TRAINING NEEDS OF DAIRY FARM INSTRUCTORS OF THE DAIRY DEVELOPMENT DEPARTMENT OF KERALA

By

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THESIS

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DECLARATION

I hereby declare that this thesis entitled **"TRAINING NEEDS OF DAIRY FARM INSTRUCTORS OF THE DAIRY DEVELOPMENT DEPARTMENT OF KERALA"** 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 the thesis entitled **"TRAINING NEEDS OF DAIRY FARM INSTRUCTORS OF THE DAIRY DEVELOPMENT DEPARTMENT OF KERALA"** is a record of research work done independently by **Shri. Vimal Rajkumar. N.,** 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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Vimal Raj Kumar.N.

DEDICATED TO MY

BELOVED PARENTS AND

MENTOR

ABBREVIATIONS

AHD	-	Animal Husbandry Department
DDD	-	Dairy Development Department
DESU	-	Dairy Extension Service Unit
I.A.R.I	-	Indian Agricultural Research Institute
I.C.D.P	-	Intensive Cattle Development Project
IMG	-	Institute of Management in Government
I.V.R.I.	-	Indian Veterinary Research Institute
KAU	-	Kerala Agricultural University
KILA	-	Kerala Institute for Local Administration
KLDB	-	Kerala Livestock Development Board
MANAGE	-	National Institute of Agriculture Extension Management
NAARM	-	National Academy of Agriculture Research Management
N.D.R.I	-	National Dairy Research Institute
NIC	-	National Institute of Computer science
TNAU	-	Tamil Nadu Agricultural University
TNI	-	Training Need Index
TNQ	-	Training Need Quotient
VLW	-	Village Level Worker

CONTENTS

LIST OF TABLES

LIST OF FIGURES

Introduction

1. INTRODUCTION

India has made remarkable achievements in the field of dairying since independence. With an annual milk production of 86 million tonnes in 2000, India became the largest producer of milk in the world. (Hemalatha and Reddy, 2001). Milk production in Kerala has also steadily increased from 23.4 lakh tonnes in 1997-98 to 24.2 lakh tonnes in 1998-99. But the annual requirement of milk in Kerala is about 33.1 lakh tonnes (Nair, 1999). Thus, there is a wide gap between the demand of milk and its production making it necessary to bring milk from outside states. So naturally there is a need for boosting the milk production.

The twin objectives of enhancing the milk production and making dairying into a lucrative venture can be realized only if the productivity of the cattle is increased. In India, Kerala tops with regard to its crossbred cattle population of 68 per cent. (Government of Kerala, 1999). Despite concerted research efforts and innovation explosion in dairy spheres, the productivity of our crossbred cattle is one far behind that of the developed countries. Apart from lags in the availability of new and appropriate technologies and paucity of physical resources, lack of proper efforts in the direction of human resource development has also been a major constraint that stunts the growth of the dairy sector to its potential levels. To achieve greater strides in dairy production, it is not only necessary to accelerate

scientific discoveries appropriate to the farm situation but there must also be systematic efforts to transfer the relevant technologies from the research system to the ultimate users, the dairy farmers.

Many of the potential livestock production technologies are either being partially adopted by the users or totally rejected by them (Singh and Sharma, 2001). Bridging the gap between technology generation and its utilization is an important pre-requisite for achieving sustainable production, quality control and efficient marketing. This responsibility lies with the extension system, which is to be revamped and strengthened with trained human resource.

The Dairy Development Department of Kerala plays a key role as an agency providing extension services in dairying in the state. The Dairy Farm Instructors of the Dairy Development Department act as the nervous system in the process of communicating the latest scientific knowledge from lab to land. They are the grass root workers who are entrusted with the responsibilities of both extension and administration of primary milk cooperative societies in their area of jurisdiction. Being the extension functionaries at the Block level, the Dairy Farm Instructors are to be well versed with dairy science and technology and its appropriate application. They should also be skilled enough to fulfill the role of educators as well as change agents. Their professional competence can pay rich dividends to win

the confidence of the dairy farmers and motivate them to adopt appropriate technologies. So it is essential to update periodically their knowledge and skill in the concerned task areas through systematic and continuous in-service training programmes.

Training is an intellectual investment for human resource development. Training is the process of assisting a person for enhancing his or her efficiency and effectiveness at work by improving and updating his/her professional knowledge and by developing skills relevant to his/her work and cultivating appropriate attitude towards work and people (Collings, 1966). Hence training is considered to be a vital component in the capacity building of change agencies. It has been recognized as an important input in improving the professional competence of extension personnel for effective transfer of technology to the farming community. It is obvious that any training programme, to be effective, should be based on the needs of the trainees, which should be determined with the help of a systematic procedure and spelled out accurately for the guidance of those in charge of such training programmes.

Keeping this view in forefront, the present study was designed with the following objectives.

1. To identify the training needs of Dairy Farm Instructors as perceived by them.

2. To find out the determinants of training needs of Dairy Farm Instructors.

The perceived training needs of the Dairy Farm Instructors brought out by the study may contribute to the development of a need based curriculum while designing training programmes for them. Ensuring the participation of trainees in the training need assessment would result in goodness of fit of the training programmes with the priorities and preferences of the trainees. This in turn can induce interest and motivation in them to make best use of the training programmes for improving their job performance. Also, the determinants or factors influencing the training needs of the Dairy Farm Instructors among their various socio-personal characteristics sorted out through the study may give valuable clues to the motivational factors that persuade the respondents to attend training programmes.

Review of Literature

2. REVIEW OF LITERATURE

The review of the past relevant studies have been presented under the following sub-headings.

2.1 Concept of training

2.2 Importance of training for extension personnel

2.3 Role perception

2.4 Subject matter areas for training

2.5 Training strategy

2.6 Relationship between the training need and socio-personal characteristics

2.1 Concept of training

Training has been defined variously by different authors.

Hall (1962) described training as the process of aiding employees to gain effectiveness in their present or future work through the development of appropriate habits of thought and action, skills, knowledge and attitudes.

Rudramoorthy (1964) defined training as a means to bring improvement in the quality of work performed by the staff and individuals. The concept was further explained as that it should equip the worker with

necessary knowledge and skills or abilities and attitudes to reach his goal efficiently.

Flippo (1966) described training as the act of increasing the knowledge and skill of an employee for doing a particular job.

Craig and Bittel (1967) defined training as an essential input in management efforts to improve overall performance of the enterprise.

Bennis (1969) conceived training as a small group effort designed to make the participants more aware of themselves and of group process. The group works under the guidance of a professionally competent behavioural scientist and explores group processes and development by focusing attention on the experienced behaviour of its members.

Littlefield *et al.* (1971) elaborated training as a continuous, systematic development among all levels of employees of that knowledge and those skills and attitudes which would contribute to their welfare and that of the company.

Peter (1972) observed that training is learning job which is a socialization process by which the individual acquires knowledge, attitudes and skills to meet the expectation of those who influence his behaviour.

Havelock and Havelock (1973) described training as a means to a more immediate end, namely creating a cadre of professionals with a new set

of skills. It was assumed that those persons after acquiring the needed skills, would be able to effect further change in a large sphere.

Coombs and Ahmed (1974) envisaged that training emphasises a more systematic and deeper learning of specific skills and related knowledge.

Jucius (1975) stated that training is used to indicate any process that would increase the aptitudes, skills and abilities of employees to perform specific jobs.

According to Rao (1975) training is a kind of learning process where a selected group of individuals undergo learning experiences to internalize skills, resulting in modification of behaviour towards job performance.

Armstrong (1977) defined training as a systematic development of the knowledge, skills and attitudes required by an individual to perform adequately a given task or job. According to him, training would involve learning of various kinds and in various situations.

Aslam (1979) views training for skill development as an attempt to bridge the gap between the existing skill and the new technology on the one side and develop skill among the unskilled on the other side.

Kamat (1983) defined training as the process of helping personnel in an organization to acquire knowledge, skill and attitude for new and better ways of behaviour needed by an organization.

Dahama and Bhatnagar (1985) stated that training aims at educating a person so as to be fitted, qualified and proficient in doing some job. For an extension worker, training included education, which aimed at bringing a desirable change in the behaviour of the trainee or learner.

According to Lynton and Pareek (1990) training is primarily concerned with preparing the participants for certain lines of action which are delineated by technology and the organization in which he works. The focus in training is on internalizing the skills for action by giving opportunities to participate to practise the new skills in situations resembling the complexities of real life.

2.2 Importance of training for extension personnel

Planty (1948) pointed out that the aim of the training is to build continuously and systematically to the maximum degree and in proper proportions, the skill and attitude which contribute to the welfare of the organization and employee.

Dayal (1966) stated that training would make a man perfect. It would enable him to do his job efficiently, smoothly and quickly with great confidence and concentration.

Ramakrishnan (1968) opined that the training of people engaged in agriculture and community development programme aims to communicating information, knowledge and skills, replacing old attitude by new ones, exchanging opinion and experience, removing doubts and difficulties and creating a desire to change. To be effective, training should be planned in advance. The content and method should suit to the level of intelligence, education and understanding of the trainees and should take into account the local needs and problems and their applicability of new techniques and solutions to the local situations.

Rao (1984) stated that training was aimed at giving the functionaries a sense of purpose, to promote extensive and broad-based development of initiative amongst beneficiaries and to generate self-confidence and belief in the efficiency and self-help. It was also expected to equip the workers with the capability to find solutions to the problems.

According to Reddy (1984) training is the organized procedure by which people acquire knowledge and/or skill for a definite purpose. The objective of training is to bring about change in the behaviour of the trained. It means that the trainees should acquire new skills, technical knowledge and

problem solving ability. It is expected that the trainees will apply their newly acquired knowledge and skill on the job in such a way to facilitate the achievement of organizational goal.

2.3 Role perception

In a study on the Animal Husbandry Extension Officers in Punjab, Sharma and Singh (1968) reported that all the respondents were performing dual roles, one that of the Veterinary Surgeon and the other that of the Veterinary Extension Officer. Between these two roles, they were found to perceive the former more important than the latter.

Krishnaraj and Srinivasan (1988) found that almost all the Veterinary Assistant Surgeons working in Coimbatore region of Tamil Nadu were conscious about their roles and responsibilities.

Reddy and Jayaramaiah (1990) studied the relationship of certain selected variables and the productivity of the Village Extension Workers serving in Guntur, Karimnagar and Anatapur districts of Andhra Pradesh. They found that the job perception of the respondents was positively and significantly correlated with their productivity.

2.4 Subject matter areas for training

A study by the Government of West Bengal, India (1955) suggested that the training programme for Village Level Workers should be in the

areas of extension methods, farm mechanics, road construction and maintenance, rural health improvement and social education.

Bisen (1962) studied the training needs of Agriculture Extension Officers of Mahakoshal region, Madhya Pradesh. He recommended that the training programme for them should give emphasis to the aspects such as methods of approaching farmers so as to win their confidence, developing leadership and imparting knowledge and skills of improved farm practices to cultivators.

In his study on the suitability of training of Village Level Workers to their job in Kerala State, Pisharody (1962) observed that topics like soil testing, identification of different soil types, minor repairs of agricultural implements and modern methods of weed control needed more emphasis in the training programme for the Village Level Workers.

While analyzing the training needs of Agriculture Extension Officers working in Andhra Pradesh, Reddy and Reddy (1966) found that they needed more training in extension education.

A study on the in-service training needs of the Agriculture Extension Officers of Bhagalpur division, Bihar was carried out by Singh and Singh (1966). They observed that the training need was more in the areas of programme planning and development, communication and agriculture.

The training needs of the Village Level Workers working in the I.A.D.P. blocks of Ludhiana, Punjab were analysed by Sinha and Gill (1967). They reached the conclusion that the respondents needed further training in plant protection, agricultural implements and soil management.

Sharma and Singh (1968) reported that there was greater demand for training in clinical and surgical subjects and comparatively less need in extension education and animal science as far as the Animal Husbandry Extension Officers of Punjab State were concerned.

Halim and Islam (1973) found that most of the Front Line Extension Workers serving in Mymensinge Sadar Sub division (North), Bangladesh preferred technical subject matter and extension teaching methods for training.

A unique study on the in-service training needs of Stockmen as perceived by them and their Supervisors was done by Dubey *et al.* (1977). The study was conducted in I.C.D.P., Karnal and key village area of N.D.R.I., Karnal. They found that both the stockmen and the supervisors gave first and second priorities to animal breeding and disease control respectively whereas economics of milk production and marketing were the least preferred areas by the stockmen and their supervisors.

In their attempt to find out the training need hierarchy of selected Village Level Workers of Jaipur district, Rajasthan, Jha and Jani (1977)

observed that the disease control of high yielding varieties of plants was the top most in the hierarchy.

In a study on the training needs of Agriculture Extension Officers of Punjab State, Sandhu and Bilang (1977) observed that the respondents needed in-service training in the areas of organization, services and programme planning.

The subject matter training needs of some selected Gram Sevaks of the Madurai district in Tamil Nadu were assessed by Ganeshan *et al.* (1980). It was noted that the Gram Sevaks preferred plant protection as the most important area for training followed by manures and manuring, soils and soil management and crop husbandry and farm management.

In a critical analysis of the in-service training needs of the Assistant Agriculture Officers of Karnataka, Naik (1982) recognized the highest need for training in the area of crop production technology for crop innovation. The areas of extension administration and supervision, extension communication and programme planning were also found significant.

A study on the training needs of District Agriculture Development Officers in Nepal done by Shrestha (1983) revealed that training was needed the most in the area of programme development followed by administration and management, communication and extension methods.

Sharma and Shukla (1986) investigated the training needs of Agriculture Extension officers of Punjab. They found that training was needed in the areas of communication process of agricultural technology, preparation of script for radio broadcast, organizing field trips and tours, determining training needs of farmers, evaluating effectiveness of training, finding out problems and needs of farmers, and monitoring and evaluation.

Sharma (1987) made an attempt to evaluate the institutional training of the Village Extension Workers under T and V system in Rajasthan. He found the trainees stating that most part of the training had hardly any practical application in their areas.

In a study on the training needs of Horticulture Inspectors of Punjab State, Bhagat and Khurana (1991) reported that the respondents expressed the need for further training in the areas of plant protection measures and raising fruit nursery.

In an investigation on the training needs of Agriculture Inspectors of Punjab State, Saini and Sandhu (1993) found that the respondents needed more training in the areas of diseases and insect pests of fodder production, seed production and varieties.

An analysis on the training need preference of dairy trainees who underwent training in a Farmers Training Centre, Kattupakkam, Tamil Nadu was done by Sudeepkumar and Subramanian (1993). They reported that the

respondents preferred the subject matter areas of disease control measures, management of crossbred animals and calf management which were assigned first, second and third ranks respectively.

A study conducted by Kalita and Sarmah (1999) to identify the training needs of some selected Village Level Extension Workers of Assam revealed that entomology was the most preferred subject and agricultural economics the least preferred by the respondents for training.

Rambabu (2000) assessed the training needs of Agriculture Extension Officers of Srikakulam district in Andhra Pradesh. He observed that the subject matter areas of meteorological data in crop production, diversified farming and dryland agricultural crops were preferred for training as they scored first, second and third ranks respectively.

Sakthivel (2001) studied the training needs of the Veterinary Surgeons of Kerala state. He reported that zoo and wildlife was the most preferred area for training followed by Information technology, Veterinary medicine, Surgery and Extension by the respondents.

2.5 Training strategy

2.5.1 Type of training

While analyzing the training need of the Veterinary Surgeons of Kerala, Sakthivel (2001) found that institutional type of training was the

most preferred one for all the subject matter areas except extension and professional management for which the respondents preferred distance learning.

2.5.2 Training method

Bhaskaram (1966) made an attempt to evaluate the in-service training of extension personnel working in different states of India. He found that the workshop was indicated as the most useful training method whereas lecture was perceived as the least effective one by the respondents.

Sharma and Singh (1968) reported that majority of the Animal Husbandry Extension Officers of Punjab preferred practical oriented methods for their training programme.

As reported by Naik (1982) demonstration was the most preferred method of training followed by field visit by majority of the Assistant Agriculture Officers of Karnataka.

As per the findings of a study done by Sudeepkumar and Subramanian (1993) majority of the dairy trainees of Farmers Training Centre, Kattupakkam, Tamil Nadu preferred method demonstration the most followed by a combination of lecture, field trip and campaign as training methods.

Mathiyalagan and Subramanian (1998) found that majority of the poultry farmers and extension personnel in Namakkal block, Salem district, Tamil Nadu preferred the methods of skill teaching followed by 'do it yourself' and field trip for their future training programme.

Tyagi (1998) opined that the training programme for the development personnel in India should incorporate more means of participatory training approach rather than the existing practices like chalk and talk method and content and trainer-centered training approach.

2.5.3 Trainers

Naik (1982) reported that majority of the Assistant Agriculture Officers of Karnataka gave first preference to the specialists from the State Agriculture College and second preference to the block level subject matter specialists to be the trainers for their in-service training programme.

As reported by Shrestha (1983) about forty three per cent of the District Agriculture Development Officers in Nepal preferred to invite trainers from foreign countries to impart training to them in certain topics.

While discussing his perspective on training the development personnel of India for twenty-first century Tyagi (1998) opined that the existing training institutions should be streamlined and strengthened by giving equal footing to subject matter specialists and social scientists in the

training institutions for development personnel. He also suggested that experts should be hired from all the concerned sectors.

As per the findings of a study done by Sakthivel (2001) most of the Veterinary Surgeons of Kerala gave their first preference to trainers from outside the parent organization (AHD) but within the Kerala state. The second preference was given to experts from outside the state.

2.5.4 Duration and periodicity of training

In his study on the felt training needs of Animal Husbandry Extension Officers in Punjab, Sharma (1966) found that the Animal Husbandry Extension Officers and Instructors preferred a duration of three months for training whereas the District Animal Husbandry Officers preferred one month as duration.

Halim and Islam (1973) reported that most of the Frontline Extension Workers serving in Mymensinge Sadar Sub Division (North), Bangladesh preferred to attend training programmes of one to three months duration.

Dubey *et al.* (1977) reported that majority of the stockmen and supervisors of I.C.D.P., Karnal recommended a duration of four weeks for their training programme.

Naik (1982) observed that majority of the Assistant Agriculture Officers of Karnataka preferred less than one week as duration for their in-service training programme at an interval of once in a fortnight.

According to a study by Shrestha (1983) majority of the District Agricultural Development Officers in Nepal desired to attend a training programme of 15-20 days duration.

In an investigation on the training needs of Horticulture Inspectors of Punjab State, Bhagat (1989) found that majority of the respondents preferred to undergo a training programme of seven days duration at an interval of one year.

As per the findings of a study done by Krishnaraj and Srinivasan (1989) most of the Veterinary Assistant Surgeons working in Coimbatore region, Tamil Nadu indicated a minimum of two months as the optimum duration at an interval of every three to five years for their in-service training programme.

As reported by Sudeep Kumar and Subramanian (1993) three-fourth of the dairy trainees who underwent training in a Farmers Training Centre, Kattupakkam, Tamil Nadu preferred a duration of five to seven days for their training programme.

While analyzing the training need of Veterinary Surgeon of Kerala, Sakthivel (2001) found that about one-fourth of the respondents preferred a duration of 15 days for a short-term training that lead to a certificate and a duration of three months for a training programme that lead to a diploma. He also found that most of the respondents preferred the periodicity of those training programmes of one to seven days duration to be six months, that of eight to fourteen days and that of fifteen to thirty days to be one year and that of more than a month to be more than a year.

2.5.5 Percentage of Theory and Practical sessions

Sinha and Gill (1967) found that majority of the Village Level Workers in Ludiana, Punjab desired that the time spent during their pre-service training should be divided into theory, campus practicals and village practicals in the ratio 36:33:31.

Dubey *et al.* (1977) while studying the in-service training needs of stockmen working in I.C.D.P. block, Karnal as perceived by them and their supervisors found that both preferred 60 per cent of the training time for teaching of practicals and only 40 per cent for that of theory.

Jha and Jani (1977) found that majority of the Village Level Workers in Jaipur, Rajasthan expressed their desire for practical training rather than theory in most of the subject matter areas.

2.5.6 Venue of training

In a study on the pre-service training programme of Agricultural Extension Officers of Bihar, Sinha *et al.* (1968) stated that for the subject matter of agricultural extension, the practical classes should be held in villages.

According to Naik (1982) the State Agriculture College was the most preferred venue followed by block head quarters for in-service training by the Assistant Agricultural Officers of Karnataka.

A study conducted by Shrestha (1983) to identify the training needs of District Agricultural Development Officers in Nepal revealed that most of the respondents preferred research stations as venue for their training programme.

Bhagat (1989) reported that majority of the Horticulture Inspectors working in Punjab State preferred the Punjab Agricultural University as the venue for training in horticultural technology.

Mani (1996) revealed that most of the Agriculture Officers of Tamil Nadu preferred the Tamil Nadu Agricultural University as the venue for their training.

Sakthivel (2001) found that majority of the Veterinary Surgeons of Kerala preferred the institutes within Kerala and premier institutes outside Kerala for their short term and long term training programmes respectively.

2.6 Relationship between the training need and socio-personal characteristics

2.6.1. Age

In an analysis of the Induction training for supervisors in cooperative extension services of the Southern and Western regions of the United States, Broadbent (1960) found that there was no relationship between the age and the training needs of the extension supervisors.

Halim and Islam (1973) reported that proportionately higher (35.3) per cent of the older age Union Agricultural Assistants serving in Mymensinge Sadar sub-division (North), Bangladesh did not like to attend any training programme compared to middle (25.0) and younger age (11.8) groups.

As reported by Shrestha (1983) age had no significant association with the expressed training need of the District Agriculture Development Officers of Nepal.

Bhagat (1989) stated that there was no significant relationship between the age and expressed training need of the Horticulture Inspectors of Punjab State.

Mani (1996) reported that the age of the Agriculture Officers working in Tamil Nadu was negatively and significantly correlated with their knowledge based training needs.

Kalita and Sarmah (1999) from their study on training needs of village level extension workers of Assam revealed that age had positive and significant relationship with the extent of training need of the respondents.

Sakthivel (2001) found that there was no significant relationship between the age and expressed training need of the Veterinary Surgeons of Kerala.

2.6.2 Sex

Sakthivel (2001) stated that sex of the Veterinary Surgeons Serving in Kerala was not significantly associated with their expressed training need.

2.6.3 Marital Status

Mani (1996) found that there was no significant association between the marital status and training need of the Agriculture Officers of Tamil Nadu.

Sakthivel (2001) stated that the marital status of the Veterinary Surgeons Serving in Kerala was not significantly associated with their expressed training need.

2.6.4 Educational qualification

Broadbent (1960) found that the academic degrees had no relationship with the training needs of the Supervisors in Co-operative Extension Services of the Southern and Western regions of the United States.

Sharma and Singh (1968) reported that the academic qualification of the Animal Husbandry Extension Officers Serving in Punjab was positively and significantly associated with their expressed training need.

Halim and Islam (1973) found that the educational qualification of Frontline Extension workers serving in Mymensinge Sadar Sub division (North), Bangladesh had shown significant and positive correlation with their training need.

Ganeshan *et al.* (1980) stated that there was a significant relationship between the educational qualification and training needs of Gram Sevaks of the Madurai district, Tamil Nadu.

Shrestha (1983) reported that the academic qualification of the District Agriculture Development Officers of Nepal was not significantly associated with their expressed training needs.

Bhagat (1989) found that the level of education of the Horticulture Inspectors of Punjab State was significantly and negatively associated with their in-service training needs.

Rambabu (2000) stated that there was a significant and positive correlation between the educational qualification and training need of the Agriculture Extension Officers of Srikakulam district in Andhra Pradesh.

Sakthivel (2001) stated that there was no significant relationship between the educational qualification and the training needs of Veterinary Surgeons of Kerala.

2.6.5 Service experience

Sharma (1966) reported that the service experience of the Animal Husbandry Extension Officers of Punjab had no significant association with their expressed training need.

As per the findings of a study by Halim and Islam (1973) the tenure of service of the Front Line Extension workers serving in the Mymensinge Sadar Sub-division of Bangladesh had negative correlation with their expressed training need.

Ganeshan *et al.* (1980) found that the length of service of the Gram Sevaks of Madurai district, Tamil Nadu had no influence on their training needs.

A study conducted by Shrestha (1983) revealed that the service experience of the District Agricultural Development Officers in Nepal had no significant association with their expressed training needs.

Bhagat (1989) studied the relationship between the service experience of the Horticulture Inspectors of Punjab State and their training needs. He observed non-significant association between these two variables.

Kalita and Sarmah (1999) found that the service experience of the Village Level Extension Workers serving in three districts of Assam had positive and significant correlation with their training needs.

Rambabu (2000) reported that the service experience of the Agricultural Extension Officers of Srikakulam district, Andhra Pradesh had non-significant relationship with their training needs.

In a study on the training needs of Veterinary Surgeons of Kerala, Sakthivel (2001) found that the service experience of the respondents had no significant relationship with their expressed training needs.

2.6.6 Training exposure

Ganeshan *et al.* (1980) found that the training needs of the Gram Sevaks of Madurai district, Tamil Nadu was not influenced by their previous training exposure.

In a critical analysis of the in-service training needs of the Assistant Agriculture Officers of Karnataka, Naik (1982) recognized that the training need hierarchy of the respondents was influenced by the training already received by them.

A study on the training needs of the District Agricultural Development Officers in Nepal done by Shrestha (1983) revealed that the previous training exposure of the respondents had non-significant association with their expressed training need.

Bhagat (1989) found that there was no significant association between the previous in-service training exposure and the expressed training needs of the Horticulture Inspectors of Punjab State.

Kalita and Sarmah (1999) studied the relationship between the previous training exposure of the Village Level Extension Workers of Assam and their training needs. They observed positive and significant correlation between these two variables.

In his attempt to assess the training needs of the Agricultural Extension Officers of Srikakulam district, Andhra Pradesh, Rambabu (2000) found that the previous training exposure of the respondents was positively and significantly related to their training needs.

Sakthivel (2001) studied the training needs of the Veterinary Surgeons of Kerala State. He reported that the training exposure of the respondents had no significant relationship with their training needs.

2.6.7 Exposure to professional journals and periodicals

Sharma and Singh (1970) found that there was no significant relationship between the habit of reading professional Journals and the Training Need Quotient of the Animal Husbandry Extension Officers of Punjab.

Bhagat (1989) reported that the media exposure had no significant association with the training needs of the Horticulture Inspectors of Punjab State.

Sakthivel (2001) observed no significant relationship between the exposure to professional journals and the training needs of the Veterinary Surgeons of Kerala.

2.6.8 Number of professional seminars, symposia and workshops attended

In a study on the training needs of Veterinary Surgeons of Kerala, Sakthivel (2001) found that the number of professional seminars, symposia and workshops attended by the respondents was not significantly associated with their expressed training needs.

Materials and Methods

3. MATERIALS AND METHODS

The methodology used in this study is presented under the following headings.

3.1 Locale and respondents of the study
3.2 Data collection
3.3 Variables of the study
3.4 Operationalization and measurement of variables
3.5 Statistical tools

3.1 Locale and respondents of the study

The study was confined to the Dairy Farm Instructors of the Dairy Development Department of Kerala. The organizational structure of the Dairy Development Department encompasses Directorate at the State level, Dairy Development offices at the district level and Dairy Extension Service Units (DESU) at the Block level. The Dairy Farm Instructors, the grassroot workers of the Dairy Development Department working under the Dairy Extension Officers in the Dairy Extension Service Units were studied. At the time of data collection, 120 Dairy Farm Instructors were actually in position who constituted the respondents of the study.

3.2 Data collection

The data were collected using structured questionnaire. The questionnaires were either sent by post with business reply facility or

distributed in person during the district level monthly meetings to all the 120 Dairy Farm Instructors. Out of the 120 respondents, 75 Dairy Farm Instructors returned the filled in questionnaires within the stipulated period of one month. Hence the sample of the study comprised of 75 Dairy Farm Instructors.

3.3 Variables of the study

Based on the objectives of the study, review of literature and discussion with subject matter specialists the following variables were selected for the study.

*(i) Personal profile (Independent variable)

1. Age
2. Sex
3. Marital status
4. Educational qualification
5. Service experience
6. Training exposure
7. Exposure to professional journals and periodicals
8. Seminars, symposia and workshops attended

*(ii) Role perception (Independent variable)

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*Personal profile and role perception are being mentioned as socio-personal characteristics in this thesis.

(iii) Training need in subject matter areas

1. Dairy cattle production and management
2. Milk and milk products
3. Fodder production and management
4. Dairy extension
5. Professional management
6. Information technology

(iv) Perceived relevance of the training programmes conducted

(v) Training strategy

1. Type of training preferred
2. Method of training preferred
3. Trainers preferred
4. Periodicity of training preferred
5. Duration of training preferred
6. Percentage of theory and practical sessions preferred
7. Venue preferred

(vi) Extent of training need of Dairy Farm Instructors (Dependent variable)

3.4 Operationalization and measurement of variables

3.4.1 Personal profile

3.4.1.1 Age

Age of the respondent was operationally defined as the number of years completed by the respondent at the time of study. The respondents were arbitrarily put under three categories.

Category	Score
Young (Below 35 years)	1
Middle aged (35-45 years)	2
Old (Above 45 years)	3

3.4.1.2 Sex

It indicated whether the respondents were male or female and accordingly they were put under two categories.

Category	Score
Male	1
Female	2

3.4.1.3 Marital status

It meant whether the respondents were married or unmarried at the time of the study. Based on this, two categories were derived and scores were assigned as follows.

Category	Score
Married	1
Unmarried	2

3.4.1.4 Educational qualification

It was operationally defined as the qualification of the respondents in terms of possession of Bachelors degree, Bachelors degree with Diploma or certificate or both, Post graduation and Post graduation with Diploma or

Certificate or both. Scores were assigned to the categories concerned as follows.

Category	Score
Bachelors degree	1
Bachelors degree with Diploma or certificate or both	2
Post graduation	3
Post graduation with diploma or certificate or both	4

3.4.1.5 Service experience

It referred to the number of years of service completed by the respondents in the Dairy Development Department at the time of the study. Based on this, the respondents were put under three categories as mentioned below.

Category	Score
Below 10 years	1
10-20 years	2
Above 20 years	3

3.4.1.6 Training exposure

It referred to the number of trainings undergone by the respondents after their entry into the service. The scores were assigned to the different categories of respondents as follows.

Category	Score
None attended	1
Attended 1-2 training programmes	2
Attended 3 or more training programmes	3

3.4.1.7 Exposure to professional journals

This was operationalized as the number of professional journals read by the respondents since they entered service and based on this, three arbitrary categories of respondents were drawn and scores were assigned as given below.

Category	Score
None read	1
Read 1-2 journals	2
Read 3 or more journals	3

3.4.1.8 Exposure to periodicals

It indicated the number of periodicals (farm journals) read by the respondents since they entered service. The scores were assigned to the three arbitrary categories drawn as follows.

Category	Score
None read	1
Read 1-2 periodicals	2
Read 3 or more periodicals	3

3.4.1.9 Seminars, Symposia and Workshops attended

This was operationalized as the total number of seminars, symposia and workshops attended by the respondents since their entry into the service.

Category	Score
None attended	1
1-5 attended	2
More than 5 attended	3

3.4.2 Role perception

In the present study role perception was operationally defined as the set of job behaviours the Dairy Farm Instructor believed he/she should enact.

The respondents were asked to list out their important roles (duties and responsibilities) as Dairy Farm Instructors in the structured questionnaire. They were also asked whether there was any change in emphasis of their roles in the recent past. If so, they were asked to list out the new roles. The roles listed by the respondents were compared with the standard job chart along with unwritten but mandatory duties and responsibilities such as implementation of Panchayati Raj schemes, guiding self help groups and providing technical guidance with regard to milk collection and testing in the primary milk cooperative societies. On the basis of the number of roles reported correctly marks were assigned to the respondents. Each item mentioned correctly carried one mark. Thus, the marks obtained by each respondent was considered as the indicator for his/her role perception.

Based on the marks obtained, the respondents were arbitrarily classified into three categories

Category	Score
High [above (mean + SD)]	1
Medium [(Mean + SD) to (Mean – SD)]	2
Low [below (Mean – SD)]	3

Further, the content analysis of the roles reported by the respondents was done to find out the frequency with which each role was reported. On the basis of the frequencies obtained the roles were also ranked.

3.4.3 Determination of training need

In the present study the **training need** was operationalized as the perceived training needs of the Dairy Farm Instructors which were obtained in a check list of items.

3.4.3.1 Training need in subject matter areas

The check list contained six selected major subject matter areas under which selected minor subject matter areas or items to assess the knowledge needs of the respondents and those to assess the skill needs of respondents were given separately.

A detailed review of literature was done for selecting the subject matter areas for the study. The job chart which is the official document regarding duties and responsibilities of the Dairy Farm Instructors collected from the Directorate of Dairy Development Department was also referred.

Further, subject matter specialists of the College of Veterinary and Animal Sciences, Thrissur were consulted and their suggestions were also considered. Thus, the check list consisted of altogether 62 items for knowledge need assessment and 50 items for skill need assessment listed under the six major subject matter areas.

The final check list was developed after rating the relevancy of the subject matter areas or items by a group of thirty judges comprising of fifteen Dairy Extension Officers, ten Subject matter specialists from the College of Veterinary and Animal Sciences, Thrissur and five Senior Veterinary Surgeons of the Animal Husbandry Department, Kerala working in Thrissur district. They were requested to rate the items on a four point continuum, viz., very relevant, relevant, somewhat relevant and not relevant, the scores assigned being four, three, two and one respectively.

The mid point of the four point continuum ranging from 30 to 120, the minimum and maximum possible scores respectively was found out and this was assumed to be the cut off point for the final selection of items. The mid point being 75, the items having scores above this were selected for inclusion in the final questionnaire. All the 112 items were selected since they had scores above the cut off point of 75.

The final questionnaire was administered to the respondents who were asked to rate both the knowledge need items and skill need items

separately on a three point continuum viz., required, somewhat required and not required with scores of three, two and one respectively.

The Training Need Index (TNI) for each item was calculated using the formula,

$$\text{TNI of an item} = \frac{\text{Sum of scores obtained for an item by all the respondents}}{\text{Maximum possible score for the item}} \times 100$$

Further, the mean TNI of each major domain was worked out using the formula,

$$\text{Mean TNI of the major domain} = \frac{\text{Sum of training need indices of all the items under the domain}}{\text{No. of items in the domain}}$$

The major domains were ranked based on their mean training need indices. Subsequently the specific items within the major domains were also ranked based on their training need indices.

3.4.3.2 Extent of training need of the respondents

To find out the extent of training need of the respondents, the Training Need Quotient (TNQ) was found out for all the respondents.

The formula used was

$$\text{Training Need Quotient} = \frac{\text{Actual score obtained by the respondent}}{\text{Maximum possible score}} \times 100$$

Based on their TNQ, the respondents were arbitrarily classified into three categories.

Category	Score
High [above (mean + SD)]	1
Medium [(Mean + SD) to (Mean – SD)]	2
Low [below (Mean – SD)]	3

The calculated TNQ was also used to find out the relationship between the training needs of the respondents and their personal profile viz., age, sex, marital status, educational qualification, service experience, training exposure, journals and periodicals read, seminars, workshop and symposia attended and role perception.

3.4.4 Perceived relevance of the training programmes conducted

The list of the training programmes conducted by the Dairy Development Department for the Dairy Farm Instructors from 1997 onwards was collected from the Directorate of Dairy Development Department, Thiruvananthapuram. The respondents were asked to indicate the relevancy of these training programmes on a three point continuum viz., relevant, somewhat relevant and not relevant with scores of three, two and one respectively.

The mean score for each item (training programme) was worked out using the formula,

$$\text{Item mean score} = \frac{\text{Sum of the scores assigned to the item by all the respondents}}{\text{No. of respondents}}$$

Those training programmes, the mean scores of which fall within the range of two to three were rated as somewhat relevant to relevant. Also, the training programmes were ranked on the basis of the mean scores obtained.

3.4.5 Training strategy preferred

3.4.5.1 Type of training preferred

Type of training referred to the three types of training viz., distance learning (correspondence courses, website etc.) institutional learning (face to face) and integrated learning (appropriate combination of distance and institutional). The respondents were asked to mention the type of training they preferred the most for each of the six major subject matter areas and preference ranking was done accordingly.

3.4.5.2 Method of training preferred

Method of training referred to the ways by which training is imparted to the trainees such as lecture, group discussion, seminar, symposium, panel discussion, workshop, study tour, role play, case method, practice in demonstrations, presentation, group tasks and assignments. The respondents were asked to indicate the methods of training which they considered suitable for each of the six major subject matter areas. Subsequently the

training methods were ranked based on the frequencies with which they were reported.

3.4.5.3 Trainers preferred

It referred to the subject matter specialists or experts preferred by the respondents for imparting training to them among the three choices given viz., experts from the parent organization (DDD), experts from outside the parent organization but within the state and experts from outside the state. The respondents were asked to indicate their preference for the trainers in all the six major subject matter areas and ranks were assigned to the three categories of trainers concerned based on the frequencies with which these were recommended.

3.4.5.4 Periodicity of training preferred

It referred to the interval preferred by the respondents to attend any two consecutive training programmes. The respondents were given four choices of time period viz., every three months, every six months, every year and more than a year and they were asked to indicate one among the choices for each of the training programmes of duration 1-7 days, 8-14 days, 15-30 days and more than one month. Subsequently, the periodicities were ranked based on the frequencies with which these were mentioned.

3.4.5.5 *Duration of training preferred*

It referred to the number of days or months the respondents preferred to undergo both short-term and long-term residential training programmes. The respondents were asked to indicate their preference for duration with regard to both short-term and long-term training programmes and preference ranking was done accordingly.

3.4.5.6 Percentage of theory and practical sessions preferred

It referred to the approximate percentage of theory and practical sessions the respondents preferred to have in their training programme for each of the six major domains. The respondents were asked to indicate the percentages of theory and practical sessions they preferred in all the six major domains.

3.4.5.7 Venue preferred

It referred to the institutes in which the respondents preferred to undergo training. The respondents were provided with separate lists of training centres or institutes for each of the six major domains and asked to indicate the institute they preferred the most to undergo training. Based on the frequencies of preference reported the different training centres or institutes were ranked for each of the six major domains.

3.5 Statistical tools

Statistical tools and procedures like frequency analysis, estimation of percentages, mean, standard deviation, Spearman's rank order correlation, Chi-square analysis and Mann-Whitney U test were used in this study.

Results

4. RESULTS

This chapter presents the results of the study under the following subheads.

4.1 Personal profile

4.2 Role perception

4.3 Training need in subject matter areas

4.4 Perceived relevance of the training programmes conducted by the Dairy Development Department of Kerala

4.5 Training strategy preferred

4.6 Extent of training need of Dairy Farm Instructors

4.1 Personal profile

4.1.1 Age

Table 1. Distribution of respondents based on age

*n = 75

Sl. No.	Age	Frequency (f)	Percentage (%)
1.	Young (below 35 years)	2	2.67
2.	Middle aged (35 – 45 years)	59	78.67
3.	Old (above 45 years)	14	18.66
	Total	75	100.00

* Sample size

The data in Table 1 reveals that majority of the respondents (78.67 per cent) were between 35 and 45 years of age, i.e., middle aged. Those below the age of 35 years were 2.67 per cent and those above 45 years of age were 18.66 per cent.

4.1.2 Sex

Table 2. Distribution of respondents based on sex

n = 75

Sl. No.	Sex	Frequency (f)	Percentage (%)
1.	Male	42	56.00
2.	Female	33	44.00
	Total	75	100.00

It can be observed from Table 2 that majority of the respondents (56.00 per cent) were male and the rest 44.00 per cent were female.

4.1.3 Marital status

Table 3. Distribution of respondents based on marital status

n = 75

Sl. No.	Marital status	Frequency (f)	Percentage (%)
1.	Married	72	96.00
2.	Unmarried	3	4.00
	Total	75	100.00

It is evident from Table 3 that almost all (96.00 per cent) the respondents studied were married and those unmarried were only 4.00 per cent.

4.1.4 Educational qualification

Table 4. Distribution of respondents based on educational qualification

n = 75

Sl. No.	Educational qualification	Frequency (f)	Percentage (%)
1.	Bachelors degree	27	36.00
2.	Bachelors degree with Diploma or certificate or both	19	25.33
3.	Post Graduation	14	18.67
4.	Post Graduation with Diploma or Certificate or both	15	20.00
	Total	75	100.00

A perusal of Table 4 reveals that most of the respondents (36.00 per cent) were holding Bachelors degree only followed by Bachelors degree with additional diploma or certificate or both (25.33 per cent). Those with Post graduation were of 18.67 per cent and those who possessed additional diploma or certificate or both along with post graduation were of 20.00 per cent.

4.1.5 Service experience

Table 5. Distribution of respondents based on service experience

n = 75

Sl. No.	Service experience	Frequency (f)	Percentage (%)
1.	Below 10 years	16	21.33
2.	10 – 20 years	48	64.00
3.	Above 20 years	11	14.67
	Total	75	100.00

As evident from the data in Table 5, majority (64.00 per cent) of the respondents had a service experience of ten to twenty years. This was followed by those respondents (21.33 per cent) who had an experience of less than ten years and those (14.67 per cent) who had an experience of more than twenty years.

4.1.6 Training exposure

Table 6. Distribution of respondents based on exposure to training

n=75

Sl. No.	Training attended	Frequency (f)	Percentage (%)
1.	None attended	18	24.00
2.	Attended 1-2 training programmes	53	70.67
3.	Attended 3 or more training programmes	4	5.33
	Total	75	100.00

Table 6 reveals that more than two-third of the respondents (70.67 per cent) had attended one to two training programmes. Twenty four per cent of the respondents had not attended any training programme and 5.33 per cent of respondents had attended three or more training programmes.

4.1.7 Exposure to professional journals

Table 7. Distribution of respondents based on exposure to professional journals

n=75

Sl. No.	Professional journals read	Frequency (f)	Percentage (%)
1.	None read	18	24.00
2.	Read 1-2 journals	52	69.33
3.	Read 3 or more journals	5	6.67
	Total	75	100.00

Table 7 reveals that more than half of the respondents (69.33 per cent) had read one to two journals. Also, it is evident that about 24.00 per cent of the respondents did not have the habit of reading any professional journal and a few (6.67 per cent) were reading three or more professional journals.

4.1.8 Exposure to periodicals

Table 8. Distribution of respondents based on exposure to periodicals

n =75

Sl. No.	Periodicals read	Frequency (f)	Percentage (%)
1.	None read	-	-
2.	Read 1-2 periodicals	33	44.00
3.	Read 3 or more periodicals	42	56.00
	Total	75	100.00

Majority (56.00 per cent) of the respondents had read three or more periodicals and the remaining (44.00 per cent) respondents had read one or two periodicals. (Table 8)

4.1.9 Seminars, symposia and workshops attended

Table 9. Distribution of respondents based on the number of seminars, symposia and workshops attended

n = 75

Sl. No.	No. of seminars, symposia and workshops attended	Frequency (f)	Percentage (%)
1.	None attended	5	6.67
2.	1-5 attended	45	60.00
3.	More than 5 attended	25	33.33
	Total	75	100.00

It is evident from Table 9 that majority (60.00 per cent) of the respondents had attended upto five seminars/symposia and/or workshops followed by 33.33 per cent of respondents who had attended more than five seminars/symposia and/or workshops. The remaining 6.67 per cent of the respondents had not attended any seminar, symposium or workshop.

4.2 Role perception

4.2.1 Distribution of respondents based on their role perception

Table 10. Distribution of respondents based on their role perception

n = 75

Sl. No.	Role perception	Frequency (f)	Percentage (%)
1.	Low [below (Mean – SD)]	8	10.67
2.	Medium [(Mean – SD) to (Mean + SD)]	54	72.00
3.	High [above (Mean + SD)]	13	17.33

Mean = 7.04 Standard deviation = 2.45

Fig.1 Distribution of respondents based on their role perception

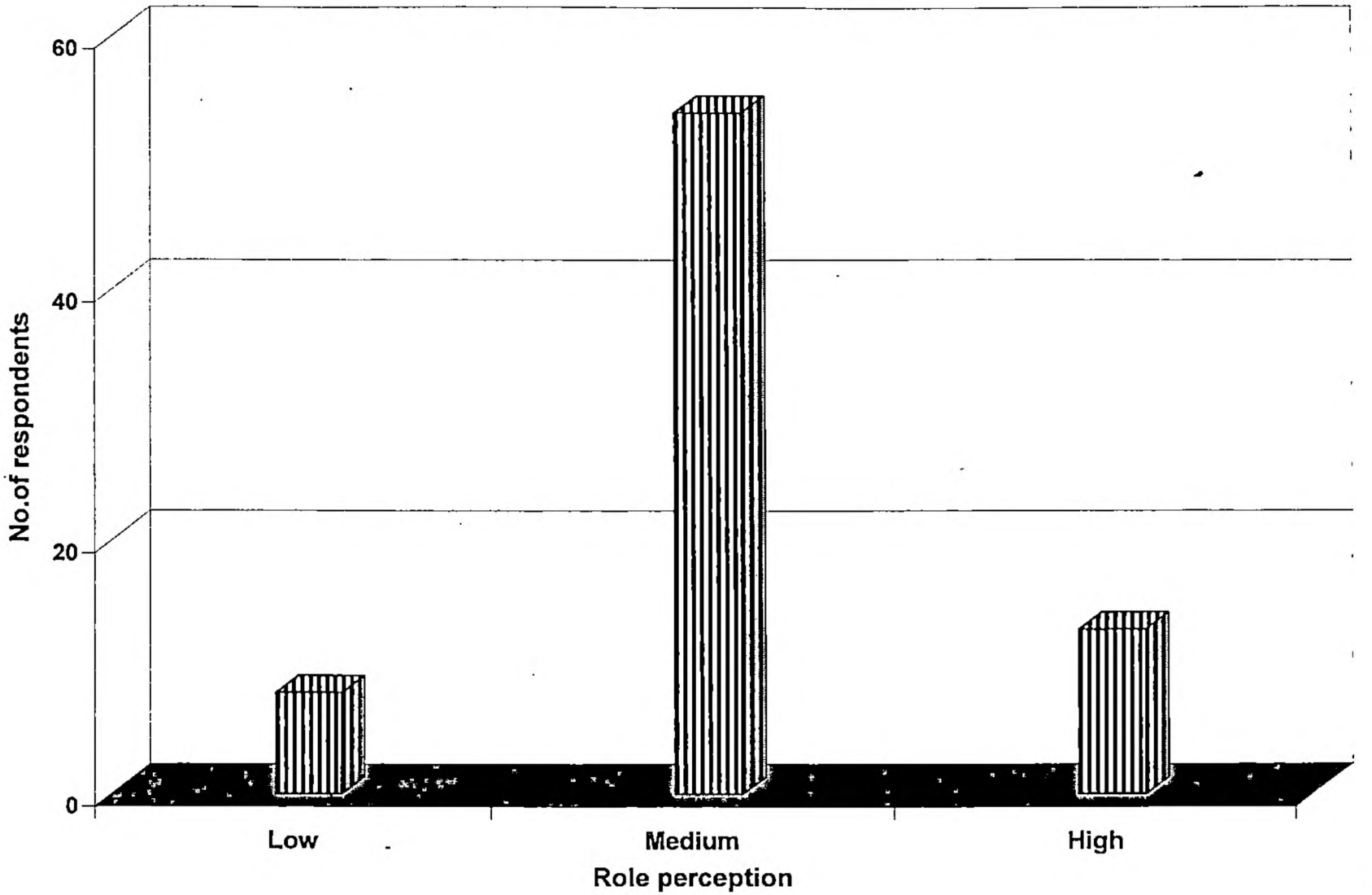


Table 10 shows that majority (72.00 per cent) of the respondents were in the medium category with respect to their role perception. This was followed by the high category (17.33 per cent). The role perception of 10.67 per cent of the respondents was low.

4.2.2 Perceived roles

Table 11. Distribution of respondents based on roles perceived

Sl. No.	Perceived roles	Frequency (f)	Percentage (%)	Rank
1.	Farm and home visit	55	73.33	I
2.	Conducting group discussions, seminars and other farmers contact programmes	51	68.00	II
3.	Working as a part time administrator in milk cooperative societies	45	60.00	III
4.	Periodical inspection of milk cooperative societies	42	56.00	IV
5.	To provide technical advice and instruction to the farmers with regard to fodder cultivation practices and periodical inspection of fodder plots.	36	48.00	V
6.	Implementation of Panchayati Raj schemes	34	45.33	VI
7.	Conducting demonstration classes on the manufacture of indigenous milk products for the women self help groups	32	42.66	VII
8.	Working as returning officer in the election for managing committee of the milk cooperative societies	31	41.33	VIII
9.	Implementing and monitoring the departmental schemes.	23	30.66	IX
10.	Organizing new milk cooperative societies	21	28.00	X
11.	Providing technical guidance related to milk collection and testing in the primary milk cooperative societies	20	26.66	XI

12.	Clerical work in Dairy extension service units	19	25.33	XII
13	Selecting beneficiaries for various schemes	17	22.66	XIII
14	Assist in conducting cattle shows	16	21.33	XIV
15	Inspection of mini dairy unit and giving training and instructions to farmers with regard to clean milk production	11	14.66	XV
16	Providing guidance to dairy farmers in the construction of model cattle sheds	6	8.00	XVI
17	Participating in the managing committee meetings and general body meetings of milk cooperative societies	5	6.66	XVII
18	Assist in milk cooperative society audit	3	4.00	XVIII
19	Preparing scripts for radio talks	-	-	XIX

The data in Table 11 reveals that the roles viz., farm and home visit (73.33 per cent), conducting group discussions, seminars and other farmers contact programmes (68.00 percent) and working as a part time administrator in milk cooperative societies (60.00 per cent) received the first, second and third ranks respectively in terms of the frequency of reporting by the respondents. The roles viz., periodical inspection of milk cooperative societies, providing technical advice and instruction to the farmers with regard to fodder cultivation practices and periodical inspection of fodder plots, implementation of Panchayati Raj schemes, conducting demonstration classes on the manufacture of indigenous milk products for the women self help groups, working as returning officer in the election for managing committee of the milk cooperative societies, implementing and monitoring the departmental schemes, organizing

new milk cooperative societies, providing technical guidance related to milk collection and testing in the primary milk cooperative societies, clerical work in Dairy extension service units, selecting beneficiaries for various schemes, assist in conducting cattle shows, inspection of mini dairy unit and giving training and instructions to dairy farmers with regard to clean milk production, providing guidance to dairy farmers in the construction of model cattle sheds, participating in the managing committee meetings and General body meetings of milk cooperative societies and assist in milk cooperative society audit received ranks from four to eighteen and the corresponding percentage of respondents who reported these roles were viz., 56.00, 48.00,45.33,42.66, 41.33, 30.66, 28.00, 26.66, 25.33,22.66, 21.33, 14.66, 8.00, 6.66 and 4.00 per cent respectively. None of the respondents reported the role of preparing scripts for radio talks though this too was a prescribed role as per the standard, job chart.

4.3 Training need in subject matter areas

4.3.1 Perception of training need in major subject matter areas

Table 12. Perception of training need in knowledge and skill by Dairy Farm Instructors in major subject matter areas

Sl. No.	Subject matter areas	Knowledge		Skill		Average TNI	Rank
		Mean TNI	Rank	Mean TNI	Rank		
1.	Information technology	89.77	1	87.40	1	88.58	1
2.	Milk and Milk products	83.88	2	82.11	2	82.99	2

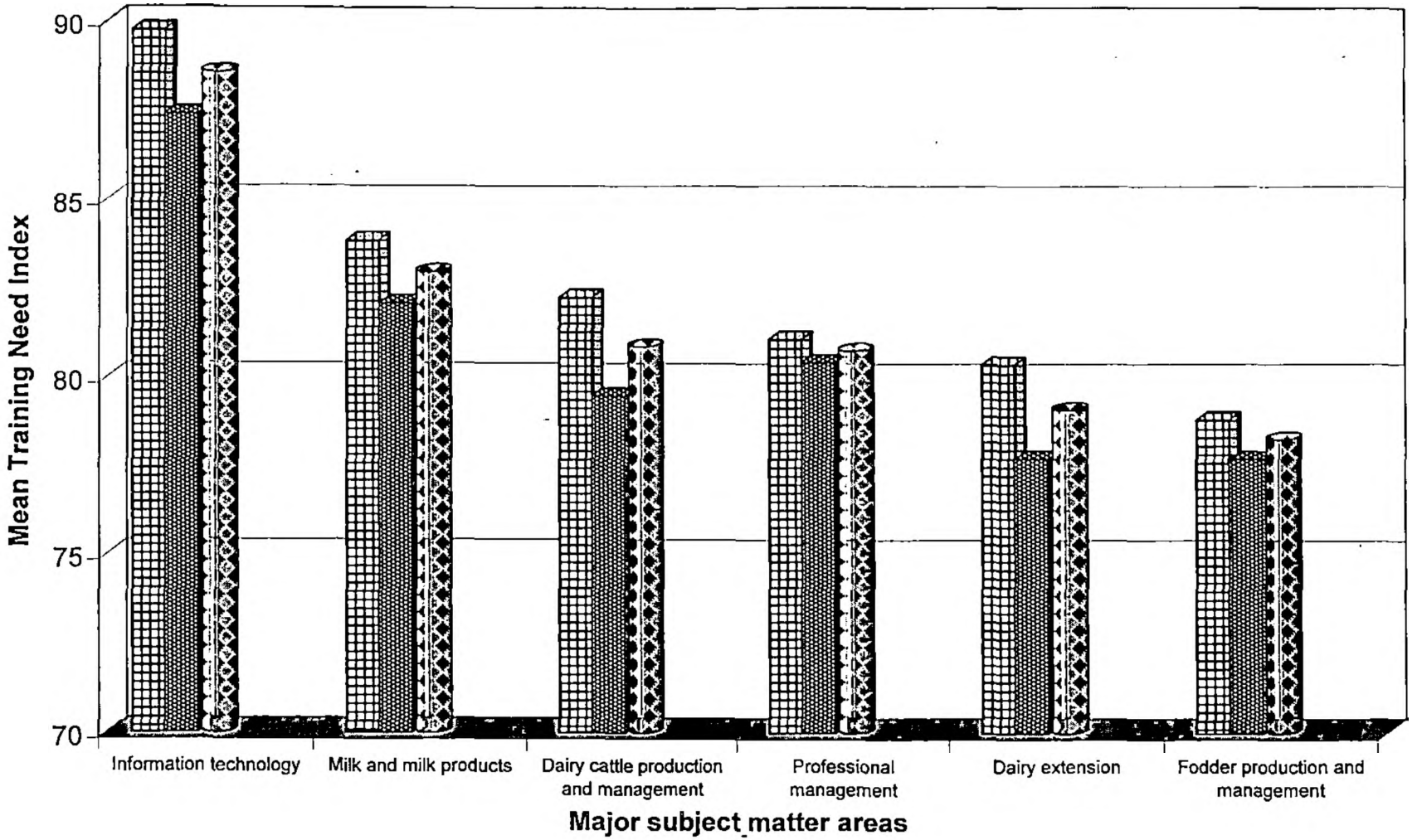
3.	Dairy cattle production and management	82.28	3	79.48	4	80.88	3
4.	Professional management	81.11	4	80.44	3	80.77	4
5.	Dairy extension	80.39	5	77.72	5	79.10	5
6.	Fodder production and management	78.83	6	77.71	6	78.27	6

The data in Table 12 indicates that with regard to the knowledge need of the respondents in the given six major subject matter areas, information technology was ranked first with a mean training need index of 89.77 followed by milk and milk products (83.88), dairy cattle production and management (82.28), professional management (81.11), dairy extension (80.39) and fodder production and management (78.83).

As far as the skill need in various subject matter areas was concerned, information technology (87.40) stood first followed by milk and milk products (82.11), professional management (80.44), dairy cattle production and management (79.48), dairy extension (77.72) and fodder production and management (77.71).

Further, when the average of mean training need indices for knowledge and skill aspects were considered, information technology (88.58) was ranked first followed by milk and milk products (82.99), dairy cattle production and management (80.88), professional management (80.77), dairy extension (79.10) and fodder production and management (78.27).

Fig.2 Perception of training need in knowledge and skill in major subject matter areas



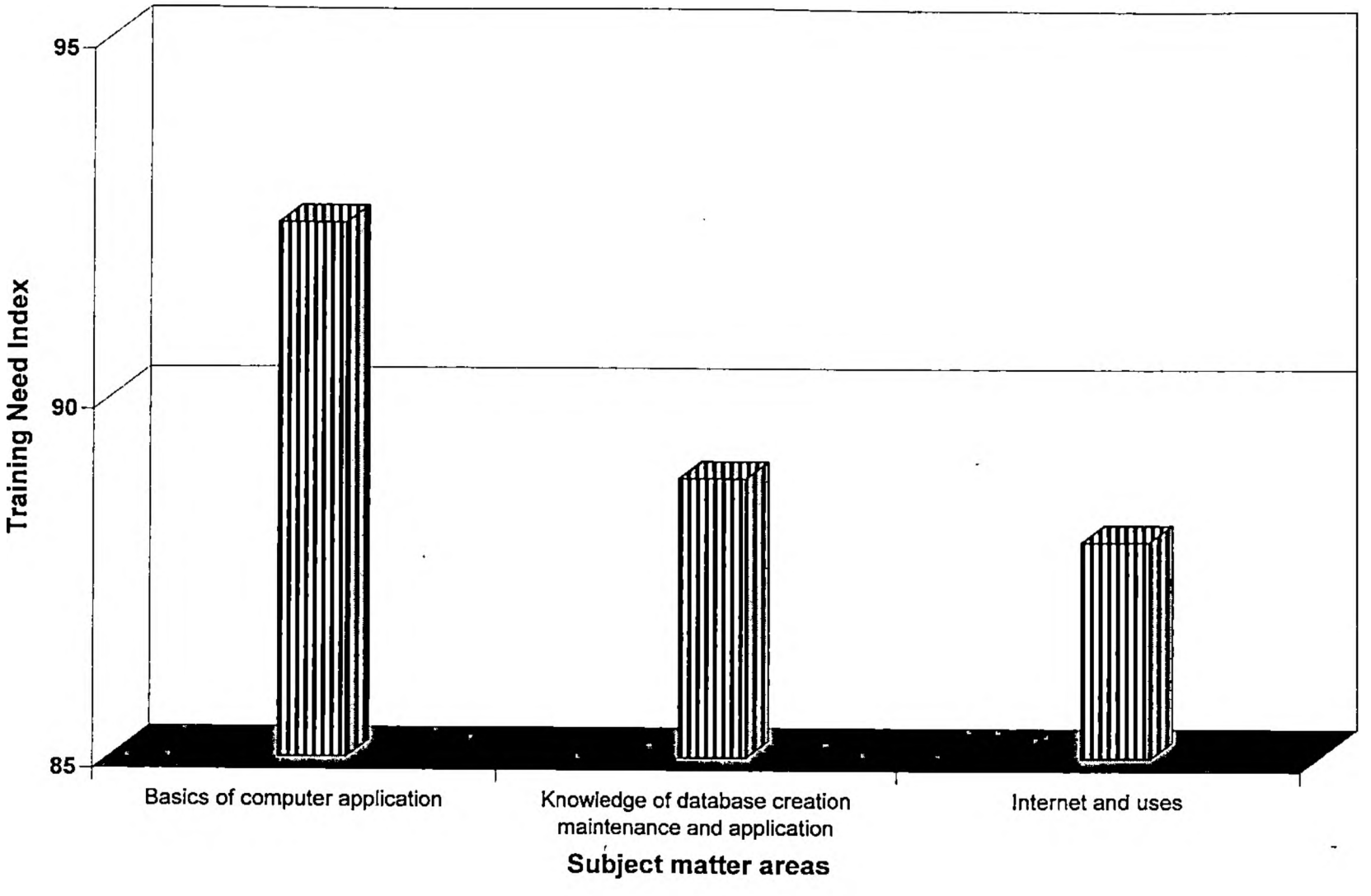
4.3.1.1 Perception of knowledge oriented training need of Dairy Farm Instructors in the domain of information technology

Table 13. Knowledge oriented training need of Dairy Farm Instructors in the domain of information technology

Sl. No.	Subject matter areas	Knowledge		Mean TNI
		TNI	Rank	
1.	Basics of computer application	92.44	1	89.77
2.	Knowledge of database creation, maintenance and application	88.88	2	
3.	Internet and uses	87.99	3	

It is evident from Table 13 that about the perceived training need for knowledge in the domain of information technology, basics of computer application (92.44) was ranked first followed by knowledge of database creation, maintenance and application (88.88) and internet and uses (87.99). The mean training need index of the three knowledge need items in the subject matter area of information technology was 89.77.

Fig.3 Knowledge oriented training need in the domain of information technology



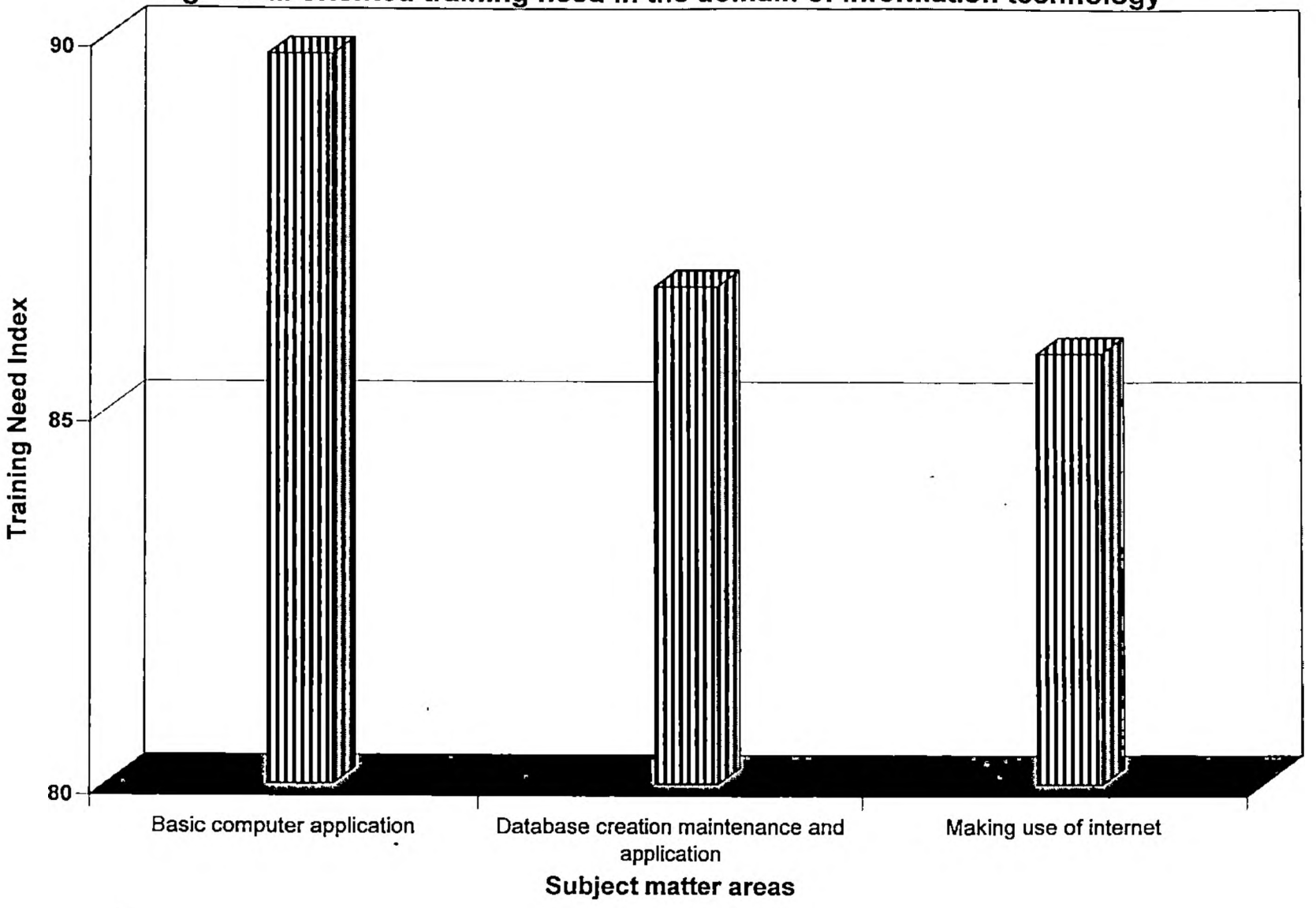
4.3.1.2 Perception of skill oriented training need of Dairy Farm Instructors in the domain of information technology

Table 14. Skill oriented training need of Dairy Farm Instructors in the domain of information technology

Sl. No.	Subject matter areas	Skill		Mean TNI
		TNI	Rank	
1.	Basic computer application	89.77	1	87.40
2.	Database creation, maintenance and application	86.66	2	
3.	Making use of internet	85.77	3	

It can be seen from Table 14 that as far as the perceived training need for skills in the domain of information technology was concerned, basic computer application (89.77) stood first followed by database creation, maintenance and application (86.66) and making use of internet (85.77). The mean training need index of the three skill need items in the domain of information technology was 87.40.

Fig.4 Skill oriented training need in the domain of Information technology



4.3.1.3 Perception of Knowledge oriented training need of Dairy Farm Instructors in the domain of milk and milk products

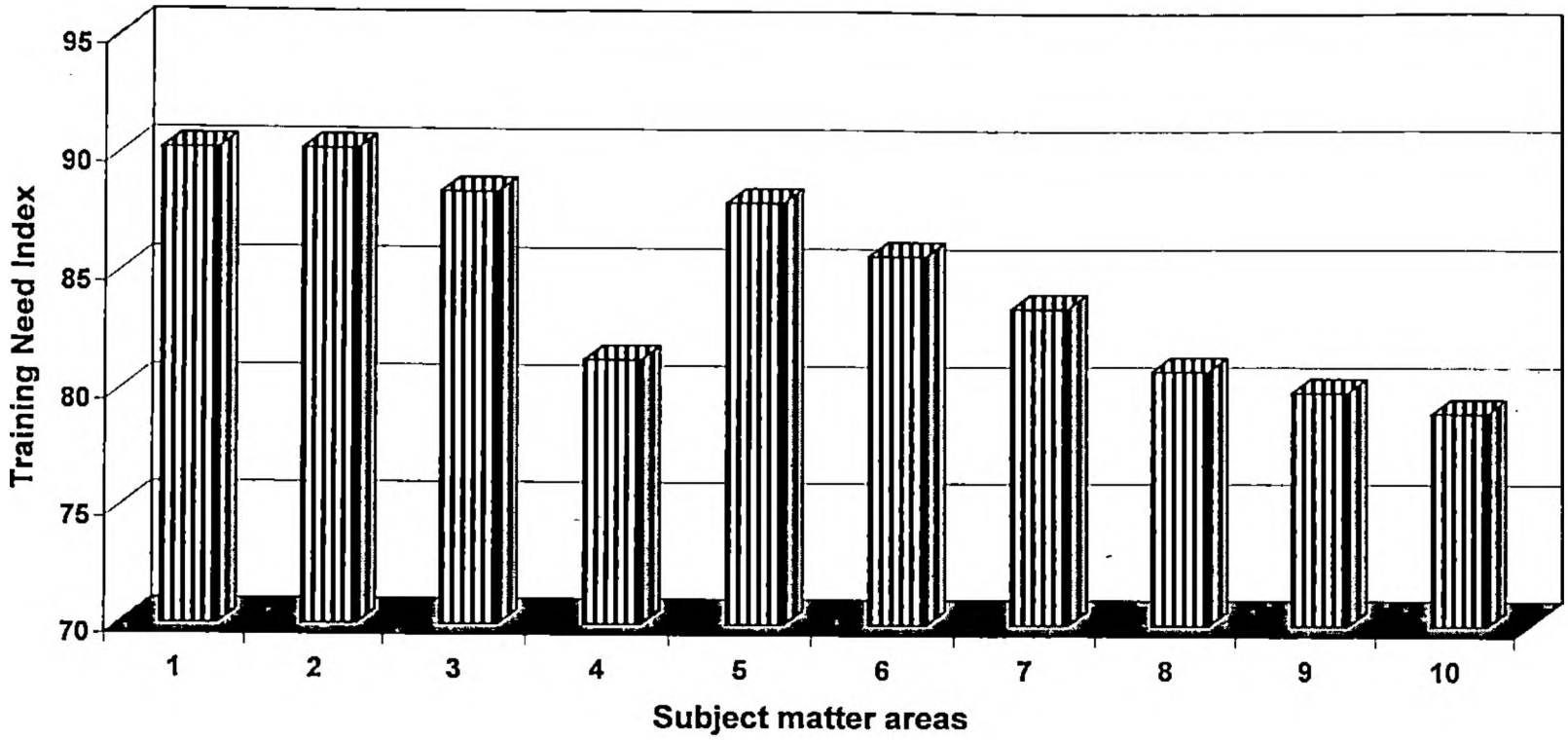
Table 15. Knowledge oriented training need of Dairy Farm Instructors in the domain of milk and milk products

Sl. No.	Subject matter areas	Knowledge		Mean TNI	Rank
		TNI	Rank		
I	**Procurement, storage and quality control of milk**				
1.	Tests for bacteriological quality and bacteriological count in milk	90.22	1	87.55	1
2.	Methods for preservation of milk	90.21	2		
3.	Tests to detect adulterants, preservatives and neutralizers in milk	88.44	3		
4.	Tests for estimation of specific gravity, fat and solids not fat in milk	81.33	4		
II	**Processing of milk**				
1.	Condensation of milk	88.00	1	84.55	2
2.	Homogenisation of milk	85.77	2		
3.	Pasteurisation of milk	83.55	3		
4.	Indigenous milk products and dairy by-products	80.88	4		
III	**Clean milk production**				
1.	Milking techniques	80.00	1	79.55	3
2.	Sources of contamination of milk and their control measures	79.11	2		

A perusal of Table 15 reveals that as for the perceived training need for knowledge of the respondents in the domain of milk and milk products, the sub area of procurement, storage and quality control of milk got the first rank with a mean training need index of 87.55. This was followed by the sub areas viz., processing of milk (84.55) and clean milk production (79.55).

Further, about the need for knowledge in the sub area of procurement, storage and quality control of milk, tests for bacteriological quality and

Fig.5 Knowledge oriented training need in the domain of milk and milk products



1.Tests for bacteriological quality and count in milk
2.Methods for preservation of milk
3.Tests to detect adulterants,preservatives and neutralizers in milk
4.Tests for estimation of specific gravity,fat and solids not fat in milk
5.Condensation of milk
6.Homogenisation of milk
7.Pasteurisation of milk
8.Indigenous milk products and dairy by-products
9.Milking techniques
10.Sources of contamination of milk and their control measures

bacteriological count in milk (90.22) stood first followed by methods for preservation of milk (90.21), tests to detect adulterants, preservatives and neutralizers in milk (88.44) and tests for estimation of specific gravity, fat, and solids not fat in milk (81.33).

As for the sub area of processing of milk, condensation of milk (88.00) was ranked first followed by homogenization of milk (85.77), pasteurization of milk (83.55) and indigenous milk products and dairy by-products (80.88).

As far as the sub area of clean milk production was concerned, milking techniques (80.00) stood first followed by sources of contamination of milk and their control measures (79.11).

4.3.1.4 Perception of Skill oriented training need of Dairy Farm Instructors in the domain of milk and milk products

Table 16. Skill oriented training need of Dairy Farm Instructors in the domain of milk and milk products

Sl. No.	Subject matter areas	Skill		Mean TNI	Rank
		TNI	Rank		
I	**Procurement, storage and quality control of milk**				
1.	Detection of adulterants, preservatives and neutralizers in milk	86.22	1	83.77	1
2.	Techniques for preservation of milk	84.88	2		
3.	Tests for bacteriological quality and bacteriological count in milk	84.44	3		
4.	Tests for estimation of specific gravity, fat and solids not fat in milk	79.55	4		

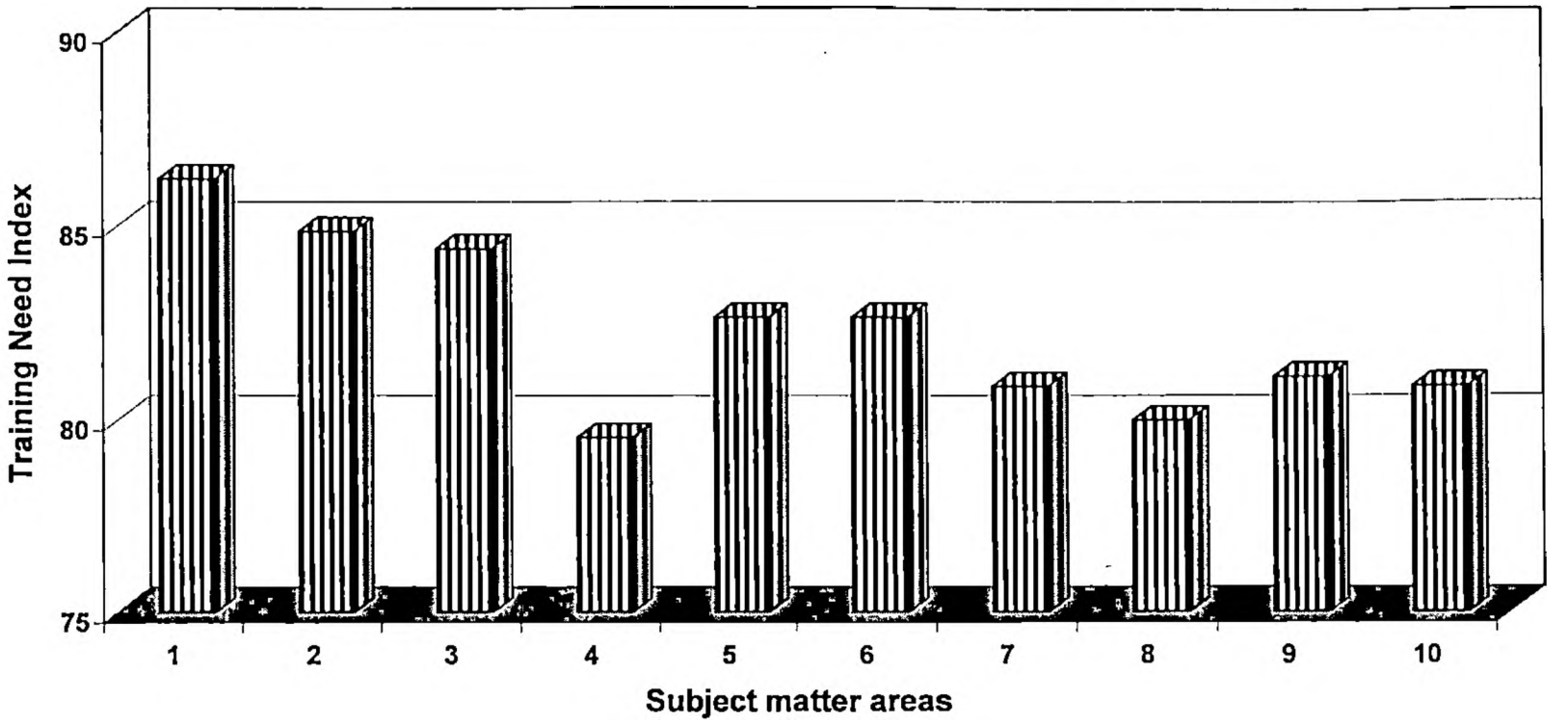
II	**Processing of milk**				
1.	Techniques for condensation of milk	82.66	1	81.55	2
2.	Methods of preparation and packaging of indigenous milk products	82.66	1		
3.	Techniques for homogenization of milk	80.88	2		
4.	Techniques for pasteurization of milk	80.00	3		
III	**Clean milk production**				
1.	Milking techniques (hand and machine milking)	81.13	1	81.00	3
2.	Measures to prevent contamination of milk	80.88	2		

It can be seen from Table 16 that as far as the perceived training need for skills in the domain of milk and milk products was concerned, the sub area of procurement, storage and quality control of milk stood first with a mean training need index of 83.77. This was followed by the sub areas of processing of milk (81.55) and clean milk production (81.00).

As for the sub area of procurement, storage and quality control of milk, detection of adulterants, preservatives and neutralizers in milk (86.22) was ranked first followed by techniques for preservation of milk (84.88), tests for bacteriological quality and bacteriological count in milk (84.44) and tests for estimation of specific gravity, fat and solids not fat in milk (79.55).

Further, concerning the training need for skills in the sub area of processing of milk, techniques for condensation of milk (82.66) and methods of preparation and packaging of indigenous milk products (82.66) stood first

Fig.6 Skill oriented training need in the domain of milk and milk products



1.Detection of adulterants,preservatives and neutralizers in milk
2.Techniques for preservation of milk
3.Tests for bacteriological quality and count in milk
4.Tests for estimation of specific gravity,fat and solids not fat in milk
5.Techniques for condensation of milk
6.Methods of preparation and packaging of indigenous milk products
7.Techniques for condensation of milk
8.Techniques for pasteurization of milk
9. Milking techniques (hand and machine milking).
10.Measures to prevent contamination of milk

followed by techniques for homogenization of milk (80.88) and techniques for pasteurization of milk (80.00).

Regarding the sub area of clean milk production, milking techniques (81.13) was ranked first followed by measures to prevent contamination of milk (80.88).

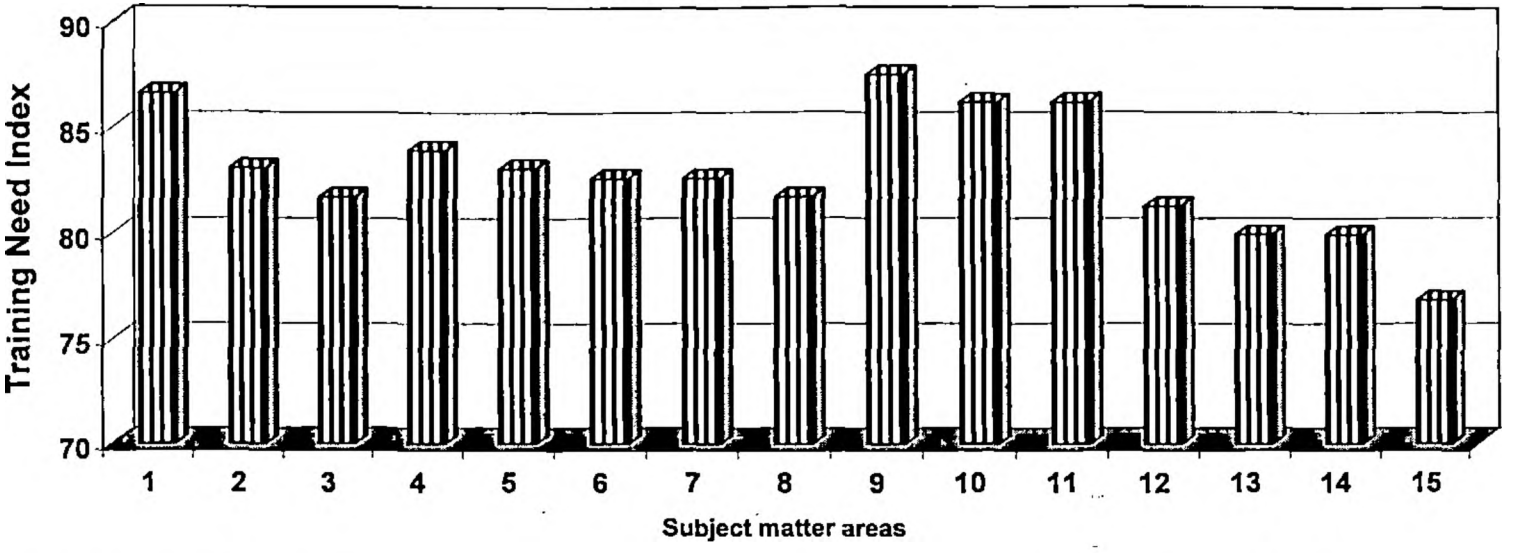
4.3.1.5 Perception of knowledge oriented training need of Dairy Farm Instructors in the domain of dairy cattle production and management

Table 17. Knowledge oriented training need of Dairy Farm Instructors in the domain of dairy cattle production and management

Sl. No.	Subject matter areas	Knowledge		Mean TNI	Rank
		TNI	Rank		
I	**Selection of dairy cattle**				
1.	Economic traits like standard lactation yield, peak milk yield, inter-calving period, service period, etc., in selection of dairy cattle	86.66	1	83.84	1
2.	Maintenance of farm records and registers	83.11	2		
3.	Body characteristics of high producing dairy cattle	81.77	3		
II	**Housing of dairy cattle**				
1.	Recommendations for housing of diseased animals	84.00	1	82.84	2
2.	Recommendations for housing of calves	83.11	2		
3.	Recommendations for housing of heifers	82.66	3		
4.	Recommendations for housing of pregnant animals	82.66	3		
5.	Recommendations for housing of milch and dry animals	81.77	4		

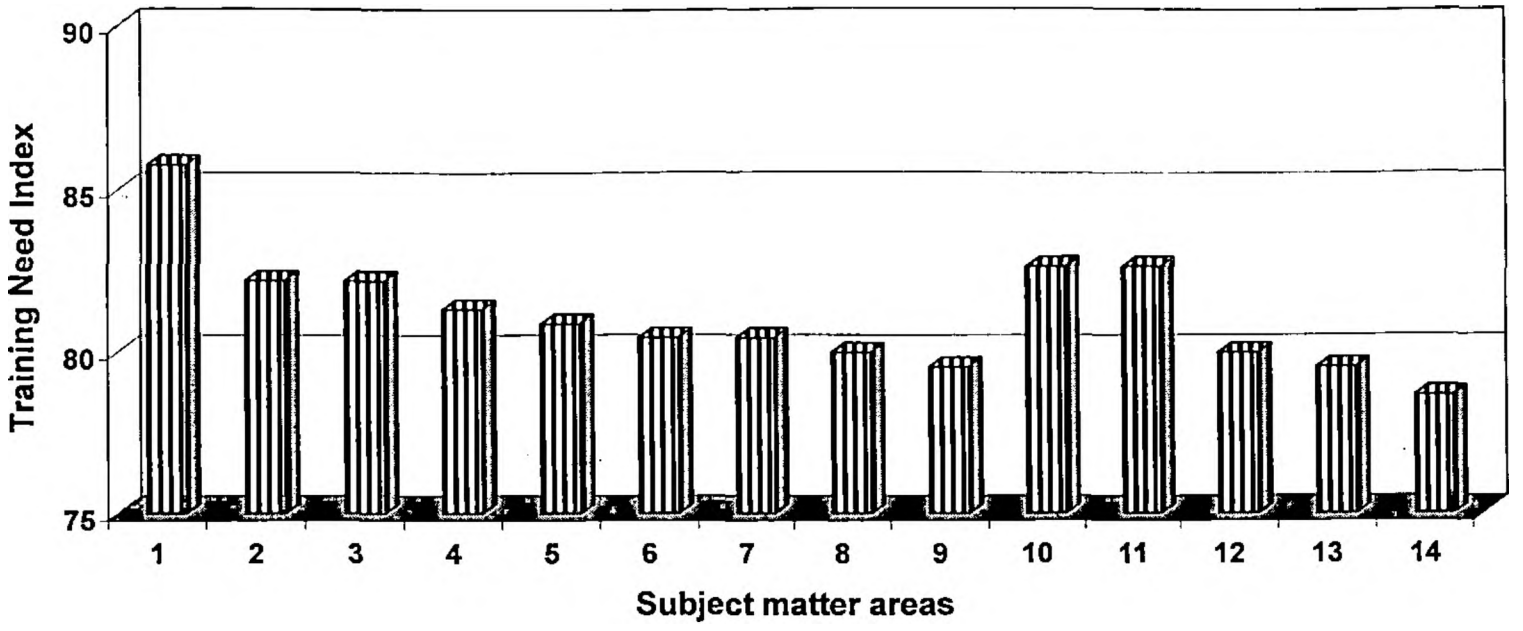
III	**Feeding of dairy cattle**				
1.	By-pass protein	87.55	1		
2.	Proportion of various feed ingredients used in cattle feed	86.22	2		
3.	Unconventional feeds and their recommended levels of inclusion in dairy cattle ration (tapioca leaf meal, tapioca starch waste, coffee husk, tea waste, etc.)	86.22	2	82.60	3
4.	Feeding schedule of calves, heifers, pregnant, dry and lactating animals	81.33	3		
5.	Colostrum feeding to neonatal calves	80.00	4		
6.	Weaning of calves	80.00	4		
7.	Urea treatment of straw	76.88	5		
IV	**Breeding of dairy cattle**				
1.	Postpartum complications	85.77	1		
2.	Importance of timely pregnancy diagnosis	82.22	2		
3.	Problems in parturition	82.22	2	81.42	4
4.	Time of insemination	81.33	3		
5.	Signs of approaching parturition and duration of parturition	80.88	4		
6.	Signs of heat in dairy cattle	80.44	5		
7.	Time of first insemination after calving	80.44	5		
8.	Care of newborn calves	80.00	6		
9.	Gestation period and dry period	79.55	7		
V	**Disease control of dairy cattle**				
1.	Symptoms of common diseases in cattle	82.66	1		
2.	Zoonotic diseases	82.66	1		
3.	Scientific disposal of dead animals	80.00	2	80.71	5
4.	Deworming schedule of cattle	79.55	3		
5.	Vaccination schedule of cattle	78.66	4		

Fig.7a Knowledge oriented training need in the domain of dairy cattle production and management



1.Economic traits in selection of dairy cattle
2.Maintenance of farm records and registers
3.Body characteristics of high producing dairy cattle
4.Recommendations for housing of diseased animals
5.Recommendations for housing of calves
6.Recommendations for housing of heifers
7.Recommendations for housing of pregnant animals
8.Recommendations for housing of milch and dry animals
9.By-pass protein
10.Proportion of various feed ingredients used in cattle feed
11.Unconventional feeds and their recommended levels of inclusion in dairy cattle ration
12.Feeding schedule of calves, heifers, pregnant, dry and lactating animals
13.Colostrum feeding to neonatal calves
14.Weaning of calves
15.Urea treatment of straw

Fig.7b Knowledge oriented training need in the domain of dairy cattle production and management



1.Postpartum complications
2.Importance of timely pregnancy diagnosis
3.Problems in parturition
4.Time of insemination
5.Signs of approaching parturition and duration of parturition
6.Signs of heat in dairy cattle
7.Time of first insemination after calving
8.Care of newborn calves
9.Gestation period and dry period
10.Symptoms of common diseases in cattle
11.Zoonotic diseases
12.Scientific disposal of dead animals
13.Deworming schedule of cattle
14.Vaccination schedule of cattle

It is evident from Table 17 that as far as the perceived training need for knowledge in the domain of dairy cattle production and management was concerned, the sub area of selection of dairy cattle was ranked first with a mean training need index of 83.84. This was followed by the sub areas viz., housing of dairy cattle (82.84), feeding of dairy cattle (82.60), breeding of dairy cattle (81.42) and disease control of dairy cattle (80.71).

About the training need for knowledge in the sub area of selection of dairy cattle, knowledge of economic traits like standard lactation yield, peak milk yield, intercalving period, service period etc., in selection of dairy cattle (86.66) stood first followed by maintenance of farm records and registers (83.11) and body characteristics of high producing dairy cattle (81.77).

Regarding the training need for knowledge in the sub area of housing of dairy cattle, recommendations for housing of diseased animals (84.00) was ranked first followed by those for housing of calves (83.11), housing of heifers (82.66), housing of pregnant animals (82.66 per cent) and housing of milch and dry animals (81.77).

Concerning the training need for knowledge in the sub area of feeding of dairy cattle, knowledge of by-pass protein (87.55) stood first followed by that of proportion of various feed ingredients used in cattle feed (86.22), unconventional feeds and their recommended levels of inclusion of dairy cattle ration (86.22), feeding schedule of calves, heifers, pregnant, dry and lactating

animals (81.33), colostrum feeding to neonatal calves (80.00), weaning of calves (80.00) and urea treatment of straw (76.88).

As for the training need for knowledge in the sub area of breeding of dairy cattle, postpartum complications (85.77) was ranked first followed by importance of timely pregnancy diagnosis (82.22), problems in parturition (82.22), time of insemination (81.33), signs of approaching parturition and duration of parturition (80.88), signs of heat in dairy cattle (80.44), time of first insemination after calving (80.44), care of newborn calves (80.00) and gestation period and dry period (79.55).

Further, as far as the training need for knowledge in the sub area of disease control of dairy cattle was concerned, symptoms of common diseases in cattle (82.66) and zoonotic diseases (82.66) stood first followed by scientific disposal of dead animals (80.00), deworming schedule of cattle (79.55) and vaccination schedule of cattle (78.66).

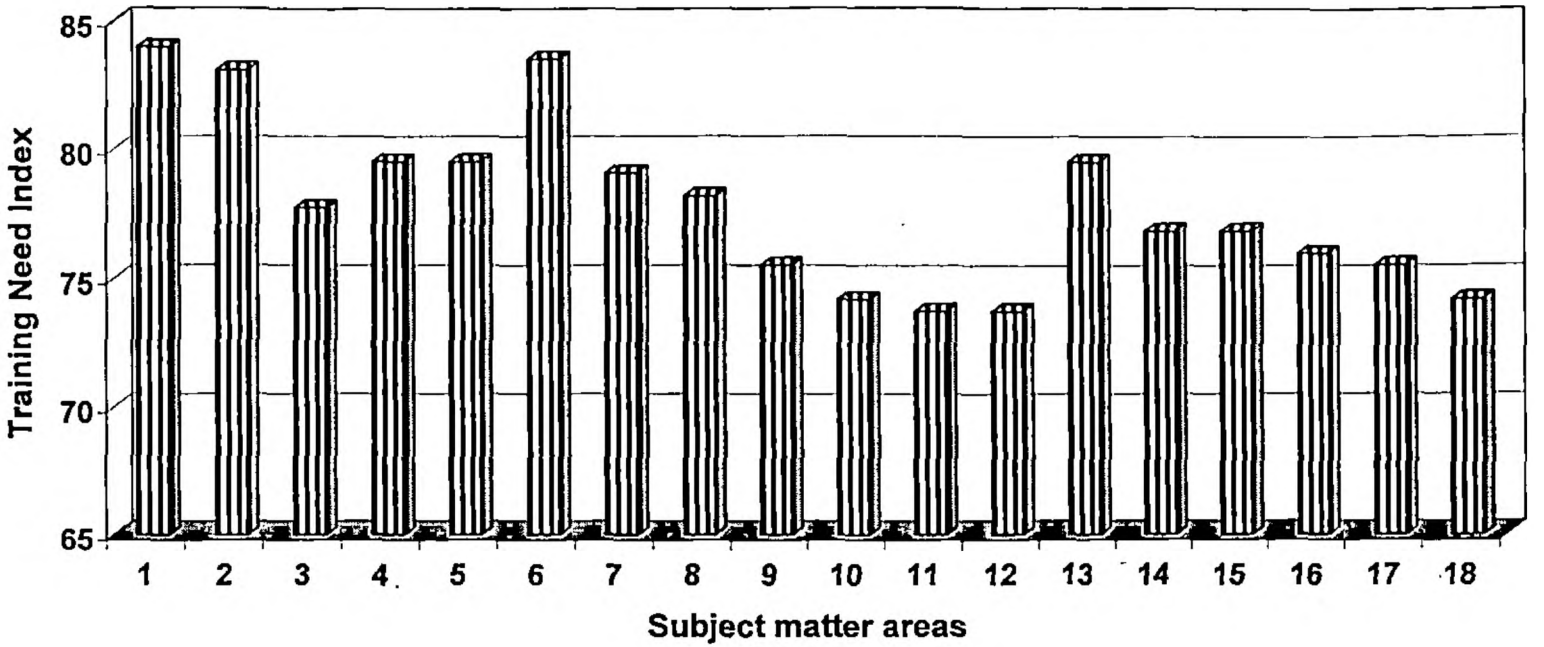
4.3.1.6 Perception of skill oriented training need of Dairy Farm Instructors in the domain of dairy cattle production and management

Table 18. Skill oriented training need of Dairy Farm Instructors in the domain of dairy cattle production and management

Sl. No.	Subject matter areas	Skill		Mean TNI	Rank
		TNI	Rank		
I	**Selection of dairy cattle**				
1.	Judging and selection of high producing dairy cattle	84.00	1	84.00	1

II	**Disease control of dairy cattle**				
1.	Identifying the diseased animals	83.11	1	80.44	2
2.	Scientific disposal of dead animals	77.77	2		
III	**Housing of dairy cattle**				
1.	Preparing lay out for constructing cattle sheds	79.55	1	79.55	3
2.	Taking on the spot right decisions and giving guidance to farmers in constructing cattle sheds	79.55	1		
IV	**Feeding of dairy cattle**				
1.	Preparation of by-pass protein	83.55	1		
2.	Computation of ration for dairy cattle	79.11	2		
3.	Preparation of ration for calves, heifers, pregnant, milch and dry animals	78.22	3		
4.	Preparation of artificial colostrum	75.55	4	76.88	4
5.	Methods of weaning	74.22	5		
6.	Urea treatment of straw	73.77	6		
7.	Training of calves to drink colostrum and to drink from the pail	73.77	6		
V	**Breeding of dairy cattle**				
1.	Identification of postpartum complications	79.55	1		
2.	Identification of dairy cattle in heat	76.88	2		
3.	Management of dairy cattle during and after insemination	76.88	2		
4.	Method of drying off lactating cattle	76.00	3	76.51	5
5.	Identification of signs of approaching parturition, stages of parturition and problems in calving	75.55	4		
6.	Wiping the newborn calf clean, cutting the umbilical cord and providing artificial respiration in emergency	74.22	5		

Fig.8 Skill oriented training need in the domain of dairy cattle production and management



1.Judging and selection of high producing dairy cattle
2.Identifying the diseased animals
3.Scientific disposal of dead animals
4.Preparing lay out for constructing cattle sheds
5.Taking on the spot right decisions and giving guidance to farmers in constructing cattle sheds
6.Preparation of by-pass protein
7.Computation of ration for dairy cattle
8.Preparation of ration for calves, heifers, pregnant, milch and dry animals
9.Preparation of artificial colostrum
10.Methods of weaning
11.Urea treatment of straw
12.Training of calves to drink colostrum and to drink from the pail
13.Identification of postpartum complications
14.Identification of dairy cattle in heat
15.Management of dairy cattle during and after insemination
16.Method of drying off lactating cattle
17.Identification of signs of approaching parturition, stages of parturition and problems in calving
18.Wiping the newborn calf clean, cutting the umbilical cord and providing artificial respiration in emergency

The data in Table 18 reveals that as far as the perceived training need for skills in the domain of dairy cattle production and management was concerned, the sub area of selection of dairy cattle was ranked first with a mean training need index of 84.00 followed by the sub areas viz., disease control of dairy cattle, housing of dairy cattle, feeding of dairy cattle and breeding of dairy cattle with the mean training need indices 80.44, 79.55, 76.88 and 76.51 respectively.

Regarding the training need for skills in the sub area of selection of dairy cattle, the training need index of the item judging and selection of high producing dairy cattle was 84.00.

About the training need for skills in the sub area of disease control of dairy cattle, the item, identifying the diseased animals (83.11) was ranked first followed by scientific disposal of dead animals (77.77).

With regard to the sub area of housing of dairy cattle, the training need index for both the items viz., preparing layout for constructing cattle sheds and taking on the spot right decisions and giving guidance to farmers in constructing cattle sheds was 79.55.

As far as the need for skills in the sub area of feeding of dairy cattle was concerned, preparation of by-pass protein (83.55) was ranked first followed by computation of ration for dairy cattle (79.11), preparation of ration for calves, heifers, pregnant, milch and dry animals (78.22), preparation of artificial

colostrum (75.55), methods of weaning (74.22), urea treatment of straw (73.77) and training of calves to drink colostrum and to drink from the pail (73.77).

With regard to the training need for skills in the sub area of breeding of dairy cattle, identification of post partum complications (79.55) stood first followed by identification of dairy cattle in heat (76.88), management of dairy cattle during and after insemination (76.88), method of drying off lactating cattle (76.00), identification of signs of approaching parturition, stages of parturition and problems in calving (75.55) and wiping the newborn calf clean, cutting the umbilical cord and providing artificial respiration in emergency (74.22).

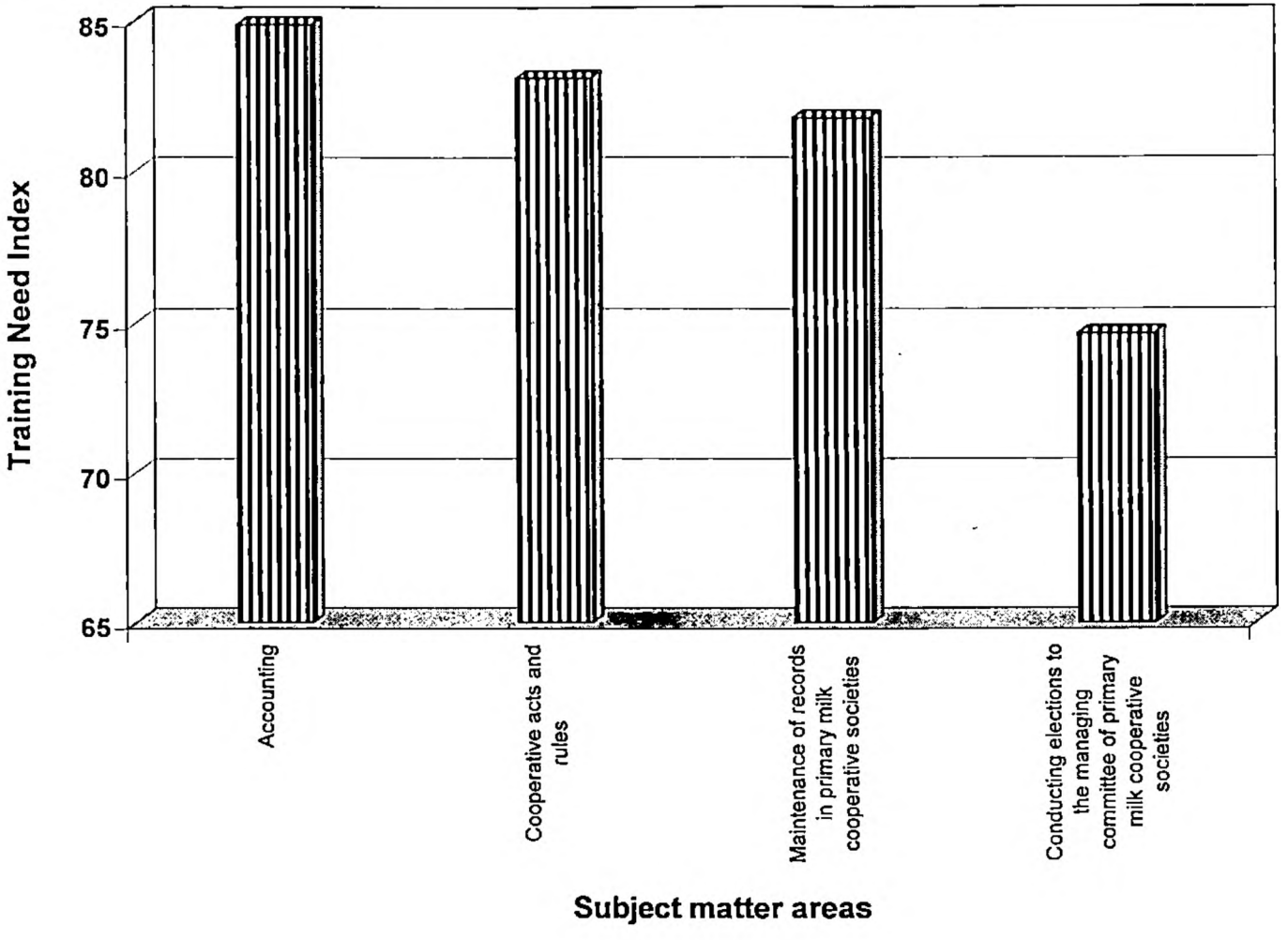
4.3.1.7 Perception of Knowledge oriented training need of Dairy Farm Instructors in the domain of professional management

Table 19. Knowledge oriented training need of Dairy Farm Instructors in the domain of professional management

Sl. No.	Subject matter areas	Knowledge		Mean TNI
		TNI	Rank	
1.	Accounting	84.88	1	81.11
2.	Cooperative acts and rules	83.11	2	
3.	Maintenance of records in primary milk cooperative societies	81.77	3	
4.	Conducting elections to the managing committee of primary milk cooperative societies	74.66	4	

Data in Table 19 reveals that with regard to the perceived training need for knowledge in the domain of professional management, accounting (84.88) stood first followed by cooperative acts and rules (83.11), maintenance of

Fig.9 Knowledge oriented training need in the domain of professional management



records in primary milk cooperative societies (81.77) and conducting elections to the managing committee of primary milk cooperative societies (74.66). The mean training need index of the four knowledge need items in the domain of professional management was 81.11.

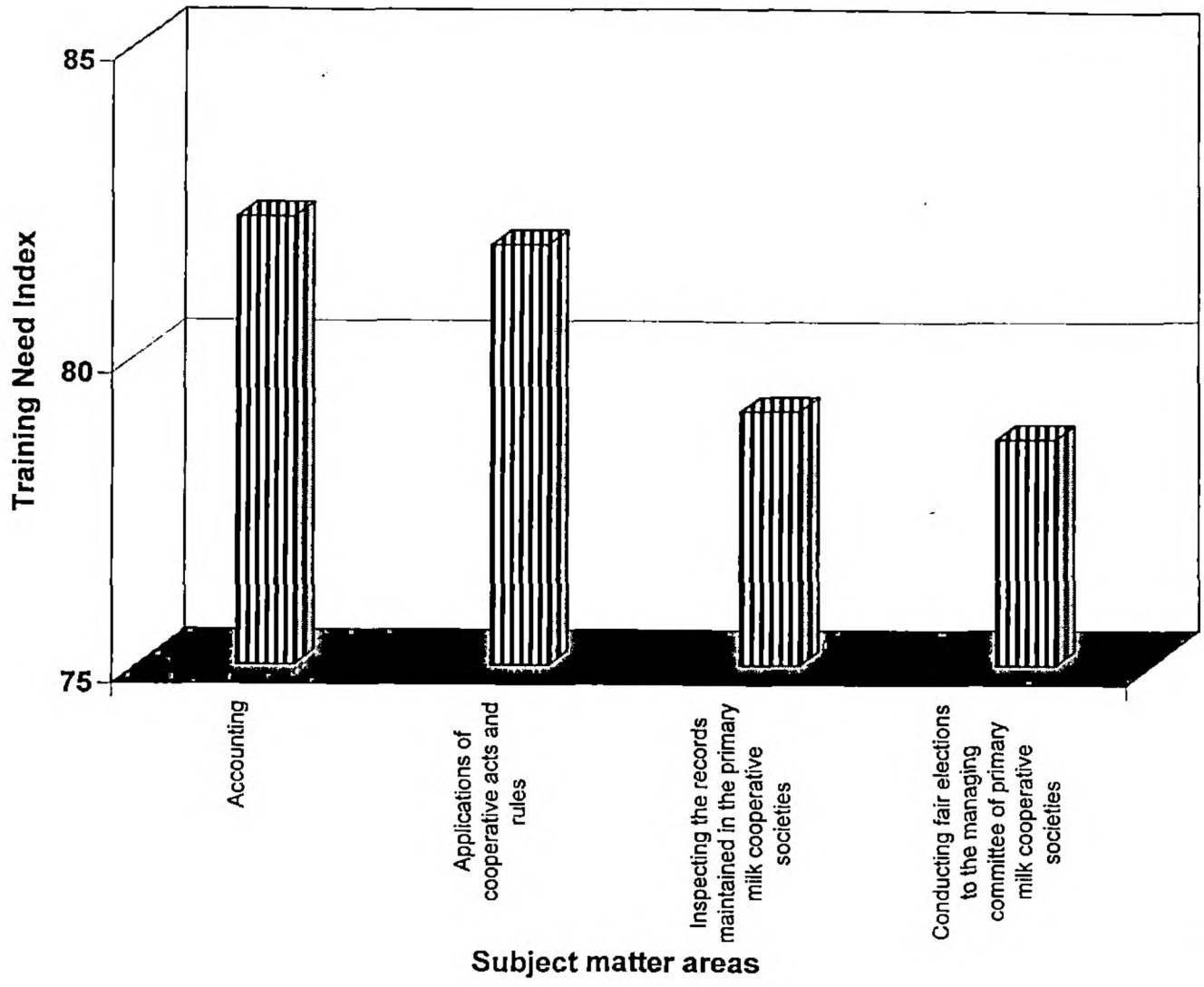
4.3.1.8 Perception of Skill oriented training need of Dairy Farm Instructors in the domain of professional management

Table 20. Skill oriented training need of Dairy Farm Instructors in the domain of professional management

Sl. No.	Subject matter areas	Skill		Mean TNI (%)
		TNI (%)	Rank	
1.	Accounting	82.22	1	80.44
2.	Application of cooperative acts and rules	81.77	2	
3.	Inspecting the records maintained in the primary milk cooperative societies	79.11	3	
4.	Conducting fair election to the managing committee of primary milk cooperative societies	78.66	4	

It can be seen from Table 20 that as far as the perceived training need for skills in the domain of professional management was concerned, accounting (82.22) was ranked first followed by application of cooperative acts and rules (81.77), inspecting the records maintained in the primary cooperative societies (79.11) and conducting fair election to the managing committee of primary cooperative societies (78.66).

Fig.10 Skill oriented training need in the domain of professional management



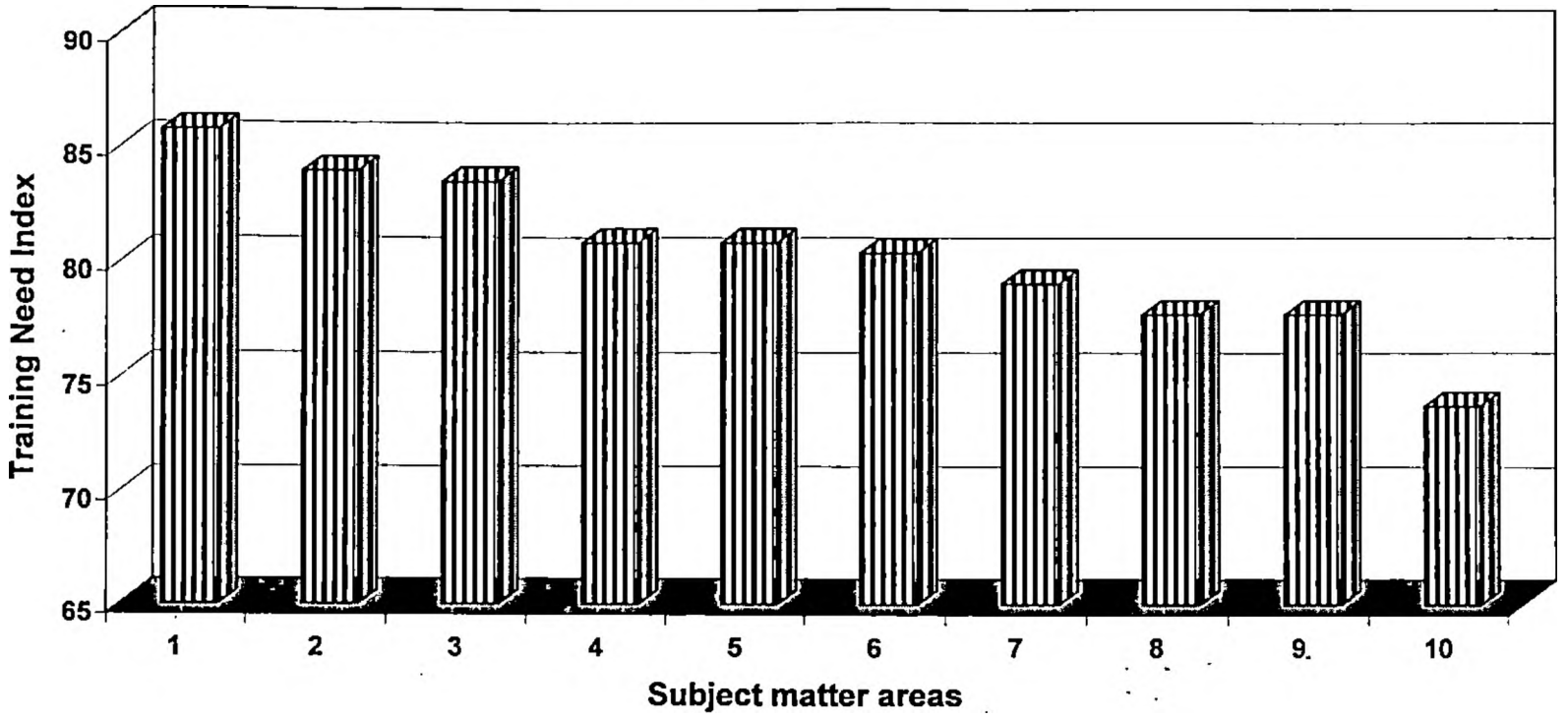
4.3.1.9 Perception of Knowledge oriented training need of Dairy Farm Instructors in the domain of dairy extension

Table 21. Knowledge oriented training need of Dairy Farm Instructors in the domain of dairy extension

Sl. No.	Subject matter areas	Knowledge		Mean TNI
		TNI	Rank	
1.	Basic principles of farm economics	85.77	1	80.39
2.	Marketing extension (providing information regarding modern means of marketing, market structure etc.)	84.00	2	
3.	Script writing for radio talks	83.55	3	
4.	Organization of training programmes for farmers	80.88	4	
5.	Project formulation (bankable dairy related projects to be started by individual/group of farmers)	80.88	4	
6.	Preparation of various audio-visual teaching aids	80.44	5	
7.	Implementation and evaluation of departmental schemes such as model dairy unit	79.11	6	
8.	Farm and home visit	77.77	7	
9.	Organizations of exhibitions, cattle shows, demonstrations, and field trips for farmers	77.77	7	
10	Rural leadership	73.77	8	

It is evident from Table 21 that regarding the perceived training need for knowledge in the domain of dairy extension, basic principles of farm economics (85.77) was ranked first followed by marketing extension (84.00), script writing for radio talks (83.55), organization of training programmes for farmers (80.88), project formulation (80.88), preparation of various audio-visual teaching aids (80.44), implementation and evaluation of departmental schemes such as model

Fig.11 Knowledge oriented training need in the domain of dairy extension



1.Basic principles of farm economics
2.Marketing extension
3.Script writing for radio talks
4.Organization of training programmes for farmers
5.Project formulation
6.Preparation of various audio-visual teaching aids
7.Implementation and evaluation of departmental schemes
8.Farm and home visit
9.Organization of exhibitions,cattle shows,demonstrations, and field trips for farmers
10.Rural leadership

dairy unit (79.11), farm and home visit (77.11), organizations of exhibitions, cattle shows, demonstrations, and field trips for farmers (77.77) and rural leadership (73.77). The mean training need index of the knowledge need items in the domain of dairy extension was 80.39.

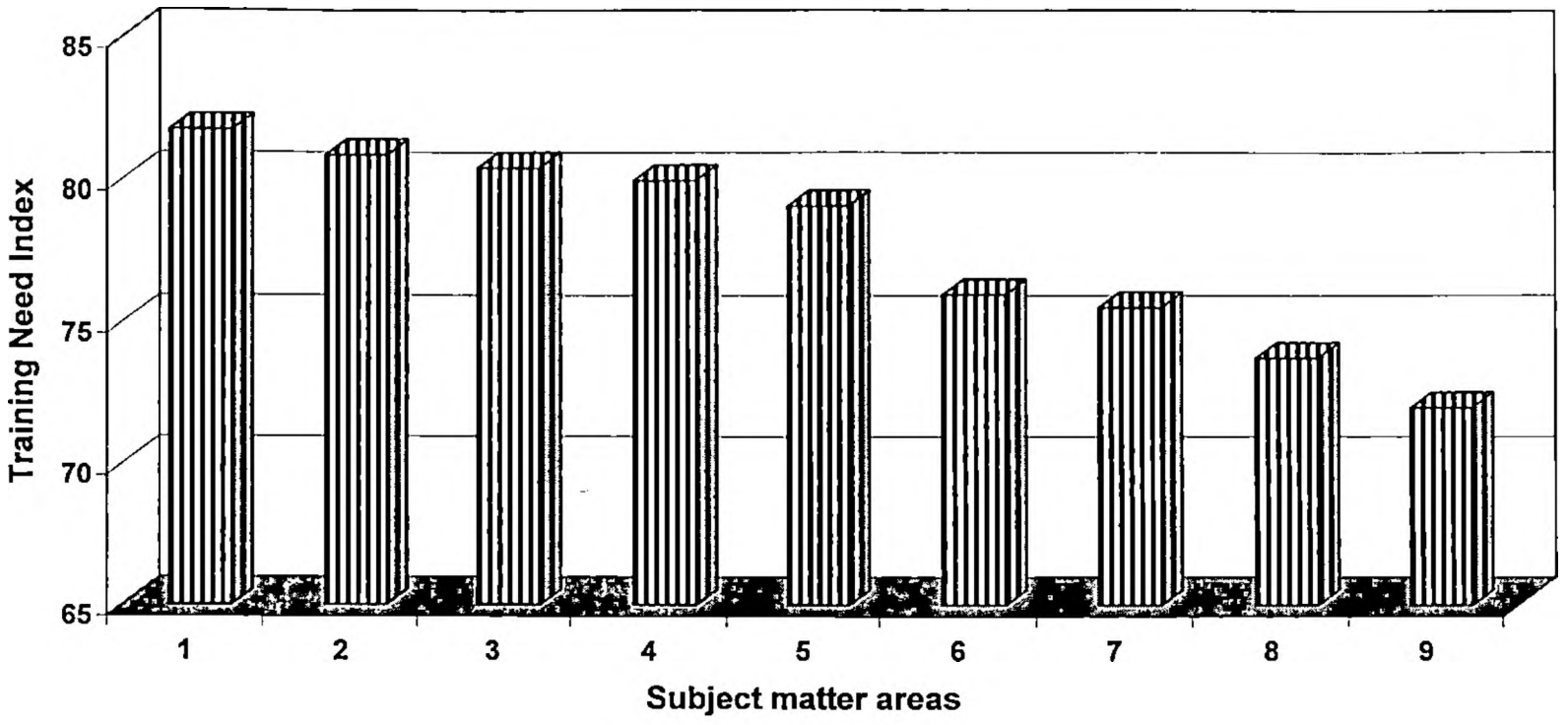
4.3.1.10 Perception of Skill oriented training need of Dairy Farm Instructors in the domain of dairy extension

Table 22. Skill oriented training need of Dairy Farm Instructors in the domain of dairy extension

Sl. No.	Subject matter areas	Skill		Mean TNI
		TNI	Rank	
1.	Preparing projects and budgets for dairy farms, economic analysis of dairy farming	81.77	1	77.72
2.	Preparing scripts for radio talks	80.88	2	
3.	Formulation of projects (bankable dairy related projects to be started by individual/group of farmers)	80.44	3	
4.	Preparation of various audio-visual teaching aids	80.00	4	
5.	Organising training programmes for farmers	79.11	5	
6.	Organising exhibitions, cattle shows, demonstrations and field trips for farmers	76.00	6	
7.	Implementation and evaluation of departmental schemes such as model dairy unit	75.55	7	
8.	Conducting farm and home visit	73.77	8	
9.	Identification of local leaders	72.00	9	

It is seen that (Table 22) as far as the perceived training need for skills in the subject matter area of dairy extension was concerned, the item preparing projects and budgets for dairy farms, economic analysis of dairy farming (81.77) stood first followed by preparing scripts for radio talks (80.88),

Fig.12 Skill oriented training need in the domain of dairy extension



1.Preparing projects and budgets for dairy farming
2.Preparing scripts for radio talks
3.Formulation of projects
4.Preparation of various audio-visual teaching aids
5.Organising training programmes for farmers
6.Organising exhibitions, cattle shows, demonstrations and field trips for farmers
7.Implementation and evaluation of departmental schemes
8.Conducting farm and home visits
9.Identification of local leaders

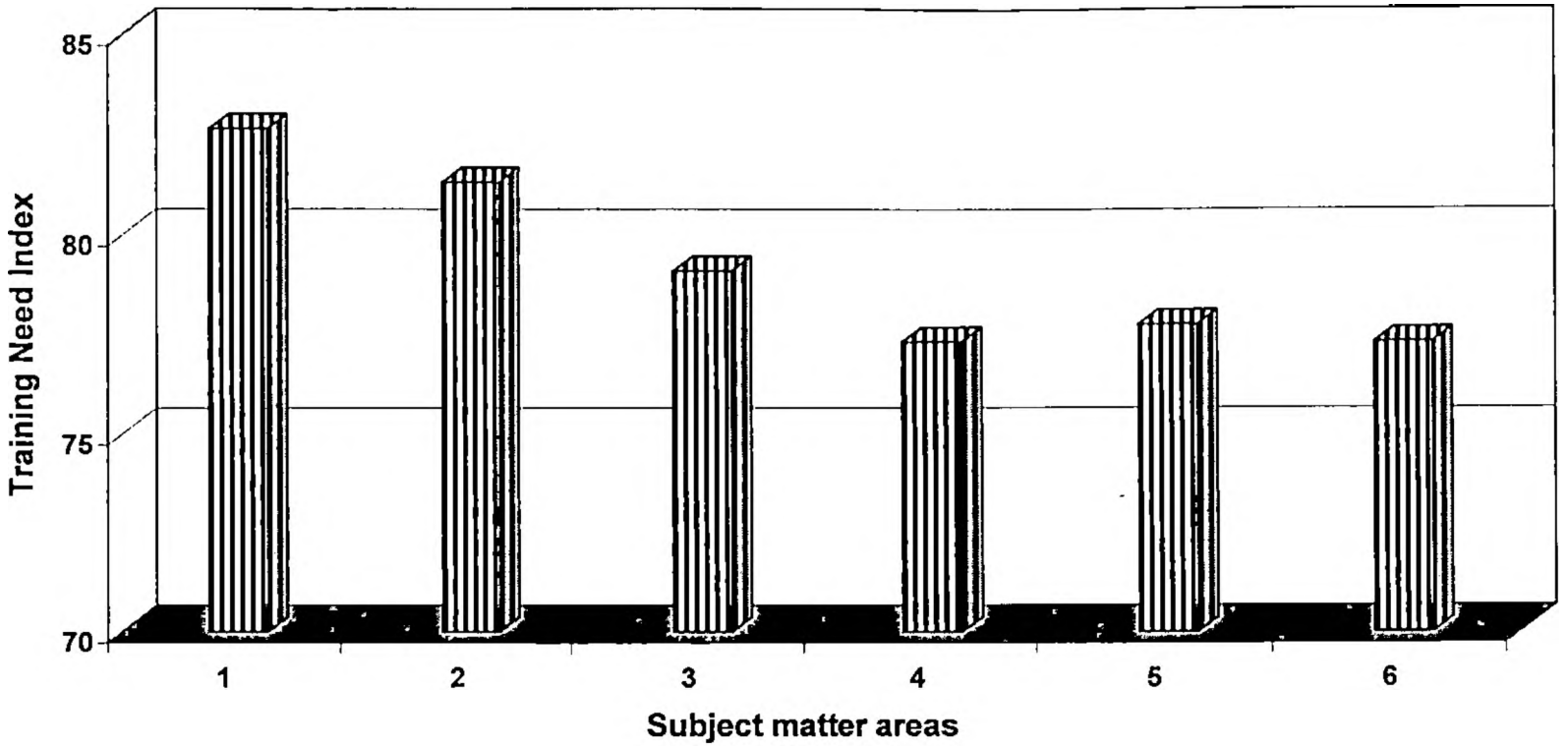
formulation of projects (80.44), preparation of various audio-visual teaching aids (80.00), organizing training programmes for farmers (79.11), organizing exhibitions, cattle shows, demonstrations and field trips for farmers (76.00), implementation and evaluation of departmental schemes such as model dairy unit (75.55), conducting farm and home visit (73.77), and identification of local leaders (72.00). The mean training need index of the skill need items in the domain of dairy extension was 77.72.

4.3.1.11 Perception of Knowledge oriented training need of Dairy Farm Instructors in the domain of fodder production and management

Table 23. Knowledge oriented training need of Dairy Farm Instructors in the domain of fodder production and management

Sl. No.	Subject matter areas	Knowledge		Mean TNI	Rank
		TNI	Rank		
I	**Fodder Production**				
1.	Fodder management (fertilizer application, control of pests and diseases, etc.)	82.66	1	78.99	1
2.	Fodder varieties suitable for different agro-climatic regions of Kerala	81.33	2		
3.	Fodder harvesting	79.11	3		
4.	Fodder cultivation (land preparation, irrigation, sowing, seedling, etc.)	77.33	4		
II	**Fodder Preservation**				
1.	Hay making	77.77	1	77.55	2
2.	Silage making	77.33	2		

Fig.13 Knowledge oriented training need in the domain of fodder production and management



1.Fodder management
2.Fodder varieties suitable for different agro-climatic regions of Kerala
3.Fodder harvesting
4.Fodder cultivation
5.Hay making
6.Silage making

The data in Table 23 indicates that as far as the perceived training need for knowledge in the domain of fodder production and management was concerned, the sub area fodder production stood first with a mean training need index of 78.99. This was followed by the sub area fodder preservation and the mean training need index was 77.55.

With regard to the training need for knowledge in the sub area of fodder production was concerned, fodder management (82.66) was ranked first followed by fodder varieties suitable for different agro-climatic regions of Kerala (81.33), fodder harvesting (79.11) and fodder cultivation (77.33).

Further, about the sub area of fodder preservation, hay making (77.77) was ranked first followed by silage making (77.33).

4.3.1.12 Perception of Skill oriented training need of Dairy Farm Instructors in the domain of fodder production and management

Table 24. Skill oriented training need of Dairy Farm Instructors in the domain of fodder production and management

Sl. No.	Subject matter areas	Skill		Mean TNI	Rank
		TNI	Rank		
I	**Fodder Production**				
1.	Fodder management practices (Application of fertilizer, control of pests and diseases, weed control, etc.)	80.88	1	78.99	1
2.	Selection of fodder varieties suitable for different agro climatic regions of Kerala	80.44	2		

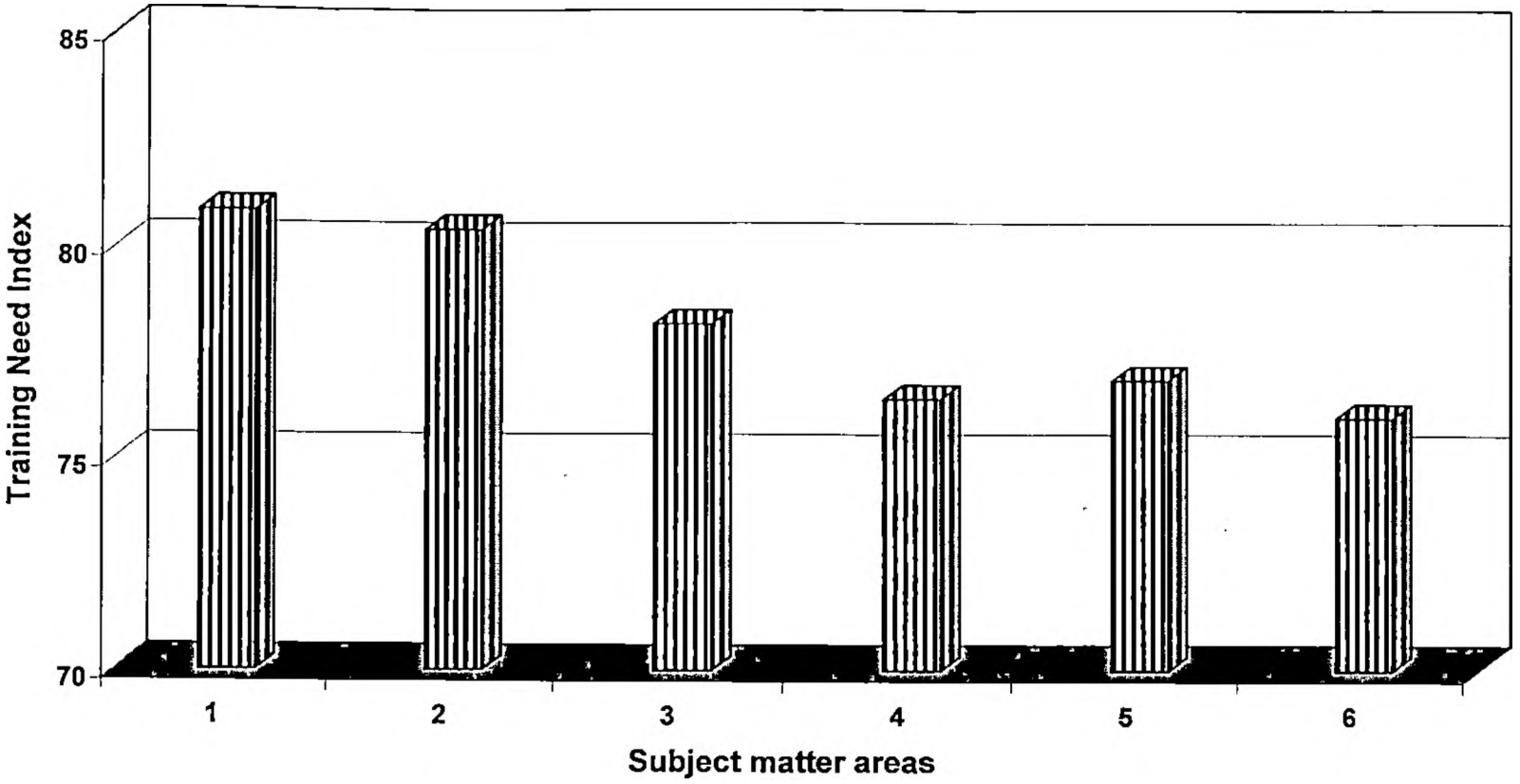
3.	Methods of fodder harvesting	78.22	3		
4.	Cultivation of fodder (land preparation, irrigation, sowing, seedling, etc.)	76.44	4		
II	**Fodder Preservation**				
1.	Techniques of hay making	76.88	1	76.44	2
2.	Techniques of silage making	76.00	2		

It is evident from Table 24 that as for the perceived training need for skills in the domain of fodder production and management, the sub area of fodder production was ranked first with a mean training need index of 78.99 followed by the sub area fodder preservation (76.44).

Concerning the skill oriented training needs of the respondents in the sub area of fodder production, the item fodder management practices (80.88) stood first followed by selection of fodder varieties suitable for different agro-climatic regions of Kerala (80.44), methods of fodder harvesting (78.22) and cultivation of fodder (76.44).

As for the sub area of fodder preservation, the techniques of hay making (76.88) was ranked first followed by techniques of silage making (76.00).

Fig.14 Skill oriented training need in the domain of fodder production and management



1.Fodder management practices
2.Selection of fodder varieties suitable for different agro-climatic regions of Kerala
3.Methods of fodder harvesting
4.Cultivation of fodder
5.Techniques of hay making
6.Techniques of silage making

4.4 Perceived relevance of the training programmes conducted

Table 25. Perceived relevance of the training programmes conducted by Dairy Development Department, Kerala.

Sl.No.	Name of the training programme	Item mean score	Rank	Relevancy
1.	Training programme on Diploma in Dairy Cooperative management	2.93	I	Somewhat relevant to relevant
2.	Training programme on role of Grama Panchayats and Developmental functionaries in planning	2.86	II	„
3.	Training programme on panchayat level projects for women	2.85	III	„
4.	Extension education: off campus training programme	2.81	IV	„
5.	Training programme on project management for functionaries of women development programme	2.71	V	„
6.	Training programme: Life skill development for women	2.62	VI	„
7.	Environmental management	2.56	VII	„
8.	Training programme on biodiversity issues and concerns	2.56	VII	„

Table 25 reveals that the mean scores of all the training programmes ranged from 2.56 to 2.93 indicating that the training programmes were perceived as somewhat relevant to relevant the tendency being more towards 'relevant'. The training programmes were ranked on the basis of the mean scores obtained. The training programme on diploma in dairy cooperative

management (2.93) received the first rank. The training programme on role of grama panchayats and developmental functionaries in planning (2.86) stood next followed by training programme on panchayat level projects for women (2.85), extension education: off campus training programme (2.81), training programme on project management for functionaries of women development programme (2.71), training programme: life skill development for women (2.62), environmental management (2.56) and training programme on biodiversity issues and concerns (2.56).

4.5 Training strategy preferred

4.5.1 Type of training

Table 26. Type of training preferred

Sl. No.	Subject matter areas	Type of training					
		Distance learning		Institutional learning		Integrated learning	
		Frequency (f)	Percentage (%)	Frequency (f)	Percentage (%)	Frequency (f)	Percentage (%)
1.	Dairy cattle production and management	5 (III)	6.67	40 (I)	53.33	30 (II)	40.00
2.	Milk and milk products	4 (III)	5.33	47 (I)	62.67	24 (II)	32.00
3.	Fodder production and management	5 (III)	6.67	44 (I)	58.67	26 (II)	34.66
4.	Dairy extension	12 (III)	16.00	32 (I)	42.67	31 (II)	41.33
5.	Professional management	7 (III)	9.33	38 (I)	50.67	30 (II)	40.00
6.	Information technology	8 (III)	10.67	39 (I)	52.00	28 (II)	37.33

* Figures in parenthesis indicate ranks

It can be seen from Table 26 that out of the three given types of training i.e. distance learning, institutional learning and integrated learning, the most preferred one was institutional learning followed by integrated learning and then the distance learning regarding all the six subject matter areas viz., Dairy cattle production and management, milk and milk products, fodder production and management, dairy extension, professional management and information technology. The corresponding percentage of respondents were 53.33 per cent, 62.67, 58.67, 42.67, 50.67 and 52.00 per cent for institutional learning, 40.00 per cent, 32.00, 34.66, 41.33, 40.00 and 37.33 per cent for integrated learning and 6.67 per cent, 5.33, 6.67, 16.00, 9.33 and 10.67 per cent for distance learning.

4.5.2 Method of training

Table 27. Methods of training preferred for the subject matter area of dairy cattle production and management

Sl. No	Training methods	Dairy cattle production and management		
		Frequency (f)	Percentage (%)	Rank
1.	Practice in demonstration	49	65.33	I
2.	Study tour	42	56.00	II
3.	Group discussion	35	46.66	III
4.	Seminars	26	34.66	IV
5.	Lecture	21	28.00	V
6.	Workshop	17	22.66	VI
7.	Assignments	16	21.33	VII
8.	Case method	15	20.00	VIII
9.	Group tasks	14	18.66	IX
10.	Presentation	13	17.33	X
11.	Panel discussion	11	14.66	XI
12	Symposium	10	13.33	XII
13	Role play	7	9.33	XIII

Table 27 reveals that for the subject matter area of dairy cattle production and management, practice in demonstration (65.33 per cent) was the training method preferred the most followed by study tour (56.00 per cent), group discussion (46.66 per cent), seminars (34.66 per cent), lecture (28.00 per cent), workshop (22.66 per cent), assignments (21.33 per cent), case method (20.00 per cent), group tasks (18.66 per cent), presentation (17.33 per cent), panel discussion (14.66 per cent) and symposium (13.33 per cent). The least preferred method of training for this subject matter area was found to be role play, 9.33 per cent of respondents opting for it.

Table 28. Methods of training preferred for the subject matter area of Milk and milk products

Sl. No	Training methods	Milk and milk products		
		Frequency (f)	Percentage (%)	Rank
1.	Practice in demonstration	56	74.66	I
2.	Study tour	38	50.66	II
3.	Workshop	32	42.66	III
4.	Group discussion	28	37.33	IV
5.	Seminars	26	34.66	V
6.	Presentation	20	26.66	VI
7.	Lecture	18	24.00	VII
8.	Symposium	14	18.66	VIII
9.	Panel discussion	13	17.33	IX
10.	Group tasks	12	16.00	X
11.	Case method	10	13.33	XI
12	Role play	9	12.00	XII
13	Assignments	7	9.33	XIII

It can be observed from Table 28 that for the subject matter area of milk and milk products, the training method preferred the most was practice in demonstration (74.66 per cent). The method of study tour (50.66 per cent) stood next followed by workshop (42.66 per cent), group discussion (37.33 per cent), seminars (34.66 per cent), presentation (26.66 per cent), lecture (24.00 per cent), symposium (18.66 per cent), panel discussion (17.33 per cent), group tasks (16.00 per cent), case method (13.33 per cent) and role play (12.00 per cent). The least preferred method was assignments (9.33 per cent).

Table 29. Methods of training preferred for the subject matter area of Fodder production and management

Sl. No	Training methods	Fodder production and management		
		Frequency (f)	Percentage (%)	Rank
1.	Practice in demonstration	57	76.00	I
2.	Study tour	33	44.00	II
3.	Workshop	31	41.33	III
4.	Lecture	20	26.66	IV
5.	Seminars	18	24.00	V
6.	Group discussion	16	21.33	VI
7.	Symposium	13	17.33	VII
8.	Group tasks	11	14.66	VIII
9.	Case method	10	13.33	IX
10.	Presentation	9	12.00	X
11.	Panel discussion	8	10.66	XI
12	Assignments	6	8.00	XII
13	Role play	5	6.66	XIII

Table 29 shows that the training method preferred the most for the subject matter area of fodder production and management was practice in demonstration chosen by 76.00 per cent of the respondents followed by study tour (44.00 per cent), workshop (41.33 per cent), lecture (26.66 per cent), seminars (24.00 per cent), group discussion (21.33 per cent), symposium (17.33 per cent), group tasks (14.66 per cent), case method (13.33 per cent), presentation (12.00 per cent), panel discussion (10.66 per cent) and assignments (8.00 per cent). The least preferred method was role play which was mentioned by 6.66 per cent of respondents

Table 30. Methods of training preferred for the subject matter area of Dairy extension

Sl. No	Training methods	Dairy extension		
		Frequency (f)	Percentage (%)	Rank
1.	Group discussion	42	56.00	I
2.	Study tour	34	45.33	II
3.	Seminars	33	44.00	III
4.	Lecture	27	36.00	IV
5.	Workshop	26	34.66	V
6.	Practice in demonstration	25	33.33	VI
7.	Symposium	17	22.66	VII
8.	Panel discussion	14	18.66	VIII
9.	Case method	13	17.33	IX
10.	Group tasks	12	16.00	X
11.	Assignments	11	14.66	XI
12	Presentation	10	13.33	XII
13	Role play	5	6.66	XIII

Table 30 reveals that group discussion was the most preferred method for imparting training in dairy extension chosen by 56.00 per cent of respondents. The method of study tour (45.33 per cent) was ranked second followed by seminars (44.00 per cent), lecture (36.00 per cent), workshop (34.66 per cent), practice in demonstration (33.33 per cent), symposium (22.66 per cent), panel discussion (18.66 per cent), case method (17.33 per cent), group tasks (16.00 per cent), assignments (14.66 per cent) and presentation (13.33 per cent). The method of role play was the least preferred one (6.66 per cent).

Table 31. Methods of training preferred for the subject matter area of Professional management

Sl. No	Training methods	Professional management		
		Frequency (f)	Percentage (%)	Rank
1.	Group discussion	37	49.33	I
2.	Workshop	35	46.66	II
3.	Seminars	31	41.33	III
4.	Lecture	27	36.00	IV
5.	Practice in demonstration	25	33.33	V
6.	Study tour	20	26.66	VI
7.	Symposium	17	22.66	VII
8.	Case method	16	21.33	VIII
9.	Role play	14	18.66	IX
10.	Panel discussion	13	17.33	X
11.	Assignments	12	16.00	XI
12	Group tasks	11	14.66	XII
13	Presentation	9	12.00	XIII

It can be observed from Table 31 that for the subject matter area of professional management the respondents preferred the method of group discussion (49.33 per cent) the most. The method of workshop (46.66 per cent) stood next followed by seminars (41.33 per cent), lecture (36.00 per cent) practice in demonstration (33.33 per cent), study tour (26.66 per cent), symposium (22.66 per cent), case method (21.33 per cent), role play (18.66 per cent), panel discussion (17.33 per cent), assignments (16.00 per cent) and group tasks (14.66 per cent). The least preferred method of training was presentation which was opted by 12.00 per cent of respondents.

Table 32. Methods of training preferred for the subject matter area of Information technology

Sl. No	Training methods	Information technology		
		Frequency (f)	Percentage (%)	Rank
1.	Practice in demonstration	51	68.00	I
2.	Workshop	37	49.33	II
3.	Lecture	26	34.66	III
4.	Study tour	21	28.00	IV
5.	Group discussion	18	24.00	V
6.	Assignments	17	22.66	VI
7.	Seminars	16	21.33	VII
8.	Presentation	14	18.66	VIII
9.	Symposium	13	17.33	IX
10.	Panel discussion	12	16.00	X
11.	Group tasks	11	14.66	XI
12	Role play	10	13.33	XII
13	Case method	8	10.66	XIII

Table 32 shows that the training method preferred the most was practice in demonstration (68.00 per cent) for the subject matter area of information technology. The method of workshop (49.33 per cent) stood next followed by lecture (34.66 per cent), study tour (28.00 per cent), group discussion (24.00 per cent), assignments (22.66 per cent), seminars (21.33 per cent), presentation (18.66 per cent), symposium (17.33 per cent), panel discussion (16.00 per cent), group tasks (14.66 per cent) and role play (13.33 per cent). The case method (10.66 per cent) was the least preferred one.

4.5.3 Trainers

Table 33. Trainers preferred

Sl. No.	Subject matter areas	Type of trainers					
		Experts from the parent organization (DDD)		Experts from outside the parent organization but within the state		Experts from out side the state	
		Frequency (f)	Percentage (%)	Frequency (f)	Percentage (%)	Frequency (f)	Percentage (%)
1.	Dairy cattle production and management	20 (III)	20.67	48 (I)	64.00	21 (II)	28.00
2.	Milk and milk products	33 (II)	44.00	34 (I)	45.33	26 (III)	34.67
3.	Fodder production and management	29 (II)	38.66	44 (I)	58.66	14 (III)	18.66
4.	Dairy extension	33 (II)	44.00	37 (I)	49.33	16 (III)	21.33
5.	Professional management	14 (III)	18.66	45 (I)	60.00	29 (II)	38.66
6.	Information technology	5 (III)	06.66	43 (I)	57.33	36 (II)	48.00

* Figures in parenthesis indicate ranks

It is evident from Table 33 that out of the three given options of trainers, viz., experts from the parent organization (DDD), experts from outside the parent organization but within the state and experts from outside the state, the most preferred one was experts from outside the parent organization but within the state for all the given six subject matter areas viz., dairy cattle production and management, milk and milk products, fodder production and management, dairy extension, professional management and information technology and the percentage of respondents preferring them were 64.00, 45.33, 58.66, 49.33, 60.00 and 57.33 respectively.

Regarding preference for trainers, experts from out side the state stood next to experts from out side the parent organization but within the state for the subject matter areas of dairy cattle production and management (28.00 per cent), professional management (38.66 per cent) and information technology (48.00 per cent). The experts from the parent organization were preferred the least as trainers in these subject matter areas. The percentage of respondents preferring them were 20.67, 18.66 and 6.66 respectively.

In the subject matter areas of milk and milk products, fodder production and management and dairy extension, experts from parent organization were preferred next to experts from out side the parent organization but within the state. The percentage of respondents preferring them were 44.00, 38.66 and 44.00 respectively. For these subject matter areas experts from out side the state

were preferred the least as trainers the percentage of respondents opting for them being 34.67, 18.66 and 21.33 respectively.

4.5.4 Periodicity of training

Table 34. Preferred periodicity of the training programme

n = 75

Sl. No	Duration of the training	Periodicity of training							
		Every 3 months		Every 6 months		Every year		More than a year	
		Frequency (f)	Percen -tage (%)	Frequency (f)	Percen -tage (%)	Frequency (f)	Percen -tage (%)	Frequency (f)	Percen -tage (%)
1.	1 – 7 days	20 (III)	26.66	27 (I)	36.00	26 (II)	34.66	2 (IV)	2.66
2.	8 – 14 days	6 (IV)	08.00	12 (II)	16.00	47 (I)	62.66	10 (III)	13.33
3.	15 – 30 days	2 (IV)	02.66	4 (III)	05.33	31 (II)	41.33	38 (I)	50.66
4.	More than one month	-	-	3 (III)	04.00	11 (II)	14.66	61 (I)	81.33

* Figures in parenthesis indicate ranks

Table 34 shows that the most preferred periodicity for the training programmes of 1-7 days duration was six months, suggested by 36.00 per cent of respondents followed by an year, three months and more than a year preferred by 34.66, 26.66 and 2.66 per cent of respondents respectively.

Regarding the training programmes of 8-14 days duration the most preferred periodicity was one year, suggested by 62.66 percent of respondents followed by 6 months, more than a year and three months preferred by 16.00, 13.33 and 8.00 per cent of respondents respectively.

The most preferred periodicity for the training programmes of 15-30 days duration was more than a year, mentioned by 50.66 per cent of respondents. The periodicity of one year (41.33 per cent) was preferred next followed by six months (5.33 per cent) and then three months (2.66 per cent).

With respect to the training programmes of more than one month duration, the most preferred periodicity was more than a year, opted by 81.33 per cent of the respondents followed by one year and six months opted by 14.66 and 4.00 per cent of respondents respectively. None of the respondents preferred three months periodicity.

4.5.5 Duration of training

4.5.5.1 Duration preferred for a short-term residential training programme

Table 35. Preferred duration for a short-term residential training programme

n=75

Sl. No.	Duration	Frequency (f)	Percentage (%)
1.	1 – 7 days	57 (I)	76.00
2.	7 – 15 days	10 (II)	13.34
3.	15 – 30 days	4 (III)	5.33
4.	1 month – 3 months	3 (IV)	4.00
5.	3 months – 6 months	1 (V)	1.33
Total		75	100.00

* Figures in parenthesis indicate ranks

Data in Table 35 shows that 76.00 per cent of the respondents were in favour of a short-term residential training programme of duration 1-7 days for which the respondent would probably have to stay away from his/her home. This was followed by 13.34, 5.33, 4.00 and 1.33 per cent of respondents

favouring durations of 7-15 days, 15-30 days, 1 month to 3 months and 3 months to 6 months respectively.

4.5.5.2 Duration preferred for a long-term residential training programme

Table 36. Preferred duration for a long-term residential training programme

n=75

Sl. No.	Duration	Frequency (f)	Percentage (%)
1.	1 – 15 days	11 (III)	14.67
2.	15 days – 1 month	36 (I)	48.00
3.	1 month – 3 months	16 (II)	21.33
4.	3 months – 6 months	4 (IV)	5.33
5.	6 months –1 year	4 (IV)	5.33
6.	1 year – 2 years	4 (IV)	5.33
Total		75	100.00

* Figures in parenthesis indicate ranks

The data in Table 36 indicates that 48.00 per cent of respondents were in favour of a long-term residential training programme of 15 days to one month duration for which they would have to stay away from home some times. This was followed by 21.33, 14.67, 5.33, 5.33 and 5.33 per cent of respondents favouring durations of 1 month to 3 months, 1 to 15 days, 3 months to 6 months, 6 months to 1 year, and 1 year to 2 years respectively.

4.5.6 Percentage of theory and practical sessions

Table 37. Preferred percentage of theory and practical sessions for the subject-matter of dairy cattle production and management

n=75

Subject matter area	Theory (%)	Practical (%)	Frequency (f)	Percentage (%)
Dairy cattle production and management	50	50	27	36.00
	45	55	13	17.33
	40	60	10	13.33
	60	40	8	10.64
	30	70	5	6.67
	55	45	3	4.00
	80	20	2	2.67
	20	80	2	2.67
	25	75	2	2.67
	65	35	2	2.67
	70	30	1	1.33

Table 37 shows that 36.00 per cent of respondents preferred 50.00 per-cent each of theory and practical,17.33 per cent of respondents preferred 45.00 per cent theory and 55.00 per cent practical, 13.33 per cent of respondents preferred 40.00 per cent theory and 60.00 per cent practical, 10.64 per cent of respondents preferred 60.00 per cent theory and 40.00 per cent practical, 6.67 per cent of respondents preferred 30.00 per cent theory and 70.00 per cent practical, 4.00 per cent of respondents preferred 55.00 per cent theory and 45.00 per cent practical, 2.67 per cent of respondents preferred 80.00 per cent theory and 20.00 per cent practical, 2.67 per cent of respondents preferred 20.00 per cent theory and 80.00 per cent practical, 2.67 per cent of respondents preferred 25.00 per cent theory and 75.00 per cent practical,2.67 per cent of respondents

preferred 65.00 per cent theory and 35.00 per cent practical and 1.33 per cent of respondents preferred 70.00 per cent theory and 30.00 per cent practical for training in dairy cattle production and management.

Table 38. Preferred percentage of theory and practical sessions for the subject-matter of milk and milk products

n=75

Subject matter area	Theory (%)	Practical (%)	Frequency (f)	Percentage (%)
Milk and milk products	40	60	15	20.00
	45	55	14	18.67
	25	75	13	17.33
	50	50	11	14.67
	20	80	9	12.00
	30	70	7	9.33
	35	65	4	5.33
	70	30	2	2.67

Data in Table 38 indicates that 20.00 per cent of respondents preferred 40.00 per cent theory and 60.00 per cent practical, 18.67 per cent of respondents preferred 45.00 per cent theory and 55.00 per cent practical,17.33 per cent of respondents preferred 25.00 per cent theory and 75.00 per cent practical,14.67 per cent of respondents preferred 50.00 per cent theory and 50.00 per cent practical, 12.00 per cent of respondents preferred 20.00 per cent theory and 80.00 per cent practical, 9.33 per cent of respondents preferred 30.00 per cent theory and 70.00 per cent practical,5.33 per cent of respondents preferred 35.00 per cent theory and 65.00 per cent practical and 2.67 per cent of respondents preferred 70.00 per cent theory and 30.00 per cent practical for training in the subject matter area of milk and milk products.

Table 39. Preferred percentage of theory and practical sessions for the subject-matter of fodder production and management

n=75

Subject matter area	Theory (%)	Practical (%)	Frequency (f)	Percentage (%)
Fodder production and management	50	50	25	33.33
	40	60	18	24.00
	45	55	15	20.00
	20	80	8	10.67
	25	75	6	8.00
	35	65	1	1.33
	70	30	1	1.33
	75	25	1	1.33

It can be seen from the Table 39 that 33.33 per cent of respondents preferred 50.00 per cent each of theory and practical, 24.00 per cent of respondents preferred 40.00 per cent theory and 60.00 per cent practical, 20.00 per cent of respondents preferred 45.00 per cent theory and 55.00 per cent practical, 10.67 per cent of respondents preferred 20.00 per cent theory and 80.00 per cent practical, 8.00 per cent of respondents preferred 25.00 per cent theory and 75.00 per cent practical, 1.33 per cent of respondents preferred 35.00 per cent theory and 65.00 per cent practical, 1.33 per cent of respondents preferred 70.00 per cent theory and 30.00 per cent practical and 1.33 per cent of respondents preferred 75.00 per cent theory and 25.00 per cent practical for training programme in fodder production and management.

Table 40. Preferred percentage of theory and practical sessions for the subject-matter of dairy extension

n=75

Subject matter area	Theory (%)	Practical (%)	Frequency (f)	Percentage (%)
Dairy extension	50	50	23	30.67
	40	60	17	22.67
	45	55	13	17.33
	60	40	8	10.67
	30	70	7	9.33
	25	75	4	5.33
	20	80	2	2.67
	10	90	1	1.33

Data in Table 40 reveals that as far as the subject matter dairy extension was concerned about 30.67 per cent of respondents preferred 50.00 per cent each of theory and practical, 22.67 per cent of respondents preferred 40.00 per cent theory and 60.00 per cent practical, 17.33 per cent of respondents preferred 45.00 per cent theory and 55.00 per cent practical, 10.67 per cent of respondents preferred 60.00 per cent theory and 40.00 per cent practical, 9.33 per cent of respondents preferred 30.00 per cent theory and 70.00 per cent practical, 5.33 per cent of respondents preferred 25.00 per cent theory and 75.00 per cent practical, 2.67 per cent of respondents preferred 20.00 per cent theory and 80.00 per cent practical and 1.33 per cent of respondents preferred 10.00 per cent theory and 90.00 per cent practical sessions for training.

Table 41. Preferred percentage of theory and practical sessions for the subject-matter of professional management

n=75

Subject matter area	Theory (%)	Practical (%)	Frequency (f)	Percentage (%)
Professional management	50	50	27	36.00
	45	55	16	21.33
	60	40	11	14.67
	40	60	10	13.33
	30	70	3	4.00
	70	30	3	4.00
	55	45	3	4.00
	65	35	1	1.33
	85	15	1	1.33

Data in Table 41 indicates that 36.00 per cent of respondents preferred 50.00 per cent each of theory and practical, 21.33 per cent of respondents preferred 45.00 per cent theory and 55.00 per cent practical, 14.67 per cent of respondents preferred 60.00 per cent theory and 40.00 per cent practical, 13.33 per cent of respondents preferred 40.00 per cent theory and 60.00 per cent practical, 4.00 per cent of respondents preferred 30.00 per cent theory and 70.00 per cent practical, 4.00 per cent of respondents preferred 70.00 per cent theory and 30.00 per cent practical, 4.00 per cent of respondents preferred 55.00 per cent theory and 45.00 per cent practical, 1.33 per cent of respondents preferred 65.00 per cent theory and 35.00 per cent practical and 1.33 per cent of respondents preferred 85.00 per cent theory and 15.00 per cent practical for training in dairy extension.

Table 42. Preferred percentage of theory and practical sessions for the subject-matter of information technology

n=75

Subject matter area	Theory (%)	Practical (%)	Frequency (f)	Percentage (%)
Information technology	45	55	22	29.33
	40	60	14	18.67
	50	50	13	17.33
	30	70	9	12.00
	25	75	7	9.33
	20	80	6	8.00
	60	40	3	4.00
	80	20	1	1.33

It can be noticed from Table 42 that 29.33 per cent of respondents preferred 45.00 per cent theory and 55.00 per cent practical,18.67 per cent of respondents preferred 40.00 per cent theory and 60.00 per cent practical, 17.33 per cent of respondents preferred 50.00 per cent theory and 50.00 per cent practical, 12.00 per cent of respondents preferred 30.00 per cent theory and 70.00 per cent practical, 9.33 per cent of respondents preferred 25.00 per cent theory and 75.00 per cent practical, 8.00 per cent of respondents preferred 20.00 per cent theory and 80.00 per cent practical, 4.00 per cent of respondents preferred 60.00 per cent theory and 40.00 per cent practical and 1.33 per cent of respondents preferred 80.00 per cent theory and 20.00 per cent practical for training in information technology.

4.5.7 Preferred venue for the training programme

Table 43. Preferred venue for training in dairy cattle production and management

n=75

Subjectmatter area	Preferred Venue							
	Veterinary College, Thrissur		Identified centres of DDD, MILMA, KLDB, etc.		Premier institutes outside Kerala such as NDRI, IVRI, etc.		Any other	
	Frequ -ency (f)	Percent-age (%)	Frequ-ency (f)	Percent-age (%)	Frequ-ency (f)	Percent-age (%)	Frequ -ency (f)	Percent-age (%)
Dairy cattle production and management	42 (I)	56.00	9 (III)	12.00	24 (II)	32.00	-	-

* Figures in parenthesis indicate ranks

Table 43 shows that the Veterinary College, Thrissur was the most preferred venue for training in dairy cattle production and management, suggested by 56.00 per cent of the respondents. Premier institutes outside Kerala such as NDRI, IVRI, etc., stood next in the order of preference, opted by 32.00 per cent of the respondents. The identified centres of DDD, MILMA, KLDB etc., was the least preferred venue, 12.00 per cent of the respondents opting for it. None of the respondents preferred any institute other than the aforesaid venues.

Table 44. Preferred venue for training in milk and milk products

n=75

Subject matter area	Preferred Venue							
	Dairy technology unit, KAU, Thrissur		Identified centres of DDD, MILMA, KLDB, etc.		Premier institutes outside Kerala such as NDRI, IVRI, ANAND, etc.		Any other	
	Frequency (f)	Percentage (%)	Frequency (f)	Percentage (%)	Frequency (f)	Percentage (%)	Frequency (f)	Percentage (%)
Milk and milk products	20 (II)	26.67	17 (III)	22.67	38 (I)	50.66	-	-

* Figures in parenthesis indicate ranks

It can be seen from Table 44 that for the subject matter area of milk and milk products, premier institutes outside Kerala such as NDRI, IVRI, ANAND, etc. were the most preferred venue suggested by 50.66 per cent of the respondents followed by dairy technology unit, KAU, and identified centres of DDD, MILMA and KLDB opted by 26.67 and 22.67 per cent of respondents respectively. None of them preferred any institute other than these options.

Table 45. Preferred venue for training in fodder production and management

n=75

Subject matter area	Preferred Venue							
	Kerala Agricultural University		Identified centres of DDD, MILMA, KLDB, etc.		Premier institutes outside Kerala such as TNAU, IARI, etc.		Any other	
	Frequency (f)	Percentage (%)	Frequency (f)	Percentage (%)	Frequency (f)	Percentage (%)	Frequency (f)	Percentage (%)
Fodder production and management	36 (I)	48.00	29 (II)	38.67	10 (III)	13.33	-	-

* Figures in parenthesis indicate ranks

Table 45 shows that 48.00 per cent of the respondents preferred the Kerala Agricultural University as the venue for training in fodder production and management. This was followed by identified centres of DDD, MILMA, KLDB and premier institutes outside Kerala such as TNAU, IARI, the percentage of respondents preferring these being 38.67 and 13.33 respectively. None of the respondents preferred any institute other than these.

Table 46. Preferred venue for training in dairy extension

n=75

Subject matter area	Preferred Venue							
	Central Training Institute, KAU, Thrissur		Identified centres viz., Institute of Management in Government (IMG), Kerala Institute for Local Administration (KILA), etc.		Premier institutes outside Kerala such as MANAGE, NAARM, etc.		Any other	
	Frequency (f)	Percentage (%)	Frequency (f)	Percentage (%)	Frequency (f)	Percentage (%)	Frequency (f)	Percentage (%)
Dairy extension	26 (II)	34.67	30 (I)	40.00	19 (III)	25.33	-	-

* Figures in parenthesis indicate ranks

It is inferred from Table 46 that as far as the preference for venue with regard to training in dairy extension was concerned the identified centres viz., Institute of management in Government (IMG), Kerala Institute for Local Administration (KILA), etc., stood first, suggested by 40.00 per cent of the respondents. The Central Training Institute, KAU stood next followed by premier institutes outside Kerala such as MANAGE, NAARM etc., preferred by

34.67 and 25.33 per cent of respondents respectively. No institute other than these three were opted by the respondents.

Table 47. Preferred venue for training in professional management

n=75

Subject matter area	Preferred Venue							
	Central Training Institute, KAU, Thrissur		Identified centres viz., Institute of Management in Government (IMG), Kerala Institute for Local Administration (KILA), etc.		Premier institutes outside Kerala such as MANAGE, NAARM, etc.		Any other	
	Frequency (f)	Percentage (%)	Frequency (f)	Percentage (%)	Frequency (f)	Percentage (%)	Frequency (f)	Percentage (%)
Professional management	16 (III)	21.33	30 (I)	40.00	29 (II)	38.67	-	-

* Figures in parenthesis indicate ranks

It is observed from Table 47 that the identified centres viz., Institute of Management (IMG), Kerala Institute for Local Administration (KILA) etc., stood first in the order of preference for venue with regard to training in professional management, being opted by 40.00 per cent of the respondents. This was followed by premier institutes outside Kerala such as MANAGE, NAARM etc., and the Central Training Institute, KAU, the percentage of respondents found to prefer these being 38.67 and 21.33 respectively. None of the respondents indicated any institute other than these three.

Table 48. Preferred venue for training in information technology

n=75

Subject matter area	Preferred Venue							
	Central library, KAU		Identified centres viz., IMG, NIC with in the State		Premier institutes outside the State		Any other	
	Frequency (f)	Percentage (%)	Frequency (f)	Percentage (%)	Frequency (f)	Percentage (%)	Frequency (f)	Percentage (%)
Information technology	17 (II)	22.67	45 (I)	60.00	13 (III)	17.33	-	-

* Figures in parenthesis indicate ranks

It can be inferred from Table 48 that the venue of identified centres viz., IMG, NIC within the state was the most preferred one for training in information technology, suggested by 60.00 per cent of respondents. The venue preferred next was Central library, KAU which was opted by 22.67 per cent of respondents followed by premier institutes outside the state chosen by 17.33 per cent of respondents. No institute other than these three were reported by the respondents.

4.6 Extent of training need of the respondents

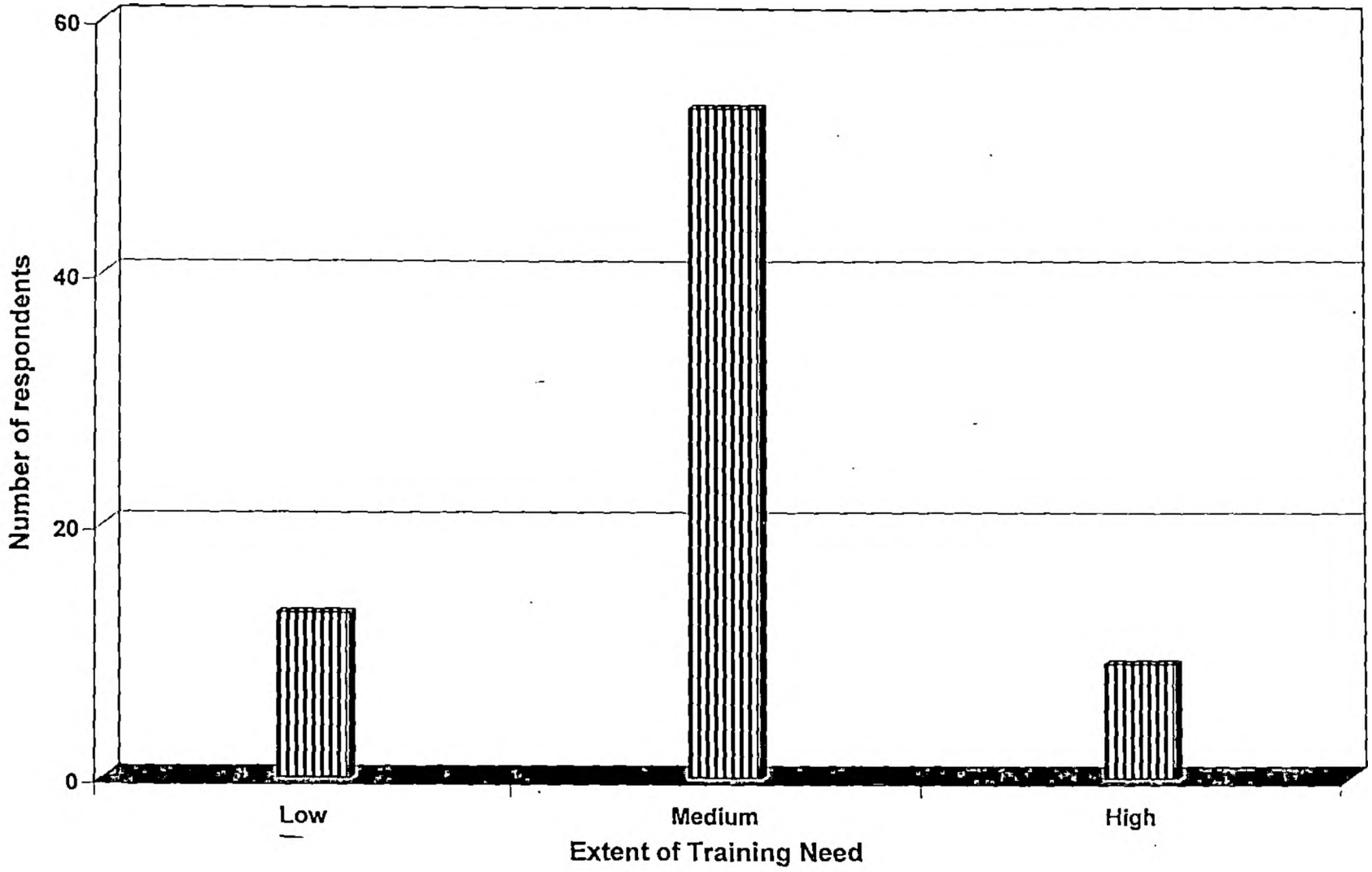
Table 49. Distribution of respondents based on their training need quotient.

n = 75

Sl. No.	Extent of training need	Frequency (f)	Percentage (%)
1.	Low [below (Mean – SD)]	13	17.33
2.	Medium [(Mean – SD) to (Mean + SD)]	53	70.67
3.	High [above (Mean + SD)]	9	12.00

Mean TNQ = 81.05
SD = 18.40

Fig.15 Distribution of respondents based on their extent of training need



It is inferred from Table 49 that majority of the respondents (70.67 per cent) were in the medium category with respect to their extent of training need followed by 17.33 and 12.00 per cent of the respondents occupying the categories low and high respectively.

4.6.1 Relationship between socio-personal characteristics and training need of the Dairy Farm Instructors

Table 50. Correlation of age, service experience and role perception of the respondents with their training need

n=75

Sl. No.	Socio-personal characteristics	'r_s' value	't' value
1.	Age	0.010	0.0855^{NS}
2.	Service experience	-0.106	-0.910^{NS}
3.	Role perception	0.3145	2.830*

NS – Non-significant * Significant at 1% level

The relationship of age, service experience and role perception of the respondents with their training need was found out using Spearman's rank order correlation.

Table 50 shows that there was no significant relationship between the age, service experience and training need of the respondents. Further, it also reveals that there was a positive and significant relationship between the role perception and the training need of the respondents.

Table 51. Relationship of sex, training exposure, number of journals read and number of periodicals read by the respondent with their training need

n=75

Sl. No.	Socio-personal characteristics	'U' value	'Z' value
1.	Sex	582.000	-1.186^{NS}
2.	Training exposure	364.000	-1.850*
3.	Number of journals read	485.500	-0.341^{NS}
4.	Number of periodicals read	513.250	-0.437^{NS}

NS – Non-significant * Significant at 10% level

The relationship between the sex, training exposure, number of journals read and number of periodicals read by the respondents and their training need was found out using Mann-Whitney U test and the results are given in Table 51.

It is evident from Table 51 that there was no significant relationship between the training need and the sex, number of journals read and number of periodicals read by the respondents.

Further, it also reveals that there was a significant relationship between their previous training exposure and the training need. Also, while applying one tailed test, it was found that the training need of the category of respondents who had no training exposure was stochastically higher than the other category of respondents who had previous training exposure.

Table 52. Relationship between the training need and the educational qualification and number of seminars, symposia and workshops attended by the respondents

n=75

Sl. No.	Socio-personal characteristics	Chi-square value
1.	Educational qualification	7.055^{NS} at 6 d.f.
2.	No. of seminars, symposia and workshops attended	2.684^{NS} at 4 d.f.

NS – Non-significant

The relationship between the training need of the respondents and their educational qualification and number of seminars, symposia and workshops attended by them was found out by Chi-Square test and the results are given in Table 52. It can be seen that there was no significant association existing between the training need and the educational qualification as well as the training need and the number of seminars, symposia and workshops attended by the respondents.

Discussion

5. DISCUSSION

The results of the study are discussed under the following headings.

5.1 Personal profile

5.2 Role perception

5.3 Training need in subject matter areas

5.4 Perceived relevance of the training programmes conducted by the Dairy Development Department of Kerala

5.5 Training strategy preferred

5.6 Extent of training need of Dairy Farm Instructors

5.7 Relationship between the socio-personal characteristics and training need of the Dairy Farm Instructors

5.1 Personal profile

Most of the respondents studied were middle aged and had a service experience of ten years or more. The fact that recent appointments were not made might be the reason for this.

Concerning educational qualification, some of the respondents were post graduates and some others were even diploma or certificate holders, in addition. However, most of the respondents were just degree holders, obviously because the minimum educational qualification stipulated for the job was bachelors degree.

More than two-third of the respondents had attended to a minimum of one or two training programmes. Surprisingly, about one-fourth of the respondents had not attended to any training programme at all. This points out to the need for a change in the selection policy followed in identifying the prospective trainees.

Except a few all had attended professional seminars, symposia or workshops. All the respondents had the habit of reading periodicals related to the profession and about three-fourth were regular readers of professional journals even, which reflected the readiness to improve the professional competence through self study. This behaviour is an indicator of professionalism as also opined by Sharma and Singh, 1970 in a similar context.

5.2 Role perception

Regarding the role perception, more than two-third of the respondents belong to the medium category. The rest one-third perceived it as either high or low and between these two categories the former comprised of more respondents than the latter. This indicated that the respondents were aware of their roles and responsibilities though not to the desired extent. There has to be deliberate attempts to remind the respondents of their mandatory roles.

Being the grass root extension workers the Dairy Farm Instructors were expected to perform extension activities most of the time even though

they had to perform the role of administrators of milk cooperative societies occasionally. This might be the reason why they perceived the former as their principal responsibility than the latter.

Going by their responses, farm and home visit, conducting group discussions, seminars and other farmer contact programmes were reported by most of the respondents as forms of extension activities performed by them than radio talks. In fact none reported writing scripts for radio talks as their duty. This indicated that the respondents were mostly adopting the individual and group contact methods for educating the farmers probably because they found this type of extension approach more effective in building rapport with the farmers and getting adequate and timely feed back from them.

It was verbally reported by some of the respondents that the implementation of schemes concerning fodder production and management was given priority by the parent organization compared to other department schemes such as model dairy unit and construction of model cattle shed. Naturally the respondents perceived giving instructions to the farmer in fodder cultivation practices as more important than inspection of model dairy unit and providing guidance to the farmers in the construction of model cattle sheds. This indicates that the organizational policy has a considerable influence on the role perception of its employees.

5.3 Training need in subject matter areas

The comparatively higher preference for training in the subject matter areas of information technology, milk and milk products and dairy cattle production and management could be due to the contemporary importance of these subjects vis-à-vis the respondents' lesser exposure to the field of information technology.

5.3.1 Information technology

It was quite natural that the Dairy Farm Instructors preferred to acquire more knowledge and skill in information technology as this has become an absolute necessity in the ongoing era of information explosion and cyber revolution. Moreover, expertise in computer application, data base creation and application of internet might have been considered as an important job requirement by the respondents. This points out to the need of organizing training programmes in information technology, giving due weightage to the aforesaid areas. This finding is in agreement with that of Sakthivel (2001).

5.3.2 Milk and milk products

The comparatively higher priority assigned to the knowledge of tests for bacteriological quality and count in milk, methods for preservation of milk and tests to detect adulterants, preservatives and neutralizers in milk might be because of the relevance of these from the public health point of

view. Similarly the importance given to acquiring skill in these areas could be because the respondents themselves wanted to conduct properly the tests prescribed that ensure the quality of milk and train the farmers effectively to produce quality milk. Both knowledge and skill aspects of milk and milk products, therefore, need due emphasis in any training programme.

5.3.3 Dairy cattle production and management

The Dairy Farm Instructors were expected to provide technical advice and guidance to the dairy farmers in the scientific management of cattle which in turn would help the farmers to increase the milk production rendering dairying profitable. Also, they had to prepare the farmers to face the problems and challenges encountered in dairy farming. To meet these role expectations the respondents had essentially to be competent by keeping themselves abreast with the latest technologies and information in dairy cattle production and management. The need for training in the above subject matter area has also been reported by Dubey *et al.* (1977) and SudeepKumar and Subramanian (1993).

5.3.4 Professional management

The Dairy Farm Instructors were expected to function as part time administrators in the primary milk cooperative societies which were in their jurisdiction. Hence, they had to be familiarized with various aspects of administration such as accounting, cooperative acts and rules, and

maintaining records. They had to perform as returning officers also during election to the managing committee of the primary milk cooperative societies. Hence the respondents might have strongly felt that training in these areas was very essential to meet the job requirements. This finding is in accordance with that of Sandhu and Bilang (1977) and Shrestha (1983).

5.3.5 Dairy extension

The Dairy Farm Instructors were expected to provide guidance to the farmers to establish model dairy units, adopt modern means of marketing and run the farms economically. To perform these tasks successfully they should have a thorough knowledge of the basic principles of farm economics and marketing extension apart from skills in economic analysis of dairy farming and preparing projects and budgets. The significance of knowledge and skill in the aforesaid areas was seen rightly conceived as indicated by the respondents' comparatively higher preference for training in these areas.

It was nevertheless interesting to note that the respondents needed more training in mass contact methods like preparing scripts for radio talks as compared to individual contact methods like farm and home visits. It was mandatory for the respondents to undertake twenty farm and home visits per month in their jurisdiction. So, undertaking farm and home visits was a routine job where as preparing scripts and delivering radio talks were not so, which has resulted in lesser experience in the latter. The respondents might have desired to acquire more expertise in preparing scripts for radio talks.

This might be the reason why a training in preparing scripts and delivering radio talks was preferred next to a training in marketing extension.

The respondents might have also been aware of their role as educators as they were seen expressing the desire to acquire skills in the preparation of audio-visual aids and organizing training programmes for farmers. They might have also felt that training in personality traits such as leadership quality was only of lesser importance as compared to a training in subject matter or technology areas in dairying. This could be the reason why they preferred the least a training in rural leadership and identification of local leaders.

The need for training in the subject matter area of extension for extension personnel has also been reported by Reddy and Reddy (1966), Singh and Singh (1966), Halim and Islam (1973), Sandhu and Bilang (1977), Naik (1982), Sharma and Shukla (1986) and Sakthivel (2001).

5.3.6 Fodder production and management

As part of their extension work, the Dairy Farm Instructors were supposed to advise the farmers regarding fodder production and management. This role had to be performed almost entirely by the respondents. So, it was mandatory for the respondents to update their knowledge and skill in fodder production and management either through self study or consulting experts. This might have made them knowledgeable,

experienced and confident in the subject of fodder production and management. This might have been the reason for the respondents giving least preference to this subject matter area. Further, within this subject matter area, the respondents assigned comparatively higher preference to such aspects as fodder management, fodder varieties suitable for different agro-climatic regions of Kerala, fodder harvesting and fodder cultivation practices. The training need in the subject matter area of fodder production and management for extension personnel is in accordance with that of Saini and Sandhu (1993).

5.4 Perceived relevance of the training programmes

All the training programmes conducted for the Dairy Farm Instructors by the parent organization were rated as somewhat relevant to relevant by the respondents. The training programmes viz., diploma in dairy cooperative management, role of grama panchayats and developmental functionaries in planning, and panchayat level projects for women were preferred first, second and third respectively among many other training programmes which indicated that the respondents considered those three training programmes more important than others. The fact that the respondents were needed to work under the panchayati raj system and shoulder the responsibilities of formulating and implementing dairy related projects in cooperation with the local bodies might be the reasons for preferring such training areas. The

need for continuing these training programmes was therefore realized in the present study.

5.5 Training strategy preferred

It was observed that the institutional type of training was the most preferred one for all the six major subject matter areas. The respondents might have realized that institutional training was the one most effective to learn skills. This finding is in agreement with that of Sakthivel (2001). Moreover, institutional learning provides an opportunity for interactive learning with trainers.

It could be noted that practice in demonstration was the most preferred method of training for all the subject matter areas except dairy extension and professional management. The preference for the method of practice in demonstration might be due to the fact that it would provide opportunities for learning by doing. This finding regarding the preference for the method of training is one in accordance with that of Sudeepkumar and Subramanian (1993).

Anyhow, group discussion was the one method most preferred for both dairy extension and professional management. The potential of this method to provide opportunities to the trainees for sharing of information, ideas, experiences and opinions which are important in these two subject

matter areas might be the reason for its preference over others. In addition, group participation might have been perceived as motivating.

In the subject matter areas of dairy cattle production and management, milk and milk products, fodder production and management, and dairy extension, study tour as a method of training was ranked second. The respondents might have felt that study tours would give an opportunity to visit professional institutes, research stations, dairy farms, dairy plants etc., within and outside the state and help acquire new information and also understand new technologies. Study tours are especially important to the applied research and technology based subject matter areas since the trainees could get exposed to research and technology application elsewhere. The preference for study tours by trainees was also reported by Sudeepkumar and Subramanian (1993) and Mathiyalagan and Subramanian. (1998).

Concerning the domains of professional management and information technology, workshop as a method of training was assigned the second rank. Perhaps, workshop might have been perceived as a better means to exchange ideas, experiences and skills which would in turn help the participants to produce a product, prepare a document, report or programme for future action.

It was interesting to note that role play was the least preferred method of training regarding almost all the subject matter areas. This might be

because the respondents might have perceived role play as embarrassing since they were required to act roles.

Regarding preference for trainers, most of the respondents preferred to invite trainers from outside the parent organization but within the state for all the major subject matter areas. The respondents might have probably felt that interacting with experienced persons from outside the parent organization would be beneficial. This finding is in agreement with that of Naik (1982) and Sakthivel (2001).

It could be noted that most of the respondents preferred the periodicity or interval of those training programmes of one to seven days duration to be six months, that of eight to fourteen days to be one year and that of fifteen to thirty days and more than thirty days to be more than a year. This indicated that the respondents were not finding it convenient to attend to frequent training programmes probably because of their family pre-occupations. This factor might be considered while deciding the periodicity or interval of training programmes. This finding is in agreement with that of Sakthivel (2001).

Duration is another important criterion for any training. It is much essential that the duration of training is sufficient to deliver the content of training as well as to suit the convenience of the trainees. The finding that most of the respondents preferred a duration of one to seven days for a short-term training programme and fifteen days to one month for a long-term training

programme deserves consideration while deciding upon the duration of training. This finding is in accordance with those of Bhagat (1989) and Sudeepkumar and Subramanian (1993).

Another important point to be considered while organizing any training programme is the percentage of theory and practical sessions for the various subject matter areas. From the findings, it could be noted that most of the respondents preferred an equal percentage of theory and practical in most of the subject matter areas. This might be because they might have perceived training in theoretical and applied aspects as equally important. In the subject matter areas of milk and milk products and information technology most of the respondents preferred practical training sessions much more than theoretical sessions might be because the respondents perceived these areas as more skill oriented. This finding is in agreement with that of Dubey *et al.* (1977).

The physical facilities and environment of training institutes do affect the learning experience of trainees. The success of a training programme will depend on the selection of a venue which has all the required facilities such as suitable physical environment, teaching aids, resource persons etc. The findings concerning the preference for venue of training reveal that most of the respondents preferred institutes within Kerala for most of the subject matter areas. Attending to training programmes outside Kerala may not be convenient in view of domestic obligations as almost all of the respondents

were married. This finding is in agreement with that of Naik (1982), Bhaghat (1989) and Mani (1996). However, they were ready to move out of the state if needed as in the case of training in milk and milk products. This finding is one similar to that of Sakthivel (2001).

5.6 Extent of training need

It is worth noting that more than two-third of the respondents perceived the need for training as medium only. The rest one-third perceived it as either low or high and between the low and high categories the former comprised of more respondents than the latter. It all meant that the respondents in general were content with the trainings already undergone or in other words did not perceive a higher need for training.

5.7 Relationship between the socio-personal characteristics of Dairy Farm Instructors and their training need

Among the various independent variables studied, only two variables viz., training exposure and role perception had a significant relationship with the perceived training need of the respondents and it could be noted that the other independent variables viz., age, sex, marital status, educational qualification, service experience, journals and periodicals read and the number of seminars, symposia or workshops attended had no significant impact on the need for training.

The finding that age had a non-significant relationship with the training need is in accordance with the findings of Broadbent (1960), Shrestha (1983), Bhagat (1989), and Sakthivel (2001) and is in contradiction with those of Mani (1996), and Kalita and Sarmah (1999).

The non-significant association between sex and the training need has been in agreement with the findings of Sakthivel (2001).

The non-significant association between educational qualification and the training need is in accordance with the findings of Broadbent (1960), Shrestha (1983), and Sakthivel (2001) and is against the findings of Sharma and Singh (1968), Halim and Islam (1973), Bhagat (1989) and Rambabu (2000).

The finding that service experience had a non-significant association with the training need is in accordance with the findings of Sharma (1966), Ganeshan *et al.* (1980), Shrestha (1983), Bhagat (1989), Rambabu (2000) and Sakthivel (2001) and in contradiction with the findings of Halim and Islam (1973), and Kalita and Sarmah (1999).

The non-significant association between the number of professional journals and periodicals read by the respondents and the training need is in accordance with the findings of Sharma and Singh (1970), and Sakthivel (2001).

The finding that the number of professional seminars, symposia and workshops attended by the respondents had a non-significant association with the training need is in accordance with that of Sakthivel (2001).

The basic training requirement of the respondents for career development such as promotion might have been satisfied by exposure to certain prescribed training programmes. The respondents might have felt that the requirement for further updating of professional knowledge could be attained through self education and informal discussions with experts as well. This might be the reason behind the stochastically lesser training need of respondents who had previous training exposure than that of the respondents who had no training experience. This finding is in contradiction with that of Kalita and Sharma (1999) and Rambabu (2000).

The awareness about one's own duties and responsibilities would eventually make one conscious of one's own professional abilities and limitations. Hence, individuals who have higher level of role perception would only have the desire to bridge the gulf between where they stand in terms of professional competence and job performance and what they are expected to be. Probably this might be the reason for the positive and significant relationship between the role perception of the respondents and training needs articulated by them.

Summary

6. SUMMARY

This is a study of the training needs of the Dairy Farm Instructors of Dairy Development Department of Kerala. The study has attempted to find out the training needs as well as the determinants of the training needs of the respondents. The data were collected through structured questionnaires to which 75 Dairy Farm Instructors out of 120 responded. Statistical tools and procedures like frequency analysis, estimation of percentages, mean, standard deviation, Spearman's rank order correlation, chi-square analysis and Mann-Whitney U test were used to analyse the data.

Majority of the respondents studied were male, married, middle aged and had a service experience of ten years or more. Most of the respondents were just degree holders. More than two-third of the respondents had attended to a minimum of one or two training programmes. Except a few all had attended professional seminars, symposia or workshops. All the respondents had the habit of reading periodicals related to the profession and about three-fourth were regular readers of professional journals.

More than two-third of the respondents had medium level of role perception. The roles viz., farm and home visit; conducting group discussions, seminars and other farmers contact programmes and working as part time administrator in milk cooperative societies got the first three ranks in terms of role perception. It is worth noting that none of the respondents

perceived the role of preparing scripts for radio talks, though this too was a prescribed role as per the standard job chart.

Concerning the major subject matter areas, the training need analysis revealed information technology as the most preferred domain for both knowledge and skill based training followed by milk and milk products, dairy cattle production and management, professional management, dairy extension and fodder production and management.

The Dairy Farm Instructors rated all the training programmes organized by their parent organization from 1997 onwards as somewhat relevant to relevant.

The most preferred type of training was institutional type for all the six major subject matter areas. Practice in demonstration was the most preferred method of training for all the subject matter areas except dairy extension and professional management for which group discussion was preferred the most. Most of the respondents preferred to invite trainers from outside the parent organization but within the state for all the major subject matter areas.

The most preferred duration of training was one to seven days for a short-term training programme and fifteen days to one month for a long-term training programme. For the training programmes of one to seven days and eight to fourteen days durations, the periodicities preferred the most

were six months and one year respectively. The periodicity of more than a year was the one most preferred for the training programmes of duration fifteen days to thirty days and more than a month.

Most of the respondents preferred an equal percentage of theory and practical sessions for training in all the subject matter areas except milk and milk products and information technology for which practical sessions were preferred than theoretical sessions.

Regarding the venue of training programme, most of the respondents preferred the Veterinary College, Thrissur for the subject matter of dairy cattle production and management, premier institutes out side Kerala such as NDRI, IVRI, ANAND, etc., for milk and milk products, Kerala Agricultural University for fodder production and management, identified centres viz., Institute of Management in Government, Kerala Institute for Local Administration, etc., for dairy extension and professional management and identified centres viz, IMG, NIC within the state for the subject matter area of information technology.

As for the extent of training need, more than two-third of the respondents belonged to the medium category. The non-parametric statistical tests which were mentioned earlier were employed to find out the relationship between the socio-personal characteristics of Dairy Farm Instructors and their training need in terms of knowledge and skill in different subject matter areas. It was found that only two variables viz.,

training exposure and role perception had a significant relationship with the perceived training need of the respondents.

Implications of the study

Based on the major findings of the study following broad implications are drawn.

1. The subject matter areas like information technology, milk and milk products and dairy cattle production and management should be given priority in the curriculum of the training programmes for Dairy Farm Instructors.

2. The organization should have a well defined selection policy for identifying those who are to be sent for any training programme.

3. Institutional type of training should be opted for their training programme.

4. As for the method of training in the subject matter areas of milk and milk products and fodder production and management; demonstrations, study tours and workshops should be given priority. Demonstration should definitely be adopted in imparting training in information technology and dairy cattle production and management. Group discussions, workshops and seminars should be made use of while training the Dairy Farm Instructors in professional management. In the trainings meant for developing extension skills, methods such as

group discussions, study tours and seminars should be given preference.

5. The trainers from outside the parent organization but within the state should be given priority.

6. The duration of training programme should not exceed one week and one month for short-term and long-term trainings respectively.

7. The periodicity for short-term trainings should be six months and that for long-term trainings more than a year.

8. Equal importance should be given to the theory and practical sessions in the schedule of training programmes for the subject matter areas of dairy cattle production and management, fodder production and management, dairy extension and professional management where as training should be more practical oriented in topics such as information technology and milk and milk products.

9. The venue for the training programme should be institutes within Kerala especially for the subjects dairy cattle production and management, fodder production and management, dairy extension, professional management and information technology. Further, selected premier institutes outside Kerala should be given priority as the venue for training in the subject matter area of milk and milk products.

10. Since the training programmes organized by the Dairy Development Department were rated as some what relevant to relevant by the Dairy Farm Instructors these shall continue to be part of the in-service training programme for them.

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Appendix

APPENDIX

KERALA AGRICULTURAL UNIVERSITY

COLLEGE OF VETERINARY AND ANIMAL SCIENCES, MANNUTHY

Dr. R. S. Jiji,
Assistant Professor,
Department of Extension,
College of Veterinary and Animal Sciences,
Pookot, Wayanad.
H.Q.- Mannuthy.680 651.

Sir/ Madam,

One of our postgraduate students in Veterinary Extension discipline, Dr. N. Vimal Raj Kumar has taken up a research topic entitled **"Training needs of Dairy Farm Instructors of the Dairy Development Department of Kerala"** under my guidance. One of the objectives of the study is to identify the training needs, both knowledge and skill needs of the Dairy Farm Instructors. I am happy to inform you that you have been selected as a respondent for this study.

I request you to kindly spare some time to go through the questionnaire and express your response on the various items frankly. It is sure that your valuable responses would enrich the quality of the study. Enclosed herewith kindly find the questionnaire with instructions for filling up and operational definitions of the various training methods.

I shall be obliged if you could send the filled in questionnaire at the earliest to

Dr. N. Vimal Raj Kumar,
M.V.Sc., Scholar,
Department of Extension,
College of Veterinary and Animal Sciences,
Mannuthy (P.O.)
Thrissur- 680 651.

Expecting your whole hearted cooperation.

Thanking you,

Yours faithfully,

(Dr. R. S. Jiji)

TRAINING NEEDS OF DAIRY FARM INSTRUCTORS OF THE DAIRY DEVELOPMENT DEPARTMENT OF KERALA

QUESTIONNAIRE

General instructions

1. Please read each statement carefully and indicate your response.
2. Please do not leave any item; incomplete information may lead to inconclusive results
3. Please write your answer in the space provided or tick (✓) in the appropriate box.

PART I
PERSONAL PROFILE

1. Name _____
2. Age _____ Years
3. Sex Male ☐ Female ☐
4. Marital status Married ☐ Unmarried ☐
5. Educational qualification [Please mention the name of the degree, post graduation, diploma and certificate]
   1. Degree _____
   2. Post graduation _____
   3. Diploma _____
   4. Certificate _____
6. Present designation and office _____
   _____
7. Service experience (in Dairy Development Department) _____ years
8. Please mention the offices of the Dairy Development Department you have worked

Sl.No	Office	Duration worked (approximately)
1.		
2.		
3.		
4.		

9. Given below are some of the training programs conducted by the Dairy Development Department of Kerala from 1997 and attended by selected Dairy Farm Instructors of the state. Even if you have not attended these training programs, please indicate the relevancy of the training programs by tick marking the columns viz: - relevant, somewhat relevant and not relevant.

Sl. No	Name of the Training programmes	Duration	Training institute	Relevant (R)	Some what relevant (SR)	Not relevant (NR)
1.	Training Programme on Project Management for Functions of Women Development Programme	5 days	Institute of Management in Government, Thiruvananth-apuram			
2.	Training Programme on Panchayat level projects for Women	5 days	Institute of Management in Government, Thiruvananth-apuram			
3.	Training Programme on role of Gram Panchayats and Developmental functionaries in Planning	5 days	Institute of Management in Government, Thiruvananth-apuram			
4.	Extension Education: Off-Campus Training Programme	6 days	Institute of Management in Government, Thiruvananth-apuram			
5.	Training Programme: "Life Skill". Development for Women	5 days	Institute of Management in Government, Cochin			

Sl. No	Name of the Training programmes	Duration	Training institute	Relevant (R)	Some what relevant (SR)	Not relevant (NR)
6.	Environmental Management	5 days	Institute of Management in Government, Thiruvananth-apuram			
7.	Training Programme on Biodiversity issues and concerns	3 days	Institute of Management in Government, Thiruvananth-apuram			
8.	Training programme on Diploma in Dairy Cooperative Management	3 months	Institute of Co-operative Management, Thiruvananth-apuram and Kannur			

10.Please mention the training programs that you have attended among those programmes listed above (1 to 8). Indicate the serial numbers only

(Eg:3,7,8)

Ans:_____

Any other, which you have attended but not listed above

Sl. No.	Name of the Training programmes	Duration	Training institute	Relevant (R)	Some what relevant (SR)	Not relevant (NR)
1.						
2.						
3.						
4.						

11. Do you read scientific journals relevant to your area of work? Yes/ No

If yes, what are the journals you read (since entered service)? (Please tick (✓) mark).

Sl. No	Name of the journal	Journals read
1.	Indian Journal of Dairy Science	
2.	Indian Dairyman	
3.	Dairy guide	
4.	Journal of Dairy Science	
5.	Journal of Dairy Research	
6.	Australian journal of Dairy technology	
7.	Any other (specify)	
	1.	
	2.	

12. Do you read periodicals (farm journals) related to the profession? Yes/ No

If yes, what are the periodicals you read (since entered service)? (Please tick (✓) mark).

Sl. No	Name of the periodicals	Periodicals read
1.	Kurukshetra	
2.	Yojana	
3.	Pasudhan	
4.	Kerala karshakan (FIB)	
5.	Kalpadhenu (KAU)	
6.	Karshakasree (Manoroma)	
7.	Ksheerapadham (MILMA)	
8.	Any other (specify)	
	1.	
	2.	
	3.	

13. How many of the following (related to the profession) have you attended so far?

	Number attended
a. Seminar	_____
b. Symposium	_____
c. Workshop	_____

PART II

Perceived roles

1. List out the important roles (duties and responsibilities) that you have been performing as Dairy Farm Instructors.

Sl. No	Roles
1.	
2.	
3.	
4.	
5.	
6.	

2. Was there a change in emphasis of your roles in the recent past? Yes/ No

   If there was a change what was it? Please state it in your own words (in English or Malayalam).

Sl. No.	KNOWLEDGE NEEDS	Required	Somewhat required	Not required
D.	**Breeding of dairy cattle**			
1.	Signs of heat in dairy cattle			
2.	Knowledge of time of insemination			
3.	Importance of timely pregnancy diagnosis			
4.	Knowledge of gestation period and dry period			
5.	Knowledge of signs of approaching parturition and duration of parturition			
6.	Knowledge of problems in parturition			
7.	Knowledge of care of newborn calves			
8.	Knowledge of time of first insemination after calving			
9.	Knowledge of post parturition complications			
E.	**Disease control of dairy cattle**			
1.	Deworming schedule of cattle			
2.	Vaccination schedule of cattle			
3.	Symptoms of common diseases in cattle			
4.	Knowledge of scientific disposal of dead animals			
5.	Knowledge of zoonotic diseases			
II.	**MILK AND MILK PRODUCTS**			
A.	**Clean milk production**			
1.	Sources of contamination of milk and their control measures			
2.	Knowledge of milking techniques			
B.	**Procurement, storage and quality control of milk**			
1.	Knowledge of tests for estimation of specific gravity, fat and solids not fat in milk			
2.	Knowledge of tests for bacteriological quality and bacteriological count in milk			
3.	Knowledge of tests to detect adulterants, preservatives and neutralizers in milk			
4.	Methods for preservation of milk			
C.	**Processing of milk**			
1.	Pasteurisation of milk			
2.	Homogenisation of milk			
3.	Condensation of milk			
4.	Indigenous milk products and dairy by-products			

PART III

Please indicate your knowledge and skill requirements (needs) in the following subject matter areas by giving a tick mark (✓) against the relevant column (please attempt all items).

Sl. No.	KNOWLEDGE NEEDS	Required	Somewhat required	Not required
I	**DAIRY CATTLE PRODUCTION AND MANAGEMENT**			
A.	**Selection of dairy cattle**			
1.	Knowledge of economic traits like standard lactation yield, peak milk yield, inter-calving period, service period, etc., in selection of dairy cattle			
2.	Body characteristics of high producing dairy cattle			
3.	Knowledge of maintenance of farm records and registers.			
B.	**Housing of dairy cattle**			
1.	Recommendations for housing of calves			
2.	Recommendations for housing of heifers			
3.	Recommendations for housing of pregnant animals			
4.	Recommendations for housing of milch and dry animals			
5.	Recommendations for housing of diseased animals			
C.	**Feeding of dairy cattle**			
1.	Knowledge of colostrum feeding to neonatal calves			
2.	Knowledge of weaning of calves			
3.	Knowledge of feeding schedule of calves, heifers, pregnant, dry and lactating animals			
4.	Knowledge of proportion of various feed ingredients used in cattle feed			
5.	Knowledge of unconventional feeds and their recommended levels of inclusion in dairy cattle ration (tapioca leaf meal, tapioca starch waste, coffee husk, tea waste, etc.,)			
6.	Knowledge of by-pass protein			
7.	Knowledge of urea treatment of straw			

Sl. No.	KNOWLEDGE NEEDS	Required	Somewhat required	Not required
D.	**Breeding of dairy cattle**			
1.	Signs of heat in dairy cattle			
2.	Knowledge of time of insemination			
3.	Importance of timely pregnancy diagnosis			
4.	Knowledge of gestation period and dry period			
5.	Knowledge of signs of approaching parturition and duration of parturition			
6.	Knowledge of problems in parturition			
7.	Knowledge of care of newborn calves			
8.	Knowledge of time of first insemination after calving			
9.	Knowledge of post parturition complications			
E.	**Disease control of dairy cattle**			
1.	Deworming schedule of cattle			
2.	Vaccination schedule of cattle			
3.	Symptoms of common diseases in cattle			
4.	Knowledge of scientific disposal of dead animals			
5.	Knowledge of zoonotic diseases			
II.	**MILK AND MILK PRODUCTS**			
A.	**Clean milk production**			
1.	Sources of contamination of milk and their control measures			
2.	Knowledge of milking techniques			
B.	**Procurement, storage and quality control of milk**			
1.	Knowledge of tests for estimation of specific gravity, fat and solids not fat in milk			
2.	Knowledge of tests for bacteriological quality and bacteriological count in milk			
3.	Knowledge of tests to detect adulterants, preservatives and neutralizers in milk			
4.	Methods for preservation of milk			
C.	**Processing of milk**			
1.	Pasteurisation of milk			
2.	Homogenisation of milk			
3.	Condensation of milk			
4.	Indigenous milk products and dairy by-products			

Sl. No.	KNOWLEDGE NEEDS	Required	Somewhat required	Not required
III.	**FODDER PRODUCTION AND MANAGEMENT**			
A.	**Fodder production**			
1.	Knowledge of fodder varieties suitable for different agro-climatic regions of Kerala			
2.	Knowledge of fodder cultivation (land preparation, irrigation, sowing, seedling, etc.,)			
3.	Knowledge of fodder management (Fertilizer application, control of pests and diseases etc.,)			
4.	Knowledge of fodder harvesting			
B.	**Fodder preservation**			
1.	Hay making			
2.	Silage making			
IV.	**DAIRY EXTENSION**			
1.	Farm and home visit			
2.	Rural leadership			
3.	Knowledge of organisation of training programmes for farmers			
4.	Knowledge of organisation of exhibitions, cattle shows, demonstrations, and field trips for farmers			
5.	Knowledge of script writing for radio talks			
6.	Knowledge of preparation of various audio-visual teaching aids			
7.	Knowledge of project formulation (bankable dairy related projects to be started by individual / group of farmers)			
8.	Knowledge of implementation and evaluation of departmental schemes such as Model dairy unit			
9.	Marketing Extension (providing information regarding modern means of marketing, market structure etc.,)			
10.	Basic principles of farm economics.			
V.	**PROFESSIONAL MANAGEMENT**			
1.	Maintenance of records in primary cooperative societies			
2.	Knowledge of cooperative acts and rules			
3.	Accounting			

Sl. No.	KNOWLEDGE NEEDS	Required	Somewhat required	Not required
4.	Knowledge of conducting elections to the managing committee of primary cooperative societies			
VI.	**INFORMATION TECHNOLOGY**			
1.	Basics of computer application			
2.	Knowledge of database creation, maintenance and application			
3.	Internet and uses			

SKILL NEEDS OF DAIRY FARM INSTRUCTORS

Sl. No.	SKILL NEEDS	Required	Somewhat required	Not required
I.	**DAIRY CATTLE PRODUCTION AND MANAGEMENT**			
A.	***Selection of dairy cattle***			
1.	Judging and selection of high producing dairy cattle			
B.	**Housing of dairy cattle**			
1.	Preparing lay out for constructing cattle sheds			
2.	Taking on the spot right decisions and giving guidance to farmers in constructing cattle sheds.			
C.	**Feeding of dairy cattle**			
1.	Training of calves to drink colostrum and to drink from the pail			
2.	Preparation of artificial colostrum			
3.	Methods of weaning			
4.	Computation of ration for dairy cattle			
5.	Preparation of ration for calves, heifers, pregnant, milch and dry animals			
6.	Preparation of by-pass protein			
7.	Urea treatment of straw			
D.	**Breeding of dairy cattle**			
1.	Identification of dairy cattle in heat			
2.	Management of dairy cattle during and after insemination			
3.	Method of drying off lactating cattle			

Sl. No.	SKILL NEEDS	Required	Somewhat required	Not required
4.	Identification of signs of approaching parturition, stages of parturition and problems in calving			
5.	Wiping the new born calf clean, cutting the umbilical cord and providing artificial respiration in emergency			
6.	Identification of postpartum complications			
E.	**Disease control of dairy cattle**			
1.	Identifying the diseased animals			
2.	Scientific disposal of dead animals			
II.	**MILK AND MILK PRODUCTS**			
A.	**Clean milk production**			
1.	Measures to prevent contamination of milk			
2.	Milking techniques (hand and machine milking)			
B.	**Procurement, storage and quality control of milk**			
1.	Tests for estimation specific gravity, fat and solids not fat in milk			
2.	Tests for bacteriological quality and bacteriological count in milk			
3.	Detection of adulterants, preservatives and neutralizers in milk			
4.	Techniques for preservation of milk			
C.	**Processing of milk**			
1.	Techniques for pasteurisation of milk			
2.	Techniques for homogenisation of milk			
3.	Techniques for condensation of milk			
4.	Methods of preparation and packaging of indigenous milk products			
III.	**FODDER PRODUCTION AND MANAGEMENT**			
A.	**Fodder production**			
1.	Selection of fodder varieties suitable for different agro climatic regions of Kerala			
2.	Cultivation of fodder (land preparation, irrigation, sowing, seedling, etc.,)			
3.	Fodder management practices (Application of fertilizer, control of pests and disease, weed control, etc.,)			
4.	Methods of fodder harvesting			
B.	**Fodder preservation**			
1.	Techniques of hay making			
2.	Techniques of silage making			

Sl. No.	SKILL NEEDS	Required	Somewhat required	Not required
IV.	DAIRY EXTENSION			
1.	Conducting farm and home visit			
2.	Identification of local leaders			
3.	Organising training programmes for farmers			
4.	Organising exhibitions, cattle shows, demonstrations, and field trips for farmers			
5.	Preparing scripts for radio talks			
6.	Preparation of various audio-visual teaching aids			
7.	Formulation of projects (bankable dairy related projects to be started by individual / group of farmers)			
8.	Implementation and evaluation of departmental schemes such as Model dairy unit			
9.	Preparing projects and budgets for dairy farms, economic analysis of dairy farming.			
V.	PROFESSIONAL MANAGEMENT			
1.	Inspecting the records maintained in the primary cooperative societies			
2.	Application of cooperative acts and rules			
3.	Accounting			
4.	Conducting fair election to the managing committee of primary cooperative societies			
VI.	INFORMATION TECHNOLOGY			
1.	Basic computer application			
2.	Database creation, maintenance and application			
3.	Making use of internet			

PART IV

1. Please give your first preference as to what should be the type of training for the following subject matter areas (please tick (✓) mark).

Sl. No	Subject matter areas	Type of training		
		1. Distance learning (correspondence, website etc.)	2. Institutional (face to face)	Integrated (appropriate combination of 1 & 2)
1.	Dairy cattle production and management			
2.	Milk and milk products			
3.	Fodder production and management			
4.	Dairy extension			
5.	Professional management			
6.	Information technology			

2. Please indicate the training methods you prefer for the following subject matter areas (please tick (✓) mark).

Sl. No	Subject matter areas	Training methods preferred
1.	Dairy cattle production and management	1. Lecture
		2. Group discussion
		3. Seminars
		4. Symposium
		5. Panel discussions
		6. Workshop
		7. Study tour
		8. Role play
		9. Case method
		10. Practice in demonstration
		11. Presentation
		12. Group tasks
		13. Assignments
2.	Milk and milk products	1. Lecture
		2. Group discussion
		3. Seminars

Sl. No	Subject matter areas	Training methods preferred
		4. Symposium
		5. Panel discussions
		6. Workshop
		7. Study tour
		8. Role play
		9. Case method
		10. Practice in demonstration
		11. Presentation
		12. Group tasks
		13. Assignments
3.	Fodder production and management	1. Lecture
		2. Group discussion
		3. Seminars
		4. Symposium
		5. Panel discussions
		6. Workshop
		7. Study tour
		8. Role play
		9. Case method
		10. Practice in demonstration
		11. Presentation
		12. Group tasks
		13. Assignments
4.	Dairy extension	1. Lecture
		2. Group discussion
		3. Seminars
		4. Symposium
		5. Panel discussions
		6. Workshop
		7. Study tour
		8. Role play
		9. Case method
		10. Practice in demonstration
		11. Presentation
		12. Group tasks
		13. Assignments
5.	Professional management	1. Lecture
		2. Group discussion
		3. Seminars
		4. Symposium
		5. Panel discussions
		6. Workshop

Sl. No	Subject matter areas	Training methods preferred
		7. Study tour
		8. Role play
		9. Case method
		10. Practice in demonstration
		11. Presentation
		12. Group tasks
		13. Assignments
6.	Information technology	1. Lecture
		2. Group discussion
		3. Seminars
		4. Symposium
		5. Panel discussions
		6. Workshop
		7. Study tour
		8. Role play
		9. Case method
		10. Practice in demonstrations
		11. Presentation
		12. Group tasks
		13. Assignments

3. If training programmes are organised in the state for the following subject matter areas, from where the trainers or experts should be? Please tick mark (✓) the appropriate column(s)

Sl. No	Subject matter area	Experts from the parent organisation (DDD)	Experts from outside the parent organisation but within the state	Experts from outside the state
1.	Dairy cattle production and management			
2.	Milk and milk products			
3.	Fodder production and management			
4.	Dairy extension			
5.	Professional management			
6.	Information technology			

4. Considering your convenience as well as necessity to keep abreast of the technological changes, at what periodicity you can attend to a short-term training (you may have to stay away from home). Please tick mark (✓) the appropriate column.

Sl. No	Duration of the training programme	Periodicity of the training			
		Every 3 months	Every 6 months	Every year	More than a year
1.	1-7 days				
2.	8-14 days				
3.	15-30 days				
4.	More than 1 month				

5. a) What should be the duration for a short term residential training programme?
(You may have to stay away from home)_____

b) What should be the duration for a long term residential training programme?
(You may have to stay away from home)_____

6. What should be the proportion of theory and practical for training programme for the following subject matter areas?

Sl. No	Subject matter areas	Theory in % (approximately)	Practical in % (approximately)
Eg.	Agronomy	45 %	55 %
1.	Dairy cattle production and management		
2.	Milk and milk products		
3.	Fodder production and management		
4.	Dairy extension		
5.	Professional management		
6.	Information technology		

7. Please indicate your first preference for the venue of training for the following subject matter areas by a tick mark (✓)

Sl. No	Subject matter areas	List of training centres preferred
1.	Dairy cattle production and management	1. Veterinary College, Thrissur 2. Identified Centres of DDD, MILMA, KLDB, etc., 3. Premier institutes outside the Kerala such as NDRI, IVRI, etc. 4. Any other (specify)
2.	Milk and milk products	1. Dairy Technology Unit, KAU, Thrissur 2. Identified Centres of DDD, MILMA, KLDB, etc., 3. Premier institutes outside the Kerala such as NDRI, IVRI, ANAND, etc. 4. Any other (specify)
3.	Fodder production and management	1. Kerala Agricultural University, Thrissur 2. Identified Centres of DDD, MILMA, KLDB, etc., 3. Premier institutes outside the Kerala such as TNAU, IARI, etc. 4. Any other (specify)
4.	Dairy extension	1. Central Training institute, Kerala Agricultural University, Thrissur 2. Identified Centres viz :- Institute of Management in Government (IMG's), Kerala Institute for Local Administration (KILA) of the state. 3. Premier institutes outside the Kerala such as National Institute of Agricultural Extension Management (MANGE), National Academy of Agriculture Research Management (NAARM) –

Sl. No	Subject matter areas	List of training centres preferred
		Hyderabad, etc. 4. Any other (specify)
5.	Professional management	1. Central Training Institute, Kerala Agricultural University. 2. Identified Centres viz :- Institute of Management in Government (IMG's), Kerala Institute for Local Administration (KILA) within the state. 3. Premier institutes outside the Kerala such as National Institute of Agricultural Extension Management (MANGE), National Academy of Agriculture Research Management (NAARM) – Hyderabad, etc. 4. Any other (specify)
6.	Information technology	1. Central Library, Kerala Agricultural University 2. Identified Centres viz :- Institute of Management in Government (IMG's), National Institute of Communication (NIC) within the state. 3. Premier Institute outside the state 4. Any other (specify)

Operational Definitions of various training methods

1. LECTURE

It is a method of verbal presentation on a topic by a speaker to a group of audience.

2. GROUP DISCUSSION

Group discussion is a method by which two or more persons meet, express or convey their ideas, their felt problems, discuss on them and finally arrive at a solution to the commonly felt problems by their own efforts.

3. SEMINARS

It is one of the most important forms of group discussion and is more formal in nature. The seminar enables a study in depth to be made in specific areas under guidance of experts. The discussion leader introduces the topic to be discussed. In seminar, the discussion papers prepared by the participants on the basis of their study and research are presented, and discussion is based primarily on these papers.

4. SYMPOSIUM

It is a meeting in which a small number of resource persons present short prepared papers on a given topic. Each one speaks for a definite amount of time and presents a different phase or sub-division of a general topic. Symposium is primarily meant for information gathering at the professional level.

5. PANEL

This is an informal conversation before audience by a panel or a selected group of three or four experts in a specific area of specialisation on a particular subject. The mutual interactions of the panelists among themselves and with the audience can lead to an effective understanding of the topic.

6. WORKSHOP

A workshop is a cooperative gathering of individuals who discuss, learn and apply practical skills under expert supervision. It may be held for a day or number of consecutive days. The workshop as the name implies, must produce something at the end-a report, a publication, a visual or any other material object.

7. STUDY TOUR

In STUDY TOUR, a group of interested persons accompanied and guided by one or more extension agents moves out of their neighbourhood to study and learn significant improvements in farm and home elsewhere. The main purpose is to motivate the visitors by showing what others have been able to achieve.

8. ROLE PLAY

It is the dramatization of a problem or situation in the general area of human relations. The participants may be made to act and re-live a particular situation so that they get a real feel of the roles they are actually called upon to play. Special emphasis should be put on the discussion following the exercise.

9. CASE STUDY

In this method, a written case or a problem situation is presented to the participant in a programme for careful study and examination from all facets, so as to enable them to exercise their analytical, synthetical and decision-making powers.

10. DEMONSTRATION

a. Result Demonstration

It is a method of motivating the people for adoption of a new practice by showing its distinctly superior results.

b. Method Demonstration

It is given before a group of people to show how to carry out an entirely new practice or an old practice in a better way.

11. PRESENTATION

It is process in which an individual makes an effort to share his / her ideas, information and knowledge with another individual or individuals.

12. GROUP TASKS

These are simulated group exercises given to the trainees in the class room situation in order to enable them to handle and solve the problems in their future work situation.

13. ASSIGNMENT

It is one of the individualized training methods. In this method the individual is assigned to do some specific tasks and he/she is expected to complete the same with the help of books and other relevant study materials.

TRAINING NEEDS OF DAIRY FARM INSTRUCTORS OF THE DAIRY DEVELOPMENT DEPARTMENT OF KERALA

By

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ABSTRACT OF THE THESIS

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ABSTRACT

The objectives of the study were to identify the training needs of the Dairy Farm Instructors (DFIs) of Dairy Development Department of Kerala and find out the determinants of their training needs. The data were collected through questionnaires to which 75 DFIs responded.

Information technology was the most preferred major subject matter domain for training followed by milk and milk products, dairy cattle production and management, dairy extension, professional management and fodder production and management.

Among the socio-personal characteristics, the training exposure and role perception of the respondents had significant relationship with the training need. Both the role perception and training need of most of the respondents were medium only.

For all the domains, institutional type of training as well as trainers from outside the parent organization but within the state were preferred the most. Demonstration was the most preferred method of training for most of the domains. The most preferred periodicity for the trainings of one to seven days duration was six months, those of eight to fourteen days was one year and those of fifteen to thirty days and more than a month was more than a

year. The duration preferred the most for short-term trainings was one to seven days and that for long-term trainings was fifteen days to one month.

Further, an equal percentage of theory and practical training sessions was preferred for all the domains except milk and milk products and information technology for which more practical sessions were preferred. The training institutes within Kerala were the most preferred venue for training in all the major domains except milk and milk products in which selected premier institutes outside Kerala were preferred the most.

All the training programmes for DFIs organised by the parent organization from 1997 onwards were rated as either relevant or somewhat relevant by the respondents.