

**AN ANALYSIS OF THE INSERVICE TRAINING  
PROGRAMMES FOR THE PERSONNEL OF  
THE DEPARTMENT OF AGRICULTURE  
CONDUCTED BY THE  
KERALA AGRICULTURAL UNIVERSITY**

By

**C. U. SANTHI**

**THESIS**

submitted in partial fulfilment of  
the requirement for the degree

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(Agricultural Extension)

Faculty of Agriculture

Kerala Agricultural University

Department of Agricultural Extension

**COLLEGE OF HORTICULTURE**

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**1987**

**DECLARATION**

I hereby declare that this thesis entitled "AN ANALYSIS OF THE INSERVICE TRAINING PROGRAMMES FOR THE PERSONNEL OF THE DEPARTMENT OF AGRICULTURE CONDUCTED BY THE KERALA AGRICULTURAL UNIVERSITY" 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.

Vellanikkara,

2 - 9 - 1987.

  
SANTHI, C.U.

**CERTIFICATE**

**Certified that this thesis entitled  
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THE PERSONNEL OF THE DEPARTMENT OF AGRICULTURE CONDUCTED  
BY THE KERALA AGRICULTURAL UNIVERSITY" is a record of  
research work done independently by Smt.C.U. Santhi,  
under my guidance and supervision and that it has not  
previously formed the basis for the award of any degree,  
fellowship or associateship to her.**



**Dr.A.G.G. Menon,**

**Chairman,**

**Advisory Committee,**

**Director of Extension,**

**Kerala Agricultural University.**

**Vellanikkara,**

**2 - 9 - 1987.**

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The task of embarking on a research programme and preparing a thesis; however simple the subject may seem to be; is a nerve-racking experience. It invariably leads to total catastrophe, if not backed by proper guidance from experienced and scholarly advisors. I am pleased to note that I could get all the necessary guidance and help from the advisory committee, consisting of the following erudite persons resulting in the smooth course of my research programme and preparation of this thesis.

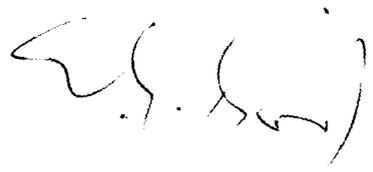
I wish to record my sincere gratitude to (1) Dr.A.G.G. Menon, Director of Extension (Chairman), (2) Dr.C.Bhaskaran, Assistant Professor of Agricultural Extension (Member), (3) Dr.C.Sreedharan, Associate Dean of the College of Horticulture (Member) and (4) Sri.V.K.G. Unnithan, Associate Professor of Agricultural Statistics (Member) of the Advisory Committee for their sterling guidance and encouragement.

Sri.K.P.R.Nair, Associate Professor and Head, Department  
of Agricultural Extension, Sri.F.M.H.Khaleel, Assistant  
Professor of Agricultural Extension, Smt.Mrudula Devi, K.,  
Smt.M.J.Thomas, Professor of Entomology,

APPROVED BY

CHAIRMAN

DR.A.G.G. Menon



MEMBERS

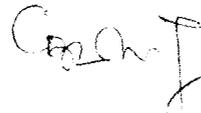
1. Dr.C. Sreedharan



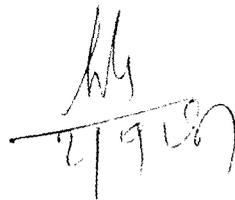
2. Shri.V.K.G. Unnithan



3. Dr.C. Bhaskaran



EXTERNAL EXAMINER



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# INTRODUCTION

## CHAPTER 1

### INTRODUCTION

Among the developing countries India has the lowest productivity in the agricultural sector, particularly in crops, milch animals and poultry layers. One of the significant reasons for this situation is the yawning gap between the known technology and the technology used by the farmers. Effective communication of technology to the farmers and creating situations conducive to the acquisition of the communicated technology will go a long way in bridging this gap. Communication of technology is the major function of extension personnel. Availability of trained extension personnel with adequate knowledge and skill in the subject matter concerned and communication ability is a pre-requisite to effective transfer of technology to its users.

Training for the extension personnel involves two aspects (1) "What to extend" - that is the knowledge on subject matter concerned - how to grow crops scientifically, how to raise better animals and birds, what crops to grow, how to control pests and diseases etc.; and (2) "How to extend" - that is knowledge about and skill in effective communication of subject matter to the clientele.

Without adequate knowledge about "how to extend" the extension worker will not be able to do his job effectively. Even if he has sound knowledge of technical subjects he may not be able to do his job properly if he does not have the necessary communication skills. To a great extent, these skills can be achieved through the training of extension personnel.

Agricultural Science and Technology are undergoing rapid changes. Therefore, improvement in the efficiency of the functionaries including extension workers participating in developmental programmes in agriculture will largely depend on a suitable built in system for on-the-job training designed to update the knowledge and skill of these functionaries. An extension worker while in service would require periodic training to improve professional competence which in turn will help to solve field problems. Hence there is need for reinforcing the knowledge of Extension personnel by inservice training at suitable intervals. The frequency and duration of such training would necessarily depend upon the background of the trainee and the nature of the courses to be covered.

The re-organised Agricultural Extension Service of the State Department of Agriculture (SDA) into the Training and Visit System of Agricultural Extension envisages regular and systematic training of extension personnel as one of its

important features. Such constant, continuous and pre-scheduled training is emphasised in the new system to make the field level workers upto-date and competent enough to handle most of the location specific problems in farmers' fields.

Agricultural Universities in the country play a prominent role in offering on the job training to the extension personnel. The training role of State Agricultural Universities has been well brought out by the National Commission on Agriculture as follows: "The University may undertake training of key extension functionaries of the development departments, education and education training institutions."

In Kerala, the task of organising need based and efficient training programmes for the benefit of agricultural extension personnel is carried out by the Kerala Agricultural University (KAU). It is the statutory authority in the State in so far as the training programmes in agriculture and allied subjects are concerned.

Since the introduction of the Training and Visit System of Agricultural Extension in Kerala in 1979, the need for periodic training of extension personnel at regular intervals became an urgent necessity as this is an inbuilt aspect of the system. A review of the physical achievements in

inservice training under the Training and Visit System indicates that the KAU had offered eight training programmes benefitting 831 Extension personnel in 30 batches during 1983-84. By the next year (1984-85) the corresponding figures rose to 28, 2041 and 64 indicating a phenomenal increase in the training activities of the KAU.\* The major beneficiaries of these training programmes were the extension personnel of the State Department of Agriculture belonging to the three cadres, viz: Agricultural Demonstrators, Agricultural Officers and Assistant Directors.

The Kerala Agricultural University has Training Service Scheme which organizes training programmes among others, training programmes for the extension personnel of the State Department of Agriculture. Recently a Central Training Institute has been established at the Directorate of Extension, Mannuthy, Trichur particularly to meet the training needs of senior level officers in the State Department of Agriculture. It has two units, one at the College of Agriculture, Vellayani and another at the Regional Agricultural Research Station, Pilicode.

Thus, to meet the growing need for quality training programmes, the KAU has built up good infrastructural facilities. It conducts periodical training programmes for the extension personnel of the State Department of Agriculture

\* Source:- Proposal for the establishment of a central training institute - special sub project under NARP-1

at various levels. An important aspect, which contributes to the efficiency of training programmes, is the timely monitoring and evaluation of these programmes. However, a comprehensive study covering different training programmes for the extension personnel of the State Department of Agriculture has not yet been conducted. Therefore, the present study was conducted to assess the effectiveness of the inservice training programmes for the personnel of the Kerala State Department of Agriculture conducted by the KAU with the following specific objectives

- 1) to assess the impact of selected inservice training programmes for the personnel of the Department of Agriculture conducted by the KAU on the professional knowledge of the trainees, and the factors related to it.
- 2) to find out the perception of the trainees about the treatment and utility of the topics dealt with in the selected inservice training programmes,
- 3) to analyse the perceived effectiveness of training methodology followed in the inservice training programmes, and
- 4) to identify the constraints experienced by the trainees, trainers and training organizers (Course Directors) of inservice training programmes.

### Importance and limitations of the study

The study aims at assessing the effectiveness of selected inservice training programmes and to identify the factors which determine their effectiveness. The results, therefore, will help in improving the efficiency of the training programmes organised by the KAU and will help in streamlining the training methodology. The results of the study, it is hoped, will be of immense practical utility to both the KAU and the State Department of Agriculture in the context of the implementation of the Training and Visit System of Agricultural Extension.

The study was conducted within a limited period of time, which necessitated the purposive selection of the representative training programmes. One training programme for each category of respondents only could be selected for the study which limits the scope for drawing generalizations based on the results of the present study. Moreover, the number of respondents and variables for the study were also limited due to lack of adequate time and resources, which are inherent in most of the Masters level studies. However, efforts were taken to make the study systematic and objective in spite of these limitations.

# THEORETICAL ORIENTATION

## CHAPTER II

### THEORETICAL ORIENTATION

Fast studies pave way to future endeavours. An acquaintance with earlier pertinent studies will be useful in developing the theoretical frame work and in identifying relevant variables for the present study. With this objective in view, a thorough review of related literature was made and the available reviews are furnished under the following heads.

- 2.1. Concept of training
- 2.2. Models of training
- 2.3. Importance of training for extension personnel
- 2.4. Research studies on the impact of training programmes on extension personnel
- 2.5. Determinants of effectiveness of training for extension personnel
- 2.6. Treatment and utility of the training programmes
- 2.7. Operational definitions of the terms used in the study

#### 2.1. Concept of training

Training has been defined by different authors in different ways.

Miles (1959) conceptualised training as a change inducing temporary system.

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, skills or abilities and attitudes to reach his goal efficiently.

Collings (1966) elaborated training as the instruction and other learning experiences, which purport to fit the worker into the service so that he competently meets the demands of his job, as determined by changing leadership needs of people.

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.

According to Lynton and Pareek (1967), training is primarily concerned with preparing the participants for

certain lines of action which are delineated by technology and the organisation in which he works. The focus in training is on internalising the skills for action by giving opportunities to participants to practise the new skills in situations resembling the complexities of real life.

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 focussing 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 socialisation 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 internalise 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 of 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.

Dahama and Bhatnagar (1980) 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.

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

## 2.2. Models of training

Lynton and Pareek (1967) propounded three models of training one after the other. At the first stage, a simple model was developed which identified the organization and its character as independent variable, influencing the effectiveness of an organization as dependent variable through the training which was identified as an intervening variable.

At the second stage, they added the concept of feedback, which was assumed to improve the training as well as the organization. At the third state, they identified the true type of training form. The earlier notion of linearity was transformed into spirality. This spiral model had three phases as pre-training, training and post-training

phases. Sub-items under each of the major items were identified. The model also assumed that such type of organized training would lead to improvement in the job. The significance of the model is that it identifies an individual to have gained more knowledge and skill at the end of every training programme and that he would start with a higher level of knowledge and skill at the commencement of the next training programme. Thus, it is conceptualised as a continuous development process.

While analysing the training by objectives, Odiorne (1970) put forth the simple cybernetic model of training. This model had the components of training need, training effort, evaluation and feed back. Eventhough, the model had the element of feed back, it did not state clearly the nature of training need that would arise due to training.

Rao (1975) applied the Lynton and Pareek (1967) model to farmers training. This model encompasses all the aspects of training with the 'Preparatory', 'Training' and 'Post-training' phases. The limitation of this model has been that it included evaluation as a post-training activity only. In fact evaluation should be an integral part and should take place at each phase of a training programme. The decision to select 'the methods of training', 'duration', 'time' and 'place' of training which are the main activities

at the preparatory stage were not mentioned in the model eventhough emphasis was laid on 'participants', 'trainers' and 'subject matter'.

### 2.3. Importance of training for extension personnel

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

Ramkrishan (1968) opined that the training of people engaged in agriculture and community development programme aims at 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.

Jaiswal et al. (1978), in their evaluation study of Training and Visit System observed the problems with respect to training as 'the lack of linkage between research stations and the subject matter specialists'.

Reddy (1981) stated that the research system can link itself with extension by devoting part of its time to (i) in-service training of extension personnel (ii) conducting farmers' day for the benefit of farmers and extension workers (iii) serving as resource persons to the extension agency in formulating its production programmes, contingency plan etc., and (iv) serving as consultants to the extension system in diagnosing and tackling new field problems. He further stated that obtaining the latest technology from the research system by extension system and giving necessary feed back necessitate better linkage.

Sarikaphuti (1981) concluded that the gap between research and extension agencies was a very important problem in a developing country like Thailand. There were many factors that cover co-ordination problems. These included culture, organisational system, their limited number of trainers for research findings and lack of applied research. However, these problems could be overcome by strategies such as informal get together, special joint projects and improved training.

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 organisational goal.

Singh (1984) pointed out that the linkages between extension and research system are still very weak and of ad hoc type. A stage has reached where a regular mechanism has to be established for satisfactory communication between these two systems. He further stated that one of the main constraints in crop production is weak or no linkage between research and extension which is detrimental to the effectiveness of both. Without continuous and freeflow of crop

production technology from research institutes to farmers' field, the extension service becomes non-professional and loses its credibility and has nothing new to extend. Similarly, for want of feed back from extension workers and farmers, research becomes mostly academic and unrelated to farmers' real problems. It is, therefore, necessary to have a built in mechanism for effective linkages and communication between research institutes and extension service. Organising periodic training programmes for extension workers would be a very important step to establish this linkage, he observed.

According to Reddy (1985), it is through training that an understanding of concepts, values, attitudes and capabilities can be inculcated among the functionaries to achieve the programme objectives.

#### 2.4. Research studies on the impact of training programmes on extension personnel

Bhaskaram (1970) conducted a study of the training for extension personnel. The results revealed that the training had helped the participants to improve their concept and understanding of extension education and community development.

Patel and Somasundaram (1974) studied the impact of Upgraded Training Course on the Gramsevaks in Madhya Pradesh. They found that 60 per cent of the trained gramsevaks were

rated 'good' in knowledge test, about 32 per cent 'average' and eight per cent rated as 'poor'. It was also evident that the knowledge of the trained gramsevaks was higher than that of the untrained gramsevaks. The superiority of trained gramsevaks over the untrained gramsevaks with regard to the understanding about extension methods was also statistically significant.

Venugopal and Jalihal (1979), after studying the influence of training at Indo-Japanese Centre on the knowledge and performance of Agricultural Extension Officers regarding rice cultivation, reported that 46 per cent of Agricultural Extension Officers trained at the Training Centre had high overall knowledge regarding rice cultivation, as against six per cent of Agricultural Extension Officers who were not trained.

Joshi and Rao (1981) conducted a study on the impact of training situation on the knowledge level of Village Level Workers by using a 'before and after' experimental design at the Rural Development Training Centre in Dharward. The results showed that there was significant increase in the knowledge of the participants due to training.

Uma (1982) conducted a critical analysis of the impact of training on Mahila Mandal Members with reference to

Nutrition and Home gardening aspects in Dharward District of Karnataka State. The results revealed that the improvement in the knowledge level of the participants in the training was statistically significant.

Kalaichelvan (1984) studied the transfer of farm technology through Training and Visit system and found that the increase in knowledge on different aspects of the subject matter was due to the training given to the Village Extension Workers.

Verma (1984) conducted a study on the role of training as a means to increasing subject matter competencies of extension personnel among the sugarcane development workers who underwent a training at the Indian Institute of Sugarcane Research, Lucknow, U.P. It was clear from the results that the participants had significant gain in knowledge due to training.

## 2.5. Determinants of effectiveness of training for extension personnel

### 2.5.1. Age

Patel and Somasundaram (1974) found that the age of the gramsevak had positive and significant relationship with their gain in knowledge as a result of training.

Kalaichelvan (1984) stated that the age of the extension personnel had positive and significant relationship with their gain in knowledge.

### 2.5.2. Education

Patel and Somasundaram (1974) revealed that there was positive association between the educational level of gramsevaks and their gain in knowledge as a result of the training course.

Joishi (1980) reported that there was no significant association between education and gain in knowledge of the Village Level Workers.

Kalaichelvan (1984) reported that the gain in knowledge of the Village Level Workers was positively and significantly associated with their education.

### 2.5.3. Experience

Jha and Sharma (1973) observed that the length of service of a Village Level Worker had a bearing on the amount of knowledge gained as a result of training.

Patel and Somasundaram (1974) found that there was positive association between the experience and gain in knowledge of the respondents.

Joshi (1980) stated that there was no association between the tenure of service and the gain in knowledge of the Village Level Workers.

Kalaichelvan (1984) reported that there was positive and significant association between the experience and gain in knowledge of the Village Level Workers.

#### 2.5.4. Number of previous trainings undergone

Kalaichelvan (1984) found that the gain in knowledge of the Village Level Workers was significantly and positively associated with the number of trainings attended by them in the Training and Visit System.

#### 2.5.5. Attitude towards extension profession and attitude towards Training and Visit System

Allport (1935) defined attitude as a mental and <sup>e</sup>rural state of readiness organized through experience, exerting a directive or dynamic influence upon the individuals' response to all objects and situations with which it is related.

According to Krech and Crutchfield (1948) attitudes are a function of perception.

Newcomb (1951) speaks of attitude as a state of readiness for motive arousal and an individual's attitude

towards something is his predisposition to perform, perceive, think and feel in relation to it.

Rosenberg (1956) stated that "an attitude is a relatively stable affective response to an object".

Katz and Scotland (1959) defined attitude as a tendency of disposition to evaluate an object or symbol of the object in a certain way.

Gilmer (1961) stated that job attitude is the feeling the employees has about his job, his readiness to reach in one way or another to specify factors related to a job.

Remmers et al. (1967) defined attitude as a feeling for and against something.

Rogers and Shoemaker (1971) explained attitude as a relatively enduring organization of an individual's beliefs about an object that predisposes his actions.

Sharma (1972) defined attitude as a personal disposition which impels an individual to react to some objects or situations.

Mehrabian (1973) explained attitude as the degree of liking, positive evaluation and/or performance of one person for another.

Studies relating the above two independent variables viz. attitude towards extension profession and attitude towards Training and Visit System, and the dependent variable, gain in knowledge, were not available.

#### 2.5.6. Job satisfaction

Katzell (1964) defined job satisfaction as the verbal expressions of the incumbent's evaluation of his job.

Blum and Naylor (1968) reported that job satisfaction has usually been considered as a general attitude which is the result of many specific attitudes in three areas viz, specific job factors, individual characteristics and group relationships outside the job.

Williams (1971) stated that adequate opportunities should be given to the extension officers to have a satisfying and rewarding career in the organisation by suitable inservice training programmes.

Subhalakshmi and Singh (1974) found that nearly two thirds of the Gram Sevaks were either very much satisfied or satisfied with their job, nearly 20 per cent were dissatisfied or very much dissatisfied and the remaining gramsevaks were neutral in their attitude.

Jalihal et al. (1975) observed that about 74 per cent Gram Sevaks were satisfied with the time spent by them on educational activities.

Sinha et al. (1976) defined job satisfaction as a mental state of an individual in an organisation when he feels satisfaction in performing the job of his position.

Rajagopal (1977) found that 50 per cent of the Gram Sevaks had more job satisfaction while the remaining 50 per cent had less job satisfaction.

Menon et al. (1978) reported that majority of the Deputy Agricultural Officers in Tamil Nadu were dissatisfied with their promotion chances, independence in their work and the departmental policies and practices.

Sundararajan (1985) found that the job satisfaction among graduates was comparatively better than that among the non-graduates.

#### 2.5.7. Work load situation

Studies which relate work load situation to gain in knowledge of the trainees were not available.

#### 2.6. Treatment and utility of the training programmes

Bhaskaram (1966) conducted an evaluation of inservice

training of extension personnel and found that great majority of the trainees felt the treatment of the syllabus as effective.

Sandhu and Bilang (1977) studied the training needs of Agricultural Extension Officers. The major objective of the study was to determine the level of adequacy of inservice training of Agricultural Extension Officers in agricultural and allied subjects. The results showed that the adequacy score of the various items of subject matter ranged from 3.43 to 4.14, when it was measured on a five point continuum ranging from 'Most adequately' to 'Not adequately'.

Rao et al. (1980) conducted an evaluation of the Summer Institute on Water Management in Black Soils and the authors measured the usefulness and coverage of the topics dealt with in the classes, using the treatment-utility index. The treatment-utility index of the Summer Institute as rated by the participants was 82.98 per cent.

Bhaskaran and Menon (1981) conducted an objective evaluation of the Agricultural Exhibition conducted at the KAU and <sup>u</sup>found that the treatment utility index of the exhibition was 64.80 per cent.

## 2.7. Operational definitions of the terms used in the present study

### 2.7.1. Inservice training programmes:

In this study, inservice training programmes are

operationally defined as the trainings conducted by the KAU for the agricultural extension personnel of the Kerala State Department of Agriculture.

#### 2.7.2. Agricultural extension personnel

Agricultural extension personnel are operationally defined as the officers of the Kerala State Department of Agriculture including Agricultural Demonstrators, Agricultural Officers and Assistant Directors of Agriculture who participated in the training programmes offered by the KAU.

#### 2.7.3. Professional knowledge

Professional knowledge is operationally defined as the knowledge of the extension personnel about the different subject matter areas in agriculture included for the training programme.

#### 2.7.4. Treatment of training

Treatment of training is operationally defined as the adequacy of coverage of different subject matter areas in the trainings as perceived by the agricultural extension personnel.

#### 2.7.5. Utility of training

Utility of training is operationally defined as the extent of usefulness of the different subject matter areas

dealt in the training as preceived by the agricultural extension personnel.

#### 2.7.6. Age

Age in this study is defined as the number of years the agricultural extension personnel has completed at the time of investigation since his/her birth.

#### 2.7.7. Education

Education is defined as the formal education received by the agricultural extension personnel from S.S.L.C. upwards.

#### 2.7.8. Total experience

Total experience is the period in completed years for which the agricultural extension personnel had been in service.

#### 2.7.9. Experience in Training and Visit System

Experience in Training and Visit System is defined as the period in completed years for which the agricultural extension personnel had been in service in Training and Visit System.

#### 2.7.10. Number of previous trainings undergone

It is defined as the number of inservice trainings undergone by the agricultural extension personnel after the

implementation of Training and Visit System throughout the state.

**2.7.11. Attitude towards extension profession**

It is defined as the degree of positive or negative affect towards the extension profession held by the agricultural extension personnel.

**2.7.12. Attitude towards Training and Visit System of Agricultural Extension**

It is the degree of positive or negative affect towards the Training and Visit System of Agricultural Extension held by the agricultural extension personnel.

**2.7.13. Job satisfaction**

It is defined as the expression of the agricultural extension personnel regarding the degree of satisfaction or dissatisfaction he/she is deriving from his/her job.

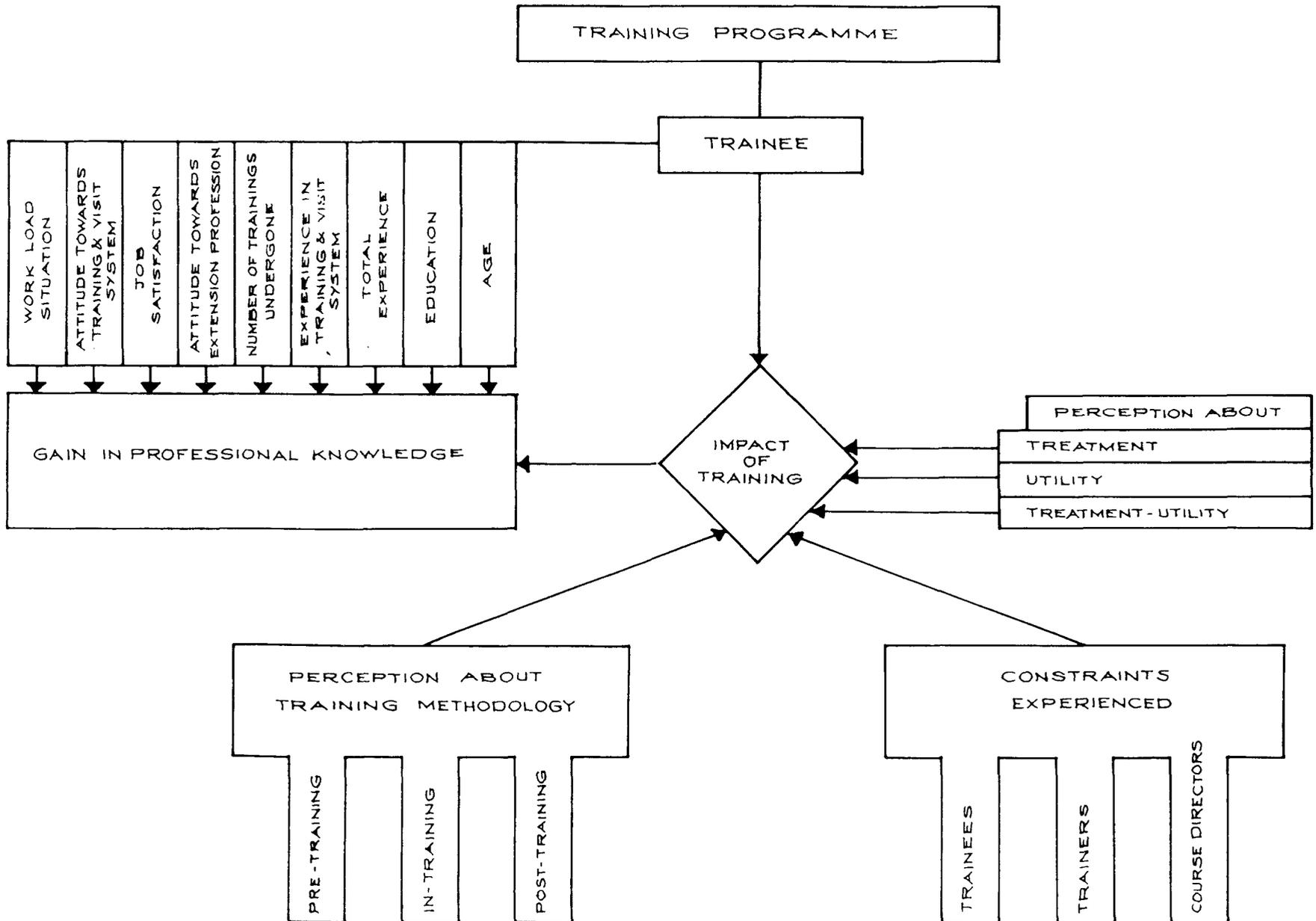
**2.7.14. Work load situation**

It is operationally defined as the perception of the agricultural extension personnel about his/her best manageable and worst manageable job situation in relation to his/her job of communication of information.

#### 2.7.15. Perception of training methodology

It is defined as the opinion of the agricultural extension personnel about the way in which the different items of training activities in the pre-training, in training and post-training phases were carried out.

FIG. 1 THEORETICAL FRAME WORK OF THE STUDY



# METHODOLOGY

## CHAPTER III

### METHODOLOGY

In this chapter, the methodology employed for the study is presented under the following heads.

- 3.1. Selection of the training programmes for the study.
- 3.2. Description of the training programmes.
- 3.3. Selection of respondents.
- 3.4. Selection and measurement of the dependent and independent variables.
- 3.5. Measurement of the treatment and utility of the training programmes.
- 3.6. Measurement of the perception about the training methodology.
- 3.7. Measurement of the constraints experienced by the respondents.
- 3.8. Statistical tools used.

#### 3.1. Selection of the training programmes for the study

The KAU is organising, among other extension education activities, training programmes for the various categories of extension personnel of the State Development Departments, Departments of Agriculture of various states, Input Agencies, Voluntary Agencies etc. One of the major beneficiaries of

the University's training programmes is the Kerala State Department of Agriculture. Training programmes on Agriculture and allied subjects are organized for the various categories of extension personnel of the State Department of Agriculture. During 1985-'86, six training programmes benefitting 376 extension personnel of the State Department of Agriculture were organized by the Kerala Agricultural University. The important categories of extension personnel of the Department of Agriculture trained by the KAU during 1985-'86 were the Agricultural Demonstrators (Village Level Workers), Agricultural Officers (Superiors of the Agricultural Demonstrators) and Assistant Directors of Agriculture (Superiors of the Agricultural Officers). Therefore, training programmes specifically meant for these three categories were selected for evaluating their effectiveness.

The following three training programmes were selected for the study as suggested by a panel of judges consisting of scientists in the KAU and Senior Officers in the State Department of Agriculture.

1. Training in plant protection for Agricultural Demonstrators;
2. training in pulses and oilseeds production technology for Agricultural Officers; and
3. training in audio-visual aids and techniques for Assistant Directors of Agriculture.

As envisaged in the Training and Visit System these trainings are meant to benefit the major categories of extension personnel of the Department of Agriculture which cover three different, but significant aspects of crop production technology and its transfer, viz. plant protection, pulses and oilseeds production technology and audio-visual aids and techniques. Moreover, these training programmes are repeatedly conducted by the KAU for the various categories of Extension personnel. Therefore, these three training programmes were selected purposively for the study.

### 3.2. Description of the training programmes

#### 3.2.1. Training in plant protection for Agricultural Demonstrators

This training course was conducted at the College of Agriculture, Vellayani, one of the constituent Colleges of the University. A batch of 32 Agricultural Demonstrators underwent this training course at the time of the investigation. The duration of the training was six days from 16.6.'86 to 21.6.'86.

#### 3.2.2. Training in pulses and oilseeds production technology for Agricultural Officers

This five day training course was conducted at the Krishi Vigyan Kendra, Regional Agricultural Research Station,

Pattambi operated by the KAU. During the period of the investigation, 57 Agricultural Officers participated in this training programme in two batches, 28 Officers in the first batch (from 16.6.'86 to 20.6.'86) and 29 Officers in the second batch (from 23.6.'86 to 27.6.'86).

### 3.2.3. Training in audio-visual aids and techniques for Assistant Directors of Agriculture

The duration of the training was six days from 23.6.'86 to 28.6.'86 and the venue of the training was the Directorate of Extension, Mannuthy. This training was conducted for only one batch of 19 Assistant Directors of Agriculture.

### 3.3. Selection of respondents

#### 3.3.1. Selection of Agricultural Demonstrator-respondents

During the period of investigation, one batch of 32 Agricultural Demonstrators attended the 'training in plant protection' at the College of Agriculture, Vellayani. All the 32 Agricultural Demonstrators were selected as respondents for the study.

#### 3.3.2. Selection of Agricultural Officer-respondents

Fifty seven Agricultural Officers attended the 'training in pulses and oilseeds production technology' at the Krishi Vigyan Kendra, Pattambi in two batches during the period of

the investigation. Fifteen trainees each were randomly selected from among the participants in the first and second batches making a total of 30 Agricultural Officer - respondents for the study.

### 3.3.3. Selection of Assistant Director - respondents

The 'training in audio-visual aids and techniques' was conducted for only one batch of Assistant Directors of Agriculture. Nineteen Assistant Directors participated in the training and all of them were selected as respondents for the study.

Thus, there were 81 respondents representing the three categories of trainees in the study.

### 3.3.4. Selection of Course Director - respondents

A list of Scientists in the KAU who have served as Course Directors for training programmes conducted during the immediate past three years of the study year, viz. 1983 to 1985 was prepared. In all, 50 Course Directors were identified and from the total, 30 Course Directors were selected randomly to represent the respondents under this category.

### 3.3.5. Selection of Trainer - respondents

A list of Scientists of the Kerala Agricultural University who have handled classes for the various training

courses during the immediate past 3 years of the study year, viz. 1983 to 1985, was prepared. From the list of 62 trainers a random sample of 30 trainers was selected and included as respondents for the study.

In all, the study included 141 respondents comprising of 81 Trainee-respondents, 30 Course Director-respondents and 30 Trainer-respondents.

#### 3.4. Selection and measurement of the dependent and independent variables

##### 3.4.1. Selection of the dependent and independent variables

The variables included in the study were selected after a thorough review of research work done in the past, on various aspects of the training and on the basis of the opinion of the experts in the University.

##### 3.4.1.1. Selection of the dependent variable

The training programmes selected for evaluation were meant for the extension personnel of the State Department of Agriculture. These trainings were focussed on important professional subject matter areas in Agriculture such as plant protection, pulses and oilseeds production technology and audio-visual aids and techniques. Since these trainings had the major focus on professional subject matter areas, it was decided to select the professional knowledge of the

respondents in the subject matter area of the training concerned as the dependent variable.

#### 3.4.1.2. Selection of the independent variables

After a thorough review of the pertinent literature, a list of independent variables was prepared. It was subjected to relevancy rating by a panel of judges in the KAU. Based on their judgement, the following independent variables were selected for the study.

1. Age
2. Education
3. Total experience
4. Experience in Training and Visit System
5. Number of previous trainings undergone
6. Attitude towards extension profession
7. Job satisfaction
8. Attitude towards Training and Visit System
9. Work-load situation

#### 3.4.2. Measurement of the dependent variable

Professional knowledge of the respondents in the subject matter area of the training concerned was treated as the dependent variable for the study. A number of researchers have suggested different methods for the measurement of knowledge. Some of the significant methods

are reviewed hereunder.

Shankariah and Singh (1967) measured the knowledge of farmers on improved method of vegetable cultivation based on 'teacher-made test'.

Equal weightage was given to all items, presuming that all these items included had same difficulty to understand, apply and recall. Then they calculated the knowledge index as follows.

$$\text{Knowledge index} = \frac{X_1 + X_2 + \dots + X_n}{n} \times 100$$

$X_1$  = No. of correct answers of first practice

$X_2$  = No. of correct answers of second practice

$n$  = Total number of questions put to a respondent to test his/her knowledge

Sinha et al. (1968) adopted the method of self appraisal to determine the level of knowledge of Agricultural Extension Officers.

Jaiswal and Dave (1972) calculated knowledge scores for measuring the knowledge level of farmers about recommended agricultural practices. For this, a score of one for right answer and score of zero for wrong answer were given. The scores obtained by respondents were expressed in terms of percentage of total scores.

$$\text{Knowledge score} = \frac{\text{Number of correct answers}}{\text{Actual total score}} \times 100$$

Singh and Prasad (1974) measured knowledge by working out Knowledge Quotient which was calculated as follows:

$$\text{Knowledge Quotient} = \frac{\text{Obtained knowledge score}}{\text{Actual total score}} \times 100$$

Gill and Sandhu (1981) measured the knowledge of farmers by calculating an average knowledge score.

$$\text{Average knowledge score} = \frac{\text{Total knowledge score}}{\text{No. of questions} \times \text{No. of respondents}}$$

Joshi and Rao (1981) measured the knowledge of Village Level Workers by conducting the knowledge test 'before' and 'after' training. Verma (1984) used the method followed by Joshi and Rao (1981) to measure the increase in subject matter competencies of extension personnel due to training.

In order to measure the gain in knowledge of the respondents, as a result of their response to training situation, the 'before' and 'after' method of knowledge test used by Joshi and Rao (1981) and Verma (1984) in similar studies was adopted in this study.

The procedure followed for measuring the gain in knowledge of the respondents of the study is outlined below.

### Knowledge test for the Agricultural Demonstrator-respondents

The universe of content of the knowledge items regarding plant protection was collected from the scientists handling classes for the said training programme. Fifty knowledge items were listed and these knowledge items were framed in objective type and question form subjected to editing by subject matter specialists in plant protection in KAU. During editing, irrelevant items and most difficult and most easy items were deleted. After editing, 30 items were retained and these formed the knowledge test for the Agricultural Demonstrator-respondents.

### Knowledge Test for Agricultural Officer-respondents

As outlined earlier, a total of 60 knowledge items were collected to represent the universe of content of the subject matter area viz. 'pulses and oilseeds production technology'. These items were framed into questions and subjected to expert editing. After editing, 25 knowledge items were retained and they formed the knowledge test for the Agricultural Officer-respondents.

### Knowledge Test for the Assistant Director-respondents

Here also, the procedure elaborated earlier was followed. Of the 45 identified knowledge items relating to 'audio-visual aids and techniques', 27 were finally selected

after editing to constitute the knowledge test for the Assistant Director-respondents.

#### Computation of the knowledge scores of the respondents

The respondents were administered with the respective knowledge test both before and after the training. Correct responses were given a score of one and wrong answers received no score. The individual respondent's total score was added up and it indicated his/her knowledge score. The difference between the knowledge scores of the respondents before and after the training was considered as the gain in knowledge.

#### 3.4.3. Measurement of the independent variables

##### Age

In this study age was measured as the number of years the respondent had completed at the time of study since his birth.

##### Education

In this study, education was measured by assigning scores for the academic qualifications acquired by the respondents. The scoring system used for the different categories was as follows:

a) Agricultural Demonstrator-respondents

<u>Sl.No.</u>	<u>Academic qualification</u>	<u>Score</u>
1	S.S.L.C.	1
2	K.G.T.E. (Agriculture) or M.G.T.E. (Agriculture)	2
3	Above K.G.T.E. (Agriculture) or M.G.T.E. (Agriculture)	3

b) Agricultural Officer-respondents

<u>Sl.No.</u>	<u>Academic qualification</u>	<u>Score</u>
1	Training including Diploma in Agriculture, K.G.T.E. (Agriculture) or M.G.T.E. (Agriculture) and for those who were selected as Agricultural Officers from Agricultural Demonstrators.	1
2	Graduation in Agriculture	2
3	Above graduation	3

c) Assistant Director-respondents

It was found that there was no variation among the Assistant Directors in their educational level and they all had B.Sc.(Ag) degree. Therefore, this variable was not included for analysis in respect of the Assistant Director-respondents.

### Total experience

In the present study the total experience of the respondent was measured as the total number of years, rounded to the nearest year, spent in service by the respondent at the time of the survey.

### Experience in Training and Visit system

The experience in Training and Visit System was measured by the number of completed years of service put in by the respondent in the Training and Visit System.

### Number of previous trainings undergone

The respondents were asked to indicate the number of trainings undergone by them since 1983, the year in which the Training and Visit system was extended to cover the entire Kerala State. A score of one was given to each training undergone by the respondent and the scores were summed up to indicate the respondent's score for previous trainings undergone.

### Attitude towards extension profession

To measure this variable, the scale developed by Sobhana (1982) was used with slight modifications. The Likert type attitude scale adapted for this study consisted of five negative and five positive statements. The scoring

procedure for positive statements was:

Strongly agree	5
Agree	4
Undecided	3
Dis-agree	2
Strongly disagree	1

The scoring procedure was reversed in the case of negative statements. The total score of a respondent was the summation of numerical weights assigned to the responses.

#### Job satisfaction

Muthayya and Gnanakannan (1973) measured the job satisfaction of developmental personnel by items covering three aspects viz. personal aspects including feeling of inadequacy, security, non-acceptance etc. the interpersonal aspects covering the interaction with superior people and non-officials and the job aspects including pay, work opportunities, expectation etc.

Rathore (1974) developed a job satisfaction scale to measure the level of job satisfaction of extension personnel. The different degrees of job satisfaction/job dissatisfaction were assigned the following scores.

Very much satisfied	5
Satisfied	4
Undecided	3
Dissatisfied	2
Very much dissatisfied	1

Sinha et al. (1976) measured job satisfaction in terms of overall attitude of the respondent towards his job by asking direct questions such as whether he liked or disliked his job.

In the present study the scale developed by Rathore (1974) was modified and used to measure the job satisfaction of the respondents. Ten items reflecting different aspects of the job were selected. The items were in the form of questions and the answers were rated on a five point continuum ranging from very much satisfied to very much dissatisfied. The scores assigned were as follows:

Very much satisfied	5
Satisfied	4
Undecided	3
Dissatisfied	2
Very much dissatisfied	1

The job satisfaction score of each respondent was computed by summing up the score corresponding to each answer.

### Attitude towards the Training and Visit System

Samad (1979) developed a Likert type scale to measure the attitude of farmers and Agricultural Officers towards Package Programme.

Joseph (1983) developed a scale to measure the attitude of Agricultural Demonstrators towards the Training and Visit System. The scale consisted of four positive and four negative statements. The following scoring pattern was used in respect of the positive items.

Strongly agree	5
Agree	4
Undecided	3
Disagree	2
Strongly disagree	1

The scoring was reversed in the case of negative items.

In the present study, the procedure used by Joseph (1983) was followed to quantify the attitude of the respondents of the study towards the Training and Visit System.

### Work load situation

Sundararajan (1985) measured the work load situation using a ladder technique. The ladder given was having eleven steps with zero score for the bottom step indicating the

worst manageable job situation and ten score for the top-step indicating the best manageable job situation. The respondents were asked to indicate the present position with regard to the job situation in relation to their job of communication of innovations.

### 3.5. Measurement of the treatment and utility of the training programmes

Ambastha and Singh (1975) developed a treatment utility index which was used by Rao et al. (1980) to evaluate the Summer Institute on Water Management in Black Soils.

Bhaskaran and Menon (1981) followed the same procedure for the evaluation of Agricultural Exhibition.

The original treatment-utility index developed by Ambastha and Singh (1975) was utilized as a measure of overall rating of the topics dealt with in the training on both the coverage and utility dimensions.

The respondents were asked to indicate their perception about the treatment (coverage) and utility (usefulness) of each of the topics dealt with in the training programmes.

The coverage and usefulness of the topics were rated separately on a four-point continuum as follows:

<u>Perception about the treatment of topics</u>	<u>Weight assigned</u>
Thoroughly adequate	4
Adequate	3
Less adequate	2
Inadequate	1
<u>Perception about the utility of the topics</u>	<u>Weights assigned</u>
Very useful	4
Useful	3
Less useful	2
Not useful	1

Taking into consideration the coverage and utility dimensions and the points of continuum in the respective scales, a 4 x 4 table was constructed and the topics dealt with in the training programmes were posted in the respective cells as per the raw scores on both dimensions. The formula used for calculating the treatment-utility index was

$$TUI = \frac{\sum F_i C_i \times 100}{NXY}$$

TUI = Treatment-utility index

$F_i$  = The frequency of the topics in the  $i^{th}$  cell

$C_i$  = The cell score of the  $i^{th}$  cell  
(Product of the corresponding scale values as presented on the two dimensions in 4 x 4 table)

- N = Total number of respondents  
X = The highest scale value on X dimension  
Y = The highest scale value on Y dimension

To compute the concordance or discordance on the rating of the topics by the respondents, the treatment and utility scores for individual topics were calculated separately. Based on these scores the topics dealt with the training were ranked to facilitate comprehensive comparison.

### 3.6. Measurement of perception about the training methodology

Singh and Arya (1968) studied the perception of leadership behaviour with the help of two instruments namely paired comparison and rating scales.

Rajababu (1984) studied the perception about the training methodology and transfer of technology by presenting the items before the respondents for rating them on a five point continuum.

The method followed by Rajababu (1984) was followed in the present study also.

The different aspects of the training methodology were divided into three stages as follows:

1. Pre-training stage
2. Intraining stage
3. Post-training stage

The different aspects of the training methodology in each stage of the training were identified after discussion with experts. These aspects were presented before the respondents for rating on a five-point continuum as follows:

<u>Response continuum</u>	<u>Weights assigned</u>
Excellent	5
Good	4
Fair	3
Bad	2
Very bad	1

The perception scores for each aspect was calculated by adding the scores corresponding to each aspect of the training methodology given by the individuals.

Ranking of the different aspects of training methodology at the three stages was done by taking the mean perception score for each item as the criterion.

### 3.7. Measurement of the constraints experienced by the respondents

The constraints normally experienced by the Trainees, Trainers and Course Directors while participating in/ conducting training programmes were identified after discussion with subject matter specialists in the University and Officials of the Kerala State Department of Agriculture.

The constraints relevant to each category viz. Trainees, Trainers and Course Directors were listed and the list of constraints was administered to the respondents. They were asked to indicate their constraint perception on a four-point continuum ranging from 'Most felt', 'felt', 'less felt' to 'least felt' with weights of 4, 3, 2 and 1 respectively. The mean score for each constraint was computed and based on the mean scores, the constraints were ranked from most felt to least felt. Thus, there were three sets of ranking of the constraints, one each for the categories of Trainees, Trainers and Course Directors.

### 3.8. Statistical tools used

#### 3.8.1. Kruskal-wallis one-way analysis of variance by ranks

This non-parametric test was used to know the significance of difference in gain in knowledge between the low, medium and high groups of respondents, who were classified on the basis of their selected characteristics ie. the independent variables. The respondents were classified into three groups, namely 'low', 'medium' and 'high' groups in such a way that each group contained approximately equal number of respondents.

The formula used for the purpose is given below:

$$H = \frac{12}{N(N+1)} \leq \frac{(X_1)^2}{n_1} - 3(N+1)$$

- $N$  = Total number of observations  
 $X_1$  = Sum of the ranks in  $i^{\text{th}}$  group  
 $n_1$  = Number of observations in  $i^{\text{th}}$  group

The 'H' value calculated was compared with the table value to find out the significance of association.

Besides this, mean score analysis and percentage analysis were also carried out in the study.

## RESULTS AND DISCUSSION

## CHAPTER IV

### RESULTS AND DISCUSSION

In this chepter, the results of the study are presented and discussed in the following sequence.

1. Impact of training on the professional knowledge of the respondents.
2. Association of the dependent variable with the independent variables - Results of the Kruskal-Wallis test.
3. Perception about the treatment and utility of the training programmes.
  - 3.1. Perception about the treatment of the topics dealt with in the training for the Agricultural Demonstrators.
  - 3.2. Perception about the utility of the topics dealt with in the training for the Agricultural Demonstrators.
  - 3.3. Treatment - Utility indices of the topics dealt with in the training for the Agricultural Demonstrators.
  - 3.4. Perception about the treatment of the topics dealt with in the training for the Agricultural Officers.
  - 3.5. Perception about the utility of the topics dealt with in the training for the Agricultural Officers.
  - 3.6. Treatment-utility indices of the topics dealt with in the training for the Agricultural Officers.

- 3.7. Perception about the treatment of the topics dealt with in the training for Assistant Directors.
- 3.8. Perception about the utility of the topics dealt with in the training for Assistant Directors.
- 3.9. Treatment utility indices of the topics dealt with in the training for Assistant Directors.
4. Perception about the training methodology.
  - 4.1. Perception about the training methodology - pre-training stage.
  - 4.2. Perception about the training methodology - in training stage.
  - 4.3. Perception about the training methodology - post-training stage.
5. Constraints experienced by the Trainees, Trainers and Course Directors.
  - 5.1. Constraints experienced by the Agricultural Demonstrators.
  - 5.2. Constraints experienced by the Agricultural Officers.
  - 5.3. Constraints experienced by the Assistant Directors.
  - 5.4. Constraints experienced by the Trainers.
  - 5.5. Constraints experienced by the Course Directors.
1. Impact of the training programme on the professional knowledge of the respondents

Gain in professional knowledge of the respondents after their exposure to the training programmes was considered

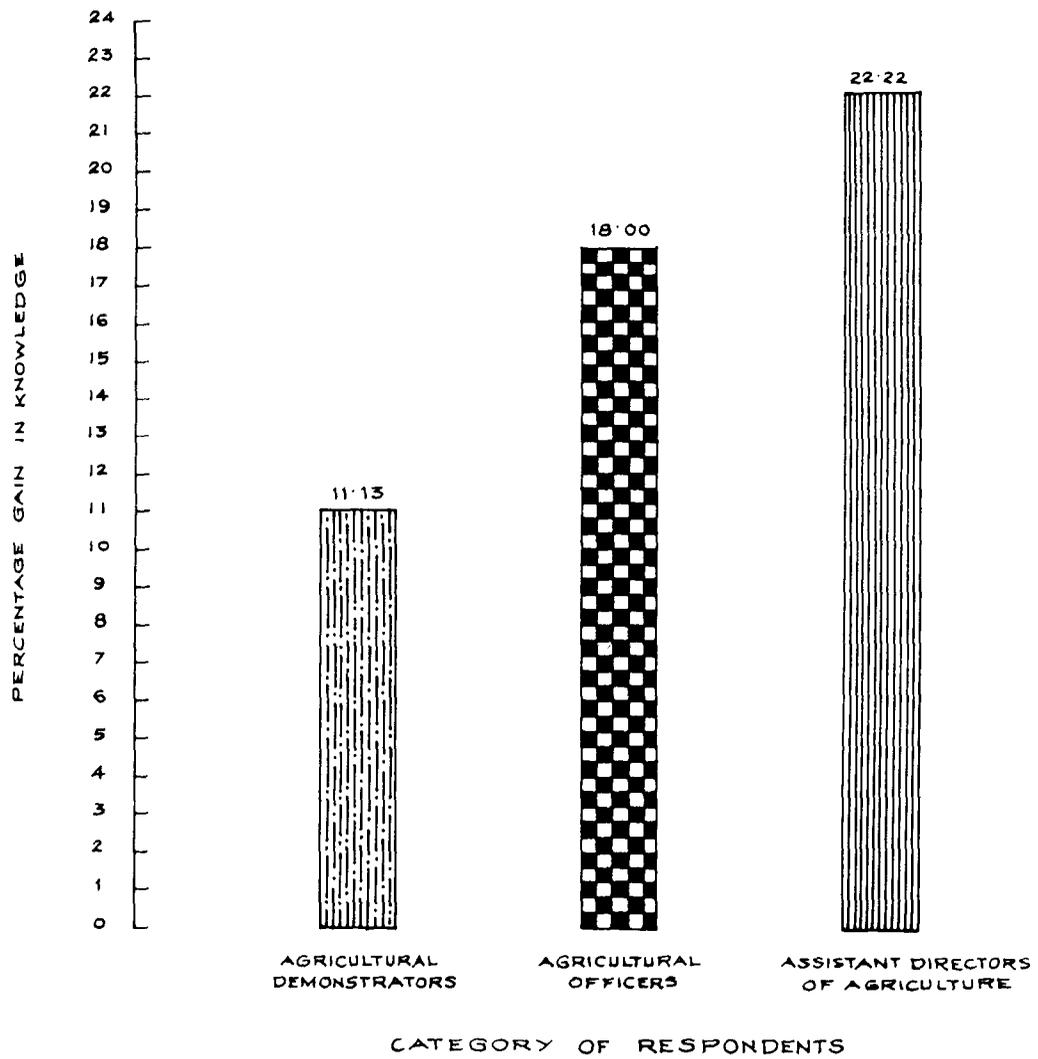
as the impact of the respective training programmes. The results relating to these aspects are furnished in Table 1.

A perusal of the results in Table 1 and Fig. 2 shows the extent of knowledge gained by the three categories of respondents namely the Agricultural Demonstrators, the Agricultural Officers and the Assistant Directors of Agriculture. The maximum score possible on professional knowledge for the Agricultural Demonstrators was 30, for the Agricultural Officers it was 25 and for the Assistant Directors it was 27. The percentage gains in knowledge were 11.13, 18.00 and 22.22 respectively for Agricultural Demonstrators, Agricultural Officers and Assistant Directors of Agriculture. Thus, there was substantial gain in knowledge, for the three categories of respondents due to training. This can be explained based on the facts that consequent to the introduction of Training and Visit System there is a new sense of awakening among the extension personnel in the Department of Agriculture. The new system has warranted substantial competency in the subject matter on the part of the extension personnel so as to tackle problems arising out of complex technologies and pressing demands from the farmers. More than even before, the farming public have high expectations about the extension personnel, and it is quite logical that the extension personnel would strive to derive maximum benefit from

Table 1. Impact of training on the professional knowledge of the respondents

Sl. No.	Category of respondents	Number of respondents	Maximum score possible on professional knowledge	Mean pre-training knowledge score	Mean post-training knowledge score	Mean gain in professional knowledge	Percentage gain in knowledge
1	Agricultural Demonstrators	32	30	18.38	21.72	3.34	11.13
2	Agricultural Officers	30	25	15.33	19.83	4.50	18.00
3	Assistant Directors	19	27	13.00	19.00	6.00	22.22

FIG. 2. PERCENTAGE GAIN IN KNOWLEDGE OF THE THREE CATEGORIES OF RESPONDENTS.



competency improvement programmes like the trainings as in the present case to meet the expectations. Latently, it also implies that the resource persons of the Kerala Agricultural University who served as trainers would have given their best to meet the requirements emerging from such training situations. Thus, the synergistic effect of the constant quest for technical knowledge on the part of the trainees and the expertise of the trainers of KAU would have resulted in substantial gains in professional knowledge as has occurred in the present investigation. This finding is in agreement with that of Bhaakaram (1970), Patel and Somasundaram (1974), Joshi (1980), Joshi and Rao (1981), Uma (1982), Kalaichelvan (1984) and Verma (1984).

The results also indicate that out of the three categories of respondents, the Assistant Directors of Agriculture had the highest gain in knowledge followed by the Agricultural Officers and the Agricultural Demonstrators. The variation in the gain in knowledge of the respondents may be due to various factors. The Assistant Directors of Agriculture who had better educational back ground and more field experience had maximum gain in knowledge compared to the Agricultural Officers and Agricultural Demonstrators. The educational back-ground and field experience possessed by the Assistant Directors of Agriculture provided them more power of comprehension and it is logical that a person

having more power of comprehension will have more gain in knowledge compared to another person who has less power of comprehension. Moreover, the Assistant Directors are expected to provide the technical linkage between the Research Stations and the farmers' fields. Their role is to teach the Agricultural Officers and Agricultural Demonstrators through whom the innovations are passed on to the farmers. Therefore there is compelling need for them to keep themselves abreast of the latest technology. Further, they have a major role to play in the process of knowledge flow from the research stations to farmers' fields. This, again, demands sound knowledge base and the training offered to the Assistant Directors provided a chance for them to gain more knowledge which was probably, effectively utilized by them. The 'training in audio-visual aids and techniques for Assistant Directors' was of peculiar nature, which would help them to get new ideas on communication through the use of audio-visual aids. As a result of the facts explained above, the Assistant Directors of Agriculture would have attended the training very seriously and therefore, had derived maximum advantage out of the training.

Comparing the other two categories of respondents, namely the Agricultural Demonstrators and Agricultural Officers, the latter had more gain in knowledge than the former. The subject matter of the training for Agricultural

Officers was 'pulses and oilseeds production technology' which is a current topic for which thrust is given in the Twenty Point Programme of the country. The popularisation of scientific cultivation of pulses and oilseeds is a challenging task for the extension personnel of the State Department of Agriculture and so they had a felt need to know more and more about the subject. Moreover, the educational background of the Agricultural Officers was better than that of the Agricultural Demonstrators. Thus, the compounding effect of the educational background of the trainees and the importance of the subject matter of the training resulted in substantial gain in knowledge by the trainees, namely the Agricultural Officer-respondents.

The Agricultural Demonstrators had low educational background and experience compared to the Agricultural Officers and the Assistant Directors of Agriculture and hence their power of comprehension will also be naturally lower than that of others. Moreover they had a very high perception about the competency of the trainers who handled classes in the training. Because of this, the Agricultural Demonstrators showed reluctance to ask questions and to clarify their doubts. As a result of this, the Agricultural Demonstrators had low gain in knowledge compared to the Agricultural Officers and Assistant Directors of Agriculture.

2. Association of the dependent variable with the independent variables

Results of the Kruskal-Wallis analysis of variance test

As detailed elsewhere, the gain in the professional knowledge of the respondents consequent to their exposure to the respective training programmes was treated as the dependent variable and the selected characteristics of the respondents were treated as the independent variables for the study. An effort was made to ascertain the association between the dependent and independent variables by subjecting the data to Kruskal-Wallis analysis of variance test and the results are presented in Table 2.

It is evident from the data in Table 2 that there was significant association between the educational qualification and gain in knowledge of the Agricultural Demonstrators. But in the case of Agricultural Officers and Assistant Directors, the educational qualification was not found to be associated with their gain in knowledge. During data collection, it was found that the Agricultural Demonstrators showed wide variation in their educational backgrounds ranging from S.S.L.C. to graduation. This variation in educational background will reflect in their ability of comprehension. A highly educated person will

Table 2. Results of Kruskal-Wallis analysis of variance test

Sl. No.	Independent variable	Association with mean gain in knowledge		
		Agricultural Demonstrators (n = 32)	Agricultural Officers (n = 30)	Assistant Directors (n = 19)
1	Age	0.88 <sup>NS</sup>	1.987 <sup>NS</sup>	1.68 <sup>NS</sup>
2	Education	12.38**	2.81 <sup>NS</sup>	-
3	Total experience	4.34 <sup>NS</sup>	2.96 <sup>NS</sup>	2.53 <sup>NS</sup>
4	Experience in T & V System	0.961 <sup>NS</sup>	4.45 <sup>NS</sup>	0.61 <sup>NS</sup>
5	Previous trainings undergone	15.35**	2.89 <sup>NS</sup>	2.6 <sup>NS</sup>
6	Attitude towards Extension profession	9.08*	2.35 <sup>NS</sup>	0.75 <sup>NS</sup>
7	Job satisfaction	6.745*	2.35 <sup>NS</sup>	1.57 <sup>NS</sup>
8	Attitude towards T & V System	4.172 <sup>NS</sup>	3.34 <sup>NS</sup>	0.13 <sup>NS</sup>
9	Workload situation	0.08 <sup>NS</sup>	0.56 <sup>NS</sup>	1.13 <sup>NS</sup>

\* Significant at 5% level of probability

\*\* Significant at 1% level of probability

NS Not significant

definitely have better comprehension of the things taught to him in a training situation as compared to a person who is less educated. This would lead to the variation in the gain in knowledge of the respondents who had different educational background. Therefore, it could be explained that the association between the level of education and gain in knowledge as indicated in the case of Agricultural Demonstrators was only natural. Similar results were reported by Patel and Somasundaram (1974) and Kalaichelvan (1984). But this finding is in dissonance with the findings of Joshi (1980) who reported that there was no significant association between education and gain in knowledge of the Village Level Workers. In the case of Agricultural Officers and Assistant Directors the variable, education was not found to be associated with their gain in knowledge. Majority of the respondents belonging to these two categories were homogenous in their educational status. The lack of association between the independent variable - (without variation) - and the dependent variable - (with variation) - can be explained on the basis of this statistical reason.

The number of previous trainings undergone by the Agricultural Demonstrators showed significant association with their gain in knowledge. The respondents belonging to this category showed variation in the number of previous

trainings undergone since there were both the fresh recruits as well as the experienced hands. The number of trainings undergone by the persons with more experience, was more than the number of trainings undergone by the freshers. Those who had participated in more number of trainings showed more gain in knowledge than those who had attended only few trainings. This can be explained on the basis of the fact that the Agricultural Demonstrators who had participated in more number of trainings might have got accustomed to the training situation and they will be able to make use of the available opportunity to gain more knowledge than their fellow Demonstrators with exposure to fewer trainings. This finding is in agreement with the finding of Kalaichelvan (1984) who established positive and significant association between the number of previous trainings undergone and the gain in knowledge.

The attitude of the Agricultural Demonstrators towards extension profession was found to be associated with their gain in knowledge. Those Agricultural Demonstrators who were freshers in the field of extension work might have felt frightened due to the challenging and demanding nature of the profession and developed an unfavourable attitude towards it. But those who were more exposed to the extension work might have developed a more favourable attitude towards their job. This variation in their attitudes resulted in

an association between the attitude towards extension profession and their gain in knowledge.

The variable job satisfaction of Agricultural Demonstrators was found to be associated with their gain in knowledge. Job satisfaction is a product of the type of job as such and the environmental situations in which the job has to be performed. Those who had better job satisfaction would like their job and would try to perform their job in better ways. The training offered to them will facilitate in providing more knowledge with which they can perform their duties in an effective manner. Thus, the respondents with more job satisfaction had more gain in knowledge compared to the respondents with less job satisfaction. The above mentioned facts explain the association between the job satisfaction of Agricultural Demonstrators and their gain in knowledge.

All the other independent variables such as 'age', 'total experience', 'experience in Training and Visit System', 'attitude towards Training and Visit System' and 'workload situation' did not show significant association with the gain in knowledge in the case of Agricultural Demonstrators.

The Agricultural Officers and Assistant Directors were almost identical in their response with respect to the

independent variables, and therefore the variations in the independent variables were not significant. This will explain why there was no significant association between the dependent variable - gain in knowledge of the two categories of the respondents - and the independent variables.

### 3. Perception about the treatment and utility of the training programmes

A measure of the adequacy of coverage of different topics dealt with in the training and their usefulness was taken by calculating the treatment-utility indices of the training programmes. The treatment of the topics and their usefulness were measured separately by calculating the mean treatment and utility scores for each topic.

#### 3.1. Perception about the treatment of the topics dealt with in the training for the Agricultural Demonstrators

A perusal of Table 3.1 shows the respondents' perception about the treatment of the topics dealt with in the 'Training in plant protection' as perceived by the Agricultural Demonstrators.

The adequacy of coverage of the topics mostly depends on the efficiency of the trainer. A well prepared trainer

**Table 3.1. Perception about the treatment of the topics dealt with in the training for the Agricultural Demonstrators** n = 32

Sl. No.	Topics	Mean score for treatment	Rank
1	Importance of pest control in crop production - symptoms of damages	3.22	2
2	Principles and methods of pest control	3.38	1
3	Major pests of paddy	2.81	14
4	Major pests of coconut	3.19	3
5	Major pests of fruits	2.72	17
6	Chemical control of pests	2.94	10
7	Synthetic insecticides	2.75	15.5
8	Integrated pest management	3.16	4
9	Study of the pests of pulses and vegetables	2.84	13
10	Identification of pests of plantation crops, spices and fruits	2.75	15.5
11	Non-insect pests - rodents - nature of damages and control	2.56	18
12	Plant protection equipment operation and maintenance	3.06	6.5
13	Importance of plant diseases	3.09	5
14	Principles of plant disease control	3.06	6.5
15	Control of plant diseases by chemicals	2.97	9
16	Preparation and use of fungicides	3.03	8
17	Soil borne and seed borne diseases	2.91	11
18	Major disease problems of Kerala and their causes identification and control	2.88	12

can cover the assigned topic with in the limited period of time in such a way as to give maximum benefit to the trainees.

Out of the eighteen topics covered in the 'Training in plant protection' the Agricultural Demonstrators perceived the topic 'Principles and methods of pest control' as most adequately covered. 'Importance of pest control in crop production - symptoms and damages' was the next best covered topic in the training. Apart from this, the topics 'Major pests of coconut' (3rd rank) and 'Integrated pest management' (4th rank) were also perceived to be adequately covered by the trainers.

The topic 'Non-insect pests-rodents nature of damages and control' (18th rank) was perceived as the most inadequately covered topic in the training. Similarly, the topics 'Major pests of fruits' (17th rank), 'Synthetic insecticides' (rank value 15.5) and 'Identification of pests of plantation crops, spices and fruits' (rank value 15.5) were also inadequately treated according to the respondents.

### 3.2. Perception about the utility of the topics dealt with in the training for the Agricultural Demonstrators

The topics dealt with in the 'training in plant protection' were assessed for their utility as perceived by

**Table 3.2. Perception about the utility of the topics dealt with in the training for the Agricultural Demonstrators**  
n = 32

<b>Sl. No.</b>	<b>Topics</b>	<b>Mean score for utility</b>	<b>Rank</b>
1	Importance of pest control in crop production - symptoms of damages	3.28	1
2	Principles and methods of pest control	3.25	2
3	Major pests of paddy	2.94	12.5
4	Major pests of coconut	3.13	6
5	Major pests of fruits	2.91	14.5
6	Chemical control of pests	3.03	8.5
7	Synthetic insecticides	2.75	16
8	Integrated pest management	3.19	3.5
9	Study of the pests of pulses and vegetables	2.97	10.5
10	Identification of pests of plantation crops, spices and fruits	2.69	17
11	Non-insect pests - rodents - nature of damages and control	2.66	18
12	Plant protection equipment - operation and maintenance	3.19	3.5
13	Importance of plant diseases	3.13	6
14	Principles of plant disease control	3.13	6
15	Control of plant diseases by chemicals	2.94	12.5
16	Preparation and use of fungicides	3.03	8.5
17	Soil borne and seed borne diseases	2.97	10.5
18	Major disease problems of Kerala and their causes identification and control	2.91	14.5
	Overall mean	3.01	

the Agricultural Demonstrators and the results are furnished in Table 3.2.

Data in Table 3.2 indicate that the topic 'Importance of pest control in crop production - symptoms and damages' was the topic which was perceived by the Agricultural Demonstrators as having the highest utility. The 2nd rank, with respect to utility was given to the topic 'Principles and methods of pest control'. The topics 'Integrated pest management' and 'Plant protection equipment - operation and maintenance' were also perceived as having high utility for which the rank value given was 3.5 each.

The most inadequately treated topic, namely, 'Non-insect pests - rodents - nature of damages and control' was perceived as the least useful topic by the trainees for which the utility rank given was 18th. The 17th and 16th ranks were given to the topics 'Identification of pests of plantation crops - spices and fruits' and 'Synthetic insecticides'.

### 3.3. Treatment-utility indices of the topics dealt with in the training for the Agricultural Demonstrators

Table 3.3 relates to the results of cumulative ratings of the topics on their treatment and utility dimensions by the Agricultural Demonstrators.

**Table 3.3. Treatment - Utility Indices of the topics dealt with in the training for the Agricultural Demonstrators (n = 32)**

Sl. No.	Topic	Treatment Utility index	Rank
1	Importance of pest control in crop production - Symptoms of damages	68.35	2
2	Principles and Methods of pest control	69.92	1
3	Major pests of paddy	54.29	14
4	Major pests of coconut	64.84	5
5	Major pests of fruits	51.76	15
6	Chemical control of pests	58.20	9
7	Synthetic insecticides	50.78	16
8	Integrated pest management	65.23	3
9	Study of the pests of pulses and vegetables	55.08	12
10	Identification of pests of plantation crops, spices and fruits	49.02	17
11	Non-insect pests - rodents - nature of damages and control	47.07	18
12	Plant protection equipment - operation and maintenance	65.04	4
13	Importance of plant diseases	62.70	6
14	Principles of plant disease control	61.72	7
15	Control of plant diseases by chemicals	57.23	10
16	Preparation and use of fungicides	60.16	8
17	Soil borne and seed borne diseases	56.05	11
18	Major disease problems of Kerala and their causes, identification and control	54.30	13
Overall mean		58.43	

Data in Table 3.3 show that the overall mean of the treatment-utility indices of the eighteen topics was 58.43 while the maximum possible was 100. The treatment-utility indices of the different topics ranged from 47.07 to 69.92. This indicates that some topics were treated adequately which were very useful while some of them were treated inadequately which were not useful. The treatment-utility index of the individual topics depends on the efficiency of the trainer who handled the classes.

The topics 'Principles and methods of pest control', 'Importance of pest control in crop production - symptoms of damages' and 'Integrated pest management' were accorded the top three ranks respectively on the treatment and utility dimensions by the respondents.

The treatment-utility indices were the lowest for the topics 'Non-insect pests - rodents - nature of damages and control' (18th rank), 'Identification of pests of plantation crops, spices and fruits' (17th rank) and the 'Synthetic insecticides' (16th rank).

#### 3.4. Perception about the treatment of the topics dealt with in the training for the Agricultural Officers

The Agricultural Officers were asked to indicate their perception about the treatment (coverage) of the topics

**Table 3.4. Perception about the treatment of the topics dealt with in the training for the Agricultural Officers (n = 30)**

Sl. No.	Topic	Mean score for treatment	Rank
1	Pulses and oil seeds production possibilities and constraints in Kerala	3.13	3.5
2	Sesamum varieties and management practices	2.80	12
3	Cowpea varieties and management practices	2.87	10
4	Varieties and management practices of pulses other than cowpea	2.67	14
5	Diseases of pulses crops and their control	2.93	7.5
6	Bio-fertilizers for pulses	3.10	5
7	Nitrogen economy of cropping systems with pulses	2.80	12
8	Varieties and management practices of sunflower and groundnut	2.33	17
9	Plant protection in oilseed crops	2.53	15
10	Pulse production in command area	2.93	7.5
11	Pests of pulses and oilseed crops and their control	2.40	16
12	Crop improvement in pulses and oilseeds in Kerala	2.97	6
13	Symbiotic nitrogen fixation and factors affecting it	3.13	3.5
14	Pulses in rice based cropping system	2.80	12
15	Nutritive value of pulses and oil seeds	3.47	1
16	Fertilizer management of oil seed crops	2.90	9
17	Extension strategies for pulses oil seeds production	3.20	2
	Overall mean	2.88	

dealt with in the 'training in pulses and oilseeds production technology' and the results are furnished in Table 3.4.

On an examination of the results in Table 3.4, it is evident that the respondents had perceived the topics 'Nutritive value of pulses and oilseeds', 'Extension strategies for pulses and oilseeds production', 'Pulses and oilseed production - possibilities and constraints in Kerala' and 'Symbiotic nitrogen fixation and factors affecting it' as the most adequately covered topics in their rank order.

The most inadequately covered topics as perceived by the Agricultural Officers were 'varieties and management practices of sunflower and groundnut' (17th rank), 'Pests of pulses and oilseed crops and their control' (16th rank), and 'Plant protection in oilseed crops' (15th rank).

### 3.5. Perception about the utility of the topics dealt with in the training for the Agricultural Officers

The topics dealt with in the 'training in pulses and oilseeds production technology' were assessed for their utility as perceived by the Agricultural Officers and the results are given in Table 3.5.

A cursory glance at the data in Table 3.5 brings to focus some interesting findings. The topic 'Nutritive value of the pulses and oilseeds' which was ranked first for

**Table 3.5. Perception about the utility of the topic dealt with in the training for the Agricultural Officers (n = 30)**

Sl. No.	Item	Mean score for utility	Rank
1	Pulses and oil seeds production possibilities and constraints in Kerala	3.47	2
2	Sesamum varieties and management practices	3.27	6
3	Cowpea varieties and management practices	3.30	5
4	Varieties and management practices of pulses other than cowpea	3.00	13
5	Diseases of pulse crops and their control	3.17	8
6	Bio-Fertilizers for pulses	3.23	7
7	Nitrogen economy of cropping systems with pulses	3.10	9
8	Varieties and management practices of sunflower and groundnut	2.93	14
9	Plant protection in oil seeds crops	2.13	17
10	Pulse production in command area	3.03	12
11	Pests of pulses and oil seed crops and their control	2.83	16
12	Crop improvement in pulses and oil seeds in Kerala	2.87	15
13	Symbiotic Nitrogen fixation and factors affecting it	3.43	3.5
14	Pulses in rice based cropping system	3.07	10.5
15	Nutritive value of pulses and oil seeds	3.53	1
16	Fertilizer management of oil seed crops	3.07	10.5
17	Extension strategies for increasing pulses and oil seeds production	3.43	3.5
Overall mean		3.11	

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its treatment aspect, also was the foremost when the utility dimension was considered. 'Pulses and oilseeds production possibilities and constraints in Kerala' was the topic which was placed as 2nd for its utility when compared to other topics. The topics 'Symbiotic nitrogen fixation and factors affecting it' and 'Extension strategies for increasing pulses and oilseeds production' were also ranked as highest in their utility dimension for which the rank value given were 3.5 each.

The lowest utility rank was given for the topic 'Plant protection in oilseed crops'. The topic 'Pests of pulses and oilseed crops and their control' was given 16th rank with respect to its utility for which the treatment rank was also the same. 'Crop improvement in pulses and oilseeds in Kerala (15th rank)' and 'Varieties and management practices of sunflower and groundnut' (14th rank) were also perceived as low on their utility dimension.

### 3.6. Treatment-utility indices of the topics dealt with in the training for the Agricultural Officers

The treatment-utility indices of the topics dealt with in the training for the Agricultural Officers are presented in Table 3.6.

**Table 3.6. Treatment - Utility Indices of the topics dealt with in the training for the Agricultural Officers (n = 30)**

<b>Sl. No.</b>	<b>Topics</b>	<b>Treatment utility index</b>	<b>Rank</b>
1	Pulses and oil seeds production possibilities and constraints in Kerala	68.75	3.5
2	Sesamum varieties and management practices	58.33	8
3	Cowpea varieties and management practices	58.75	6.5
4	Varieties and management practices of pulses other than cowpea	51.67	14
5	Diseases of pulse crops and their control	60.63	5
6	Bio-Fertilisers for pulses	54.17	12.5
7	Nitrogen economy of cropping systems with pulses	56.25	10
8	Varieties and management practices of sunflower and groundnut	44.17	17
9	Plant protection in oilseed crops	50.63	15
10	Pulse production in command area	58.75	6.5
11	Pests of pulses and oilseed crops and their control	44.58	16
12	Crop improvement in pulses and oil seeds in Kerala	54.17	12.5
13	Symbiotic Nitrogen fixation and factors affecting it	68.75	3.5
14	Pulses in rice based cropping system	55.21	11
15	Nutritive value of pulses and oil seeds	77.71	1
16	Fertiliser management of oil seed crops	57.29	9
17	Extension strategies for increasing pulses and oil seeds production	70.83	2
<b>Overall mean</b>		<b>58.27</b>	

The data in Table 3.6 indicate that the overall mean of the treatment-utility indices was 58.27 and the treatment-utility indices of the seventeen topics ranged from 44.17 to 77.71.

The highest treatment-utility index was for the topic 'Nutritive value of pulses and Oilseeds' followed by 'Extension strategies for increasing pulses and oilseeds production' (2nd rank). The topics 'Pulses and oilseeds production possibilities and constraints in Kerala' and 'Symbiotic Nitrogen fixation and factors affecting it' were also having high treatment-utility indices compared to other topics for which the rank values given were 3.5 each.

The treatment-utility indices were the lowest for the topics 'Varieties and management practices of sunflower and groundnut' (17th rank), 'Pests of pulses and oilseed crops and their control' (16th rank) and 'Plant protection in oilseed crops' (15th rank).

### 3.7. Perception about the treatment of the topics dealt with in the training for Assistant Directors

The topics dealt with in the 'training in audio-visual aids and techniques' were assessed for their treatment (coverage) as perceived by the Assistant Directors and the results are given Table 3.7.

**Table 3.7. Perception about the treatment of the topics dealt with in the training for Assistant Directors (n = 19)**

Sl. No.	Item	Mean score for treatment	Rank
1	Introduction to audio-visual aids and communication media (Theory)	2.68	11.5
2	Classification and study of audio-visual aids (Theory)	2.84	6.5
3	Role of mass media in dissemination of agricultural information, types of information materials (Theory)	2.84	6.5
4	Role of mass media in dissemination of agricultural information, types of information materials (Practicals)	2.68	11.5
5	Writing script for information materials (Theory)	3.95	1
6	Writing script for information materials (Practicals)	2.84	6.5
7	Non projected visual aids (Theory)	2.84	6.5
8	Non projected visual aids (Practicals)	2.79	9.5
9	Basic principles in photography (Theory)	1.84	18.5
10	Practical hints in photography (Practicals)	1.84	18.5
11	Preparation of slides and slide story (Theory)	2.47	14.5
12	Preparation of slides and slide story (Practicals)	2.16	17
13	Projected visual aids (Theory)	2.47	14.5
14	Handling and operation of projected visual aids (Practicals)	2.21	16
15	How to give a radio talk (Theory)	2.89	4
16	How to prepare visual aids (Theory)	2.79	9.5
17	Three dimensional visual aids (Theory)	2.63	13
18	Oral communication and public address system (Theory)	3.26	2
19	Oral communication and public address system (Practicals)	3.11	3
	Overall mean	2.70	

A perusal of the Table 3.7 shows that the topic 'writing script for information materials (Theory)' was adequately covered in the training as perceived by the Assistant Directors. The second and third ranks with regard to the treatment of the topics were given to 'Oral communication and public address system (Theory)' and 'Oral communication and public address system (Practicals)' respectively.

The topics 'Basic principles in photography (Theory)' and 'Practical hints in photography (Practicals)' were perceived as the most inadequately covered topics in the training, for which the rank values given were 18.5 each. Similarly, the topics 'Preparation of slides and slide story (Practicals)' (17th rank) and 'Handling and operation of projected visual aids (Practicals)' (16th rank) were also inadequately treated, according to the respondents.

### 3.8. Perception about the utility of the topics dealt with in the training for Assistant Directors

The respondents were asked to indicate their perception about the utility of the topics dealt with in the 'training in audio-visual aids and techniques' and the results are shown in Table 3.8.

**Table 3.8. Perception about the utility of the topics dealt with in the training for Assistant Directors (n = 19)**

Sl. No.	Item	Mean score	Rank for utility
1	Introduction to audio-visual aids and communication media (Theory)	3.16	8
2	Classification and study of audio-visual aids (Theory)	3.21	5.5
3	Role of mass media in dissemination of agriculture information types of information materials (Theory)	3.11	10.5
4	Role of mass media in dissemination of agriculture information types of information materials (Practicals)	3.05	12
5	Writing script for information materials (Theory)	3.21	5.5
6	Writing script for information materials (Practicals)	3.16	8
7	Non projected visual aids (Theory)	3.26	3.5
8	Non projected visual aids (Practicals)	3.16	8
9	Basic principles in photography (Theory)	2.42	18
10	Practical hints in photography (Practicals)	2.37	19
11	Preparation of slides and slide story (Theory)	2.74	16
12	Preparation of slides and slide story (Practicals)	2.58	17
13	Projected visual aids (Theory)	2.84	15
14	Handling and operation of projected visual aids (Practicals)	2.95	14
15	How to give a radio talk (Theory)	3.26	3.5
16	How to prepare visual aids (Theory)	3.11	10.5
17	Three dimensional visual aids (Theory)	3.00	13
18	Oral communication and public address system (Theory)	3.47	1
19	Oral communication and public address system (Practicals)	3.37	2
Overall mean		3.02	

The data in Table 3.8 revealed that generally, the topics with higher treatment mean scores were having higher utility mean scores also. The topics 'Oral communication and public address system (Theory)' and 'Oral communication and public address system (Practicals)' were given 1st and 2nd ranks with respect to their utility. A rank value of 3.5 was given for the topics 'How to give a radiotalk (Theory)' and 'Non-projected visual aids (Theory)' based on their utility.

The most inadequately treated topics namely, 'Practical hints in photography (Practicals)' and 'Basic principles in photography (Theory)' were also perceived as the least useful topics by the trainees for which the utility ranks given were 19th and 18th respectively. The utility mean scores of the topics 'Preparation of slides and slide story (Theory)' (16th rank) and 'Preparation of slides and slide story (Practicals)' (17th rank) were also low when compared to other topics dealt with in the training.

### 3.9. Treatment-utility indices of the topics dealt with in the training for the Assistant Directors

The cumulative ratings of the topics dealt with in the 'training in audio-visual aids and techniques' on their treatment and utility dimensions as perceived by the respondents are furnished in Table 3.9.

**Table 3.9. Treatment-utility indices of the topics dealt with in the training for Assistant Directors (n = 19)**

Sl. No.	Topic	Treatment utility index	Rank
1	Introduction to audio-visual aids and communication media (Theory)	54.28	11
2	Classification and study of audio-visual aids (Theory)	57.89	6
3	Role of mass media in dissemination of agricultural information types of information materials (Theory)	55.92	8.5
4	Role of mass media in dissemination of agricultural information types of information materials (Practicals)	51.97	12
5	Writing script for information materials (Theory)	60.53	3
6	Writing script for information materials (Practicals)	57.24	7
7	Non projected visual aids (Theory)	58.85	5
8	Non projected visual aids (Practicals)		
9	Basic principles of photography (Theory)	28.95	18
10	Practical hints in photography (Practicals)	28.29	19
11	Preparation of slides and slide story (Theory)	42.11	15
12	Preparation of slides and slide story (Practicals)	35.20	17
13	Projected visual aids (Theory)	44.74	14
14	Handling and operation of projected visual aids (Practicals)	41.45	16
15	How to give a radio talk (Theory)	60.20	4
16	How to prepare visual aids (Theory)	54.61	10
17	Three dimensional visual aids (Theory)	50.99	13
18	Oral communication and public address system (Theory)	71.71	1
19	Oral communication and public address system (Practicals)	66.12	2
	Overall mean	51.42	

A perusal of the data in Table 3.9 gives a general idea about the respondents' perception about the treatment and utility of the topics dealt with in the 'training in audio-visual aids and techniques'. The overall mean of the treatment-utility indices of the 19 topics dealt with the training was 51.42 and the mean treatment-utility indices ranged from 28.29 to 71.71.

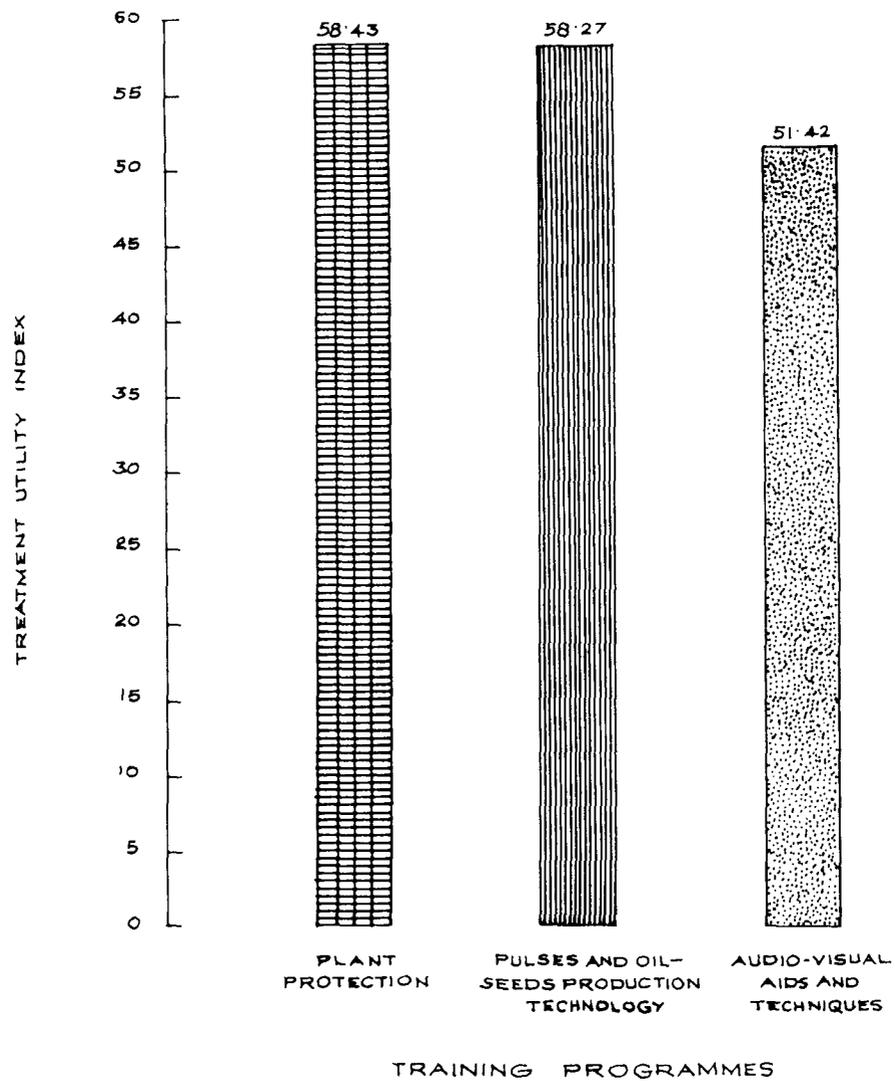
The highest treatment-utility index was for the topic 'Oral communication and public address system (Theory)' followed by 'Oral communication and public address system (Practicals)' (2nd rank) and the 3rd rank with respect to the treatment-utility index was given for the topic 'Writing script for information materials (Theory)'.

The treatment-utility indices were the lowest for the topics 'Practical hints in photography (Practicals)' (19th rank), 'Basic principles of photography (Theory)' (18th rank) and 'Preparation of slides and slide story (Practicals)' (17th rank).

The treatment-utility indices of the three training programmes namely 'Training in plant protection', 'Training in pulses and oilseeds production technology' and 'Training in audio-visual aids and techniques' were 58.43, 58.27 and 51.42 respectively (Fig.3). The highest treatment-utility

index was for 'training in plant protection' which was offered for the Agricultural Demonstrators. Next to this was the 'training in pulses and oilseeds production technology' offered for the Agricultural Officers. Comparing the three training programmes, the treatment-utility index was the lowest for the 'training in audio-visual aids and techniques for the Assistant Directors'. This shows that as the cadre goes to the higher level of hierarchy, the treatment-utility indices of the training programmes show a declining trend. This could be explained by the following reasons. The Agricultural Demonstrators who are the extension personnel in the lowest cadre in the Department of Agriculture might be having higher expectations about the training institutions as well as about the competency of the trainers in the training institutions. They considered the trainers in the KAU as highly competent and superior to them in knowledge. Therefore, the Demonstrator trainee perceived the treatment and utility of the topics handled by them in the training as high. The Agricultural Officers had the next best perception about the treatment and utility of the topics dealt with in the training. It is interesting to note that majority of the Agricultural Officer participants of the training had completed their basic degree from the KAU. They were familiar with most of the trainers in the KAU. They respect the

FIG. 3. TREATMENT-UTILITY INDICES OF THE THREE TRAINING PROGRAMMES.



trainees had towards the trainers as their teachers would have prompted the Agricultural Officer trainees to rate the topics in the training programme fairly high in the ladder of treatment-utility.

The third category of respondents namely Assistant Directors of Agriculture had given 51.42 as the treatment-utility index for their training which is lesser than the treatment-utility indices of the other two training programmes. This category of trainees are having more experience, more exposure to field situations and many of them are as old as the trainers or older than the trainers in the training institutions. These Officer trainees demanded better treatment of the topics by the trainers to match the expertise and experience of the trainees. Probably, the matching of expectations of the trainees with the expertise of the trainers left a little more to be desired and therefore, the ratings might have gone down.

#### 4. Perception about the training methodology

##### 4.1. Perception about the training methodology - Pre-training stage

The respondents belonging to all the three categories namely Agricultural Demonstrators, Agricultural Officers and Assistant Directors were asked to indicate their perception

about the training methodology followed in the three stages of training namely, pre-training stage, in-training stage and post-training stage.

Data in Table 4.1 reveal the respondents' perception about the training methodology in the pre-training stage.

The Agricultural Demonstrators had relatively better perception about the training methodology aspects namely 'Timeliness of information about the training', 'Preparation of schedule of classes and 'Selection of subject matter for training', in that order. But they had very low perception about the 'Selection of venue for training' for which the mean perception score was the lowest. The 7th and 6th ranks with respect to the perception of the respondents was for the training methodology aspects namely 'Selection of duration of training' and 'Selection of practicals for training'.

The Agricultural Officers had high perception about the training methodology aspects namely 'Selection of subject matter for training', 'Selection of practicals for training' and 'Selection of topics for training'. 'Selection of duration of training', 'Selection of venue for training' and 'Preparation of schedule of classes' were the topics for which the Agricultural Officers had low perception.

**Table 4.1. Perception about the training methodology pre-training stage**

Sl. No.	Training methodology aspect	Agricultural Demonstrators (n = 32)		Agricultural Officers (n = 30)		Assistant Directors (n = 19)	
		Mean perception score	Rank	Mean perception score	Rank	Mean perception score	Rank
1	Timely information about the training	3.97	1	3.70	4	3.74	1.5
2	Preparation of schedule of classes	3.81	2	3.40	6.5	3.11	6
3	The selection of subject matter for training	3.78	3	3.93	1.5	3.68	3.5
4	The selection of topics for training	3.75	4.5	3.83	3	3.74	1.5
5	Preparation of training notes	3.75	4.5	3.63	5	1.79	8
6	The selection of practicals for training	3.56	6	3.93	1.5	2.95	7
7	The selection of duration of training	3.53	7	2.47	8	3.16	5
8	The selection of venue for training	2.09	8	3.40	6.5	3.68	3.5
	Mean	3.53		3.54		3.23	

The Assistant Directors of Agriculture had high perception about the 'Timeliness of information about the training' and 'Selection of topics for training' for which the rank value given was 1.5 each. They also had high perception about the 'Selection of subject matter for training' (rank value 3.5) and the 'Selection of venue for training' (rank value 3.5). The 'Preparation of training notes', 'Selection of practicals for training' and 'Preparation of schedule of classes were not to the liking of the Assistant Directors for which they had given the 8th, 7th and 6th ranks respectively.

In general, the 'Selection of subject matter for training' was appreciated by all the three categories of respondents namely Agricultural Demonstrators, Agricultural Officers and Assistant Directors.

The 'Selection of topics for training' was also perceived as equally good by all the three categories of respondents. The Agricultural Demonstrators and Agricultural Officers had better perception about the 'Preparation of training notes' compared to the Assistant Directors. The Agricultural Officers had perceived the 'Selection of practicals for training' as extremely good (rank value 1.5). This reflects the care taken by the Course Directors concerned while formulating the practical sessions. This

was not observed in the case of Agricultural Demonstrators and Assistant Directors. All the three categories of respondents perceived the 'duration of training' as equally bad, and they opined that the duration of training was inadequate. Regarding the selection of venue for the trainings, when the Assistant Directors endorsed the selected venue (rank value 3.5) the Agricultural Demonstrators and Agricultural Officers denounced it (rank 8th and rank value 6.5 respectively).

Regarding the 'training in plant protection' it was evident that the Course Director had taken care to give timely information to the trainees about the training and to select appropriate subject matter for the training. The schedule of classes prepared by him was also appreciated. But the selection of venue, duration and practical classes were not properly done according to the Agricultural Demonstrator-respondents.

In the case of 'training in pulses and oilseeds production technology' the 'Selection of subject matter', 'Selection of practicals' and 'Selection of topics for training' were highly appreciated by the Agricultural Officer-respondents. But the trainees opined that the 'Selection of duration of training', 'Selection of venue for training' and the 'Preparation of schedule of classes'

were not adequately taken care of by the Course Directors.

The selection of topics for the 'training in audio-visual aids and techniques' was highly perceived by the Assistant Directors. It was also evident that the trainees were given timely information about the training. The subject matter and venue selected for the 'training in audio-visual aids and techniques' were also appreciated by the Assistant Director-respondents.

#### 4.2. Perception about the training methodology - in-training stage

The data relating to the respondents' perception about the training methodology aspects of the in-training stage are given in Table 4.2.

The results in Table 4.2 indicate that out of the thirteen training methodology aspects, the Agricultural Demonstrators had highest perception about the 'competency of the trainers'. The 'training method followed by trainers' was given 2nd rank by the Agricultural Demonstrators. Other training methodology aspects for which the Agricultural Demonstrators had given high perception scores were 'seating arrangements in the training hall' (3rd rank), 'Quality of audio-visual aids used by trainers' (rank value 4.5) and

**Table 4.2. Perception about the training methodology in training stage**

Sl. No.	Training methodology aspect	Agricultural Demonstrators (n = 32)		Agricultural Officers (n = 30)		Assistant Directors (n = 19)	
		Mean perception score	Rank	Mean perception score	Rank	Mean perception score	Rank
1	The competency of the trainers in general	4.09	1	3.97	2	3.21	8
2	Training method followed by trainers	3.78	2	3.47	8	3.32	4
3	Seating arrangements in the training hall	3.72	3	3.77	5.5	2.89	11
4	Quality of audio-visual aids used by trainers	3.69	4.5	2.9	10	3.26	6.5
5	Lighting arrangements in the training hall	3.69	4.5	3.83	3.5	2.63	12
6	Treatment of subject matter by trainers	3.66	6.5	3.67	7	3.26	6.5
7	Opportunities for clarification of doubts	3.66	6.5	4.00	1	3.32	4
8	Availability of teaching aids	3.63	8	3.10	9	3.32	4
9	Opportunities for trainees participation	3.59	9.5	3.77	5.5	3.58	1
10	Opportunities for field visits	3.59	9.5	2.17	13	1.58	13
11	Use of Audio-visual aids by trainers	3.53	11	2.87	11	3.37	2
12	Opportunities for skill practice	3.5	12	2.3	12	3.11	9
13	Ventilation provided in the training hall	2.66	13	3.83	3.5	2.95	10
	Mean	3.60		3.36		3.06	

'Lighting arrangements in the training hall' (rank value 4.5). But they had very low perception about 'the ventilation provided in the training hall' (13th rank) for which the mean perception score was the lowest. The 12th rank was assigned to the training methodology aspect namely 'Opportunities for skill practice'. Eventhough, the Agricultural Demonstrators had evaluated the 'Quality of audio-visual aids used by the trainers' (rank value 4.5) as good, they had low perception about the 'Use of audio-visual aids by trainers' (11th rank). This gave evidence to the fact that the trainers had not taken enough pains to utilise the available audio-visual aids in the proper way to support the presentation of the topics by them.

The Agricultural Officers had high perception about the training methodology aspects namely 'Opportunities for clarification of doubts', and the 'Competency of the trainers in general'. They appreciated the lighting arrangements as well as the ventilation provided in the training hall. They were not satisfied with the training methodology aspects namely, 'Opportunities for field visits', 'Opportunities for skill practice' and the 'Use of audio-visual aids by trainers'.

The Assistant Directors of Agriculture had perceived the 'Opportunities for trainees participation' and the 'Use

of Audio-visual aids by trainers' as good. They had given equally higher rating for the training methodology aspects namely 'Training method followed by trainers', 'availability of teaching aids' and 'Opportunities for clarification of doubts' (rank value 4 each). 'Opportunities for field visits', 'Lighting arrangements in the training hall' and 'Seating arrangements in the training hall' were not appreciated by the Assistant Directors of Agriculture for which they had given 13th, 12th and 11th ranks respectively.

Comparing the three training programmes, the trainers who took classes for the 'training in plant protection' were perceived to be competent to cover the topics assigned to them adequately. The Agricultural Officers also perceived the trainers who took classes in the 'training in pulses and oilseeds production technology' as adequately competent. But the Assistant Directors had very poor perception about the competency of the trainers who took classes for the 'training in audio-visual aids and techniques'. 'Training method followed by the trainers' was equally appreciated by Agricultural Demonstrators and Assistant Directors, but the Agricultural Officers did not endorse this. The 'Opportunities for field visits' and 'Opportunities for skill practice' were the aspects which were not well perceived by all the

three categories of respondents. 'Use of audio-visual aids by the trainers was not appreciated by the Agricultural Officers and Agricultural Demonstrators, but the Assistant Directors had high perception about the use of audio-visual aids by the trainers. This might be due to the fact the subject matter for the training of Assistant Directors was 'Audio-visual aids and techniques'. 'Opportunities for clarification of doubts' was perceived differently by the three categories of respondents. The Agricultural Officers had given the 1st rank for the particular training methodology aspect in the in-training stage while the Assistant Directors assigned the 4th rank for it and the Agricultural Demonstrators had given a rank value 6.5 for this particular training methodology aspect. This pattern of results in this context could be attributed to the homophily-heterophily nature existing between the trainees on the one hand and the trainers on the other. This will also explain why the three categories of respondents differed in their perception about the 'Opportunities for trainees participation.

Thus, in the 'training in plant protection' the trainers were perceived to be competent to handle the classes and that they used proper training methods to present the assigned topics to them. The Course Director

of the training took enough care to provide the trainees a training hall with good seating and lighting arrangements. The trainers were provided with good quality audio-visual aids for supporting their classes. It was also pertinent to note that the trainees were not provided with adequate opportunities for skill practice and field visits. The use of audio-visual aids by trainers in the 'training in plant protection' was also not appreciated by the trainees.

The trainees who participated in the 'training in pulses and oilseeds production technology' were provided with adequate opportunities for the clarification of their doubts. The trainees also had higher perception about the competency of the trainers who took classes for them. The opportunities for field visits and skill practice provided for the Agricultural Officers were not to their liking. As in the case of Agricultural Demonstrators, the Agricultural Officers also had low perception about the use of audio-visual aids by the trainers who took classes in the 'training in pulses and oilseeds production technology'.

In the case of 'training in audio-visual aids and techniques' the opportunities provided for the trainees participation' in the training was highly appreciated by the trainees. The trainees also had a high perception about the 'use of audio-visual aids by the trainers'. The 'availability

of teaching aids', 'the training method followed by the trainers' as well as the 'Opportunities provided for clarification <sup>of</sup> doubts' were highly appreciated by the trainees who participated in the 'training in audio-visual aids and techniques'.

#### 4.3. Perception about the training methodology - post-training stage

The respondents perception about the post-training methodology aspects are given in Table 4.3.

The results in Table 4.3 point out that out of the three post-training aspects of the training programme, all the three categories of respondents namely the Agricultural Demonstrators, Agricultural Officers and Assistant Directors of Agriculture had highest perception about 'Monitoring and evaluation of training'. This particular aspect of the training programme is very important because monitoring and evaluation will help in getting feed back from the trainees which inturn will help to streamline the training programme.

The Agricultural Officers and Assistant Directors were not supplied with the training literature. So they had lowest perception about the supply of training notes compared to the Agricultural Demonstrators.

**Table 4.3. Perception about the training methodology post-training stage**

Sl. No.	Training methodology aspect	Agricultural Demonstrators (n = 32)		Agricultural Officers (n = 30)		Assistant Directors (n = 19)	
		Mean perception score	Rank	Mean perception score	Rank	Mean perception score	Rank
1	Monitoring and evaluation of training	4.03	1	3.83	1	3.26	1
2	Quality of training notes supplied	3.94	2	0.00	3	0.00	3
3	Methodology of evaluation of training	3.91	3	3.7	2	3.42	2
	Mean	3.96		3.51		3.23	

Even though the Agricultural Demonstrators had highest perception about the 'Monitoring and evaluation of training', they had lowest perception about the 'Methodology of evaluation of training'. The other two categories of respondents, namely, the Agricultural Officers and Assistant Directors had assigned second rank to the training methodology aspect.

## 5. Constraints experienced by the Trainees, Trainers and Course Directors

### 5.1. Constraints experienced by the Agricultural Demonstrator Trainees

The Agricultural Demonstrator-trainees were asked to indicate the constraints experienced by them during the training programme and the results of their ratings are given in Table 5.1.

The data in Table 5.1 highlight lack of lodging facilities as the most felt constraint by the Agricultural Demonstrators. The trainees coming from different parts of the state needed lodging facilities for attending the training. There is no full-fledged hostel facilities for the trainees at the College of Agriculture, Vellayani where this training was conducted. Poor facilities for board (2nd rank) was another important problem faced by them.

**Table 5.1. Constraints experienced by the Agricultural Demonstrator-trainees (n = 32)**

<b>Sl. No.</b>	<b>Constraint</b>	<b>Mean score</b>	<b>Rank</b>
1	Poor lodging facilities	3.19	1
2	Poor boarding facilities	3.09	2
3	Inadequate duration of training	2.84	3
4	Insufficient transportation facilities	2.66	4
5	No opportunities for skill practice	2.41	5
6	No recreation facilities	2.31	6
7	Inadequate practicals	2.28	7
8	Too many trainees per batch	2.19	8
9	Nobody to care about the trainees	2.16	9.5
10	No opportunities for clarification of doubts	2.16	9.5
11	Poor seating arrangements in the training hall	2.13	12
12	Poor audio-visual facilities	2.13	12
13	Irrelavent practical classes	2.13	12
14	Lack of field visits	2.12	14
15	Jamming of training schedule	2.09	15

These limitations can seriously influence the effectiveness of training since food and shelter are the primary needs of human beings. They were also not satisfied with the duration of training programme. Since the subject matter of training was plant protection - one of the important factors influencing crop production - the field level extension workers like the Agricultural Demonstrators must be well acquainted with this subject matter. The trainees felt that one week time was quite inadequate to cover the subject matter in detail and therefore this particular constraint - 'Inadequate duration of training' was given 3rd rank by the Agricultural Demonstrators'.

Another major constraint experienced by the Agricultural Demonstrators was the inadequate transportation facilities. Since the Training Service Scheme at the College of Agriculture, Vellayani does not have a vehicle exclusively for its use, this problem hampers the effective conduct of the trainings. Probably, the trainees also felt this problem seriously and therefore, they have indicated this as a serious constraint.

The least felt constraints by the Agricultural Demonstrators were 'Lack of field visits' and 'Jamming of training schedule' for which the ranks given were 14th and 15th respectively. According to the trainees, the training

schedule was properly planned and arranged, and therefore they did not find 'Jamming of training schedule' as a serious constraint in the training. This is an indication of the effective scheduling of classes in accordance with the level of understanding of the trainees. Since the training was in plant protection, the identification of pests and diseases in the field situation would help the trainees to understand and to internalise in an effective manner. Opportunities were given to them for adequate field visits which helped in improving the effectiveness of the training. Therefore, 'lack of field visits' and 'irrelevant practical classes' were considered as least serious problems by the Agricultural Demonstrators.

#### 5.2. Constraints experienced by the Agricultural Officer-trainees

The results of the ratings of the constraints experienced by the Agricultural Officer-trainees are given in Table 5.2.

The results in Table 5.2. point out that the 'Lack of opportunities for skill practice' was the most felt constraint for the Agricultural Officers. 'Inadequate practicals', 'Lack of field visits' and 'Poor audio-visual facilities' were also considered as serious constraints by the respondents. It seems that they were not taken to

**Table 5.2. Constraints experienced by the Agricultural Officer trainees (n = 30)**

<b>Sl. No.</b>	<b>Constraint</b>	<b>Mean score</b>	<b>Rank</b>
1	Lack of opportunities for skill practice	3.07	1
2	Inadequate practicals	2.93	2
3	No field visits	2.90	3
4	Poor audio-visual facilities	2.50	4
5	Training literature not distributed	2.40	5
6	Irrelevant practical classes	2.13	6
7	Poor boarding facilities	1.93	7
8	Inadequate duration of training	1.90	8
9	Irrelevant theory classes	1.87	9
10	Jamming of training schedule	1.83	10.5
11	Poor lodging facilities	1.83	10.5
12	Improper monitoring	1.80	12
13	Insufficient transportation facilities	1.77	13
14	Lack of timely information about the training	1.73	14
15	No recreation facilities	1.63	15



the fields and their practical classes were inadequate to support the theoretical subject matter explained in the classes. Apart from that, the use of audio-visual aids by the trainers was also poor. This could be due to either the lack of audio-visual facilities at the training centre namely the Regional Agricultural Research Station, Pattambi or the lack of interest and knowledge on the part of the trainers to make use of the audio-visual aids. In either case, it warrants immediate ameliorative measures.

'Lack of recreation facilities' (15th rank) was the least felt problem for the Agricultural Officers. The trainees were given timely information about the training and hence they did not consider it as a serious problem. They were almost satisfied with the lodging facilities provided for them. 'Improper monitoring' and 'insufficient transportation facilities' were also felt as less serious constraints by the Agricultural Officers. The trainees hostel and vehicles available at the Regional Agricultural Research Station, Pattambi were probably utilised fully for this training, thereby eliminating a few of the most possible constraints which very often impede training programmes.

### 5.3. Constraints experienced by the Assistant Director-trainees

The perception about the constraints experienced by

the Assistant Director - trainees was assessed and the results are furnished in Table 5.3.

The rank order of the constraints experienced by the Assistant Directors given in Table 5.3 indicates that 'Lack of field visits' was the most felt constraint by the Assistant Director-trainees. This was possibly due to the gap in the expectations of the trainers and trainees. The Assistant Director-trainees wanted more field visits probably because they would have felt it appropriate to test what they have learnt and done in the class room and laboratory under typical field situations. The trainers on the other hand would have thought that it would suffice if skills they have developed (preparation of audio-visual aids and its use) now be presented in Laboratory (mock) situations only. 'Inadequate transportation facilities' was another felt problem for the trainees. Although there are vehicles attached to the Training Service Scheme and the Communication Centre, Mannuthy, where this training was conducted, vehicle was not made available for the use of this training. However the reasons for not making a vehicle available for the training were not explored. The trainees were also not supplied with the training literature for ready reference. Just as the Agricultural Demonstrators, the Assistant Directors also felt the 'poor boarding

**Table 5.3. Constraints experienced by the Assistant  
Director Trainees (n = 19)**

<b>Sl. No.</b>	<b>Constraint</b>	<b>Mean score</b>	<b>Rank</b>
1	Lack of field visits	2.89	1
2	Insufficient transportation facilities	2.68	2
3	Training literature not distributed	2.63	3
4	Poor boarding facilities	2.42	4
5	Nobody to care about the training	2.21	5.5
6	Inadequate practicals	2.21	5.5
7	Poor seating arrangements in the training hall	2.16	8
8	Nobody to care about the trainees	2.16	8
9	Poor lodging facilities	2.16	8
10	Improper monitoring	2.05	10.5
11	Inadequate duration of training	2.05	10.5
12	Poor audio-visual facilities	2.00	12
13	Incompetent trainers	1.95	13.5
14	Lack of opportunities for skill practice	1.95	13.5
15	Poor evaluation	1.89	15

facilities' (4th rank) as a serious constraint.

The evaluation of the training conducted was appreciated by the Assistant Directors and they considered the constraint 'Poor evaluation' as a least serious constraint. 'Incompetency of the trainers', 'Poor audio-visual facilities' and 'Inadequate duration of the training' were the other constraints least felt by the Assistant Directors of Agriculture.

#### 5.4. Constraints experienced by the Trainer-respondents

The constraints as perceived by the Trainer-respondents were also assessed and the results are given in Table 5.4.

As indicated in Table 5.4 the trainers felt highly constrained with the 'Lack of opportunities for assessing the impact of training'. Within the scheduled time the trainers are expected to cover all the topics assigned to them and to give a chance to the trainees to get their doubts clarified. They should then conduct the assessment of training after taking the class which they might have found as a difficult task. According to the trainers, 'Lack of recognition for taking the classes' (2nd rank) was another much felt constraint. This requires further investigation as the performance of the trainers is one of

**Table 5.4. Constraints experienced by the Trainer-respondents (n = 30)**

<b>Sl. No.</b>	<b>Constraints</b>	<b>Mean score</b>	<b>Rank</b>
1	Lack of opportunities for assessing the impact of training	3.07	1
2	Lack of recognition of taking training classes	3.03	2
3	Inadequacy of transportation facilities for field visit	3.00	3
4	Inadequacy of the training hall provided	2.93	4
5	Lack of opportunities and facilities for preparing audio-visual aids	2.67	5.5
6	The trainees are not serious about the training	2.67	5.5
7	Heterogeneity among the trainees	2.50	7.5
8	Inadequacy of the teaching aids provided	2.50	7.5
9	Remuneration given for training is less	2.47	10
10	Lack of facilities for duplicating lecture notes	2.47	10
11	Lack of timely information about the training programme	2.47	10
12	Lack of time for adequate preparation	2.43	12
13	Inadequacy of the audio-visual aids provided	2.37	13
14	Lack of timely information about the topics to be covered	2.30	14.5
15	Lack of timely information about the schedule of the programme	2.30	14.5

important factors which determines the effectiveness of training. 'Inadequacy of transportation facilities for field visits' (3rd rank) was also considered as a serious problem by the trainers. To take the trainees into the fields, a vehicle is inevitable which is supposed to be provided by the University. The trainers find it difficult to get vehicles at the scheduled time for organising field visits.

For the trainers, the 'Lack of getting timely information about the schedule of the programme' (rank value 14.5) was a least felt constraint. They were given information about the topics to be covered sufficiently earlier. Regarding the availability of audio-visual aids also, the trainers had not much to complain about. This could be due to two reasons. Either the necessary audio-visual aids were available at the venue of the training or that the trainers might have considered the use of audio-visual aids for taking training classes as of insignificant importance.

#### 5.5. Constraints experienced by the Course Director-respondents

The results on the perception about the constraints experienced by the Course Directors while conducting the training programme are furnished in Table 5.5.

**Table 5.5. Constraints experienced by the Course Directors (n = 30)**

Sl. No.	Constraint	Mean score	Rank
1	Lack of transportation facilities for field trips	3.50	1
2	Lack of recognition given to course Directors	3.43	2
3	Lack of boarding and lodging facilities for the trainees	3.33	3
4	Non receipt of lecture notes from the resource persons in time	2.87	4
5	Lack of interest among the resource personnel in preparing audio-visual aids	2.80	5
6	Lack of timely information about the training	2.70	6.5
7	Lack of timely availability of resource personnel	2.70	6.5
8	Lack of separate resource personnel for training	2.60	8
9	Inadequacy of the training hall provided	2.53	9
10	Non-availability of audio-visual aids	2.50	10.5
11	No opportunities for post training assessment	2.50	10.5
12	Insufficiency of the incentives provided to Course Directors	2.43	12
13	Lack of assistance from the supporting staff for the conduct of the training programme	2.36	13
14	Lack of interest among the trainees in the subject of training for which they were deputed	2.23	14
15	Non availability of funds in advance for the conduct of the training	2.17	15

Data in Table 5.5 bring to focus the constraints experienced by the Course Directors of the different training programmes organised by the KAU. The most serious constraint faced by the Course Directors was the 'Lack of transportation facilities for field trips'. As in the case of Trainer-respondents, the Course Directors were also constrained by the 'Lack of recognition given to them' (2nd rank). They also find it difficult to provide boarding and lodging facilities for the trainees. The above results significantly point out to the immediate need for developing infrastructure facilities such as lodging, boarding and transportation facilities etc. in all the Research Stations and Educational Institutions under the KAU where the training programmes are organized regularly. Another important aspect is that the Trainers and Course Directors were not satisfied with the recognition given to them by the University. Considering this genuine need for recognition - which any normal human being would crave for - it is hightime that the University introduces a system of recognition for the teachers in the University, who are actively involved in the training programmes.

'Non availability of financial advance for the conduct of the training' (15th rank) was the least felt constraint for the Course Directors. 'Lack of interest among the trainees' was also not a much felt constraint for them.

The Course Director of a training programme is largely responsible for making the programme a success. He/she should have the ability to preplan the programme and to take quick decisions according to the prevailing situations. The constraints experienced by them while conducting training programme would also affect the effectiveness of the training programmes.

# SUMMARY

## CHAPTER V

### SUMMARY

The study was undertaken with the general objective of analysing the selected inservice training programmes for the extension personnel of the Department of Agriculture conducted by the KAU. Three representative training programmes, one each for the three cadres of extension personnel namely, Agricultural Demonstrators, Agricultural Officers and Assistant Directors were selected for analysis in the study.

The specific objectives of the study were

- 1) to assess the impact of selected inservice training programmes for the personnel of the Department of Agriculture conducted by KAU on the professional knowledge of the trainees and the factors related to it;
- 2) to find out the perception of the trainees about the treatment and utility of the selected inservice training programmes;
- 3) to analyse the perceived effectiveness of training methodology followed in the inservice training programmes; and
- 4) to identify the constraints experienced by the trainees, trainers and training organisers (Course Directors) of inservice training programmes conducted by the KAU.

The three selected training programmes namely, 'Training in plant protection for Agricultural Demonstrators', 'Training in pulses and oilseeds production technology for Agricultural Officers' and 'Training in audio-visual aids and techniques for Assistant Directors' were conducted in the three constituent institutions of the Kerala Agricultural University viz. College of Agriculture, Vellayani, Krishi Vigyan Kendra, Pattambi and Directorate of Extension, Mannuthy respectively. The data were collected from the respondents using questionnaires. Knowledge tests were conducted before and after the training programmes to measure the gain in knowledge of the trainees, which was selected as the dependent variable for the study. The questionnaires contained questions to measure the independent variables namely age, education, total experience, experience in Training and Visit System, number of previous trainings undergone, attitude towards extension profession, job satisfaction, attitude towards Training and Visit System and workload situation of the trainee-respondents. The treatment and utility of the training programmes were measured using the treatment-utility index and a measure of the trainees perception about the training methodology was also done. The constraints experienced by the trainee-respondents trainer-respondents and Course Director-respondents were also assessed. Suitable measurement techniques were employed to measure the above variables. The statistical technique

used in the analysis of data was Kurskal-Wallis Analysis of variance test.

The salient results of the study are summarised as follows:

- 1) All the three categories of trainee-respondents namely, Agricultural Demonstrators, Agricultural Officers and Assistant Directors showed substantial gain in knowledge due to the training programme.
- 2) The gain in knowledge due to training was the highest for the Assistant Directors of Agriculture, followed by the Agricultural Officers and Agricultural Demonstrators in that order.
- 3) The independent variables such as education, number of previous trainings undergone, attitude towards extension profession and job satisfaction of Agricultural Demonstrators were found to be significantly associated with their gain in knowledge.
- 4) In the case of Agricultural Officers and Assistant Directors none of the independent variables showed significant association with their gain in knowledge.
- 5) The treatment-utility indices of the topics dealt with in the Training in 'Plant protection for Agricultural Demonstrators' ranged from 47.07 to 69.92 and the mean treatment-utility index was 58.43. The highest treatment-

utility index was for the topic 'Principles and methods of pest control' and it was lowest for the topic 'Non-insect pests - rodents - nature of damages and control'.

- 6) The treatment-utility indices of the topics dealt with in the 'Training in pulses and oilseeds production technology for Agricultural Officers' ranged from 44.17 to 77.71 and the mean treatment-utility index was 58.27. The highest treatment-utility index was for the topic 'Nutritive value of pulses and oilseeds' and it was lowest for the topic 'Varieties and management practices of sunflower and groundnut'.
- 7) The treatment-utility indices of the topics dealt with in the 'Training in audio-visual aids and Techniques' for Assistant Directors ranged from 28.29 to 71.71 and the mean treatment-utility index was 51.42. The highest treatment-utility index was for the topic 'Oral communication and public address system (Theory)' and it was lowest for the topic 'Practical hints in photography (Practicals)'.
- 8) The training methodology aspects highly perceived by the Agricultural Demonstrators in the pre-training stage were 'Timeliness of information about the training', 'Preparation of schedule of classes' and 'Selection of subject matter for training'.
- 9) The training methodology aspects appreciated by the Agricultural Officers in the pre-training stage were

'Selection of subject matter for training', 'Selection of practicals for training' and 'Selection of topics for training'.

- 10) The best perceived training methodology aspects by the Assistant Directors in the pre-training stage were 'Timeliness of information about the training', 'Selection of topics for training', and 'Selection of venue for training'.
- 11) Agricultural Demonstrators had perceived the training methodology aspects in the in-training stage namely 'Competency of the trainers in general', 'Training method followed by the trainers' and 'Seating arrangements in the training hall' as adequate.
- 12) Agricultural Officers had high appreciation for the training methodology aspects in the in-training stage namely 'Opportunities for clarification of doubts', 'Competency of the trainers in general' and 'Lighting arrangements in the training hall'.
- 13) Assistant Directors had high perception about the training methodology aspects in the in-training stage namely 'Opportunities for trainees participation', 'Use of audio-visual aids by trainers' and 'Training method followed by trainers'.

- 14) 'Monitoring and evaluation of training', 'Quality of training notes supplied' and 'Methodology of evaluation of training' were ranked by the Agricultural Demonstrators as the 1st, 2nd and 3rd training methodology aspects in the post-training stage.
- 15) 'Monitoring and evaluation of training', 'Methodology of evaluation of training' and 'Quality of training notes supplied' were ranked as the 1st, 2nd and 3rd training methodology aspects in the post-training stage both by the Agricultural Officers and Assistant Directors.
- 16) The serious constraints perceived by the Agricultural Demonstrators were 'Poor lodging facilities', 'Poor boarding facilities' and 'Inadequate duration of training'.
- 17) 'Lack of opportunities for skill practice', 'Inadequate practicals' and 'Lack of field visits' were the most serious constraints felt by the Agricultural Officers.
- 18) Assistant Directors perceived the 'Lack of field visits', 'Insufficient transportation facilities' and 'Non-supply of training literature' as the most serious constraints.
- 19) 'Lack of opportunities for assessing the impact of training' was the most serious constraint as perceived by the trainers and 'Inadequacy of transportation facilities for field visits' was also felt as a serious constraint by them.

- 20) The serious constraints perceived by the Course Directors were 'Lack of transportation facilities for field trips', 'Lack of recognition given to Course Directors' and 'Lack of boarding and lodging facilities for the trainees'.

Recommendations relating to specific training programmes

I. Training in Plant protection for Agricultural Demonstrators

- 1) The topics 'Non-insect pests - rodents - nature of damages and control', 'Identification of pests of plantation crops, spices and fruits', 'Synthetic insecticides' and 'Major pests of fruits' etc. should be treated more adequately by the concerned trainers.
- 2) The Course Directors should take more care about the 'Selection of practicals for training', 'Selection of duration of training' and 'Selection of venue for training'.
- 3) The trainees should be provided with more opportunities for field visits.
- 4) The trainers should use as many audio-visual aids as possible for presenting the topics.
- 5) The trainees should be provided with more opportunities for skill practice.
- 6) The training hall provided for the trainees should have adequate ventilation.

### III. Training in Audio-visual aids and techniques

- 1) The topics 'Practical hints in photography (Practicals)', 'Basic principles of photography (Theory)', 'Preparation of slides and slide story (Practicals)' and 'Handling and operation of projected visual aids (Practicals)' etc. should be treated adequately by the concerned trainers.
- 2) Care should be taken for the 'Preparation of training notes', 'Selection of practicals for training' and 'Preparation of schedule of classes for the training.'
- 3) The trainees should be provided with more opportunities for skill practice.
- 4) Lighting arrangements and seating arrangements in the training hall should be improved.

In conclusion, it could be stated that the present study has brought to focus the impact of training programmes organised by the KAU on the professional knowledge of the trainees. It has also explained how the trainees perceived the training programmes based on the treatment and utility as well as the training methodology followed. Moreover, this study has also helped in identifying the constraints experienced by the trainees, trainers and Course Directors. Eventhough the study included three training programmes

representing the three categories of respondents, within each category the selection of trainings was not done randomly and the trainings selected were based on purposive sampling. There is further scope for conducting evaluative studies on more number of training programmes. So also, several other factors which were not considered in this study, due to lack of time, must be explored to identify their relationships. Systematic research studies on the above aspects need to be initiated at once.

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\* Originals not seen

# APPENDICES

**അഗ്രികൾച്ചറൽ ഡയറക്ടറുടെ ഓഫീസിലുള്ള പരിശീലനപരിപാടി**

**പ്രി ട്രെയിനിങ് ഷേർ**

നിലവി : \_\_\_\_\_

1. പരിശീലനപരിപാടിയുടെ പേര് :
2. പരിശീലനാർത്ഥിയുടെ പേര് :
3. തസ്തികകൾ മേൽ വിലാസവും :
4. പ്രായം (വർഷത്തിൽ) :
5. വിദ്യാഭ്യാസ യോഗ്യതകൾ :

ക്രമ നമ്പർ	യോഗ്യതയുടെ പേര്	സ്മാപനത്തിന്റെ പേര്	പാസായ വർഷം	കോൺ	പ്രത്യേക കുറയ്ക്കുക
1	2	3	4	5	6

6. മുൻകാല പ്രവർത്തി പരിചരം :  
(വർഷത്തിൽ)

- (എ) അകെയുള്ള മുൻകാലപരിചരം :
- (ബി) ടി അൻറ് വി സപ്രൊറാജീയിലുള്ള പരിചരം :
- (സി) തിർദ്ദിന്ദിട് ഞൊഴിലിലുള്ള പരിചരം :

7. മുൻപു പരീക്ഷെടുത്തിട്ടുള്ള പരിശീലന പരിപാടികൾ :

എ. 1983 ന് യജം ചേരൈകിലും ഉൻ സർവ്വീസ് ട്രെയിനിംഗിൽ പരിപാടി കിൽ പരീക്ഷെടുത്തിട്ടുണ്ടോ

ബി. ഉണ്ടെങ്കിൽ അതിന്റെ വിശദവിവരങ്ങൾ:

ക്രമ നമ്പർ	പരിശീലനപരിപാടിയുടെ പേര്	സ്മയം	കാലമളവു കിട്തെരികു	റിമാർക്സ്

8. ബന്ധനകാലത്ത് ഉൾക്കൊള്ളിച്ചു സാധ്യതയിൽ ലഭിച്ചിട്ടുണ്ടോ ഉണ്ട് / ഉണ്ട്

ഉൾക്കൊള്ളിക്കാൻ വിശദവിവരങ്ങൾ:

ക്രമ നമ്പർ	സാധ്യതയിലൂടെ ചേർ	സാധ്യതയിലൂടെ മരം	വർഷം
1	2	3	4

9. മാനവ കോടതിയിലിരുന്ന പ്രതിബന്ധനകളോട് ബന്ധിതമായ ചില പ്രശ്നങ്ങൾ, വിചാരണകൾ, കേസുകൾ, കോർട്ടുകൾ (✓) താഴെ ചേർത്ത് തിരഞ്ഞെടുക്കുക

ക്രമ നമ്പർ	പ്രതിബന്ധന	ശക്തിയോടൊപ്പം കോർട്ടുകൾ	കോർട്ടുകൾ കേസുകൾ പ്രാദേശിക ഉള്ള	വിചാരണകൾ.	ശക്തിയോടൊപ്പം വിചാരണകൾ
1	2	3	4	5	6

1. ഗ്രാമപ്രദേശങ്ങളിൽ ജോലി ചെയ്തും, കൃഷിയിലും മറ്റ് ജോലികളിലും ജോലി ചെയ്തും സാധ്യതയിൽ ജോലി ചെയ്യാൻ സാധിച്ചിട്ടുണ്ടോ.
2. കാരാഗൃഹ വിജ്ഞാപന വ്യവസ്ഥ ജോലി ചെയ്യാൻ സാധിച്ചിട്ടുണ്ടോ അല്ലെങ്കിൽ സാധ്യതയിൽ ജോലി ചെയ്യാൻ സാധിച്ചിട്ടുണ്ടോ.
3. കാരാഗൃഹ വിജ്ഞാപന വ്യവസ്ഥ ജോലി ചെയ്യാൻ സാധിച്ചിട്ടുണ്ടോ അല്ലെങ്കിൽ സാധ്യതയിൽ ജോലി ചെയ്യാൻ സാധിച്ചിട്ടുണ്ടോ.
4. ഒരു പ്രതിബന്ധനകൾ സമയത്ത് പ്രദേശ കാരാഗൃഹ വിജ്ഞാപന നടപ്പിലാക്കുന്നതിനു സാധിച്ചിട്ടുണ്ടോ അല്ലെങ്കിൽ സാധ്യതയിൽ ജോലി ചെയ്യാൻ സാധിച്ചിട്ടുണ്ടോ.



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 1-----2-----3-----4-----5-----6-----7-----  
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4. ഒരു കാർഷിക വിദഗ്ദ്ധൻ എന്തെങ്കിലും തരത്തിൽ ജനങ്ങൾക്ക് നഷ്ടപ്പെടുത്തിയ കഷ്ടതകളിൽ ജനങ്ങൾക്ക് സഹായം നൽകാനുണ്ടോ?
5. ജനങ്ങൾക്ക് കിട്ടുന്ന സേവനങ്ങളിൽ ജനങ്ങൾക്ക് സഹായം നൽകാനുണ്ടോ?
6. ജനങ്ങളുടെ നേതൃത്വത്തിൽ ജനങ്ങൾക്ക് സഹായം നൽകാനുണ്ടോ?
7. ജനങ്ങളുടെ സഹായത്തിന്റെ അടിസ്ഥാനപരമായ ഉദ്ദേശ്യങ്ങൾക്കായി ജനങ്ങൾക്ക് സഹായം നൽകാനുണ്ടോ?
8. ഭവനങ്ങളുടെ ഉദ്ദേശ്യങ്ങളെക്കുറിച്ച് ജനങ്ങൾക്ക് സഹായം നൽകാനുണ്ടോ?
9. ഉദ്ദേശ്യങ്ങളിൽ പ്രവേശിക്കാൻ ജനങ്ങൾക്ക് സഹായം നൽകാനുണ്ടോ?
10. നിലവിലുള്ള ജനങ്ങളുടെ സഹായം നൽകാനുണ്ടോ?

11. ജനങ്ങളുടെ സഹായം നൽകാൻ ജനങ്ങൾക്ക് സഹായം നൽകാനുണ്ടോ? (✓) താഴെ പറയുന്നവയിൽ ഏതെങ്കിലും ഒന്നിന് സഹായം നൽകാനുണ്ടോ?

ക്രമ നമ്പർ	പ്രശ്നം	ശക്തി കേന്ദ്രം	ജോലിക്കാർ	ജനങ്ങൾ	ജനങ്ങൾ	ജനങ്ങൾ
1	2	3	4	5	6	7

1. ടി ജനർ വി സഹായം നൽകാനുണ്ടോ? ജനങ്ങൾക്ക് സഹായം നൽകാനുണ്ടോ?
2. ടി ജനർ വി സഹായം നൽകാനുണ്ടോ? ജനങ്ങൾക്ക് സഹായം നൽകാനുണ്ടോ?
3. ജനങ്ങൾക്ക് സഹായം നൽകാനുണ്ടോ? ജനങ്ങൾക്ക് സഹായം നൽകാനുണ്ടോ?

4. കാർഷിക വരുമാന വ്യവസ്ഥ രംഗത്ത് ടി അൻറ് വി സമ്പ്രദായം ഒരു പുതിയ കാഴ്ചപ്പാട് നന്നെ സൃഷ്ടിച്ചിരിക്കുന്നു.
  5. ടി അൻറ് വി സമ്പ്രദായത്തിൽ കൃഷിക്കാർക്ക് പൂർണ്ണമായി നന്നെ നൽകാനിടയുണ്ട്.
  6. ടി അൻറ് വി സമ്പ്രദായം നടപ്പിലാക്കിയിട്ടുള്ള പത്തു കർഷകരുടെ സമ്പന്നത നിലയിൽ കാര്യമായ വെർദ്ധന ഉണ്ടായിട്ടുണ്ട്.
  7. ടി അൻറ് വി സമ്പ്രദായത്തിന്റെ അളവുകൾ പൂർണ്ണമായി പരാമ്പര്യങ്ങളിലും കാര്യമായ പ്രവർത്തനം നടന്നിട്ടുണ്ട്.
  8. കേരളത്തിൽ ടി അൻറ് വി സമ്പ്രദായം പൂർണ്ണമായി നടപ്പിലാക്കാനുള്ള തീരുമാനം മുൻപ്രകാശിപ്പിച്ചിട്ടുണ്ട്.
12. ദൈനംദിന വിജ്ഞാന വ്യവസ്ഥ പ്രവർത്തനത്തിന്റെ ഘട്ടത്തിൽ പലതരത്തിലുള്ള ചുമട്ടുകളും പേരിടേണ്ടിവന്നിരിക്കുന്നു. ഉടൻ തന്നെ കാര്യമായ വിജ്ഞാന വ്യവസ്ഥ നടപ്പിലാക്കാനും പലതരത്തിലുള്ള അനുസരണങ്ങളും അലോപ്പ്രതികരണങ്ങളും ഉൾപ്പെടുത്തിയിരിക്കുന്നു.

നന്നെ കൊടുത്തിരിക്കുന്ന താക്കീതപരിഷ്കരണങ്ങളിലെ ഘട്ടങ്ങൾ താക്കീതങ്ങളുടെ കാര്യമായ വിജ്ഞാന വ്യവസ്ഥ നടപ്പിലാക്കാനുള്ള ഘട്ടങ്ങളും അനുസരണങ്ങളും, ഘട്ടങ്ങളുടെ തുടർ ഘട്ടങ്ങളും പ്രതികരണങ്ങളും അനുസരണങ്ങളും ഉൾപ്പെടുത്തിയിട്ടുണ്ട്. ഉടൻ തന്നെ താക്കീതങ്ങളുടെ ഉൾപ്പെടുത്തിയ തീരുമാനം എടുക്കുന്നതിനായി (✓) താക്കീതങ്ങളിൽ തിരഞ്ഞെടുക്കുക.

ഘട്ടങ്ങളുടെ കാര്യമായ അനുസരണം	10	
	9	
	8	
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	3	
	2	
ഘട്ടങ്ങളുടെ പ്രതികരണങ്ങളുടെ അനുസരണം	1	

**ഇന്ദ്രികവർദ്ധനവ് സഹായസംരക്ഷണമാർഗ്ഗ ബോർഡിലുള്ള പരിശീലന പരിപാടി**

**ബിരുദി :**

1. പരിശീലനാർത്ഥികളുടെ പേര് :
2. താഴെ കൊടുത്തിരിക്കുന്ന ചോദ്യങ്ങൾക്ക് ശരിയായ ഉദ്ദേശം (✓) താർജ്ജ് ചെയ്ത് സഭാമുഖ്യപെട്ടുകൊടുക്കുക.
  1. പൊതു കൃഷി മരണങ്ങൾ കിടന്നാശിനി സ്പ്രേ ചെയ്യാൻ ഉപയോഗിക്കുന്ന ഉപകരണങ്ങൾ .....
    1. ഹാൻറ് സ്പ്രേയർ
    2. നാപ്സാക് സ്പ്രേയർ
    3. റോക്കർ സ്പ്രേയർ
    4. പമ്പ് സ്പ്രേയർ
  2. നെല്പിന്തളം വെള്ളം ഉണ്ടാക്കുന്ന കിടമണ്ണ് .....
    1. മൂർത്ത
    2. ഗാളിയം
    3. ചെടി
    4. മണ്ണ് കുറയ്ക്കൽ പദാർത്ഥം
  3. വാഴകളുടെ കൂറ്റനാശകരമായ പരാദാഹകർ ..... കിടമണ്ണ്.
    1. മണലി
    2. കമ്പിളി
    3. വാഴമൂർ
    4. പുകക്കല്ലി
  4. .... ഒരു അംഗീകരിച്ച കിടമണ്ണ്.
    1. ലിൻഡേർ
    2. മാലിനിയം
    3. സി. എച്ച്. ഡി.
    4. സി. ഡി. ടി.
  5. വിദ്വേഷകൃഷി പകരുന്ന ഒരു കൂറ്റനാശകരമായ .....
    1. പൂജിക്കുന്നതല്ല
    2. ഉയർന്നതല്ല
    3. പൊതുവേ
    4. ഉയർന്നതല്ല

6. ലേകളെ നിരീശ്ചിതൻ ഉപഭോഗിച്ചു ഒരു അന്യരൻ വിചാരിച്ചു.....

- 1. വാർദ്ധനവ്
- 2. സൗഖ്യം
- 3. കാര്യം മോശ്ശെയ്
- 4. മേഗോൻ

7. ഗ്രാമീണർക്ക് ഒരു രോഗം ..... മൂലം ഉണ്ടാകുന്നു.

- 1. പാമ്പ്
- 2. മൈക്കോപ്ലാസ്മ
- 3. നിമോഡ
- 4. ബാക്ടീരിയ

8. മണ്ണു ശുദ്ധീകരണത്തിന് ഉപഭോഗിച്ചു ഒരു കൃമി നശിപ്പിച്ചു .....

- 1. കിനോസോൾ
- 2. കിസാസിൻ
- 3. കാപ്റ്റാൻ
- 4. സെർവെൻ

9. പൈറീറ്റം എന്നത് ഒരു .....

- 1. കൃമി നശിപ്പി
- 2. കീടനശിപ്പി
- 3. കളനശിപ്പി
- 4. നിമബീജനശിപ്പി

10. .... മോളിക്യൂലർ കോമ്പൗണ്ട് ഒരു പ്രധാനപ്പെട്ട രോഗമുണ്ട്.

- 1. ഫിബ്രോസി
- 2. ലൂപ്ലക്സീറ്റി രോഗം
- 3. നാട രോഗം
- 4. പൊസിവിവ്വർ രോഗം

11. നിമബീജങ്ങളെ നിരീശ്ചിതൻ .....

- 1. മലർമരങ്ങൾ
- 2. മൈമി
- 3. ഐ.എഫ്.സി.
- 4. പൈറീറ്റം

12. തെർക്കിൻ കഴുപ്പ് ബവ്ബ് ഓർക്കുപോകുന്ന് ..... രോഗത്തിൻറെ ലക്ഷണമാണ്.

- 1. ഫ്ലൂറീസ്
- 2. മ്ബ്ബെസ്
- 3. മൂപ്പ്രോ
- 4. ഗ്രാസിനീസ്

13. പച്ചക്കറികളുടെ ഉപയോഗം രോഗത്തിൻറെ നിമിത്തത്തിന് ഉപയോഗിക്കുന്ന കൂട്ടിൽ നശിനമാണ് .....

- 1. മിനോസാൻ
- 2. ഓറിയോഫൻ
- 3. ഡൈമിത്തേൻ
- 4. സൂരിൽ

14. ഘി രാജിയിൽ യൂമിനോസിന് ഉപയോഗിക്കുന്ന ഒരു രാസവസ്തുവാണ് .....

- 1. ബോഡിം കാർബണേറ്റ്
- 2. ജലൂമിനിയം കാർബണേറ്റ്
- 3. ഷോറേറ്റ്
- 4. അരിയം കാർബണേറ്റ്

15. ബേർട്ടേയുടെ ബരുകളിൽ മൂഴകളുടേതാണ് .....

- 1. കൂട്ടിൽ
- 2. അക്ടിനിയം
- 3. നിയാബിൻ
- 4. റൈക്ടോപ്ലാസ്റ്റ്

16. കമുക്കിൻറെ ഒരു പ്രധാന ശുദ്ധ കിടമാണ് .....

- 1. ചെമ്പൻചെല്ലി
- 2. സിംഗിൾബർഗ്
- 3. കൂഴൽകൂഴൽ
- 4. ഉപയോഗകൃഷിപുഴ

17. വിർത്തിൽ പൂർണ്ണ ഉപയോഗിക്കുന്ന ഒരു കൂട്ടിൽ നശിനമാണ് .....

- 1. കാപ്സൻ
- 2. ഓവിനീസിൻ
- 3. വിനോബിൻ
- 4. കാലിക്സിൻ

18. മേൽക്കാല പൂഴ്ത്തിനെ നിമിത്തമാൻ ഉപയോഗിക്കുന്ന ഒരു കിടമാണ് .....

- 1. നെഫ്രോസിൻ
- 2. സിംഗിൾബർഗ്
- 3. ഗ്രാഷോസിൻ
- 4. സിർട്ടോസോൾ

19. പാടർബു നിന്നും സെർജി സിങ്ങ് തിരഞ്ഞെടുത്ത നാടൻമാരുടെ സംഘടനയുടെ പേര്.....

- 1. പടാളപട്രം
- 2. ഉലയുരുട്ടിപ്പട്രം
- 3. മേട്രാസുരപ്പൻ പട്രം
- 4. കൃഷ്ണ പട്രം

20. .... ഒരു സ്പർശക കിടന്നുപിടിക്കാൻ.

- 1. ബൈബിൾ
- 2. ഹോളിസ്
- 3. റോസ്
- 4. പൈറിയസ്

21. ഹിന്ദു മതത്തിൽ കിടന്നുപിടിക്കാൻ.....

- 1. അർച്ചന
- 2. കോലാർച്ചന
- 3. അർച്ചന
- 4. മേട്രാസുരപ്പൻ

22. മരിച്ചവർക്കുള്ള ഒരു കിടന്നുപിടിക്കാൻ .....

- 1. മി. എച്ച്. സി.
- 2. സെവിൻ
- 3. മേട്രാസുരപ്പൻ
- 4. ഹോളിസ്

23. പേരിന്റെ ഉപയോഗം കൃത്യമാക്കുവാൻ ..... അക്ഷരങ്ങളെ ഉപയോഗിക്കാൻ.

- 1. കൃത്യം
- 2. അക്ഷരം
- 3. സെവിൻ
- 4. മേട്രാസുരപ്പൻ

24. മേട്രാസുരപ്പൻമാരുടെ തിരഞ്ഞെടുത്ത കിടന്നുപിടിക്കാൻ മരിച്ചവർക്കുള്ള ഒരു കിടന്നുപിടിക്കാൻ..... ഒരു സ്പർശക കിടന്നുപിടിക്കാൻ.

- 1. 11
- 2. 15
- 3. 21
- 4. 25

25. ഗ്രാമീണ ജീവിതത്തിൽ ഉപയോഗിക്കാൻ ..... കൃത്യം കൃത്യമാക്കുവാൻ.

- 1. അക്ഷരം
- 2. കൃത്യം
- 3. ഉപയോഗം
- 4. മേട്രാസുരപ്പൻ



**അഗ്രികൾച്ചറൽ കമ്മ്യൂണിറ്റിഡെവലപ്മെൻ്റ് വേർഷ്യൻ്റെ പരിശീലന പരിപാടി**

**പോസ്റ്റ് സൂട്ടിംഗിൻ്റ് പേര്**

**മിഷ്ണറി :**

1. പരിശീലന പരിപാടിയുടെ പേര് :
2. പരിശീലനാർജ്ജിയിയുടെ പേര് :
3. ജാർക്കഡ് പേഴ്സണലിൻ്റെ പരിശീലന പരിപാടിയുടെ വിവിധ വേർഷ്യൻ്റെ കുറിപ്പിൻ്റെ ജാർക്കഡിൻ്റെ കൗൺസിലിൻ്റെ സ്വീകരണക്രമം :

ക്രമ നമ്പർ	ഉന്നം	വളരെ മെച്ചം	മെച്ചം	മര ട്രേസി ന്നു	മോശം	വളരെ മോശം
1	2	3	4	5	6	7

**4. പരിശീലനാർജ്ജിയിൻ്റെ മൂല്യപൂർണ്ണ ഭാഗം**

1. പരിശീലന പരിപാടിയിൻ്റെ കുറിപ്പിൻ്റെ ഏതൊരുമൂല്യപൂർണ്ണ വിവരം ലഭിക്കുക
2. പരിശീലന പരിപാടിയുടെ വേർഷ്യൻ്റെ പ്രമോഷൻ്റെ മിഷ്ണറിയുടെ
3. പരിശീലന പരിപാടിയുടെ വേർഷ്യൻ്റെ വിവരം മിഷ്ണറിയുടെ
4. പ്രാദേശിക പരിശീലനാർജ്ജിയിൻ്റെ നിർദ്ദേശിക്കുക
5. പരിശീലന പരിപാടിയുടെ കഴിവ് കളർ
6. പരിശീലന പരിപാടി നടപ്പിലാക്കുന്ന മിഷ്ണറിയുടെ സ്ഥലം

1	2	3	4	5	6	7
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- 7. പാവ്യക്രമം തർജ്ജമാക്കൽ
- 8. ട്രേഡിംഗ് നോട്ടുകൾ തർജ്ജമാക്കൽ

**ജി. പരിശീലന കൃതികൾ**

- 1. പരിശീലകർ പ്രദേശം അവതരിപ്പിക്കുന്ന രീതി
- 2. പരിശീലനരീതികളുടെ തിരിച്ചറിയൽ
- 3. പരിശീലനാർത്ഥികൾക്ക് പരീക്ഷകൾ വാർ നടത്തുന്ന അവസരം
- 4. തൊഴിൽ ബെൻഡിംഗ് നോട്ടുകൾ ഉപയോഗിക്കുന്ന അവസരം
- 5. കുതിച്ചുചാട്ടം നടത്തുന്നതിനുള്ള അവസരം
- 6. സംരക്ഷണനിയമങ്ങൾ ഉപയോഗിക്കുന്നതിനുള്ള അവസരം
- 7. പരിശീലകരുടെ പ്രവർത്തനം
- 8. പരിശീലനം നടത്തുന്ന സമയത്ത് എടുക്കേണ്ട പ്രവർത്തനങ്ങൾ
- 9. വാക്യ തർജ്ജമാക്കലിനുള്ള അവസരം
- 10. ബെൻഡിംഗ് നോട്ടുകൾ ഉപയോഗിക്കുന്നതിനുള്ള അവസരം
- 11. പഠനസാഹചര്യങ്ങളുടെ ലഭ്യത
- 12. പരിശീലകർ ഭൂമി-പ്രവേശന പരീക്ഷകൾ ഉപയോഗിക്കുന്നതിനുള്ള അവസരം
- 13. ഭൂമി-പ്രവേശന പരീക്ഷകൾ ഉപയോഗിക്കുന്നതിനുള്ള അവസരം

**ജി. പരിശീലനരീതികളുടെ തർജ്ജമാക്കൽ കൃതികൾ**

- 1. പരിശീലനരീതികളുടെ തർജ്ജമാക്കൽ കൃതികൾ ഉപയോഗിക്കുന്നതിനുള്ള അവസരം

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 1-----2-----3-----4-----5-----6-----7-----  
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2. പരിശീലനരീതിയുടെ വിവരങ്ങൾ ഉൾക്കൊള്ളുന്ന രീതി
3. പരിശീലനാർത്ഥികൾക്ക് വിവരങ്ങൾ ഉൾക്കൊള്ളുന്ന ട്രൈനിംഗ് നോട്ടുകൾ ഉൾക്കൊള്ളുന്ന ഗ്രന്ഥം
4. ഓരോ പരീക്ഷയ്ക്കും പ്രത്യേക പരിശീലന പരിപാടികൾ ഉൾക്കൊള്ളിച്ച് മൊത്തത്തിൽ അഭിപ്രായം വ്യക്തമാക്കുക. ( ) മാർക്ക് ഉൾക്കൊള്ളിക്കുക.
  1. വളരെ മെച്ചം
  2. മെച്ചം
  3. നന്നായില്ല
  4. മോശം
  5. വളരെ മോശം
5. പ്രത്യേക പരിശീലന പരിപാടികൾ ഉൾക്കൊള്ളുന്ന വിവരങ്ങളെ ഉൾക്കൊള്ളുന്ന മെച്ചം രീതികൾ ഉൾക്കൊള്ളുന്ന പ്രത്യേക ക്ഷമയുള്ള ക്ലാസ്സുകളിൽ ഉൾക്കൊള്ളിച്ച് മെച്ചം വ്യക്തമാക്കുക

ക്രമ നമ്പർ	വിഷയം	ഉൾക്കൊള്ളുന്ന മെച്ചം രീതി					പ്രത്യേക ക്ഷമയുള്ള			
		മികച്ച പര്യായം	പര്യായം	മെച്ചം ഉൾക്കൊള്ളുന്ന പര്യായം	മെച്ചം ഉൾക്കൊള്ളുന്ന പര്യായം	മികച്ച പ്രത്യേക ക്ഷമയുള്ള	പ്രത്യേക ക്ഷമയുള്ള		പ്രത്യേക ക്ഷമയുള്ള	
							മികച്ച പ്രത്യേക ക്ഷമയുള്ള	മികച്ച പ്രത്യേക ക്ഷമയുള്ള	മികച്ച പ്രത്യേക ക്ഷമയുള്ള	മികച്ച പ്രത്യേക ക്ഷമയുള്ള
1	2	3	4	5	6	7	8	9	10	

1. വിദ്യാഭ്യാസരീതികളിൽ കീഴ്മുദ്രകൾ ഉൾക്കൊള്ളുന്ന പ്രത്യേക
2. കീഴ്മുദ്രകൾ ഉൾക്കൊള്ളുന്ന കീഴ്മുദ്രകൾ ഉൾക്കൊള്ളുന്ന മാർഗ്ഗരീതികൾ
3. മെച്ചം ഉൾക്കൊള്ളുന്ന കീഴ്മുദ്രകൾ
4. മെച്ചം ഉൾക്കൊള്ളുന്ന കീഴ്മുദ്രകൾ

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 1 ----- 2 ----- 3 ----- 4 ----- 5 ----- 6 ----- 7 ----- 8 ----- 9 ----- 10

5. പരമ്പരഗണിതങ്ങളുടെ കീഴ്വര
  6. കീഴ്വരങ്ങളുടെ രാജ നിരീശ്വര.
  7. തിന്മനിട കീടനാശിനികൾ
  8. സമോജിത കീടനിരീശ്വര.
  9. പരമ്പരഗണിതങ്ങളുടെയും പദ്യ  
 നിരീശ്വരങ്ങളുടെയും കീഴ്വര
  10. മോശിതങ്ങളുടെയും സുഗന്ധ  
 നിരീശ്വരങ്ങളുടെയും കീഴ്വര
  11. ഉത്തര കീഴ്വരനിരീശ്വര സമു  
 ളുടെ നിരീശ്വരഗണിതങ്ങളും
  12. സമുദായകർമ്മ ഉപകരണങ്ങളും  
 മേഖലയുടെ ഉപയോഗക്രമങ്ങളും
  13. സമുദായഗണിതങ്ങളുടെ പ്രാധാന്യം
  14. സമുദായ നിരീശ്വര മണ്ഡലം
  15. സമുദായഗണിതയുടെ രാജനിരീ  
 ശ്വര.
  16. കൃഷി നാശിനികൾ മോശാകർമ്മ  
 മേഖലയുടെ ഉപയോഗക്രമങ്ങൾ
  17. മണ്ണും മഴയും വിതരണ വഴി  
 ക്കും പകരുന്ന മോശാകർമ്മ
  18. കേരളത്തിലെ മധ്യ സമു  
 ദായഗണിതയുടെ മേഖലയുടെ കാര  
 ണങ്ങളും
6. പരിശീലന സമുദായ മണ്ഡലം മനോരമപത്രത്തിൽ പ്രസിദ്ധീകരിക്കുക/പരിശീലന  
 വൃക്തമാക്കുക

ക്രമ നമ്പർ	പരിശീലി	മേ. സമുദായഗണിത കൃഷി മനോരമ മനോരമ പത്രം പത്രം	മണ്ഡലം മനോരമ പത്രം	മനോരമ പത്രം	മനോരമ പത്രം
1	2	3	4	5	6

1. പരിശീലനപരിശീലനകൃഷി മണ്ഡലം  
 മനോരമ. ലഭിക്കാതിരിക്കുക

1	2	3	4	5	6
2.	പരിഷീലനപരിപാടികളുടെ കൃത്യത കാര്യത്തിന്				
3.	പെര്യോപ്തമാകാതെ ഗതാഗത സൗകര്യമില്ലായ്മ				
4.	തോഴന്മാർ: മാതൃസൗകര്യമില്ലായ്മ				
5.	തോഴന്മാർ: മാതൃ ഭക്ഷണ സൗകര്യമില്ലായ്മ				
6.	പരിഷീലന കോളിളെ തോഴന്മാർ ഉൾപ്പെടെ സൗകര്യമില്ലായ്മ				
7.	മുഖ്യ പ്രവൃത്തി തോഴികളുടെ പെര്യോപ്തമാകാതെ				
8.	പരിഷീലന തോഴികളുടെ വിലയിരുത്തലിന്റെ പെര്യോപ്തമാകാതെ				
9.	പരിഷീലനർത്ഥിനികളുടെ മാതൃ തോഴന്മാർ വിലയിരുത്തലിൽ				
10.	പരിഷീലനാർത്ഥിനികളുടെ മുൻകരുതലില്ലായ്മ				
11.	ചിട്ടപ്പെടുത്തലിന് പാഠ്യപ്രകാരം				
12.	കൃത്യത വിശദീകരണം				
13.	മാതൃസൗകര്യമില്ലായ്മ: പരിപാടികളുടെ അഭാവം				
14.	വൈദഗ്ദ്ധ്യപരിഷീലനർത്ഥിനികളുടെ അഭാവമില്ലായ്മ				
15.	സുപരിപാടിയുടെ അഭാവമില്ലായ്മ				
16.	കൃത്യത വിശദീകരണങ്ങളുടെ അഭാവം				
17.	പ്രാദേശിക പരിഷീലനർത്ഥിനികളുടെ പെര്യോപ്തമാകാതെ				
18.	അനുഭവദായക പരിഷീലനം				
19.	മെറ്റീരിയൽ നോട്ടുകൾ വിവരണം ചെയ്യാതിരിക്കൽ				
20.	അനുഭവദായക വിവരണങ്ങൾ				
21.	അനുഭവദായക പ്രാദേശിക മെറ്റീരിയൽ				
22.	പരിപാടികളുടെ നടപ്പിലാക്കൽ ചുമതല ലക്ഷ്യമില്ലായ്മയുടെ അഭാവം				
23.	പരിഷീലനാർത്ഥിനികളെ വേർതിരിച്ചുപോലെ പ്രവർത്തിപ്പിക്കാൻ ചുമതല ലക്ഷ്യമില്ലായ്മയുടെ അഭാവം				
24.	മറ്റ് മുൻകരുതലില്ലായ്മ പ്രവർത്തിപ്പിക്കൽ ഉൾപ്പെടെ				

APPENDIX-IV

SCHEDULE FOR EVALUATING THE TRAINING PROGRAMME FOR  
AGRICULTURAL OFFICERS/ASSISTANT DIRECTORS

PRE TRAINING PHASE

Date :

1. Name of the training programme:
2. Name of the trainee :
3. Designation and address :
4. Age (Years) :
5. Educational qualifications

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Sl. No.	Name of the qualification	Name of the institution	Year of passing	Class or division	Distinction if any
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- 
6. Experience in years
    - (i) Total experience
    - (ii) Experience in T & V System
    - (iii) Experience in present job

7. Previous trainings undergone :-
  - (i) Have you participated in any inservice training programme since 1981?  
Yes/No

- (ii) If yes, please give the details:

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Sl. No.	Name of the training	Duration with dates	Venue	Remarks
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8. Any distinction in professional service :-

Sl. No.	Name of distinction/award	Nature of distinction/award	Year
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9. Please give your opinion on the following statements by marking (✓) in the appropriate column

Sl. No.	Statement	Strongly Agree	Under- cided	Dis- agree	Strongly disagree	
1	2	3	4	5	6	7

- 1 I hate my profession because it requires working in countryside.
- 2 Extension profession offers little opportunity to get acquainted with all kinds of people.
- 3 Extension profession offers sufficient opportunity for development of leadership ability.
- 4 An Assistant Director/ Agricultural Officer is an eminently effective force in bringing about Agricultural Development.
- 5 Extension professionals have very little to contribute towards National Development.

1	2	3	4	5	6	7
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- 6 An Assistant Director/  
Agricultural Officer can  
contribute a lot for  
Agricultural Development.
- 7 Extension profession is  
satisfying for me.
- 8. Honestly I wish I had not  
become an Assistant  
Director/Agricultural Officer.
- 9 Professional standards of  
Extension work is far  
inferior to other  
professions.
- 10. An Assistant Director/  
Agricultural Officer has  
ample opportunity to  
display his initiatives.

10. Below are given a few questions regarding your job. Please answer the questions as to how much you are satisfied/dissatisfied with your job.

Sl. No.	Question	Very much satisfied	Satisfied	Undecided	Dissatisfied	Very much dissatisfied
1	2	3	4	5	6	7

- 1 Are you satisfied that you are given enough authority to do your job?
- 2 Are you satisfied with the progress you are making towards the goals which you had set for yourself in your present position?



11. Below are given some statements regarding the T & V system in Kerala. Please indicate your extent of Agreement/Disagreement with these statements.

Sl. No.	Statement	Strongly agree	Undecided	Disagree	Strongly disagree
---------	-----------	----------------	-----------	----------	-------------------

- 1 Farmers will not be adversely affected if T & V system is closed.
- 2 T & V system will make the rich farmers richer and poor farmers poorer.
- 3 T & V system help to improve farmer's knowledge about scientific methods of farming.
- 4 T & V system has brought out a new outlook in the field of agricultural extension work.
- 5 There is nothing new to be offered in the T & V system.
- 6 After the start of the T & V system there has been significant improvement in the economic condition of the farmers.
- 7 People talk much of the T & V system, but actually no work is done.
- 8 The decision to continue the T & V system in Kerala is wise.

12. In your day to day job situations you would have experienced the best manageable job situations in which you can perform the job of communicating information very effectively, and also the worst manageable job situations

in which you will find it most difficult to perform the job of communication of information.

Kindly mention these two situations.

1. Best manageable job situation.
2. Worst manageable job situation.

Given below is a ladder, the top and the bottom of which indicate the best manageable job situation and the worst manageable job situation as indicated by you. Where on the ladder would you say, you are at present with regard to the job situation in relation to your job of communication of information.

Your best manageable job situation

	10
	9
	8
	7
	6
	5
	4
	3
	2
	1

Your worst manageable job situation

APPENDIX-V

TRAINING ON PULSES AND OIL SEEDS FOR AGRICULTURAL OFFICERS

Date :

1. Name of the trainee :
2. Please indicate the correct answers to the following questions. (Tick (✓) the appropriate)
  1. The most important pulse crop of Kerala is .....
    - (a) Greengram
    - (b) Black gram
    - (c) Cowpea
    - (d) Field bean
  2. The most important root feeding insects of groundnut are .....
    - (a) Thrips
    - (b) Microtermes
    - (c) Aphids
    - (d) Jassids
  3. .... is a green gram variety suited to summer season
    - (a) ACV - I
    - (b) ACV - II
    - (c) NF - 40
    - (d) Pusabaisakhi
  4. One of the important characteristics of cowpea variety "Krishnamani" is .....
    - (a) Pest tolerance
    - (b) Frost tolerance
    - (c) Synchronized flowering
    - (d) Bushy nature

5. The availability of rainfall after the seed set in sesamum is disadvantageous because .....
- (a) it will decay the pods
  - (b) it will affect the pollination
  - (c) it will induce further flower initiation
  - (d) it will induce the germination of seeds
6. .... is a season bound pulse crop
- (a) Green gram
  - (b) Horse gram
  - (c) Black gram
  - (d) Cowpea
7. .... is a fodder cowpea variety
- (a) Manjeri local
  - (b) C - 152
  - (c) CO - 1
  - (d) Karnataka local
8. A free living micro organism related to Nitrogen fixation is .....
- (a) Nitrobactor
  - (b) Nitrosomonas
  - (c) Rhizobium
  - (d) Azatobactor
9. The most important nutrient element which promotes root development in pulses is .....
- (a) Nitrogen
  - (b) Phosphorus
  - (c) Potassium
  - (d) Calcium
10. .... is a traditional pulse crop which is a twining perennial with edible pods and tubers.
- (a) Soya bean
  - (b) Frenchbean
  - (c) Wingedbean
  - (d) Bengalgram

11. The recommended seed rate of a pulse crop is .....
- (a) 5-10 kg/ha
  - (b) 20-25 kg/ha
  - (c) 30-40 kg/ha
  - (d) 10-15 kg/ha
12. .... is a multipoded sesamum variety
- (a) Kayamkulam - 1
  - (b) ACV - II
  - (c) S - 488
  - (d) Kayamkulam - 2
13. After inoculation with rhizobium culture pulse seeds should not be stored beyond ..... hours.
- (a) 2 hours
  - (b) 12 hours
  - (c) 24 hours
  - (d) 48 hours
14. .... is the crop named as the wonder crop of twentieth century.
- (a) Oil palm
  - (b) Sun flower
  - (c) Wingedbean
  - (d) Soyabean
15. The attack of ..... diseases will act as a limiting factor for cowpea cultivation during the 1st crop season in Kerala.
- (a) Anthracnose
  - (b) Collar rot
  - (c) Powdery mildew
  - (d) Root rot
16. .... is a spreading type of groundnut variety
- (a) CO - 1
  - (b) TMV - 1
  - (c) CO - 2
  - (d) TMV - 2

17. Amongst the following pulse crops ..... contains the highest protein content.
- (a) Frenchbean
  - (b) Greengram
  - (c) Soyabean
  - (d) Cowpea
18. The application of fertilizer nitrogen for pulses can be skipped if the organic matter content of the soil is .....
- (a) Nil
  - (b) Between 1% and 2%
  - (c) Between 0% and 1%
  - (d) More than 2%
19. The pest and disease attack is minimum for pulses during ..... in Kerala.
- (a) Virippu
  - (b) Mundakan
  - (c) Punja
  - (d) All seasons
20. The initial growth rate of pulses can be boosted by the foliar spray of ..... after 15 days of sowing.
- (a) Cycocel
  - (b) N A A
  - (c) Urea + Dimacron
  - (d) I A A
21. .... is the element which promotes Nitrogen - fixation in pulses.
- (a) Magnesium
  - (b) Sodium
  - (c) Molybdenum
  - (d) Manganese
22. The best method of rhizobium inoculation is by .....
- (a) coating seeds with 20% Jaggery

- (b) direct application of culture to soil
- (c) Mixing the culture as such with the seeds
- (d) Soil application of the nodule extract

23. Amongst pulses ..... has the highest consumption in Kerala

- (a) Redgram
- (b) Greengram
- (c) Bengalgram
- (d) Cowpea

24. The sesamum phyllody is caused by the attack of .....

- (a) Virus
- (b) Nematode
- (c) Mycoplasma
- (d) Fungus

25. .... is a non edible oil

- (a) Safflower oil
- (b) Rape Seed oil
- (c) Niger oil
- (d) Linseed oil

**APPENDIX-VI**

**SCHEDULE FOR EVALUATING THE TRAINING PROGRAMME FOR**  
**AGRICULTURAL OFFICERS**  
**POST TRAINING PHASE**

Date :

1. Name of the training :
2. Name of the trainee :
3. Please indicate your perception about the various aspects of the training methodology followed in this training programme.

Sl. No.	Item	Exce-llent	Good	Fair	Bad	Very bad
1	2	3	4	5	6	7

**I. PRETRAINING PHASE**

1. Timely information about the training
2. The selection of subject matter for training
3. The selection of topics for training
4. The selection of practicals for training
5. The selection of duration of training
6. The selection of venue for training
7. Preparation of schedule of classes
8. Preparation of training notes

1	2	3	4	5	6	7
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**II. TRAINING PHASE**

1. Treatment of subject matter by trainers
2. Training method followed by trainers
3. Opportunities for trainees participation
4. Opportunities for skill practice
5. Opportunities for field visits
6. Opportunities for clarification of doubts
7. The competency of trainers in general
8. Seating arrangement in the training hall
9. Ventillation provided in the training hall
10. Lighting arrangements in the training hall
11. Availability of teaching aids
12. Use of Audio-visual aids by trainers
13. Quality of Audio-visual aids used by trainers

**III. POST TRAINING PHASE**

1. Monitoring and evaluation of training
2. Methodology of evaluation of training
3. Quality of training notes supplied





6. Please indicate the constraints experienced by you if any in this training programme:

Sl. No.	Constraints	Perception			
		Most felt	Felt	Less felt	Un-felt
1	Lack of timely information about training				
2	Inadequate duration of training				
3	Insufficient transportation facilities				
4	Poor lodging facilities				
5	Poor boarding facilities				
6	Poor seating arrangements in the training hall				
7	Poor audio-visual facilities				
8	Improper monitoring				
9	Poor evaluation				
10	Too many trainees per batch				
11	Jam <sup>m</sup> ing of training schedule				
12	No leisure				
13	No recreation facilities				
14	No opportunities for skill practice				
15	No opportunities for clarification of doubts				
16	No field visits				
17	Inadequate practicals				
18	Incompetent trainers				
19	Training literature not distributed				



APPENDIX-VII

TRAINING ON AUDIO-VISUAL AIDS FOR ASSISTANT DIRECTORS

Date :

1. Name of the trainee :
2. Please indicate the correct answers to the following questions. (Please tick ( ) the appropriate)
  1. Audio-visual aids provide a situation which is .....
    - (a) Real
    - (b) Nearer to reality
    - (c) Imaginary<sup>a</sup>
    - (d) None of the above
  2. The percentage of message perceived through eyes is .....
    - (a) 75%
    - (b) 15%
    - (c) 50%
    - (d) 30%
  3. .... is an Audio-visual method which provides symbolic experience to the audience.
    - (a) Model
    - (b) Demonstration
    - (c) Drama
    - (d) None of the above
  4. .... is a universally used audio-visual aid
    - (a) Flannel board
    - (b) Bulletin board
    - (c) Poster
    - (d) Chalk board

5. .... is a visual aid which can be used to depict a physically inaccessible object.
- (a) Specimen
  - (b) Object
  - (c) Model
  - (d) None of the above
6. Active learning leads to retention of .....% of the original message.
- (a) 70%
  - (b) 90%
  - (c) 85%
  - (d) 25%
7. Poster is a ..... visual aid.
- (a) Three dimensional non-projected
  - (b) Two dimensional projected
  - (c) Two dimensional non-projected
  - (d) Three dimensional projected
8. The special type of exhibition technique which provides a three dimensional effect is .....
- (a) Cinerama
  - (b) Diorama
  - (c) Visiophone
  - (d) None of the above
9. Public address equipment is a ..... aid.
- (a) Audio
  - (b) Visual
  - (c) Audio-visual
  - (d) None of the above
10. Method demonstration provides .....
- (a) Direct purposeful experience
  - (b) Contrived experience
  - (c) Dramatized experience
  - (d) None of the above

11. .... is not a primary colour
- (a) Red
  - (b) Yellow
  - (c) Blue
  - (d) Green
12. .... coloured chalk is the best to be used with a green chalk board.
- (a) Red
  - (b) Yellow
  - (c) White
  - (d) Orange
13. The size of the poster must be .....
- (a) 20" x 20"
  - (b) 20" x 30"
  - (c) 30" x 10"
  - (d) 30" x 30"
14. .... has the principle of direct projection
- (a) Opaque projector
  - (b) Slide projector
  - (c) Epidia scope
  - (d) Movie projector
15. The picture of a distant object can be taken by using a camera with .....
- (a) Wide angle lens
  - (b) Normal lens
  - (c) Fish-eye lens
  - (d) Tele lens
16. The sense of mobility makes ..... more attractive.
- (a) Poster
  - (b) Flannel graph
  - (c) Flash card
  - (d) Chart

17. .... is a three dimensional visual aid.
- (a) Model
  - (b) Poster
  - (c) Chart
  - (d) Flash card
18. A three dimensional film is taken by using a ..... camera
- (a) Aerioflex
  - (b) Pentax
  - (c) Polaroid
  - (d) None of the above
19. .... is the best projected method to teach farmers about the cultivation practices of the crops.
- (a) Film strip projection
  - (b) Slide story projection
  - (c) Over head transparency projection
  - (d) None of the above
20. The working principle of opaque projector is .....
- (a) Direct projection
  - (b) Indirect projection
  - (c) Reflected projection
  - (d) None of the above
21. Diapositive film can be used for making .....
- (a) Transparencies
  - (b) X rays
  - (c) Movies
  - (d) None of the above
22. Opaque projector is otherwise known as .....
- (a) Kaleidioscope
  - (b) Epidiascope
  - (c) Episcope
  - (d) Periscope

23. For a viewer distance of 32 feet, the minimum letter size is .....
- (a)  $\frac{1}{4}$  "
  - (b)  $\frac{1}{2}$  "
  - (c) 1 "
  - (d) 2 "
24. The normal size of video cassette tape used in Television programme is .....
- (a)  $\frac{1}{4}$  "
  - (b)  $\frac{1}{2}$  "
  - (c)  $\frac{3}{4}$  "
  - (d) 1 "
25. .... is an example for interactive video
- (a) Cable TV
  - (b) Videotex
  - (c) Instructional TV
  - (d) None of the above
26. Flannel board can be prepared with .....
- (a) Felt cloth
  - (b) Khader cloth
  - (c) Gunny bag
  - (d) All of the above
  - (e) None of the above
27. Distance from the screen and the movie projector should be ..... times of the width of the screen.
- (a) 4 times
  - (b) 8 times
  - (c) 6 times
  - (d) 10 times

APPENDIX-VIII

SCHEDULE FOR EVALUATING THE TRAINING PROGRAMME FOR ASSISTANT

DIRECTORS

POST TRAINING PHASE

Date :

1. Name of the training :
2. Name of the trainee :
3. Please indicate your perception about the various aspects of the training methodology followed in this training programme.

Sl. No.	Item	Excellent	Good	Fair	Bad	Very bad
1	2	3	4	5	6	7

I. PRETRAINING PHASE

1. Timely information about the training
2. The selection of subject matter for training
3. The selection of topics for training
4. The selection of duration of training
5. The selection of venue for training
6. The selection of practicals of training
7. Preparation of schedule of classes
8. Preparation of training notes

## II. TRAINING PHASE

1. Treatment of subject matter by trainers
2. Training method followed by trainers
3. Opportunities for trainees participation
4. Opportunities for skill practice
5. Opportunities for field visits
6. Opportunities for clarification of doubts
7. The Competency of the trainers in general
8. Seating arrangements in the training hall
9. Lighting arrangements in the training hall
10. Ventillation provided in the training hall
11. Availability of teaching aids
12. Use of Audio-visual aids by trainers
13. Quality of Audio-visual aids used by trainers

## III. POST TRAINING PHASE

1. Monitoring and evaluation of training
  2. Methodology and evaluation of training
  3. Quality of training notes supplied
-

4. Please indicate your overall perception about the training methodology followed in this training. (Tick (✓) the appropriate)

1. Excellent
2. Good
3. Fair
4. Bad
5. Very bad

5. Please indicate your perception about the treatment and utility of the following topics covered in the training. (Mark (✓) in the appropriate column)

Sl. No.	Topic	Treatment				Utility			
		Thoroughly adequate	Adequate	Less adequate	Not adequate	Very useful	Useful	Less useful	Not useful
1	2	3	4	5	6	7	8	9	10

- 1 Introduction to Audio-Visual Aids and communication media (Theory)
- 2 Classification and study of Audio-visual aids (Theory)
- 3 Role of mass media in dissemination of Agricultural information - types of information materials (Theory)
- 4 Role of mass media in dissemination of Agricultural information - types of information materials (Practicals)





1	2	3	4	5	6
13	No recreation facilities				
14	No opportunities for skill practice				
15	No opportunities for clarification of doubts				
16	No field visits				
17	Inadequate practicals				
18	Incompetent trainers				
19	Training literature not distributed				
20	Irrelevant theory classes				
21	Irrelevant practical classes				
22	No body to care about the training				
23	No body to care about the trainees				
24	Any others (Please specify)				

APPENDIX-IX

SCHEDULE FOR EVALUATING THE CONSTRAINTS EXPERIENCED BY THE  
TRAINERS DURING THE CONDUCT OF A TRAINING PROGRAMME

Please indicate the constraints experienced by while you are engaged in conducting a training programme for the inservice trainees.

Sl. No.	Constraint	Most felt	Felt	Less felt	Un-felt
1	Lack of timely information about the training programme.				
2	Lack of timely information about the topics to be covered.				
3	Lack of timely information about the schedule of the programme.				
4	Inadequacy of the training hall provided.				
5	Inadequacy of the teaching aids provided.				
6	Inadequacy of the Audio-visual aids provided.				
7	Lack of co-operation form the trainees				
8	Inadequacy of the transportation facilities for field visits.				
9	Lack of laboratory facilities.				
10	Too many trainees/batch				
11	Too many training in a year				
12	Lack of facilities for arranging practical classes.				

	1	2	3	4	5	6
13	Insufficiency of the incentives provided					
14	Heterogenity among the trainees					
15	Lack of support from the course directors					
16	Lack of opportunities and facilities for preparing Audio-visual aids					
17	No time for adequate preparation					
18	No recognition for taking training classes					
19	Remuneration given for training is less					
20	The trainees are not serious about the training					
21	Lack of opportunities for assessing the impact of training					
22	Misbehaviour of trainees					
23	Lack of facilities for duplicating lecture notes					
24	Any others (Please specify)					

APPENDIX-X

SCHEDULE FOR EVALUATING THE CONSTRAINTS EXPERIENCED BY THE  
COURSE DIRECTORS DURING THE CONDUCT OF A TRAINING PROGRAMME

Please indicate the constraints experienced by you when you are assigned with the duty of a course director of an inservice training programme.

Sl. No.	Constraint	Most felt	Felt	Less felt	Un-felt
1	Lack of timely information about the training				
2	Inadequacy of the training hall provided				
3	Lack of timely availability of the resource personnel				
4	Lack of competent subject matter specialists in certain subjects				
5	Lack of boarding and lodging facilities for the trainees				
6	Lack of transportation facilities for field trips				
7	Non receipt of lecture notes from the resource persons in time				
8	Lack of separate resource personnel for training				
9	Lack of specialist's in all disciplines				
10	Insufficient seating facilities for trainees				
11	Lack of interest among the resource personnel in preparing audio-visual aids				



**AN ANALYSIS OF THE INSERVICE TRAINING  
PROGRAMMES FOR THE PERSONNEL OF  
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CONDUCTED BY THE  
KERALA AGRICULTURAL UNIVERSITY**

By

**C. U. SANTHI**

**ABSTRACT OF THE THESIS**

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## ABSTRACT

A study was undertaken to analyse the selected inservice training programmes conducted by the Kerala Agricultural University for the extension personnel of the State Department of Agriculture to assess,

1. the impact of selected inservice training programmes on the professional knowledge of the trainees
2. the perception of the trainees about the treatment and utility of the selected inservice training programmes
3. the perceived effectiveness of training methodology followed in the inservice training programmes and factors related to it
4. the constraints experienced by the trainees, trainers and Course Directors of inservice training programmes conducted by the Kerala Agricultural University.

Three selected training programmes namely 'Training in plant protection for Agricultural Demonstrators', 'Training in pulses and oilseeds production technology for Agricultural Officers' and 'Training in audio-visual aids and techniques for Assistant Directors of Agriculture were evaluated with the objectives mentioned above.

The study revealed that all the three categories of trainee-respondents namely, Agricultural Demonstrators, Agricultural Officers and Assistant Directors showed significant gain in knowledge due to the training programmes. The gain in knowledge due to training was the highest for Assistant Directors of Agriculture, followed by the Agricultural Officers and Agricultural Demonstrators.

The independent variables namely; 'education', 'number of previous trainings undergone', 'attitude towards extension profession' and 'job satisfaction' of Agricultural Demonstrators were found to be significantly associated with their gain in knowledge. In the case of Agricultural Officers and Assistant Directors none of the independent variables showed significant association with their gain in knowledge.

Among the three training programmes the 'training in plant protection for Agricultural Demonstrators' had the highest treatment-utility index (58.43), followed by the 'training in pulses and oilseeds production technology for Agricultural Officers' and 'training in audio-visual aids and techniques for Assistant Directors' for which the treatment-utility indices were 58.27 and 51.42 respectively.

Both the Agricultural Demonstrators and Assistant Directors had the highest perception about the training

methodology aspect namely 'Timeliness of information about the training' where as the Agricultural Officers had highest perception about the 'Selection of subject matter for training' in the pre-training stage. 'The competency of the trainers in general' was the training methodology aspect which was highly appreciated by the Agricultural Demonstrators in the in-training stage. 'Opportunities for clarification of doubts' and 'Opportunities for trainees participation' were given highest perception scores respectively by the Agricultural Officers and Assistant Directors in the in-training stage. In the post-training stage all the three categories of respondents namely the Agricultural Demonstrators, Agricultural Officers and Assistant Directors had the highest perception about the 'Monitoring and evaluation of training'.

The Agricultural Demonstrators were constrained with the 'Poor lodging facilities and poor boarding facilities' provided for them. The 'Lack of skill practice', 'Inadequate practicals' and 'Lack of field visits' were the serious constraints experienced by the Agricultural Officers. The Assistant Directors perceived the 'Insufficient transportation facilities' and 'Non-supply of training literature' as serious constraints. Both the trainers and Course Directors felt the 'inadequacy of transportation facilities' as serious constraint.