63	R	25
7. Ummam ( <i>Datura stramonium</i> ) leaves and fruit if made into a paste and applied can expel maggots.	3.93	S	3.8	R	33
8. A paste made from Thumba ( <i>Ieucas</i> ) Pukayila (Tobacco leaf) and Chunnambu (lime) can expel maggots from a wound.	3.88	S	4.16	R	49

Contd.



Table 21 (Contd.)

	Farmers mean score	Strength	Scient- ists mean score	Ration- ality	Adop- ters
9. For dog bite wound Naykolly ( <i>Achyranthes aspera</i> ) leaves are fried in oil made into a paste and applied.	4.00	S	3.04	R	32
10. Koduvely ( <i>Plumbago zeylanica</i> ) leaf and stem has got styptic action.	3.91	S	3.48	R	32
11. Kadalavanakku ( <i>Jatropha curcas</i> ) leaf and stem has got styptic action.	4.12	S	3.6	R	42

Strong belief 100%

a. Rational 100%

b. Irrational Nil

Weak belief : Nil

S - Strong, R - Rational

#### 4.2.4 Beliefs on poisoning

All the beliefs related to poisoning were strongly held irrational beliefs (Table 22). It was also seen that a considerable percentage of respondents were adopting these irrational beliefs. Belief no.3 i.e. cutting the ear tip, to bleed, in order to cure snake bite was seen adopted by more than half of the respondents. However the least adopted one was belief no.4 i.e. feeding bark of the plant *Pongamia pinnata* to cure snake bite which was adopted by one-fourth of the respondents. Either practicing of such irrational beliefs or a decision to try them in future would prevent the respondents from trying scientific remedial measures.

#### 4.2.5 Beliefs on ecto and endoparasitism

All the beliefs on ecto and endoparasitism were strongly held rational beliefs (Table 23).

The most adopted was belief no.2 i.e., using neem plant for deworming which was accepted and adopted by more than half of the respondents. The least adopted was belief no.1 i.e., using tender arecanut as a dewormer which was accepted by 30 per cent of the respondents.

Table 22. Beliefs on poisoning

	Farmers mean score	Strength	Scient- ists mean score	Ration- ality	Adop- ters
1. For treating plant poisoning in cattle tip of the ear is cut and some drops of blood is Squeezed out.	3.47	S	2.9	IR	45
2. For treating snake bite Kilimookku ( <i>Corallocorpus epigaeus</i> ) tuber, Onion and Keezharnelly ( <i>Phyllanthus deblis</i> ) are ground well and is given orally.	3.78	S	2.92	IR	43
3. For snake bite, small cut is made at the tip of the ear and some drops of blood is squeezed out.	3.56	S	2.4	IR	52
4. For snake bite bark of 'Ungu' ( <i>Pongamia pinnata</i> ) is ground well and a roll as big as an egg is given orally.	3.71	S	2.72	IR	25

Strong belief:

- a. Rational Nil
- b. Irrational 100%

Weak belief : Nil

S - Strong, IR - Irrational

Table 23. Beliefs on ecto and endo parasitism

	Farmers mean score	Strength	Scient- ists mean score	Ration- ality	Adop- ters
1. For deworming tender arecanut is ground well and orally given.	4.1	S	4.0	R	30
2. For deworming leaf, bark and fruit of neem is ground well and is given orally.	4.017	S	3.76	R	54
3. For deworming thumba ( <i>Leucas aspera</i> ) plant is ground well and given orally.	3.92	S	3.6	R	40
4. For mange affections of the skin Kuppameny ( <i>Acalypha indica</i> ) leaves are ground well and applied.	4.03	S	3.76	R	35
5. For mange affections of the skin Koduvvely ( <i>Plumbago zeylanica</i> ) leaves and stem are ground well and applied.	3.89	S	3.52	R	35

Strong belief : 100%  
Weak belief : Nil

Strong belief :  
a. Rational 100%  
b. Irrational Nil

S - Strong, R - Rational

#### 4.2.6 Beliefs on urinary ailments

There were two beliefs related to urinary ailments (Table 24). Both were strongly held rational beliefs. More respondents adopted (35%) belief no.1 i.e., using the plant *Phyllanthus deblis* for urinary ailments. The second belief was adopted by 19 per cent of the respondents.

#### 4.2.7 Beliefs on abscess

There were two beliefs (Table 25) associated with abscess and both were strongly held, rational beliefs. One of these beliefs i.e. using plant *Croton bonplandianus* for abscess was accepted and practiced by more number of respondents (45%) than the other belief i.e., using *Carmona retusa* plant (34%).

#### 4.2.8 Beliefs on fracture

There were in all three beliefs associated with fracture. All these were strongly held and rational beliefs (Table 26). Belief no.3 was accepted and adopted by more (80%) followed in order by belief no.2 (75%) and belief no.1 (66%). These beliefs were, however, practices of either applying external bandages or external splints.

Table 24. Beliefs on urinary ailments

	Farmers mean score	Strength	Scient- ists mean score	Ration- ality	Adop- ters
1. In a condition with red coloured urine Keezharnelly ( <i>Phyllanthus deblis</i> ) is ground well and orally given.	4.08	S	3.44	R	35
2. For a condition of yellow coloured urine Njerinjil ( <i>Tribulus terrestris</i> ) leaf and stem is crushed well and is given orally.	3.95	S	3.76	R	19

Strong belief : 100%

Weak belief : Nil

Strong belief :

a. Rational 100%

b. Irrational Nil

S - Strong, R - Rational

Table 25. Beliefs on abscess

	Farmers mean score	Strength	Scient- ists mean score	Ration- ality	Adop- ters
1. For abscess of cattle Theraly ( <i>Carmona retusa</i> ) leaves are fried in oil made into a paste and extrenally applied.	3.78	S	3.52	R	34
2. For abscess of cattle Shirukottathalu ( <i>Croton bonplandianus</i> ) leaf and stem are made into a paste and applied externally.	3.58	S	3.64	R	45

Strong belief : 100%

Weak belief : Nil

Strong belief :

a. Rational 100%

b. Irrational Nil

S - Strong, R - Rational

Table 26. Beliefs on fracture

	Farmers mean score	Strength	Scient- ists mean score	Ration- ality	Adop- ters
1. The bark of <i>Acacia leucophloea</i> is bandaged over fracture to immobilise and heal fracture.	4.10	S	3.56	R	66
2. To bandage fractured part, cloth soaked in the sap of <i>Thirukally</i> ( <i>Euphorbia thirukally</i> ) can be used.	4.04	S	3.48	R	75
3. Bamboo pieces can be used as splints for immobilization of fracture.	4.17	S	4.32	R	80

Strong belief : 100%

Weak belief : Nil

Strong belief :

a. Rational 100%

b. Irrational Nil

S - Strong, R - Rational



#### 4.2.9 Beliefs on mastitis and udder oedema

All the three beliefs associated with mastitis and udder oedema were strongly held and rational beliefs (Table 27). The most adopted belief was belief no.1 (44%) which was followed in order by belief no.3 (30%) and belief no.2 (27%). Belief no.1 was a practice of external application of a paste made out of 'Appakovai' (coccinia sp.) leaf and turmeric which was held rational. Mastitis being highly infectious disease warrants apart from external application, internal medication the need of which should not be ruled out by the dairy farmers.

#### 4.2.10 Beliefs on improving milk production and general health of the animal

Almost 86 per cent of beliefs were rational and the rest were irrational (Table 28). But all the beliefs were strongly held by the dairy farmers. Belief no.1 i.e., placenta if wrapped in a cloth and hanged on to a tree which has white sap (ficus, cactus etc.) will result in more milk yield, though was an irrational belief, yet was adopted by more respondents (68%). Belief no.6, which was a rational belief was adopted by 30 per cent of the respondents. Belief no.1 could be a technology blocker being a widely accepted irrational belief.

Table 27. Beliefs on mastitis and udder oedema

	Farmers mean score	Strength	Scient- ists mean score	Ration- ality	Adop- ters
1. For curing mastitis 'Appakovai' leaf and stem along with turmeric is made into a paste and locally applied.	4.02	S	3.45	R	44
2. For curing prepartum udder oedema Njerinjil or Narinji ( <i>Tribulus terrestris</i> ) leaves are made into a paste and fed.	4.00	S	3.96	R	27
3. Mastitis during rainy season is more dangerous than in summer.	3.96	S	3.24	R	30

Strong belief : 100%

Weak belief : Nil

Strong belief

a. Rational 100%

b. Irrational Nil

S - Strong, R - Rational

Table 28. Beliefs on improving milk production and general health of the animal

	Farmers mean score	Strength	Scient- ists mean score	Ration- ality	Adop- ters
1. Placenta if wrapped in a cloth and hanged on to a tree which has white sap (Ficus, cactus) will result in more milk.	3.95	S	2.04	IR	68
2. Cowpea and coconut are in a ground well and that is fed to cattle to improve milk production.	4.15	S	3.88	R	51
3. Cotton seed cake 'if' included in the ration will improve milk production.	3.95	S	3.92	R	63
4. Tender papaya, soaked rice and coconut all together if fed will increase milk production.	4.04	S	3.73	R	47
5. Cattle will consume more if a little salt is added to the grass.	4.00	S	3.96	R	42
6. Cattle will consume more water if it is allowed to lick a pinch of salt.	3.9	S	4.00	R	30
7. For improving general health and appearance of cattle Gundunjaraly ( <i>Vanilla aphylla</i> ) is ground well and orally given.	4.1	S	3.24	R	37

Strong belief : 100%

Weak belief : Nil

Strong belief

a. Rational 85.71%

b. Irrational 14.28%

S - Strong, R - Rational, IR - Irrational

#### 4.2.11 Beliefs on eye ailments

In all there were three beliefs associated with eye ailments and all of them were strongly held by farmers (Table 29). One of these was an irrational belief (belief no.2). Others were rational (belief no.1 and 3). The irrational belief (no.2) was seen adopted by one-third of the respondents. Nevertheless, the maximum adoption (45%) was for belief no.1, a rational belief. So much so that belief no.2 i.e, applying powdered 'Vellarankallu' in ghee to the eyes to cure corneal opacity which was an irrational one was accepted by almost one-third of the respondents could prevent application of right remedies for corneal opacity.

#### 4.2.12 Beliefs on retention of placenta

Table 30 revealed that 75 per cent of the beliefs related to retention of placenta were rational and strongly held by dairy farmers. The highest percentage of adoption was for belief no.3 (68%) and the lowest for belief no.1 (24%) and both these beliefs were rational. Though belief no.4 was an irrational belief yet it was strongly held by the dairy farmers and its adoption rate too was high (52.1%). Therefore, the irrational belief no.4 viz., tying 'Appakovai' around the horns and feeding the same as remedy to retention of placenta could prevent practicing of scientific technologies by more than half of the respondents studied.

Table 29. Beliefs on eye ailments

	Farmers mean score	Strength	Scient- ists mean score	Ration- ality	Adop- ters
1. Aathy ( <i>Bauhinia racemosa</i> ) leaves along with tobacco is chewed well and spit on to the affected eyes to cure corneal opacity.	3.61	S	3.2	R	45
2. 'Vellarankallu' (A whitish rock fragment) is powdered well and made into a paste with ghee and applied on the affected eyes to cure corneal opacity.	3.88	S	2.88	IR	33
3. <i>Trianthema portulacastrum</i> is chewed and spit on to the affected eye in case of corneal ulcers.	4.05	S	3.08	R	32

Strong belief : 100%

Weak belief : Nil

Strong belief

b. Rational 66.6%

c. Irrational 33.3%

S - Strong, R - Rational, IR - Irrational

Table 30. Beliefs on retention of placenta

	Farmers mean score	Strength	Scient- ists mean score	Ration- ality	Adop- ters
1. For facilitating expulsion of placenta well riped snake gourd fruit is fed.	4.08	S	3.2	R	24
2. For facilitating expulsion of placenta Palampazhythala <i>Sida</i> <i>cordata</i> plant is fed.	4.14	S	3.28	R	27
3. For facilitating expulsion of placenta Bamboo leaves are fed.	4.13	S	3.84	R	68
4. For facilitating expulsion of placenta 'Appakovai' ( <i>Coccinia</i> ) is tied around the horns and also fed.	3.92	S	2.84	IR	52

Strong belief : 100%

Weak belief : Nil

Strong belief

a. Rational 75%

b. Irrational 25%

S - Strong, R - Rational, IR - Irrational

#### 4.2.13 Beliefs on general disease conditions

Almost 83 per cent of the beliefs were rational and rest were irrational (Table 31). Belief no.6 ie., fattening of cows lead to low reproductive efficiency was accepted by more respondents (56%). This belief was a rational one, and hence acceptance of the fact was a good thing. Belief no.5 ie., using *Bauhinia racemosa* plant as a remedy for yokegall was accepted by a minimum percentage of respondents (34%). The only irrational belief was belief no.3 and despite it being irrational was strongly held by the respondents, and also was accepted by 41 per cent of the respondents. Practicing of this belief, however has to be discouraged permitting diffusion of scientifically accepted practices into tribal system.

#### 4.2.14 Miscellaneous beliefs

The table 32 revealed that 60 per cent of the beliefs were strongly held rational and the rest 40 per cent were strongly held irrational beliefs. The highest adoption (88%) was for belief no.4 which was an irrational belief. Another widely accepted irrational belief was belief no.2 (61%). Next to belief no.4 the most accepted rational belief was no.3 (83%) followed in that order by belief no.5 (70%) belief no.2 (61%) and belief no.1 (42%).

Table 31. Beliefs on general disease conditions

	Farmers mean score	Strength	Scient- ists mean score	Ration- ality	Adop- ters
1. For curing cough in cattle Thottavady ( <i>Mimosa pudica</i> ) and onion are ground well and is given orally.	4.12	S	3.32	R	40
2. Velipparuthy ( <i>Pergularia daemia</i> ) leaves are given to cattle if the animal is recumbant.	4.19	S	3.2	R	47
3. For curing oedema a dehusked coconut is rolled over the area.	4.14	S	2.72	IR	41
4. For evulsion of horn 'Kara Maram' ( <i>Randia dumetorum</i> ) leaves and stem are crushed well and applied over the area.	3.8	S	3.44	R	54
5. For yoke gall in cattle ash of Aathy ( <i>Bauhinia racemosa</i> ) is mixed in oil and applied.	4.17	S	3.52	R	34
6. Cow if grows fatty will result in reduced reproductive ability.	3.96	S	3.24	R	56

Strong belief : 100%

Weak belief : Nil

Strong belief :

a. Rational 83.3%

b. Irrational 16.6%

S - Strong, R - Rational, IR - Irrational



Table 32. Miscellaneous beliefs

		Farmers mean score	Strength	Scient- ists mean score	Ration- ality	Adop- ters
1.	It is good to wipe a new born calf with a cloth soaked in boiled water in which salt and sugar are dissolved.	4.02	S	3.4	R	42
2.	An effective method of castration is by crushing the testes with the help of stones or logs of wood.	3.93	S	2.0	IR	61
3.	Coagulated colostrum if consumed is good for human health.	4.19	S	3.6	R	83
4.	The meat of cattle and buffalo should not be eaten.	4.04	S	1.86	IR	88
5.	To keep cattle elaborate housing is not needed.	4.04	S	3.4	R	70

Strong belief : 100%

Weak belief : Nil

Strong belief

a. Rational 60%

b. Irrational 40%

S - Strong, R - Rational, IR - Irrational

The irrational belief no.2, ie., castrating bulls by crushing the testes with the help of stones or logs of wood should be discouraged and stopped. The other irrational belief ie, belief that meat of buffaloes and cows should not be eaten, nonetheless, was one based on (religious) values and sentiments. Belief no.2 could definitely keep out scientific and humane methods of castration.

#### 4.2.15 Overall strength and rationality of beliefs

Table 33. Overall strength and rationality of beliefs

Sl. No.	Strength	Rationality					
		Rational		Irrational		Overall	
		A	%	A	%	A	%
1.	Strongly held beliefs	55	75.36	18	24.65	73	100.00
2.	Weakly held	Nil	Nil	Nil	Nil	Nil	Nil

Data presented in the Table 33 indicated that there were only strongly held beliefs and no belief was weakly held. Among the strongly held beliefs almost three-fourth (75.35%) were rational whereas the remaining one-fourth were irrational.

### 4.3 Awareness about the traditional beliefs

It is evident from the table 34 that majority of the respondents (65%) had middle level awareness about traditional beliefs in dairy husbandry. The middle awareness category was aware of 32 to 63 per cent of the beliefs studied. A little less than one-fifth of the respondents (19%) had high awareness. The high awareness category was aware of more than 63 per cent of the beliefs studied. The remaining respondents (16%) had only low awareness about the beliefs. The low awareness category was aware of only less than 32 per cent of beliefs. Further, among the high awareness group 94.7 per cent respondents were strong believers. Among the low awareness group only 6.25 per cent were strong believers. Among the middle level awareness group 46.15 per cent were strong believers.

The fact that among the highly aware group there were more strong believers than weak believers as against the low aware group among whom there were more weak believers than strong believers indicated that more the awareness more the degree of belief. In other words those who knew more of beliefs had more faith in the beliefs.

Table 34. Awareness about traditional beliefs in dairy busbandry

Level of awareness	Respondents		
	Strong believers	Weak believers	Overall
High (>63% beliefs)	18 (94.78)	1 (5.20 )	19 (19)
Medium (32-63% beliefs)	30 (46.15)	35 (53.84)	65 (65)
Low (<32% beliefs)	1 (6.25 )	15 (43.75)	16 (16)
Total	49	51	100

Figures in parenthesis indicate percentage

#### 4.4 Beliefs acting as techno-cultural obstacles

Table 35 enlisted the strongly held irrational beliefs which would act as techno-cultural obstacles. There were in all 18 such beliefs. The percentage of adopters ranged from 12 to as much as 70 for these beliefs. Of all, five irrational beliefs, numbers 1, 5, 15, 17 and 18 were adopted by half or more of the respondents. Except for belief no.2 for which percentage of adopters were less (12%), for all others the percentage of adopters were conspicuously more.

Since adopters in the present study included besides those already tried the beliefs, those would try in the future

as and when need arises, it is clear that many are not going to seek scientific advises or remedies in the future. This is a cause for concern as this would either delay or completely block diffusion of appropriate technologies.

It is also worth stating that even practicing many of the rational beliefs identified in the study could delay or block technological diffusion for these traditional beliefs mostly are practiced in disease conditions which are highly infectious and or contagious in nature. In such situations holistic treatment is warranted and not part therapy. Many of the practices identified in the present study were only part therapy, which may be rational. But such practices does not rule out the need for holistic treatment. For instance, one of the practices to cure mastitis identified in the study and which was judged to be a rational practice was applying to the udder a paste made out of the leaves and stem of 'Appakovai' plant and turmeric. This is a part therapy being only an external application and practicing this doesn't mean that internal medication, use of antibiotics etc. in acute cases are not required. In other words, farmers should not view such part therapy as ultimate. If and when they feel it as the ultimate there is going to be no thinking about practicing scientific and holistic methods. In such instances, practicing of rational beliefs even can block technology adoption.

Table 35. Traditional beliefs acting as techno-cultural obstacles and extent of adoption

Sl. No.	Beliefs	Adopters (%)
1.	As a cure for digestive disorders fat of wild pig is orally given	62
2.	For curing anorexia of cattle a knot is made on the tongue	12
3.	For foot lesions (FMD) cattle is left in the mud for sometime	44
4.	To cure foot and mouth disease cattle is left in the running water for some time	40
5.	For foot lesions of foot and mouth disease small fishes are ground and made into a paste and is applied to the foot lesions	50
6.	To cure foot and mouth disease fish washed water is poured on the lesions	35
7.	Snake skin ground with fat of wild pig can be applied with a feather to cure foot lesions of foot and mouth disease	28
8.	For curing black quarter the affected part of thigh is cauterized with red hot iron	42
9.	For treating plant poisoning in cattle tip of the ear is cut and some drops of blood is squeezed out	45
10.	For treating snake bite 'kilimooku' tuber, onion and 'keezharnelly' are ground well and is given orally	43
11.	For snake bite small cut is made at the tip of the ear and some drops of blood is squeezed out	52

Contd.

Table 35 (Contd.)

Sl. No.	Beliefs	Adopters (%)
12.	For snake bite bark of 'Ungu' is ground well and a roll as big as an egg is given orally	25
13.	Placenta if wrapped in a cloth and hanged on to a tree which has white sap will result in more milk	68
14.	'Vellarankallu' is powdered well and made into a paste with ghee and applied on the affected eyes to cure corneal opacity	45
15.	For facilitating expulsion of placenta 'Appakovai' is tied around the horns and also fed	52
16.	For curing oedema a dehusked coconut is rolled over the area	41
17.	An effective method of castration is by crushing the testes with the help of stones or logs of wood	61
18.	The meat of cattle and buffaloes should not be eaten	70

Plate 1. *Cissus quadrangularis*

Plate 2. *Vanilla aphylla*





Plate 3. *Acalypha indica*

Plate 4. *Jatropha curcas*



Plate 5. *Acacia leucophloea*

Plate 6. *Plumbago zeylanica*

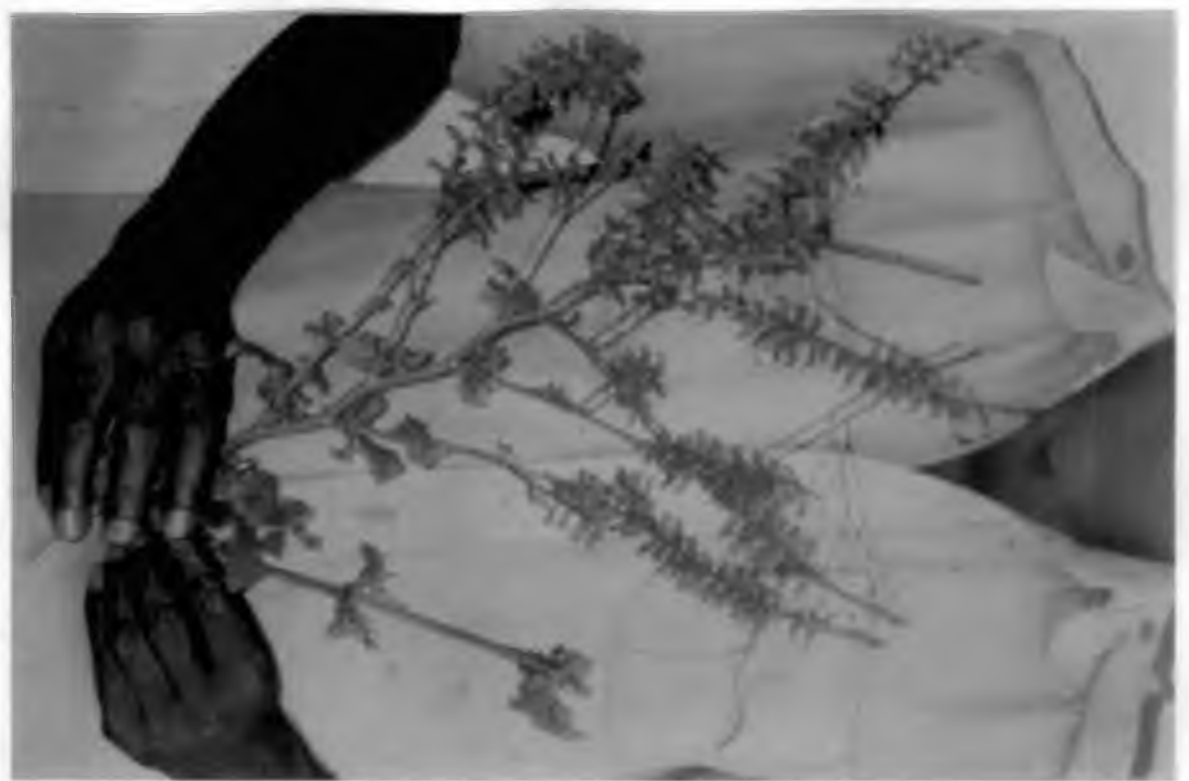


Plate 7. *Carmona retusa*

Plate 8. *Holygama amottiana*



Plate 9. *Datura stramonium*

Plate 10. *Dillenia pentagyna*





Plate 11. *Leucas aspera*

Plate 12. *Croton bonplandianus*



Plate 13. *Sida cordata*

Plate 14. *Corallocarpus epigaeus*



Plate 15. *Pongamia pinnata*

Plate 16. *Bauhinia racemosa*



Plate 17. *Trianthea portulacastrum*

Plate 18. *Azadirachta indica*





Plate 19. *Euphorbia thirukandy*

Plate 20. *Bambusa* sp.



Plate 21. *Phyllanthus debilis*

Plate 22. *Tribulus terrestris*



Plate 23. *Mimosa pudica*

Plate 24. *Pergularia daemia*



Plate 25. *Achyranthes aspera*





## ***Summary***

## SUMMARY

In the field of dairy farming, tribal societies have nurtured a vast fund of indigenous knowledge existing as traditional beliefs. These beliefs are unwritten and are transferred from generation to generation through folklore, myths, aphorisms, etc. As far as the tribal folk are concerned, these beliefs serve as the package of practices from which appropriate ones are adopted in times of need, in dairy management. Scientists and extensionists have rather ignored the worth of many such beliefs. Of late, as the scientists have turned their eyes into sustainable development, those beliefs which were considered as primitive left overs of the past have gained much significance. These age old time tested beliefs in the field of veterinary and dairy husbandry which were transferred from generation to generation orally have every possibility of being lost unless sincerely documented. The imperative of traditional beliefs or indigenous technical knowledge and its documentation and validation has been a major theme for discussion and research quite recently. Traditional beliefs, however, of any society cannot be in toto scientific or rational and the tendency of romanticizing traditional knowledge should be critically viewed. The rationality, nonetheless, should be established and only those scientific and viable beliefs be accepted. At the same time adoption of superstitious beliefs shall be

discouraged. Furthermore, superstitious practices may block technological diffusion, thereby retarding the progress of any society. In this sense, the influence of belief system in a tribal society is more pertinent and draws increased attention as tribal societies are by and large traditional and backward. Empirical studies to understand traditional beliefs related to dairy husbandry are conspicuous by their absence.

Founded on above thoughts a study on the traditional belief system in dairy husbandry among tribals of Attappady was conducted.

### **5.1 Objectives of the study**

1. Inventorying traditional beliefs related to dairy husbandry
2. To determine the strength and rationality of traditional beliefs
3. To identify the traditional beliefs that could be either facilitators or blockers of technological diffusion
4. To study adoption of traditional beliefs and
5. To study the relationship between characteristics of tribal dairy farmers and the degree of belief and extent of adoption.

The study was carried out in Attappady block of Palakkad district of Kerala. The respondents were tribal dairy farmers of the area. A total of 100 respondents were chosen for the study, applying proportionate random sampling technique, from the jurisdiction of 10 milk co-operative societies functioning in the Attappady block.

Another group of respondents, chosen for the study were 30 scientist/expert judges from the field of veterinary and dairy husbandry, ayurveda and ethnobotany to judge the rationality of the traditional beliefs. A total of 200 beliefs were identified and out of which only 73 beliefs were selected in consultation with scientists/experts from the aforesaid fields of specialisation. Data were collected by interview schedule method from both tribal dairy farmers and expert judges. The data were subjected to statistical analyses and the results were summarised as under.

The selected 73 beliefs were categorized into 14 major domains viz., beliefs on digestive disorders, foot and mouth, and black quarter diseases, wound, poisoning, parasitism, urinary ailments, abscess, fracture, mastitis and udder oedema, milk production and general health, eye ailments, retention of placenta, general disease conditions and miscellaneous beliefs.

## 5.2 Profile of the respondents

Majority of the farmers studied belonged to middle age group and illiterates. Farmers owned on an average 4.45 heads of dairy cattle. Most of them had 10-34 years of experience in dairy farming. The occupation of a majority was agriculture and other labour. Majority were low in man-nature orientation scale indicative of subjugation to nature. Economic motivation to nearly two-third was medium. There were more respondents with medium innovativeness than either high or low innovativeness. In the progressivism-traditionalism scale three-fifth were on the higher side indicative of progressivism. Respondents with low scientific orientation was a little more than those with high scientific orientation. Similar was the trend with traditional media exposure. However, majority had only a low level of mass media exposure, extension agency contact and personal localite exposure.

## 5.3 Degree of belief

Depending on the level of agreement or disagreement towards the beliefs i.e., the degree of beliefs, the respondents were categorised as either strong believers or weak believers. It was found that 49 per cent of the dairy farmers studied were strong believers and the rest weak

believers. This weak believers were a little more than strong believers.

#### **5.4 Profile of respondents in relation to degree of belief**

- (i) Among young age group there were profoundly more of weak believers.
- (ii) Among the highly experienced in livestock keeping strong believers were more.
- (iii) There was only marginal difference in the number of strong and weak believers among the low and high categories grouped on the basis of number of livestock owned.
- (iv) Among those who lived subjugated to nature, as evidenced from the man-nature orientation scale, there were more of strong believers than weak believers.
- (v) There were more of strong believers than weak believers among those who were highly economically motivated.
- (vi) Among the highly innovative group, however, weak believers were more.

- (vii) There were more of weak believers than strong believers among the highly progressive group as evidenced from progressivism - traditionalism scale.
- (viii) Among the highly scientifically oriented weak believers were more.
- (ix) Strong believers were a little more than weak believers among those having high traditional media exposure.
- (x) Weak believers were more than strong believers among those having high mass media exposure.
- (xi) Among those having high extension agency contact weak believers were a little more than strong believers.
- (xii) There were more of strong believers than weak believers among those who had high personal localite exposure.

## **5.5 Profile of respondents as correlated to degree of belief and extent of adoption**

### **5.5.1 Socio-personal**

- (i) Age was significantly and positively correlated to degree of belief and extent of adoption.



- (ii) Experience in dairying was positively and significantly correlated to degree of belief and was highly significantly and positively correlated to extent of adoption.
- (iii) Livestock owned was positively and non-significantly correlated with number of livestock owned. The extent of adoption, nevertheless had no correlation.

#### 5.5.2 Psychological

- (i) Man-nature orientation was negatively and significantly correlated with degree of belief and extent of adoption.
- (ii) Economic motivation was negatively and non-significantly correlated to degree of belief as well as extent of adoption.
- (iii) Innovativeness was negatively and significantly correlated with degree of belief and extent of adoption.
- (iv) Progressivism-traditionalism was negatively and non-significantly correlated with degree of belief and extent of adoption.

(v) Scientific orientation was negatively and significantly correlated with degree of belief and extent of adoption.

### 5.5.3 Communication

(i) Traditional media exposure was positively and non-significantly correlated with degree of belief and extent of adoption.

(ii) Mass media exposure was negatively and highly significantly correlated with degree of belief. It was negatively and significantly correlated with extent of adoption.

(iii) Extension agency contact was negatively and non-significantly correlated with degree of belief and extent of adoption.

(iv) Personal localite exposure showed a positive but non-significant correlation with degree of belief but a positive and significant correlation with extent of adoption.

## **5.6 Strength and rationality of beliefs**

### **5.6.1 Beliefs on digestive disorders**

Out of the total 10 beliefs eight beliefs were strongly held rational beliefs and the remaining two were strongly held irrational beliefs. The number of adopters to these beliefs ranged from 12 to 81.

### **5.6.2 Beliefs on foot and mouth and black quarter**

Of the total eight beliefs, two were strongly held rational beliefs and all the rest were strongly held irrational beliefs. The number of adopters ranged from 26 to 58.

### **5.6.3 Beliefs on wound**

There were 11 beliefs altogether and all of them were strongly held rational beliefs. The number of adopters ranged from 25 to 50.

### **5.6.4 Beliefs on poisoning**

All the four beliefs under poisoning were strongly held irrational beliefs. The number of adopters ranged from 25 to 45.

#### 5.6.5 Beliefs on parasitism

All the five beliefs on endo and ecto-parasitism were strongly held rational beliefs. The number of adopters ranged from 30 to 54.

#### 5.6.6 Beliefs on urinary ailments

There were only two beliefs and both were strongly held rational beliefs. The number of adopters were 35 and 19 respectively for the 1st and 2nd beliefs.

#### 5.6.7 Beliefs on abscess

There were only two beliefs under this category and both were strongly held rational beliefs. The number of adopters were 34 and 45 for the 1st and 2nd beliefs respectively.

#### 5.6.8 Beliefs on fracture

There were in all three beliefs on fracture and all of them were strongly held rational beliefs. The number of adopters ranged from 66 to 80.

#### 5.6.9 Beliefs on mastitis and udder oedema

All the three beliefs were strongly held rational beliefs. The number of adopters ranged from 27 to 44.

#### 5.6.10 Beliefs on milk production and general health

In all there were seven beliefs out of which only one belief was a strongly held irrational belief and the rest were strongly held rational beliefs. The number of adopters for the beliefs ranged from 30 to 68.

#### 5.6.11 Beliefs on eye ailments

Out of the three beliefs associated with eye ailments two were strongly held rational beliefs and one was a strongly held irrational belief. The number of adopters ranged from 32 to 45.

#### 5.6.12 Beliefs on retention of placenta

In all there were four beliefs out of which a single belief was irrational but strongly held. All the other three beliefs were strongly held rational beliefs. The number of adopters for the latter ranged from 24 to 68.

#### 5.6.13 Beliefs on general disease conditions

Of the six beliefs one was a strongly held irrational belief and all others were strongly held rational beliefs. The number of adopters ranged from 34 to 56.

#### 5.6.14 Miscellaneous beliefs

There were in all five miscellaneous beliefs and among that two were strongly held irrational beliefs and the remaining three were strongly held rational beliefs. The number of adopters ranged from 42 to 88.

#### 5.6.15 Overall strength and rationality

All the 73 traditional beliefs selected for the study were strongly held beliefs. Out of these one-fourth were irrational beliefs. However, three-fourth according to judges opinion were rational.

### 5.7 Awareness about the beliefs

Majority of the respondents had only medium level awareness about traditional beliefs in dairy husbandry. Among the highly aware group there were more strong believers than weak believers.

### 5.8 Traditional beliefs acting as techno-cultural obstacles

Those strongly held irrational beliefs which were one-fourth of all the selected beliefs could act as techno-cultural obstacles in the acceptance of scientific dairy husbandry practices.

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## ***Appendix***

DEPARTMENT OF EXTENSION  
COLLEGE OF VETERINARY AND ANIMAL SCIENCES

INTERVIEW SCHEDULE

House No.

Village

I Hamlet/colony

1. Name of the respondent :
2. Father's name :
3. Age :
4. Literacy :
5. Experience in dairying :
6. Livestock owned :
7. Occupation :
8. Caste :

II Man-nature orientation

Please state your agreement/disagreement with each of the following statements:

No.	Statement	A	DA
1.	Children should be taught not to expect too much out of life, so they won't be disappointed		
2.	Children should learn early that there is not much you can do about the way things are going to turn out in life		
3.	Success in life depends upon the will of god		
4.	When a man is born, the success he is going to have is already on the cards, so he may as well accept it and not fight against it		

### III Economic motivation

No.	Statements	A	UD	DA
1.	A livestock owner should work towards more milk yield and economic profit			
2.	A most successful livestock owner is the one who makes the most profit			
3.	A livestock owner should try any new technological know-how of animal husbandry which may earn him more money			
4.	A livestock owner should rear cross-bred cows to produce more quantity of milk to increase monetary profits in comparison to rearing of local cows			
5.	It is difficult, for the livestock owner's children to make a good start unless provided them with economic assistance			
6.	A livestock owner must earn his living but the most important thing in life cannot be defined in economic terms			

### IV Innovativeness

When would you prefer to adopt an improved dairy management practice? Please tick mark.

- a. As soon as, it is brought to my knowledge
  - b. After I have seen other farmers using it successfully
  - c. I prefer to wait and take my own time
-

IX Extension agency contact

Sl. No.	Personnel	No. of times contacted in the past calender year in connection with dairying
1.	Village Extension Officer	
2.	Tribal Extension Officer	
3.	Dairy Extension Officer	
4.	Livestock Inspector	
5.	Veterinary Surgeon	
6.	B.D.O.	
7.	Project Officer (ITDP)	
8.	Field Officer (Bank)	
9.	Milk Co-op. Society Secretary	
10.	Others	

X Personal-localite exposure

	Always	Often	Sometimes	Rarely	Never
Neighbours					
Friends					
Relatives					
Milkmen					
Local healer					
Middle-man in purchase/sales					
Trader					
Milk co-operative employees					

No.	Statements	A	UD	DA
V	<b>Progressivism - Traditionalism</b>			
1.	Girls should be educated			
2.	Caste system is of no more utility in our country under present conditions and therefore, its related barriers and restrictions should be done away with			
3.	Child birth is a human affair and not God given, therefore, birth control should be practiced to check the increasing population and family strains			
VI	<b>Scientific orientation</b>			
1.	Improved dairy husbandry practices gives better results to a farmer than old methods			
2.	Even a farmer with lots of experience should use new methods of dairy husbandry			
3.	Though it takes time for a farmer to learn new methods in dairy husbandry it is worth the efforts			
4.	A good farmer experiments on with new ideas in dairy husbandry			
5.	Traditional methods of dairy husbandry have to be changed in order to raise the level of living of farmers			
6.	The way a dairy farmers fore-father farmed is still, the best way to rear animals			

## VII Communication

### Exposure to traditional media

Sl. No.	Media	Heard		If yes howmany occasions in the last year
		Yes	No	
a.	Drama			
b.	Folk songs			
c.	Puppetry			
d.	Villupattu			
e.	Any other (specify)			

## VIII Mass media exposure

No.	Media	Regularly	Occasionally	Never
1.	Reading news paper			
2.	Listening to radio			
3.	Listening to TV			
4.	Listening to farm broadcaste on radio/TV			
5.	Reading magazine/ bulletins or any other literature relating to dairy husbandry			

IX Extension agency contact

Sl. No.	Personnel	No. of times contacted in the past calender year in connection with dairying
1.	Village Extension Officer	
2.	Tribal Extension Officer	
3.	Dairy Extension Officer	
4.	Livestock Inspector	
5.	Veterinary Surgeon	
6.	B.D.O.	
7.	Project Officer (ITDP)	
8.	Field Officer (Bank)	
9.	Milk Co-op. Society Secretary	
10.	Others	

X Personal-localite exposure

	Always	Often	Sometimes	Rarely	Never
Neighbours					
Friends					
Relatives					
Milkmen					
Local healer					
Middle-man in purchase/sales					
Trader					
Milk co-operative employees					

No.	Belief	Have you heard of this belief		If yes indicate agreement					I have tried this		Shall try next time	
		Yes	No	SA	A	UD	DA	SDA	Yes	No	Yes	No

### Diseases and treatment

#### Anorexia

1. For treating anorexia of cattle 'Changalamparanda' (*Cissus quadrangularis*) Stem is crushed well and given orally
2. For treating anorexia of cattle Gundunjarali (*Vanilla aphylla*) stem is Crushed and given orally
3. Kuppameny (*Acalypha indica*) leaf and stem if made into a paste and if orally given can cure anorexia
4. For curing anorexia of cattle a knot is made on the tongue

#### Wounds

5. Kadalavanakku (*Jatropha curcas*) bark made into a paste if applied can heal wounds
6. Powdered bark of Velamaram (*Acacia leucophloea*) can be used for healing wounds
7. For healing wounds of cattle 'Koduvely' *Plumbago zeylanica*) leaf and stem are made into a paste and applied
8. Tharali (*Carmona retusa*) leaf paste can be applied for healing the wound of cattle
9. Crushed bark of 'Cheru' (*Holygarna arnottiana*) if fed orally can expel maggots from a wound
10. Punna (*Dillenia pentagyna*) bark if made into a paste and applied on maggot wound of cattle, can cure maggot wounds
11. Ummam (*Datura stramonium*) leaves and fruit if made into a paste and applied can expel maggots
12. A paste made from Thumba (leucas) Pukayila (Tobacco leaf) and Chunnambu (lime) can expel maggots from a wound
13. Koduvely (*Plumbago zeylanica*) leaf and stem has got styptic action



No.	Belief	Have you heard of this belief		If yes indicate agreement					I have tried this		Shall try next time	
		Yes	No	SA	A	UD	DA	SDA	Yes	No	Yes	No

26. For treating snake bite Kilimookku (*Corallocarpus epigaeus*) tuber Onion and Keezharnelly (*Phyllanthus debilis*) are ground well and is given orally
27. For snake bite, small cut is made at the tip of the ear and some drops of blood is squeezed out
28. For snake bite bark of 'Ungu' (*Pongamia pinnata*) is ground well and a roll as big as an egg is given orally

#### Affections of the eye

29. Aathy (*Bauhinia racemosa*) leaves along with tobacco is chewed well and spit on to the affected eyes to cure corneal opacity
30. 'Vellarankallu' (A whitish rock fragment) is powdered well and made into a paste with ghee and applied on the affected eyes to cure corneal opacity
31. *Trianthema portulacastrum* is chewed and spit on to the affected eye in case of corneal ulcers
32. For oral ulcers of foot and mouth disease plantain fruit and fat of wild pig are mixed well and applied
33. For foot lesions cattle is left in the mud for some time
34. To cure foot and mouth disease cattle is left in the running water for some time
35. For foot lesions of RMD small fishes are ground and made into a paste and is applied to the foot lesions
36. To cure foot and mouth disease fish washed water is poured on the lesions
37. For curing foot and mouth lesions Neem leaves are made into a paste and applied

No.	Belief	Have you heard of this belief		If yes indicate agreement					I have tried this		Shall try next time	
		Yes	No	SA	A	UD	DA	SDA	Yes	No	Yes	No

38. Snake skin ground with fat of wild pig can be applied with a feather to cure foot lesions of F.M.D.

#### Fracture

39. The bark of *Acacia leucophloea* is bandaged over fracture to immobilise and heel fracture
40. To bandage fractured part cloth soaked in the sap of Thirukally (*Euphorbia thirukally*) can be used.
41. Bamboo pieces can be used as splints for immobilization of fracture
42. In a condition with red coloured urine Keezharnelly (*Phyllanthus debilis*) is groundwell and orally given
43. For a condition of yellow coloured urine Njerinjil (*Tribulus terrestris*) leaf and stem are crushed well and is given orally
44. For curing cough in cattle Thottavady (*Mimosa pudica*) and onion are ground well and is given orally
45. Velipparuthy (*Pergularia daemia*) leaves are given to cattle if the animal is recumbant
46. For curing oedema a dehusked coconut is rolled over the area
47. For dog bite wound Naykolly (*Achyranthes aspera*) leaves are fried in oil and made into a paste and applied
48. For yolk gall in cattle ash of Aathy (*Bauhinia racemosa*) mixed in oil and applied
49. For evulsion of horn 'Kara Maram' (*Randia dumetorum*) leaves and stem are crushed well and applied over the area
50. For retention of placenta Bamboo leaves are fed

No.	Belief	Have you heard of this belief		If yes indicate agreement					I have tried this		Shall try next time	
		Yes	No	SA	A	UD	DA	SDA	Yes	No	Yes	No
51.	For retention of placenta 'Appakoval' (Coccinia) is tied around the horns and also fed											
52.	For facilitating expulsion of placenta well riped snake gourd fruit is fed											
53.	For facilitating expulsion of placenta Palampazhythala ( <i>Sida cordata</i> ) is fed											
54.	For curing mastitis 'Appakova' leaf and stem along with turmeric is made into a paste and locally applied											
55.	For curing prepartum oedema Njerinjil or Narinji ( <i>Tribulus terrestris</i> ) leaves are made into a paste and fed											
56.	For curing B.Q. disease the affected part of thigh is cauterized with red hot iron											
57.	For deworming, leaf, bark and fruit of neem are ground well and is given orally											
58.	For deworming thumba ( <i>Leucas</i> ) plant is ground well and given orally											
59.	For deworming tender arecanut is ground well and orally given											
60.	For improving general health and appearance of cattle Gundunjaraly ( <i>Vanilla aphylla</i> ) is ground well and orally given											

### Nutrition and Management

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### Improving milk production

61. Cowpea and coconut are ground well and that is fed to cattle to improve milk production
62. Cotton seed cake if included in the ration will improve milk production
63. Tender papaya, soaked rice and coconut oil together if fed will increase milk production



**A STUDY OF THE TRADITIONAL BELIEF  
SYSTEM IN DAIRY HUSBANDRY AMONG  
TRIBALS OF ATTAPPADY**

**By  
SUNIL G.**

**ABSTRACT OF A THESIS**  
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## **ABSTRACT**

The imperative of traditional beliefs or indigenous knowledge and its documentation and validation has been a major theme for research quite recently. Tribal societies have nurtured, over centuries, many a beliefs in the field of dairy farming. A study was conducted among the tribal dairy farmers of Attappady block in Palakkad district with the objectives of inventorying the beliefs, determining the strength and rationality of beliefs, knowing the extent of adoption of beliefs etc. Rationality of beliefs was judged by experts identified for the purpose. A total of seventy three beliefs were studied after categorising them under fourteen domains.

Most of the farmers studied were of middle age group, illiterates and by occupation agriculture and other labourers. Majority had a low profile of communication characteristics since mass media exposure, extension agency contact and personal localite exposure were less.

There were a little more of weak believers than strong believers of traditional beliefs among them. Further, majority of the respondents had only middle level awareness about traditional beliefs. Among the highly aware group there were more of strong believers than weak believers

Out of the socio-personal variables studied, age and experience in dairying were positively and significantly correlated with degree of belief and extent of adoption. Out of the psychological variables, man-nature orientation, innovativeness and scientific orientation were negatively and significantly correlated with degree of belief and extent of adoption. Among the communication variables mass media exposure was negatively and highly significantly correlated with degree of belief.

All the beliefs studied were found to be strongly held beliefs and one-fourth of all beliefs were irrational. Extent of adoption of all beliefs were measured and it ranged from eighty eight adopters for a belief to twelve for another.

The fact that almost one-fourth of all beliefs were irrational is a matter of concern. As practicing of these irrational beliefs could result in non-adoption of modern scientific practices, thereby blocking technology diffusion.

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