TRAINING PROGRAMMES OF KERALA AGRICULTURAL UNIVERSITY KRISHI VIGNAN KENDRAS-AN ANALYSIS

By

K. V. SANJEEV

THESIS

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DECLARATION

I hereby declare that this thesis entitled "TRAINING PROGRAMMES OF KERALA AGRICULTURAL UNIVERSITY KRISHI VIGNAN KENDRAS - AN ANALYSIS" 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,
30 June, 1987.
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K.V. SANJEEV

CERTIFICATE

Certified that this thesis entitled "TRAINING PROGRAMMES OF KERALA AGRICULTURAL UNIVERSITY KRISHI VIGNAN KENDRAS - AN ANALYSIS" is a record of research done independently by Sri. K.V. Sanjeev under my guidance and supervision and that it has not previously formed the basis for the award of any degree, fellowship or associateship to him.

Dr. G. THIAGARAJAN NAIR
Chairman
Advisory Committee
Professor, Krishi Vignan Kendra
Pattambi.

Pattambi,
30 June, 1987.
2-9.

APPROVED BY

Chairman:

Dr. G. THIAGARAJAN NAIR

Members:

1. Sri. K.P. RAMACHANDRAN NAIR

2. Dr. K. MUKUNDAN

3. Sri. V.K.G. UNNITHAN

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CHAPTER - I

INTRODUCTION

For a country like India, where agriculture is going to be the predominant sector for years to come, any development activity has to start from the agricultural sector. And development in the agricultural sector necessarily has to include the development of technical competency of farmers, extension personnel and farm scientists, along with the resource development activities through input mobilisation and infra-structure build up.

The best possible method for bridging the yield gap between the research station and the farmers' field will be to produce a competency among the farmers whereby they will be able to identify their problems and find out solutions for the same by themselves.

According to Peace Corps (1983), the development centers around building local capacity and self reliance in who needs it most. All the extension activities, while aiming at the transfer of technology to the farmers, help in enhancing the technical competency of farmers. As the competency develops among farmers, it will help them to address

deeper needs - i.e. the need to participate and control change, besides enabling them to face immediate needs.

Development of human resources in the agricultural sector is possible only through developing the technical competency of farmers and this in turn depends upon educational and training efforts.

Effort towards imparting training to farmers from private sector, voluntary organizations and the government is not a new phenomenon. But an analysis of the various training programmes in India by the Second Education Commission, headed by Dr. D.S. Kothari revealed certain reasons for the failure of conventional training efforts. These reasons included weak subject matter support, academic approach, poor methods of training, training programmes not being related to immediate needs, absence of facilities for training and stress on quantity than on quality.

For remedying the defects of existing training efforts, the Education Commission recommended that specialized institutions for providing vocational education should be established. Indian Council of Agricultural Research (I.C.A.R.) evolved Krishi Vignan Kendra (K.V.K.) as an innovative institution for vocational training in agriculture and allied subjects.

The first Krishi Vignan Kendra (KVK) was established by the ICAR in March 1974 towards the end of Fourth Five Year Plan at Pondicherry under the administrative control of Tamil Nadu Agricultural University, Coimbatore. The KVK has been conceived as a vocational training institution for practicing farmers, village youth, farm women and fishermen. The ICAR launched this project to accelerate the process of transfer of technology in a more effective manner. The training design of the KVK is based on the principles of teaching by doing and learning by doing. The skill training and need-based training are the two important components of the KVK programmes. The skill-oriented training imparted at the kendras to the farmers through work-experience will bridge the gap between the latest agricultural technology on the one hand and their effective transfer to the farming community on the other.

Latest figures by ICAR (1985) show that there are 89 KVKs and eight Trainer's Training Centres under the ICAR. In Kerala there are 4 KVKs under the ICAR. They are at Vellanad, Njarackal, Pattambi and Ambalavayal. KVK at Pattambi and Ambalavayal are under the Kerala Agricultural University.

Need for the study

A large number of farmers are being trained

on different subjects through off campus and on campus trainings from different KVKs in Kerala. But no comprehensive study had been conducted so far to assess the effectiveness of these trainings. The knowledge about the effectiveness of functioning of KVK will be beneficial for future performance of KVKs. Hence in the present study, an attempt was made to conduct an analysis of the training programmes undertaken by KVKs, with main emphasis for assessing the impact of the functioning of KVK.

Objectives of the study

The study was undertaken with the following specific objectives:

1. To identify the typology of farmers trained by KVKs
2. To study the motivational pattern of farmers for participation in the training
3. To ascertain the impact of KVK training programmes on the knowledge about, attitude towards and adoption of improved practices.
4. To find out the trainees' perception about the training methodology and content of KVK training programmes

5. To find out the constraints in training, as experienced by farmers

6. To find out the training needs of the trained farmers

Scope and limitations for the study

The present study envisages to reveal the various factors related to the training programmes of KVK under Kerala Agricultural University (KAU) with specific emphasis for assessment of the impact of the training programmes undertaken. The results may help in proper identification of farmers for future training programmes and also in proper modification of the methodology and content of future trainings. This will help in bringing about an overall improvement in the quality and quantity of training programmes to be organized by KVKs under KAU.

Within the scope of the limited time and resources available it could not have been possible for the researcher to cover all the training programmes undertaken by all the KVKs under KAU. Hence the study is specifically concerned with the training in agriculture. Trainings in Animal Husbandry, Fisheries and Home Science could not be covered due to limitations.

Even though the results from the study are not intended to be projected to the trainings in other fields, it will provide an insight into the functioning of KVKs under KAU and will be helpful in guiding the future training programmes.

Theoretical Orientation

CHAPTER-II

THEORETICAL ORIENTATION

The theoretical framework for the study was formulated after a thorough review of related studies and relevant literature. This consisted of the following aspects:

1. Concept of development
2. Human Resources Development (HRD)
3. Training - Its role in Human Resources Development
4. Krishi Vignan Kendra - A training institution
5. Motivation
6. Impact of training
   a) Impact of training on knowledge
   b) Impact of training on attitude
   c) Impact of training on adoption
7. Factors influencing the impact of training
8. Hypotheses developed for the study

1. Concept of development

Commenting on rural development programmes Kahaly (1984) notes that, the task of accelerating growth with greater social justice aims at fuller development of resources and opportunities in order

to improve the quality of life of the havenots in its totality. The government is committed to the uplift of the weaker sections of the society along with the all round development of the nation. With a focus on alleviation of poverty and promoting greater well-being and equality, the massive programmes of rural development have assumed vital significance for the poor millions.

Mainly the development activities at the national level were concentrated on resources development. But recently the importance of human resource as a potential resource has been identified and the greater need for its fuller development has beenrecognized at the national level.

2. Human Resources Development (H.R.D.)

Whatever be thechanges in scientific knowledge or technology, without developing the human resources, these changes will not have any long lasting significant impact on the society at large. Even at this age of artificial intelligence through computers, it is ultimately the human brain which controls it. The human factor can never be relegated to the second position. All the innovations will remain baseless and futile unless the human beings are competent enough to utilise them. Hence the main

emphasis must naturally be on Human Resources Development.

Singh (1986) notes that the concept of Human Resources Development includes two issues, i.e. the relationship of the person a) to himself and b) to the society. A person may be an asset or a liability to himself and to the society, depending upon the development of his skills and abilities and his social attitudes.

In the agricultural sector, human resources would mainly include farmers, extension personnel and scientists. Since the ultimate user of technology is the farmer, all the development efforts should emphasise the development of the farmer. This development is possible only through proper educational and training efforts.

3. Training - Its role in Human Resources Development.

Whereas education aims at the overall development of an individual, the training is more specific to a work situation.

According to Lynton & Pareek (1973), on a continuum, that has personal maturation and growth at one end and improvement in the performance of a predetermined task at the other, education would be

near the former end and training near the latter.

Training is primarily concerned with preparing the participant for certain lines of action. Education deals mostly with knowledge and understanding. Training deals most with understanding and skill.

Johnson (1976) notes that, when there is a difference or gap between actual performance and what is needed (the standard), productivity suffers. Training can reduce, if not eliminate this gap. It does so by changing the behaviour of individuals - by giving them whatever additional specific items of knowledge, skill or attitude they need to perform upto that standard. Changing behaviour, then, is the function of training. The terminal objective is to help achieve the goals of organisation through optimum use of manpower.

Training can solve a variety of manpower problems which militate against optimum productivity. These problems can arise in any group and the solution requires individuals to add to their apperceptive backgrounds specific, identifiable items of additional knowledge, skill or understanding.

4. Krishi Vignan Kendra - a training institution

The Mohan Singh Mehta Committee (1974)

specially appointed by the ICAR for formulating the KVK scheme, enunciated the following basic concepts:

1. The Kendra will impart learning through work experience and hence will be concerned with technical literacy, the acquisition of which does not necessarily require as a precondition, the ability to read and write.

2. The Kendra will impart training to only those extension workers who are already employed or to the practicing farmers and fishermen. In other words, the kendra will cater to the needs of those who are already employed or those who wish to be self employed.

3. The Kendra will have no uniform syllabus. The syllabus and programmes for each kendra will be tailored to the felt needs, natural resources and the potential for agricultural growth in that particular area.

These kendras are the grass root level vocational training institutions, designed for bridging the gap between the available technologies at the one end and their application for increased production at the other.

The basic principles of KVK was given by ICAR (1985) as,

1. Accelerating agricultural and allied production should be the prime goal.

2. Teaching by doing and learning by doing should be principal methods of imparting the skill training.

3. Training efforts should not be made to make economically good people better, but the poor ones good so as to raise the living condition of the poorest of the poor.

The main objectives of the kendra are as follows:

1. Planning and conducting survey of the operational area in order to prepare the resources inventory with special reference to identifying the training needs of the farming community.

2. Planning and conducting production oriented need based short and long duration training courses both on the campus as well as in the villages for various target groups with priority on the weaker and the poor.

3. Developing and organizing non-formal

educational programmes by way of field days, farm visits, farmers' fair, radio talk, farm science club etc, as the follow up information support to training courses.

4. Organizing farm science clubs, both in rural schools and in villages in order to induce in younger generation a liking for and an interest for agricultural and allied sciences and for scientific farming through supervised projects.

5. Developing and maintaining the campus farms and demonstration units on scientific lines as the facilities for providing work experience to the training as also disseminating the latest technical know-how.

6. Providing practical training facilities of the kendra to the teachers and the students of vocational agriculture of higher secondary schools.

7. Imparting some general education to rural illiterates and school drop outs in order to make them not only good farmers, but also better citizens.

8. Providing added training facilities in the areas for home-making and nuitrition education for rural community.

9. Gradually enlarging the training facilities,

to encompass other important areas such as home crafts, cottage industries etc. consistent to the requirements of the Integrated Rural Development in collaboration with concerned organizations.

10 Implementing all such schemes of the ICAR and other related organizations which intend to strengthen the training programmes of the kendra.

For the efficient functioning of KVKs, practical and experienced trainers are highly essential. Since the main emphasis is on learning by doing and teaching by doing, the trainers should be in a position to demonstrate the skills effectively to the trainees by actually doing the operations themselves. In order to make available such trainers, the Trainer's Training Centres (TTC) have been established in specialized subjects mainly in the ICAR research institutes for in service training to the trainers of KVKs and such other non-degree level institutions.

The Trainer's Training Centres would offer inservice training courses for the trainers and instructors of the Extension Training Centres, Farmers' Training Centres, agricultural schools, and teachers dealing with work experience and vocational courses in high schools and higher secondary schools. In TTCs the major part of training should be imparted by work

experience and the rest by lectures and discussions. The training should include both technology as well as pedagogy in proportion of about 80 : 20 respectively.

Operational details of KVK

The trainers of KVK must take the organization and the conduct of training courses as an action research. A systematic survey of the operational villages and the farming families has to be conducted. Other devices such as personal observation, personal visits, group contacts etc. also may be used. Based on these, the technological gaps are identified and their priorities ascertained for training purposes.

The training programmes are organised and conducted through the stages of planning, execution and follow up.

In the planning stage, the priority of training areas is fixed, trainees selected, and other facilities like staff, laboratory, accommodation etc. are arranged.

Execution stage is characterised by rational distribution of work, leisure and recreation to sustain interest. Lot of self-evaluation is facilitated.

Linkage with farmers and other trainees must be maintained on regular and long term basis through effective follow up. In the follow up measures, other agencies like state government development staff, local voluntary organisations, rural institutions, educational and research institutions may be involved.

5. Motivation

The motives that direct our behaviour are inspired by biological and social or psychological drives. Drive is the internal compulsion of an individual towards an activity.

Maslow (1954) identified the hierarchy of motives as physiological needs, safety needs, need for belongingness and love, and esteem needs. The higher levels of motives can be satisfied only after satisfying motives at the lower level of the hierarchy.

Bandura & Walters (1963) showed that if one wants a person to make response, all he has to do is to elicit and reward it. They further reported that reward shaped behaviour.

Rogers and Svenning (1969) in their research in six villages in Columbia and eight villages of Uttar Pradesh concluded that farm production was positively related to achievement motivation.

Das and Sarkar (1970) found that farmers adopt the farming practices only for economic gains. The higher the economic motivation, the more will be the favourable attitude towards improved farming practices.

Rao et al. (1971) identified the following hierarchy of motives among farmers in the adoption of high yielding varieties. Economic motive was the first followed by national welfare, innovativeness, self actualization, prestige, security, affiliation and dominance.

Diraviyam (1972) found that the foremost motivational factor that induced the farmers to compete in the crop yield competition was the desire for public recognition, followed by more yield, new experience and awards.

Raghudharan (1972) studied the motivational pattern in adoption of high yielding varieties by farmers and found that the family need was at the top of the hierarchy followed by self-actualization, affiliation, patriotism, economic security, prestige, innovativeness, achievement motivation and freedom from debt.

Sinha and Sharma (1972) indicated that the farmers' tendency towards adoption - rejection of

the innovation was dependent on their levels of achievement motivation and change-proneness.

Venkidusamy (1977) studied the motivational pattern of small farmers in project and non-project (SFDA) blocks for the adoption of high yielding varieties of cotton. In the project block, at the top of the motivational hierarchy was freedom from debt and family need followed by affiliation, security and self actualization. In the non-project block the order had been as freedom from debt and family need, security, self-actualization, affiliation and prestige.

Vijayaraghavan and Subramanyan (1981) concluded from their study that innovation-proneness, economic motivation and scientific orientation of farmers had significant relation with their information input behaviour.

Haque and Ray (1983) found that economic motivation and innovation proneness of the fish farmers were extremely important in the adoption of recommended species of fish in composite fish culture.

Mishra and Sinha (1983) observed that motivational variables had a definite bearing on entrepreneurial activity for the resourceful farmers.

Motivational disposition of the trainees will be having a definite impact on the effectiveness of training. Hence it was decided to include this as a separate factor in the present study, to assess its relationship with the impact variables.

6. Impact of training

Johnson (1976) while analysing the role of training brings out the impact of training in an organization set up as

a) increased productivity

b) improved quality of work and raised morale

c) developing of new skills, knowledge, understanding and attitude

d) bringing incumbents to that level of performance which meets the standard performance for the job

e) prepare people for advancement, improve manpower deployment, and ensure continuity for leadership

f) ensure the survival and growth of the enterprise.

According to him one key to the survival and growth of organization is the efficiency of the work force. Therefore, a major effort in successful organization is directed at optimum use of manpower.

This in turn calls for constant attention to the growth needs of each employee. To meet these needs efficiently, many organizations augment on-the-job supervision with formal off-the-job training.

Any training effort brings forth impact at different levels.

i) Impact at the individual level

This involves modified behaviour as evidenced by acquired knowledge, skills, attitudes and behavioral changes like adoption.

ii) Impact at the societal level.

Changes of the individualy leads to changes in the society as a whole. This results in raised level of living of the members of the society, and the society will move forward through the path of continuous development.

a. Impact of training on knowledge

Kamalsen (1971) reported that there was significant increase in knowledge about high yielding varieties, in farmers by attending one day farmers' training camp.

Pimprikar et al. (1974) from their study concluded that there was significant association between knowledge of farmers about poultry husbandry practices

and the training. 74 per cent of the trained poultry farmers were having high level of knowledge, while only 11 per cent of the untrained farmers had high level of knowledge.

Ramakrishna (1980) revealed that there was significant change in knowledge among farmers in all the trained practices of paddy cultivation.

Joshi and Rao (1981) from their study concluded that the gain in knowledge as a result of training had been very significant among village level workers.

Raniman Kunju et al. (1981) conducted a study to evaluate the knowledge utilization by the KVK trained farmers on propagation techniques. All the farmers reported that they had clearly understood the propagation techniques.

Raniman Kunju and Mothilal Nehru (1982) in another study also found out increased knowledge of propagation techniques among trained farmers.

Joshy and Thorat (1984) revealed that nutrition training had positive impact on respondents with regard to knowledge index.

6. Impact of training on attitude

Kamalsen (1971) reported a significat change in attitude towards high yielding variety of paddy, due to training.

Pimprikar et al. (1974) from their study among poultry farmers concluded that upto 94 per cent of trained farmers had favourable attitude towards poultry practices while only 74 per cent of the untrained farmers had favourable attitude.

c. Impact of training on adoption

Patel and Patel (1968) found that most of the trained farmers gained significantly higher adoption scores than those untrained in areas trained like improved seed, seed treatment, fertilizer, farm implements and insecticides.

Pimprikar et al. (1974) found out significant association between adoption and training.

Higher adoption of hybrid maize by trained farmers was reported by Krishna and Jalihal (1976).

In a study conducted by Muthiah et al. (1978), it was found that 56 per cent of the participants in training adopted full doses of fertilizers, 30 per cent adopted partially and 14 per cent did not adopt.

Thangaraju (1979) found out that the trained farmers were better adopters of all practices of sericulture.

Ramakrishna (1980) reported a significant change in the utilization of knowledge in all the trained practices in paddy cultivation.

Rahiman Kunju et al. (1981) found that 60 per cent of the attempts at propagation techniques were successful after the training programme.

Joshy and Thorat (1984) revealed that there was statistically significant association between training and adoption index of production aspect of nuitrition food.

In the present study, main focus was given only on the impact of KVK training on the individual farmers i.e. changes in the knowledge, attitude and adoption taking place at the level of individual farmers.

7. Factors influencing the impact of training

The impact of a training event will be influenced by many factors.

a) Factors related to the training situation

Stock and Thelen (1958) found three factors in group composition as important in the success of a training programme.

1. The extent of commonality in the group with respect to expectation to work and expectation of degree of intimacy desired.

2. The extent to which there are persons who can openly express attitudes for and against fight, dependency, pairing and possibly flight and

3. The extent to which the leader's own problems of accepting and dealing with anxiety are different from the groups'.

Physical facilities available for use in the training situation will also influence the impact. Then the use of different methods of teaching, arrangements at the venue etc. will also have its own effect.

b) <u>Factors related to the trainer</u>

Trainer characteristics will significantly influence the ultimate impact of training. Lynton and Pareek (1973) notes that, the nature, quality and effectiveness of the interaction we call training depends primarily on the feeling that the trainer communicates to the participants through his behaviour.

The behaviour of the trainer in a training situation in turn will be dependent upon his attitudes, values, beliefs and abilities.

c) **Factors related to the trainee**

A number of factors related to the trainee can influence the final impact of the training. These are presented in the Table 1.

In this study only those factors related to the trainees were selected. Out of the various factors only eight independent variables had been selected. They were

Age

Education status

Economic status

Social participation

Extension contact

Mass media exposure

Scientific orientation

Farming experience

The theoretical framework for the study is presented in the Fig.1.

8. **Hypotheses developed for the study**

A.1 There will be significant difference between trained farmers and untrained farmers in their extent of knowledge about improved paddy cultivation practices.

A.2 There will be significant difference between trained farmers and untrained farmers in their

attitude towards improved paddy cultivation practices.

A.3 There will be significant difference between trained farmers and untrained farmers in their adoption of improved paddy cultivation practices.

B.1 There will be significant association between the age of the trained farmers and their knowledge about the improved paddy cultivation practices.

B.2 There will be significant association between the education status of trained farmers and their knowledge about the improved paddy cultivation practices.

B.3 There will be significant association between economic status of trained farmers and their knowledge about the improved paddy cultivation practices.

B.4 There will be significant association between social participation of trained farmers and their knowledge about improved paddy cultivation practices.

B.5 There will be significant association between extension contact of trained farmers and their knowledge about improved paddy cultivation practices.

B.6 There will be significant association between mass media exposure of trained farmers and their knowledge about improved paddy cultivation practices.

B.7 There will be significant association between scientific orientation of trained farmers and their knowledge about improved paddy cultivation practices.

B.8 There will be significant association between farming experience of trained farmers and their knowledge about improved paddy cultivation practices.

C.1 There will be significant association between age of trained farmers and their attitude towards improved paddy cultivation practices.

C.2 There will be significant association between education status of trained farmers and their attitude towards improved paddy cultivation practices.

C.3 There will be significant association between economic status of trained farmers and their attitude towards improved paddy cultivation practices.

C.4 There will be significant association between social participation of trained farmers and their attitude towards improved paddy cultivation

practices.

C.5 There will be significant association between extension contact of trained farmers and their attitude towards improved paddy cultivation practices.

C.6 There will be significant association between mass media exposure of trained farmers and their attitude towards improved paddy cultivation practices.

C.7 There will be significant association between scientific orientation of trained farmers and their attitude towards improved paddy cultivation practices.

C.8 There will be significant association between farming experience of the trained farmers and their attitude towards improved paddy cultivation practices.

D.1 There will be significant association between age of trained farmers and adoption of improved paddy cultivation practices.

D.2 There will be significant association between education status of trained farmers and adoption of improved paddy cultivation practices.

D.3 There will be significant association between economic status of trained farmers and adoption of improved paddy cultivation practices.

D.4 There will be significant association between social participation of trained farmers and adoption of improved paddy cultivation practices.

D.5 There will be significant association between extension contact of trained farmers and adoption of improved paddy cultivation practices.

D.6 There will be significant association between mass media exposure of trained farmers and adoption of improved paddy cultivation practices.

D.7 There will be significant association between scientific orientation of trained farmers and adoption of improved paddy cultivation practices.

D.8 There will be significant association between farming experience of trained farmers and adoption of improved paddy cultivation practices.

E.1 There will be significant difference in the motivational hierarchies of low adopter trainees and high adopter trainees.

Fig.1 CONCEPTUAL FRAMEWORK FOR THE STUDY

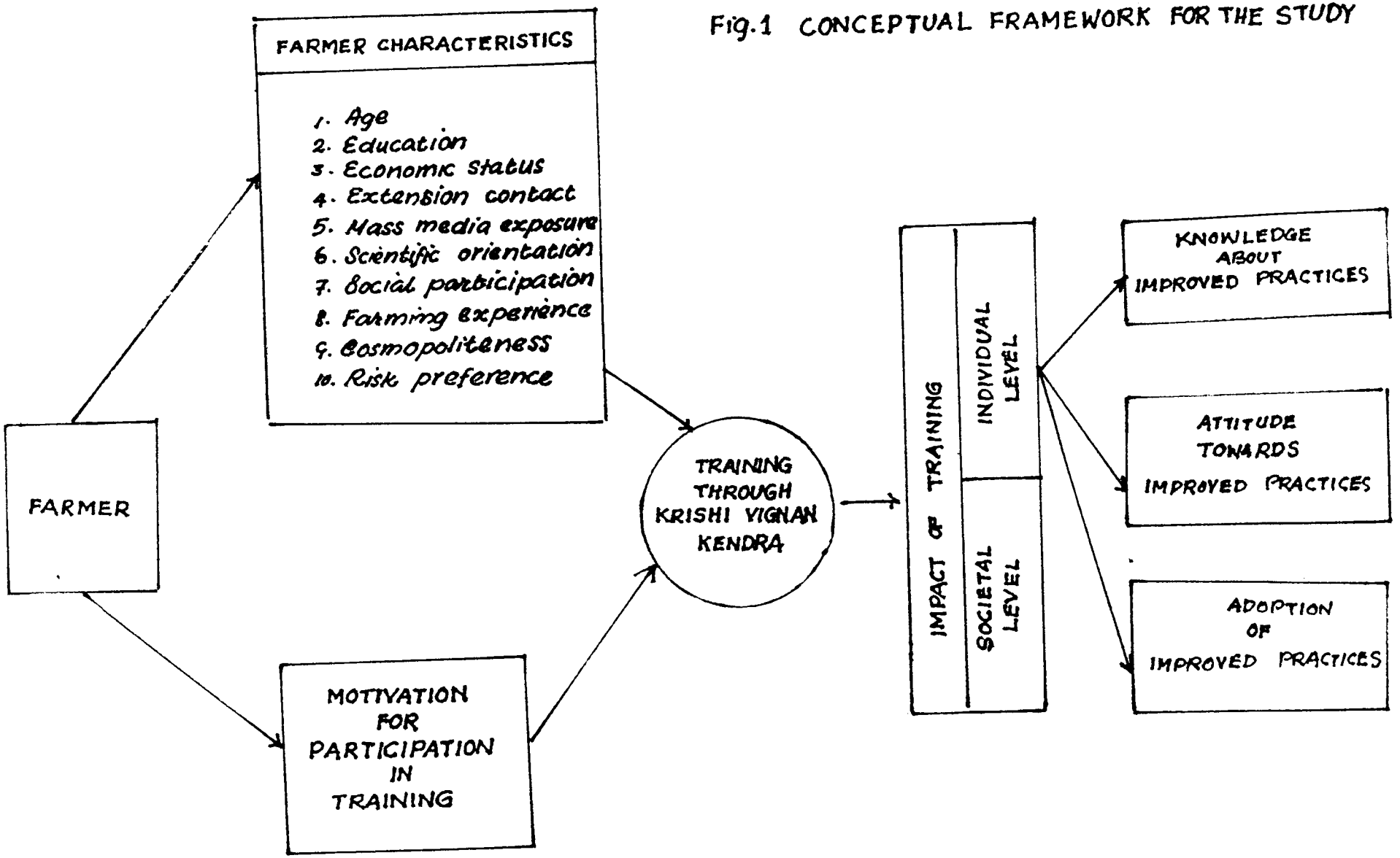


Table 1. Review of studies to show the influence of some factors on knowledge, attitude and adoption

Relationship of variables with knowledge			
Variable	Author(s)	Year	Relationship
1. Age	Gopal	1974	No relation
	Singh and Prasad	1974	No relation
	Behera and Sahoo	1975	Negative
	Kaleel	1978	No relation
	Somasundaram & Singh	1978	Negative
	Kamarudeen	1981	Negative
	Parshad	1981	Negative
	Shavinder & Dhaliwal	1984	Negative
2. Education	Gopal	1974	Positive
	Behera & Sahoo	1975	Positive
	Supe & Salode	1975	Positive
	Vijayaraghavan	1977	Positive
	Kaleel	1978	Positive
	Somasundaram & Singh	1978	Positive
	Kamarudeen	1981	Positive
	Parshad	1981	Positive
3. Farm size	Gopal	1974	Positive
	Supe & Salode	1975	No relation
	Vijayaraghavan	1977	Positive
	Kamarudeen	1981	Negative

Table 1. (Contd.)

	Variable	Author(s)	Year	Relationship
4.	Annual income	Kamarudeen	1981	Negative
5.	Social participation	Singh & Prasad	1974	Positive
		Kaleel	1978	Positive
		Kamarudeen	1981	Positive
		Pachori & Tripathi	1983	Positive
6.	Extension contact	Knight & Singh	1975	Positive
		Vijayaraghavan	1977	Positive
		Kaleel	1978	Positive
		Somasundaram & Singh	1978	Positive
		Kamarudeen	1981	Positive
7.	Mass Media Exposure	Menon & Prema	1978	Positive
		Prasad	1978	Positive
		Kamarudeen	1981	Positive
8.	Scientific orientation	Dhanokar	1970	Positive
		Supe & Salode	1975	Positive
		Somasundaram & Singh	1978	Positive
		Kamarudeen	1981	Positive
		Parshad	1981	No relation
9.	Farming experience	Gopal	1974	Positive
10.	Cosmopolite-ness	Knight & Singh	1975	Positive

Table 1. (Contd.)

	Variable	Author(s)	Year	Relationship
11.	Economic motivation	Somasundaram & Singh	1978	Positive
12.	Risk preference	Kamarudeen	1981	Positive
13.	Management orientation	Kamarudeen	1981	Positive
14.	Innovative proneness	Pachori & Tripathi	1983	Positive
	Relationship of variables with attitude			
	Variable	Author(s)	Year	Relationship
1.	Age	Singh & Singh	1968	Negative
		Das & Sarkar	1970	No relation
		Makkar & Sohal	1974	Negative
		Reddy & Reddy	1977	No relation
		Kamarudeen	1981	Negative
		Surendran	1982	No relation
2.	Education	Das & Sarkar	1970	Positive
		Singh & Singh	1971	Positive
		Makkar & Sohal	1974	Positive
		Reddy & Reddy	1977	No relation
		Kamarudeen	1981	Positive
		Surendran	1982	No relation
3.	Holding size	Das & Sarkar	1970	Positive
		Singh & Singh	1971	Positive
		Menon & Prema	1976	Positive
		Reddy & Reddy	1977	No relation

Table 1. (Contd.)

	Variable	Author(s)	Year	Relationship
4.	Material possessions	Reddy & Reddy	1977	No relation
5.	Annual income	Das & Sarkar	1970	Positive
		Sushama	1979	Positive
6.	Social participation	Das & Sarkar	1970	Positive
		Reddy & Reddy	1977	Positive
		Kamarudeen	1981	Positive
7.	Extension contact	Reddy & Reddy	1977	No relation
		Kamarudeen	1981	Positive
8.	Mass media exposure	Prakash	1980	No relation
		Kamarudeen	1981	Positive
9.	Scientific orientation	Kamarudeen	1981	Positive

Relationship of variables with adoption

	Variable	Author(s)	Year	Relationship
1.	Age	Chand & Gupta	1966	No relation
		Perumal	1970	No relation
		Rao	1972	Negative
		Ramamurthy	1973	No relation
		Ramakrishnan	1974	No relation
		Sinha *et al*	1974	No relation

Table 1. (Contd.)

Variable	Author(s)	Year	Relationship
	Karim & Mehboob	1974	No relation
	Subramanian	1976	Negative
	Pillai	1978	Negative
	Balasubramanian	1980	Negative
	Bordoloi & Bezbora	1981	Negative
	Singh	1983	No relation
2. Education	Chand & Gupta	1966	Positive
	Patel & Singh	1970	Positive
	Perumal	1970	Positive
	Grewal & Sohal	1971	Positive
	Sundaraswamy	1971	Positive
	Diraviyam	1972	Positive
	Rao	1972	Positive
	Chandrakandan	1973	Positive
	Ramamurthy	1973	Positive
	Jothiraj	1974	Positive
	Nair	1974	No relation
	Ramakrishnan	1974	Positive
	Sinha *et al.*	1974	No relation
	Pillai	1978	Positive
	Sakthivel	1979	Positive
	Balasubramanian	1980	Positive
	Kamarudeen	1981	Positive

Table 1. (Contd.)

Variable	Author(s)	Year	Relationship
3. Farm size	Chand & Gupta	1966	Positive
	Grewal & Sohal	1971	No relation
	Rao	1972	Positive
	Ramamurthy	1973	Positive
	Karim & Mehboob	1974	Positive
	Ramakrishnan	1974	No relation
	Sinha *et al.*	1974	No relation
	Chandrakandan & Subramanyam	1975	Positive
	Subramanian	1976	Positive
	Vijayaraghavan	1977	Positive
	Pillai	1978	Positive
	Kamarudeen	1981	Negative
4. Annual income	Subramanian	1976	No relation
	Kaleel	1978	Positive
	Singh	1979	Positive
	Balasubramanian	1980	Positive
	Bordoloi & Bezbora	1981	Positive
5. Social Participation	Chand & Gupta	1966	Positive
	Sundaraswamy	1971	Positive
	Diraviyam	1972	Positive
	Rao	1972	Positive
	Chandrakandan	1973	Positive

Table 1. (Contd.)

Variable	Author(s)	Year	Relationship
	Ramamurthy	1973	Positive
	Anbalagan	1974	Positive
	Jothiraj	1974	Positive
	Karim & Mehaboob	1974	Positive
	Ramakrishnan	1974	Positive
	Sharma & Nair	1974	Positive
	Salunke & Thorat	1975	Positive
	Joshi	1977	Positive
	Vijayaraghavan	1977	Positive
	Pillai	1978	Positive
	Thangaraju	1979	Positive
	Balasubramanian	1980	Negative
	Singh	1983	Positive
6. Extension contact	Dhaliwal & Sohal	1965	Positive
	Grewal & Sohal	1971	No relation
	Diraviyam	1972	Positive
	Karim & Mehboob	1974	Positive
	Sharma & Nair	1974	Positive
	Sinha *et al.*	1974	No relation
	Sundaraswamy & Duriswamy	1975	Positive
	Vijayaraghavan	1977	Positive
	Saini *et al.*	1977	Positive

Table 1. (Contd.)

	Variable	Author(s)	Year	Relationship
		Sakthivel	1979	Positive
		Singh	1979	Positive
		Thangaraju	1979	Positive
		Bordoloi & Bezbora	1981	Positive
7.	Mass media exposure	Singh & Singh	1970	Positive
		Sharma & Nair	1974	Positive
		Singh	1979	Positive
		Balasubramanian	1980	Positive
		Kamarudeen	1981	Positive
8.	Scientific orientation	Supe & Salode	1975	Positive
		Subramanian	1976	Positive
		Balasubramanian	1977	Positive
		Saini *et al.*	1977	Positive
		Vijayaraghavan	1977	Positive
		Sakthivel	1979	No relation
		Thangaraju	1979	Positive
9.	Farming experience	Grewal & Sohal	1971	Positive
		Ramakrishnan	1974	Positive
		Thangaraju	1979	Positive
		Balasubramanian	1980	Negative
10.	Economic motivation	Singh & Singh	1970	Positive

Methodology

CHAPTER - III

METHODOLOGY

This chapter explains the following

1. Selection of project area for study
2. Design of the study
3. Selection of respondents
4. Empirical measurements of selected variables
5. Collection of data
6. Procedure followed in statistical analysis

1. Selection of project area for study

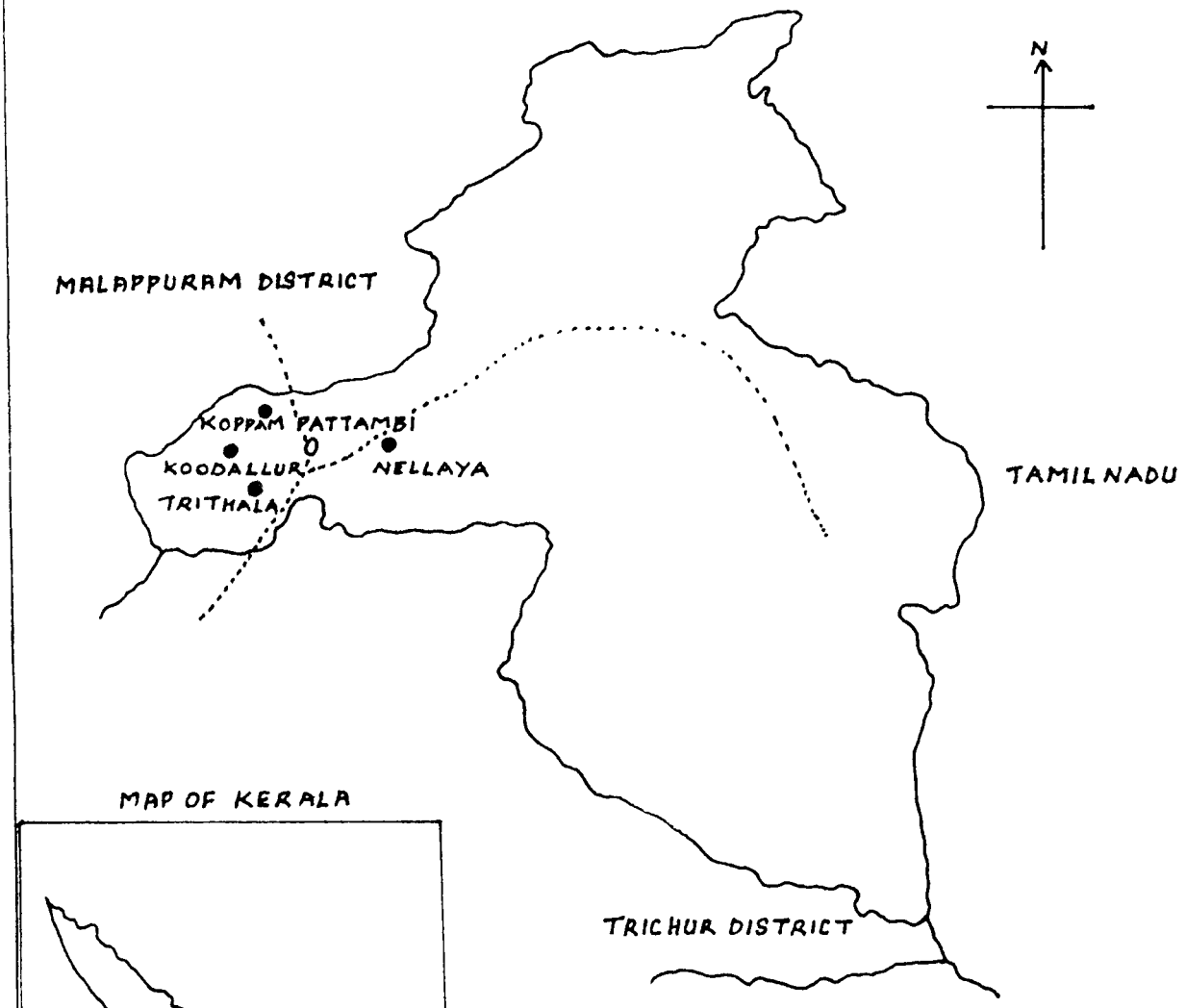
The study was meant for analysing the functioning of ICAR sponsored Krishi Vignan Kendras under Kerala Agricultural University. There are two KVKs under KAU, now sponsored by ICAR. Both these KVKs viz. Pattambi KVK and Amalavayal KVK were selected for the study. The project area included Palghat and Wynad districts which were the jurisdiction of Pattambi KVK and Ambalavayal KVK, respectively. Fig.2 and Fig. 3 relates to the location of the study.

2. Design of the study

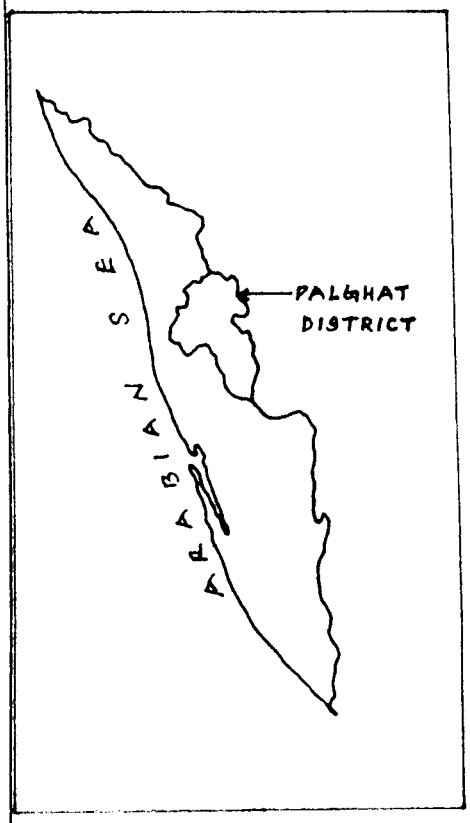
The best method to measure the impact of training is before-and-after evaluation method, where the impact variables are measured before the training and after the training. But if this is followed to study the impact of training on adoption, the researcher will have

FIG.2. MAP OF PALGHAT DISTRICT

SHOWING THE STUDY AREA



MAP OF KERALA



O K.V.K. STATION

● LOCATION OF STUDY

----- ROADS

to wait till the next crop season to measure the adoption rate. To avoid this difficulty, Ex-Post-Facto design was followed in this study.

3. **Selection of respondents**

KVK conducts training on various disciplines like Agriculture, Animal Husbandry, Home Science, Fisheries etc. Since it was not possible to evaluate all the trainings in all the fields, it was decided to focus on trainings in Agriculture only. In this case also, only trainings on paddy cultivation were considered for analysis.

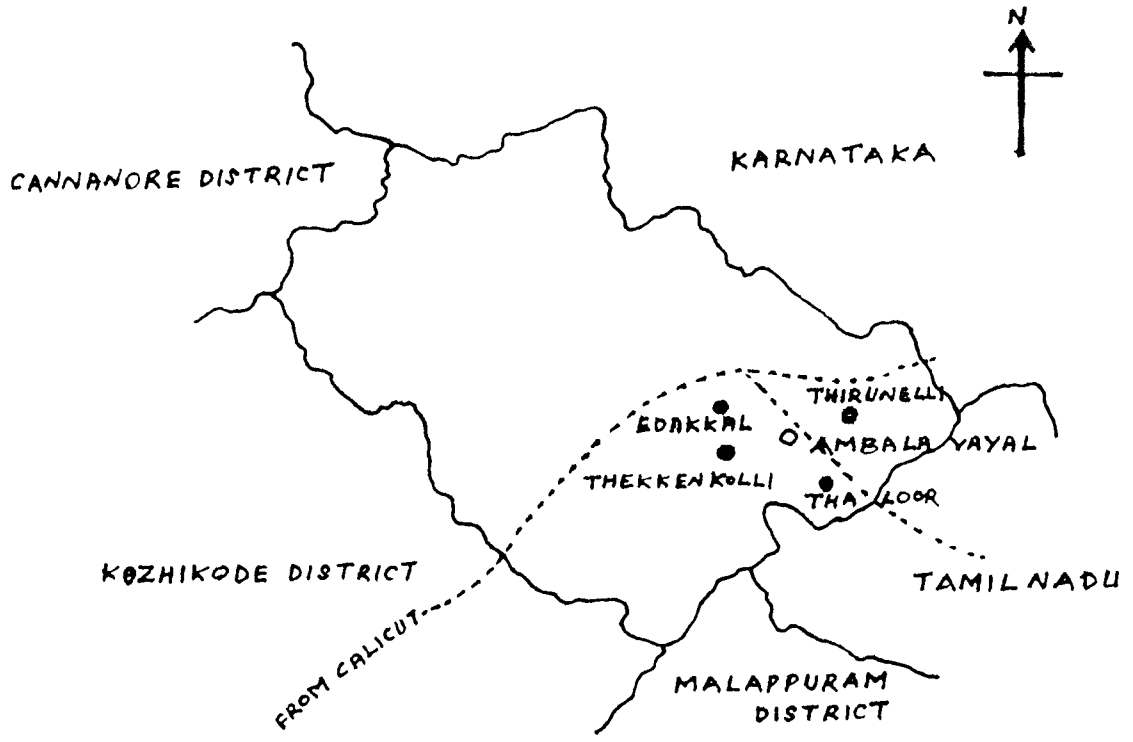
For selection of samples, the following procedure was adopted:

From the list of trainings conducted in 1984-85 on paddy cultivation by KVK Pattambi and KVK Ambalavayal, four trainings each were selected at random. From the list of farmers who attended these trainings, ten farmers were selected at random from each training to make the sample size f 80 trained farmers. (40 for KVK Pattambi and 40 for KVK Ambalavayal).

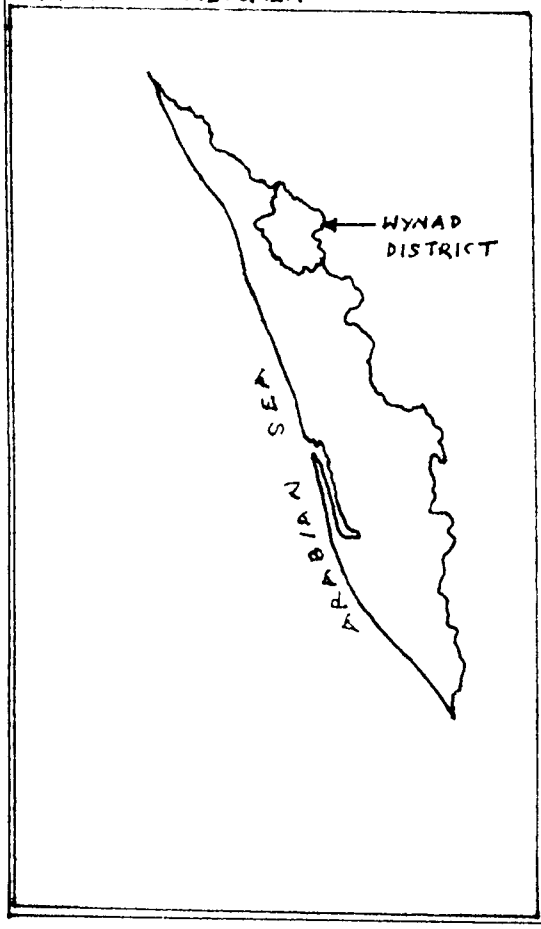
From the list of paddy cultivators available with the Agricultural Development Offices, 10 untrained farmers each were also selected from the same area from where the trained farmers were selected. Thus the total

FIG.3. MAP OF WYNAD DISTRICT

SHOWING THE STUDY AREA



MAP OF KERALA



○ K.V.K. STATION

● LOCATION OF STUDY

----- ROADS

number of untrained farmers selected were 80. (40 from KVK Pattambi, and 40 from KVK Ambalavayal).

4. Empirical measurements of selected variables

4.A. Dependent variables

4.A.1 Knowledge

Shankaraiah and Singh (1967) measured the knowledge of farmers about improved methods of vegetable cultivation on a teacher made test. Equal weightage was given to all the items assuming that all the items included, had some difficulty to understand, apply and recall. Then the knowledge index was calculated as,

$$KI = \frac{x_1 + x_2 \ldots\ldots\ldots + x_n}{N} \times 100$$

where KI = Knowledge index

x_1 = Number of correct answers for the first practice

x_2 = Number of correct answers for the second practice

x_n = Number of correct answers for the n^{th} practice

N = Total number of questions

Jaiswal and Dave (1972) gave a score of one for correct answer and zero for wrong answer in the case of knowledge about agricultural innovations. The total knowledge score was calculated as,

$$\frac{\text{Number of correct answers}}{\text{Total raw score}} \times 100$$

Pillai (1978) measured the knowledge of farmers about soil conservation practices. 12 questions were selected and the respondents were asked to state yes or no for each item. For a favourable answer, a score of one was given and for unfavourable, zero. Total scores for the 12 items indicated the extent of knowledge.

Gill and Sandhu (1981) calculated the average knowledge score as,

Average knowledge score =

$$\frac{\text{Total knowledge score}}{\text{Number of questions x number of respondents}}$$

In the present study, a simple knowledge test was developed to measure the knowledge of farmers about the improved paddy cultivation practices. All possible questions on paddy cultivation were selected after consulting with the scientists at the Kerala Agricultural University, keeping in view the syllabus of the training programmes. These questions were judged for their difficulty level by experts at KVK. Of these total number of questions judged, 12 questions with average difficulty were selected for the purpose of study.

A score of one was given for a correct answer and zero for wrong answer. Maximum score possible for an individual was 12.

4.A.2 Attitude

In this study, attitude towards high yielding varieties of paddy, attitude towards chemical fertilizers, attitude towards soil testing and attitude towards plant protection were studied. The attitude scale used by Kamarudeen (1981) was adopted for this study.

Attitude in each case was measured using six statements each. This included both favourable and unfavourable statements. For a favourable statement, the scores were given for different responses as

Strongly agree	- 4
Agree	- 3
Undecided	- 2
Disagree	- 1
Strongly disagree	- 0

For unfavourable statements this scoring pattern was reversed.

4.A.3. Adoption

Different researchers had used different methods to study adoption.

Mundra and Batham (1967) measured the extent of adoption using the following indices:

$$\text{Acceptance index} = \frac{\text{Number of people adopted new practice}}{\text{Total number of respondents}} \times 100$$

$$\text{Area index} = \frac{\text{Area covered under new practice}}{\text{Total area in a crop}} \times 100$$

Sengupta (1967) calculated the adoption quotient on the basis of the number of practices actually used by the respondent, out of the total number of practices applicable to the respondent

$$\text{Adoption quotient} = \frac{\text{Number of practices used}}{\text{Number of applicable practices}} \times 100$$

Singh and Singh (1974) used the formula for adoption quotient as

$$AQ = \frac{\leq \frac{e}{p}}{N} \times 100$$

Where AQ = Adoption quotient

$\leq$ = Summation

e = extent of adoption of each practice

p = potential for adoption

N = total number of applicable practices

In the present study, the adoption quotient developed by Singh and Singh (1974) was used

$$AQ = \frac{\leq \frac{e}{p}}{N} \times 100$$

The practices selected for study of adoption were

a) Cultivation of high yielding variety of paddy

b) Adoption of seed treatment

c) Application of lime

d) Application of chemical fertilizers

e) Application of plant protection chemicals

4.B Independent variables

4.B.1 Age

Age was measured as the number of years an individual has completed, since his birth, at the time of the study. Then respondents were classified into young, middle and old as follows,

Young - less than 30 years

Middle - 30 to 50 years

Old - more than 50 years

4.B.2 Education

In the present study, scoring procedure used by Trivedi (1963) was adopted.

Illiterate - 0

Can read only - 1

Can read and write - 2

Primary - 3

Middle - 4

High School - 5

College and above - 6

4.B.3 Economic status

The main components of economic status were

Farm size

Annual income

House type and

Material possessions

Farm size

Balu (1980) gave the scoring for farm size as

Upto one acre	-	1
Upto five acres	-	2
Upto ten acres	-	3
Upto 15acres	-	4
Upto 20 acres	-	5
More than 20 acres	-	6
No irrigation	-	1
Well irrigated	-	2

Farm size score was calculated as, score for extent of land x weightage for irrigation.

Venkataramaiah (1983) measured land holding as

No land	-	0
Less than one acre	-	1
One to five acres	-	2
More than 5 acres	-	3

In this study gross cropped area was considered as such. This included area of wet land and garden land.

Annual income

Ramamurthy (1973) scored annual income as,

Upto Rs.5,000/- per annum (low)	- 1
From Rs.5,001/- to Rs.10,000/- (medium)	- 2
More than Rs.10,000/- (high)	- 3

In this study annual income was the total of main income and subsidiary income. Then scoring was done as

One score = Rs.1,000/-

House type

Possession of house was scored by Trivedi (1963) as

No house	- 0
Hut	- 1
Katcha	- 2
Mixed	- 3
Pucca	- 4
Mansion	- 5

Chennakesavan (1978) used a different scoring

Thatched	- 1

Tiled - 2

Terraced - 3

Tiled + terraced - 4

Surendran (1982) adopted the procedure as

No house - 0

Hut - 1

Thatched - 2

Tiled - 3

Terraced - 4

Additional scores of one each was given for electrified and plastered.

In the present study the method by Surendran (1982) was followed.

Material possessions

For material possessions the scoring procedure was given by Prakash (1980) as

No animal - 0

One to two draught animal - 1

Two and above - 2

Cycle - 1

Radio - 1

Chair - 1

Cot - 1

Almirah - 1

Agricultural implements- 1

Surendran (1982) measured the material possession by giving scores based on the monetary value of the goods possessed by the respondents. A score of one each was given for every 1000 rupees.

The procedure by Surendran (1982) was used in this study also. The items considered were iron plough, bullock cart, pumpset, tractor, tillar, sprayers, bullocks, cows, buffaloes, goat, poultry, cycle, radio, bike, television and other gadgets.

Sum of scores for farm size, annual income, house type and material possessions was taken as the economic status score.

Based on the scores classification of farmers was done into high group and low group.

High group	- > mean
Low group	- < mean

4.B.4 Social participation

John (1973) measured social participation by giving scores for participation in organizational activities as,

No membership	- 0
Membership in one organization	- 1
Member in more than one	- 2

Office bearer in one organization - 3

Office bearer in more than one - 4

Distinctive features like MLA, MP - 6

Kamarudeen (1981) used the scale as having two dimensions of membership in organization and participation in organizational activities.

For membership, scores were given as

Member - 1

Office bearer - 2

For frequency of participation,

Attends all meetings - 2

Attends not all meetings - 1

Not attending any of the meetings - 0

Procedure by Kamarudeen (1981) was followed in the present study. Based on scores, farmers were classified into high group and low group

High group - > mean

Low group - < mean

4.B.5 Contact with extension agency

Jaiswal et al. (1971) measured extension contact based on the frequency of contact.

Respondents were asked to indicate their frequency of contact with JAO, VEO etc. in connection with agricultural activities. Then scores for different frequencies were given as

Visiting daily	- 5
Once in a week	- 4
Twice in a month	- 3
Once in a month	- 2
Rarely	- 1
Never	- 0

In the present study slightly modified scoring procedure was adopted as

Never	- 0
Once in a month	- 1
Once in a fortnight	- 2
Once in a week	- 3
Two or more times in a week	- 4

Based on the mean values farmers were classified into high group and low group.

4.B.6 Mass media exposure

Nair (1969) adopted the scoring procedure based on frequency, as

Never	- 0
Once in a month	- 1
Once in a fortnight	- 2

Once in a week	- 3
Two to six times in a week	- 4
Every day	- 5

The procedure by Nair (1969) was adopted for use in the present study.

4.B.7. Scientific orientation

Scientific orientation was measured by using the scale developed by Supe (1969). The scale consisted of six statements of which one is negative and all the others positive.

Response from the farmers was measured on a three point continuum of agree, undecided, disagree. In the case of positive statements the scoring was as

Agree	- 2
Undecided	- 1
Disagree	- 0

For negative statement, the scoring was

Agree	- 0
Undecided	- 1
Disagree	- 2

Based on the scores, the farmers were classified into high group and low group.

High group	- > mean
Low group	- < mean

4.B.8 Farming experience

Farming experience was measured as the number of years that the respondent had been engaged in agricultural operations.

Ramamurthy (1973) developed the scoring procedure as

Upto five years (low)	- 1
From five to 10 years (medium)	- 2
>10 years (high)	- 3

In the present study the actual years of experience was taken as the score.

4.c. Motivation

Singh (1969) developed the achievement motivation scale which consisted of six items with five alternative responses to each item.

Supe (1969) used economic motivation scale which consisted of six statements. One was negative statement and five were positive.

In this study, in order to identify the heirarchy of motives, the method used by Raghudharan (1972) was adopted after necessary modifications. Out of the 41 statements suggested by him one statement each for each motive was selected. This was presented in pairs to the respondents.

The statements used for measuring each of the motive were as follows.

Economic motive - I attended training because I wanted to make my cultivation profitable.

Affiliation motive - I attended the training because my friends also attended.

Innovativeness - I attended the training because I wanted to have a new experience.

Prestige - I attended the training because I wanted to become a model farmer and a leader.

Self actualization - I attended the training because I have enough resources to utilize new ideas.

Achievement motivation - I attended the training because I wanted to be the best farmer in my locality.

For finding out the scale value of each statement paired comparison technique was used. This was done separately for Palghat and Wynad. district. Based on the scale values, the hierarchy of motives was identified.

Then to find out whether the motivational hierarchy differed for high adopters and low adopters, farmers were classified into high adopter group (Adoption quotient more than 50), and low adopter group

(Adoption quotient less than 25). In each case hierarchy was obtained, ranking was done, and rank correlation test was done.

4.D. i) Perception about training methodology

It was measured using seven statements. The statements related to the time selected for training, venue of training, duration of training, use of skill practice, use of audio-visual aids, opportunity for field visit and arrangements at the venue.

ii) Perception about the content of training.

The content of the training was divided into ten topics and opinion of the respondents was measured on two dimensions of coverage and utility. In each case the response was obtained on a three point continuum.

Coverage was given weightage as

covered in detail	- 2
Covered not in detail	- 1
Not covered at all	- 0

Usefulness of the topic was scored as

Most useful	- 2
Useful	- 1
Not useful	- 0

4.E Training needs

Gill and Sandhu (1981) measured the training

needs of poultry farmers as follows.

At first a knowledge test was done. In the knowledge test, correct answer got a score of one and wrong answer a score of zero. Average knowledge score of each subject matter area was worked out as

Average knowledge score =

$$\frac{\text{Total score}}{\text{Number of questions} \times \text{number of respondents}}$$

Then the training need score was worked out as

Training need score = 1 - average knowledge score

In the present study, 11 topics were presented to the respondents on which they had given responses as t the intensity of training need.

The Weightage was given as

Most needed	- 2
Needed	- 1
Not needed	- 0

From this the ranking of different topics was obtained.

5. Collection of data

A draft of interview schedule was prepared for the purpose of collecting data from the farmers. Then it was put to pretest. After necessary

difications final interview schedule was prepared.

The interview schedule for trained farmers consisted of six parts - the typology of farmers, motivational pattern, impact of training, perception study, constraints and training need analysis. The interview schedule is given in Appendix - 2.

For collecting data from the untrained farmers the typology part and the impact part of the above schedule was made use of.

The researcher personally contacted all the 160 respondent farmers in the study areas and interviewed them to elicit responses.

6. Procedure followed in statistical analysis

Statistical analyses were done separately for Palghat and Wynad. Distribution free procedures were adopted for analysis.

a. Kruskal - Wallis test

This test was done to assess the relationship between independent and dependent variables.

Quartiles were found out in the score pattern of each independent variable. Dependent variables were ranked. Then to the respondents coming in each quartiles, ranks were allotted instead of the actual scores for dependent variables. Then K value was

calculated as,

$$K = \sum \frac{R^2}{N}$$

Where R = the sum of ranks in each category

N = the sample size

Then the statistic was found out as

$\frac{12k}{N(N+1)} - 3(N+1)$. This statistic can be assumed to follow x^2 distribution for large samples. Hence the calculated value of the statistic was tested against the tabled value of x^2, to know whether the groups differed significantly in the dependent variables. If they differed, it meant that the independent variable which was taken for categorising the sample, had significant relationship with the dependent variable.

This test was done for data from trained farmers in Palghat and Wynad district separately.

b. Mann - Whitney test

This test was done to assess the difference between groups for some variable.

The observations for the variables were ranked (two groups together such that the rank allotted to each individual is known) and then sum of ranks for the group with the lower sum of rank was taken as T_i.

Then W was calculated as

$$W = n_1 n_2 + \frac{n_1(n_1 + 1)}{2} - T_1$$

From this Z value was found out as

$$Z = \frac{/W - n_1 n_2/}{\sqrt{\frac{n_1 n_2 (n_1 + n_2 + 1)}{12}}}$$

n_1 and n_2 are the size of samples in each group.

c. <u>Paired comparison technique</u>

This was used to identify the hierarchy of motives. From the responses for the paired statements, frequency matrix, proportion matrix and Z-matrix were formed. Then the scale value for each statement was obtained to order the different motives along a continuum.

Results

CHAPTER-IV

RESULTS

The results of the study are presented in the following sequence:

1. Typology of trained farmers
2. Impact of training
   - a. Impact of extent of knowledge
   - b. Impact on attitude towards high yielding varieties of paddy
   - c. Impact on attitude towards soil testing
   - d. Impact on attitude towards application of chemical fertilizers
   - e. Impact on attitude towards plant protection chemicals
   - f. Impact on the attitude towards combined improved cultivation practices of paddy
   - g. Impact on adoption of improved paddy cultivation practices
3. Factors influencing impact of training
   - a. Age and dependent variables
   - b. Education and dependent variables
   - c. Economic status and dependent variables

d. Social participation and dependent variables

e. Extension contact and dependent variables

f. Mass media exposure and dependent variables

g. Scientific orientation and dependent variables

h. Farming experience and dependent variables

4. a. Motivational pattern of trained farmers

b. Motivational pattern of high adopters and low adopters

5. a. Perception about the training methodology

b. Perception about the content of training

6. Suggestions for future training

7. Constraints faced by the farmers

8. Training needs of farmers

1. Typology of trained farmers

a. Age

Distribution of farmers (trained as well as untrained) based on age is presented in Table 2. Both in Palghat and Wynad districts majority of the trained farmers belonged to the middle age group of 30 to 50

Table 2. Distribution of farmers according to age

Category	Palghat				Wynad			
	Trained		Untrained		Trained		Untrained	
	Frequency	%	Frequency	%	Frequency	%	Frequency	%
Young	9	22.50	1	2.50	16	40.00	8	20.00
Middle	19	47.50	30	75.00	21	52.50	26	65.00
Old	12	30.00	9	22.50	3	7.50	6	15.00
Total	40	100.00	40	100.00	40	100.00	40	100.00
Mean score	44.78		47.03		37.60		41.58	

years. The percentage of trained farmers belonging to the middle age group was 47.5 and 52.5 in Palghat and Wynad respectively. In Wynad, Slightly higher share of the trainees was formed by young farmers, when compared to Palghat. Comparison of mean values is shown in the Fig.5.

b. Education

Table 3 reveals the distribution of trained and untrained farmers in both the study areas based on their education status scores.

In Palghat district, 87.5 per cent of the trained farmers had formal education while the corresponding figure for the untrained farmers was 65 per cent. This meant that the trained farmers were more educated than the other farmers. More than 40 per cent of trained farmers in Palghat district had education above high school level. But only 10 per cent of the untrained farmers had education above high school level. Number of illiterates were more among the untrained farmers.

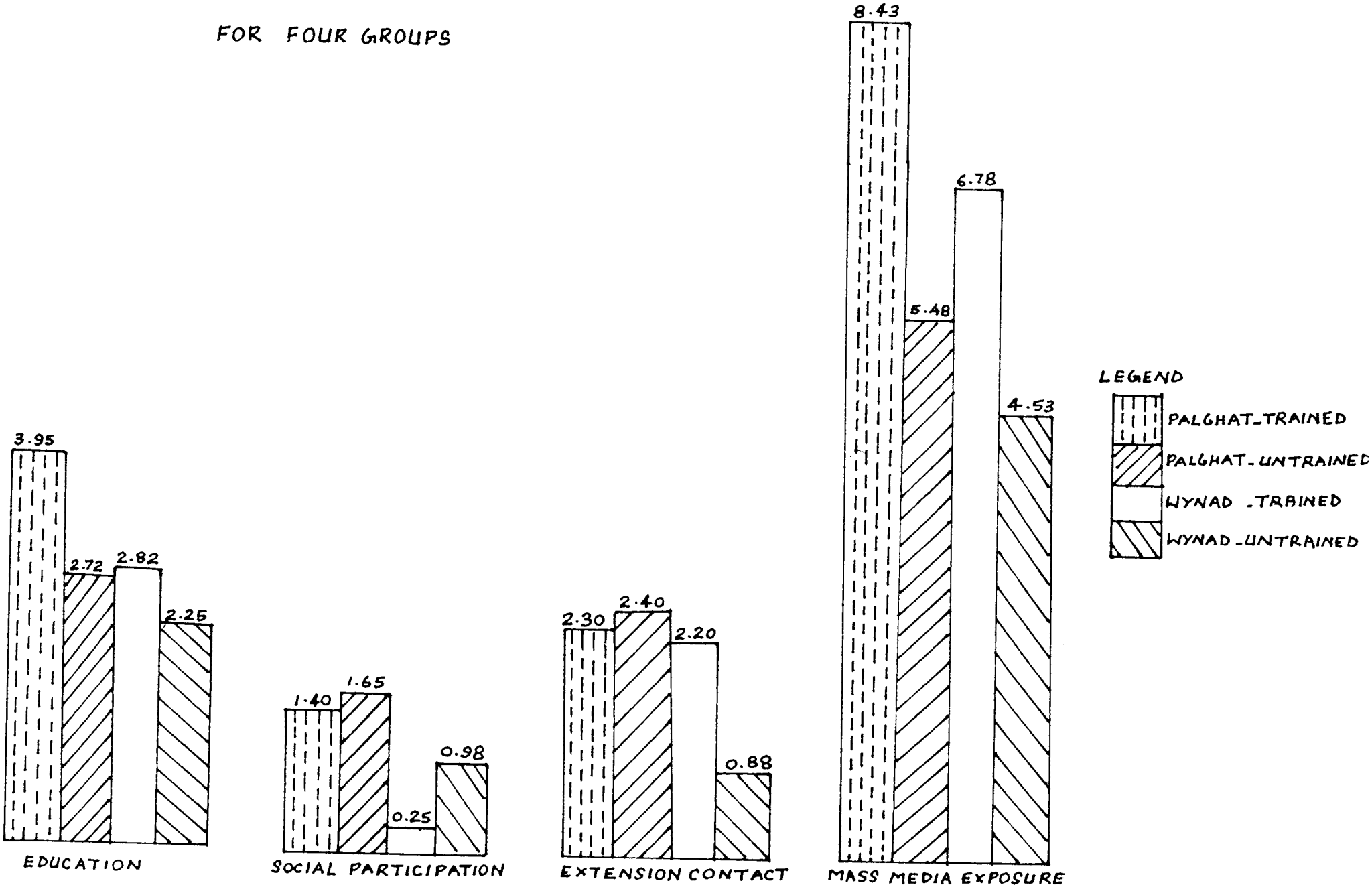
In Wynad district also, the trained farmers were found to be having higher education status than the untrained farmers. Among the trained farmers 80 per cent had formal education, while the corresponding figure for the untrained farmers was

Table 3. Distribution of farmers based on education status

Category	Palghat				Wynad			
	Trained		Untrained		Trained		Untrained	
	Frequency	%	Frequency	%	Frequency	%	Frequency	%
Illiterate	2	5.00	6	15.00	6	15.00	15	37.50
Can read only	0	0	0	0	1	2.50	0	0
Can read and write	3	7.50	8	20.00	1	2.50	1	2.50
Primary	7	17.50	15	37.50	20	50.00	10	25.00
Middle	11	27.50	7	17.50	10	25.00	12	30.00
High School	15	37.50	4	10.00	2	5.00	2	5.00
Graduate and above	2	5.00	0	0	0	0	0	0
Total	40	100.00	40	100.00	40	100.00	40	100.00
Mean score	3.95		2.72		2.82		2.25	

FIG.4. MEAN VALUES OF INDEPENDENT VARIABLES

FOR FOUR GROUPS



60 per cent. Illiterate farmers were more among the untrained farmers. Percentage of illiterate farmers was 15 and 37.5 among the trained farmers and untrained farmers respectively.

Mean education status scores were also found to be high for the trained farmers in both the districts. It is represented in the Fig.4.

Result of Mann-Whitney analysis to know the difference in education status score of trained and untrained farmers is shown in Table 4.

It indicated that only in Palghat district significant difference could be obtained between trained farmers and untrained farmers, in their education status score.

c. Economic status

A perusal of Table 5 revealed the distribution of farmers based on their economic status.

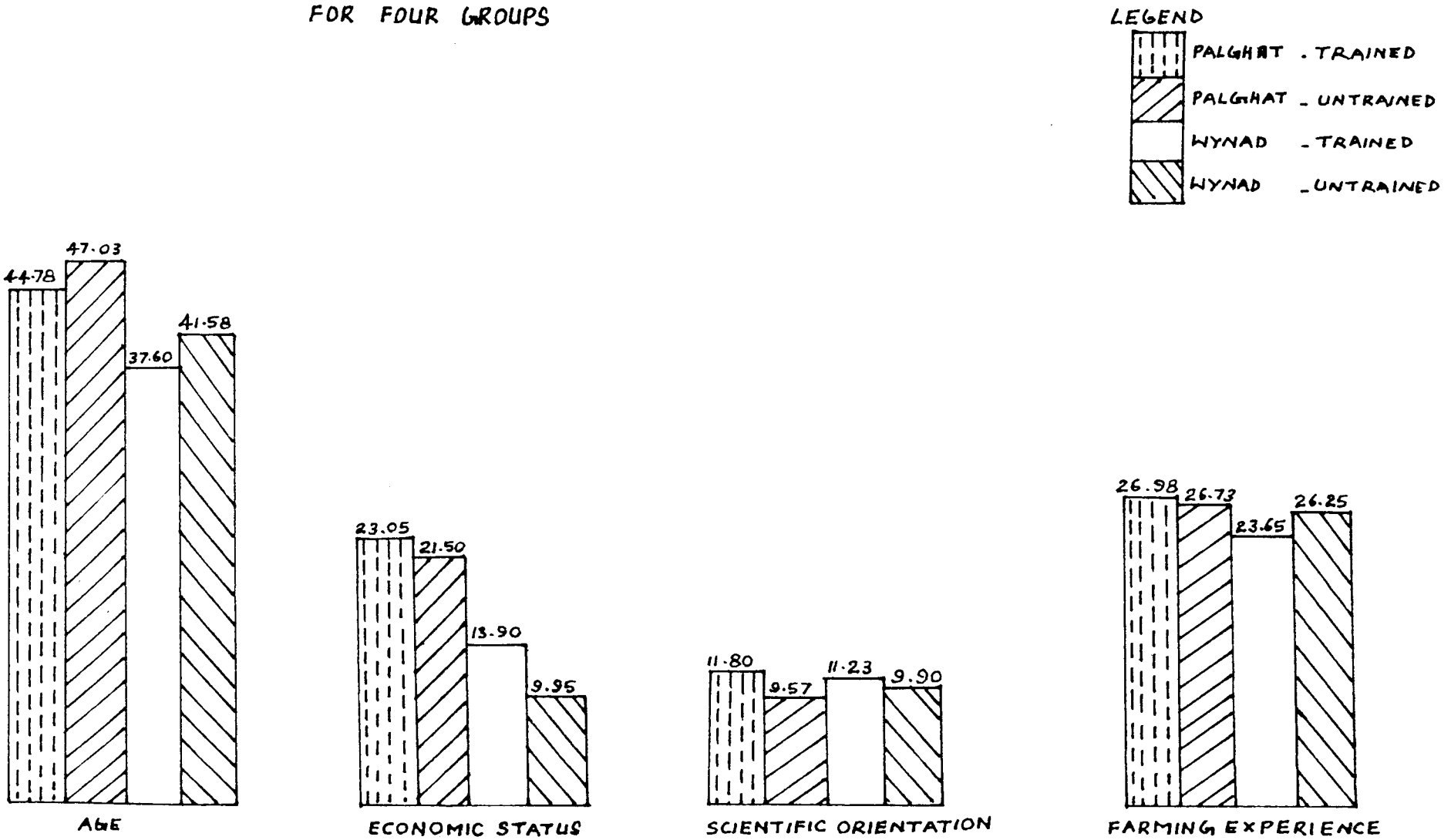
Mean economic status score of trained farmers was higher than that of untrained farmers in both the districts. Mean economic status scores of trained farmers were 23.05 and 13.93, for Palghat and Wynad respectively. The corresponding figures for untrained farmers were 21.59 and 9.95 respectively in Palghat and Wynad district.

Table 4. Difference between trained farmers and untrained farmers in independent variables (Mann-Whitney test)

Independent variable	Palghat district		Wynad district	
	Z-value	Significance	Z-value	Significance
1. Education status	3.79	Significant at 1%	0.89	Not significant
2. Economic status	0.73	Not significant	2.89	Significant at 1%
3. Social participation	1.93	Not significant	2.83	Significant at 1%
4. Extension contact	0.35	Not significant	4.32	Significant at 1%
5. Mass media exposure	3.49	Significant at 1%	2.70	Significant at 1%
6. Scientific orientation	2.11	Significant at 1%	0.10	Not significant
7. Farming experience	0.94	Not significant	1.01	Not significant

FIG.5. MEAN VALUES OF INDEPENDENT VARIABLES

FOR FOUR GROUPS



Mean values are represented in the Fig.5.

Mann-Whitney analysis was done and the result is presented in Table 4.

Only in the case of Wynad district, significant difference could be obtained between trained and untrained farmers, based on the economic status score.

d. Social participation

Distribution of farmers based on social participation score is presented in Table 6.

It could be seen from the data that the trained farmers were of comparatively low social participation than the other farmers. 52.5 per cent of trained farmers in Palghat district and 87.5 per cent of trained farmers in Wynad district belonged to the low social participation group.

Mean social participation scores were found to be high for the untrained farmers in both the districts. In Wynad district the difference was very high. Fig. 4 represents the mean scores.

Results of Mann-Whitney test is shown in Table 4.

Table 5. Distribution of farmers based on economic status

Category	Palghat				Wynad			
	Trained		Untrained		Trained		Untrained	
	Frequency	%	Frequency	%	Frequency	%	Frequency	%
Low	23	57.50	20	50.00	22	55.00	20	50.00
High	17	42.50	20	50.00	18	45.00	20	50.00
Total	40	100.00	40	100.00	40	100.00	40	100.00
Mean score	23.05		21.59		13.93		9.95	

Table 6. Distribution of farmers based on social participation

Category	Palghat				Wynad			
	Trained		Untrained		Trained		Untrained	
	Frequency	%	Frequency	%	Frequency	%	Frequency	%
Low	21	52.50	8	20.00	35	87.50	20	50.00
High	19	47.50	32	80.00	5	12.50	20	50.00
Total	40	100.00	40	100.00	40	100.00	40	100.0
Mean score	1.40		1.65		0.25		0.98	

It could be seen that in Wynad district, the difference between trained farmers and untrained farmers in their social participation was significant. In Palghat, though the untrained farmers had higher mean social participation score, the difference was not significant.

e. Extension contact

Table 7 revealed the distribution of farmers based on extension contact scores.

In Palghat, majority of the trained farmers belonged to low extension contact group. In Wynad district, the low extension contact group and high group constituted almost equal share of the trained farmers.

Mean extension contact scores were almost similar for trained farmers and untrained farmers in Palghat district. In Wynad district, trained farmers got higher mean extension contact score. The Fig.4 gives the comparison.

Mann-Whitney analysis was done, the result of which is given in Table 4.

It revealed that in Wynad, the trained farmers had significantly higher mean extension contact scores when compared to the untrained farmers.

But in Palghat, this difference was not significant.

It was concluded that among tribal farmers, the trained farmers were having more extension contact than the untrained farmers. In Palghat district, both trained farmers and other farmers had almost equal extension contacts.

f. Mass media exposure

The distribution of farmers based on their mass media exposure score is presented in Table 8.

It was seen that more of trained farmers in Palghat belonged to the high group based on mass media exposure score. Among untrained farmers, majority were in the low group.

In Wynad district the farmers were almost equally distributed to the high group and low group.

Mean mass media exposure scores were found to be higher in the case of trained farmers both in Palghat and Wynad. The mean scores were 8.43 and 6.78 for trained farmers in Palghat and Wynad district respectively. For the untrained farmers, the corresponding figures were 5.48 and 4.53 for Palghat and Wynad respectively. It is represented in the Fig.4.

Table 7. Distribution of farmers based on extension contact

Category	Palghat				Wynad			
	Trained		Untrained		Trained		Untrained	
	Frequency	%	Frequency	%	Frequency	%	Frequency	%
Low	30	75.00	39	97.50	21	52.50	12	30.00
High	10	25.00	1	2.50	19	47.50	28	70.00
Total	40	100.00	40	100.00	40	100.00	40	100.00
Mean score	2.30		2.40		2.20		0.88	

Table 8. Distribution of farmers based on mass media exposure

Category	Palghat				Wynad			
	Trained		Untrained		Trained		Untrained	
	Frequency	%	Frequency	%	Frequency	%	Frequency	%
Low	9	22.50	23	57.50	20	50.00	18	45.00
High	31	77.50	17	42.50	20	50.00	22	55.00
Total	40	100.00	40	100.00	40	100.00	40	100.00
Mean score	8.43		5.48		6.78		4.53	

Result of Mann-Whitney analysis is presented in Table 4.

It was seen that both in Palghat and Wynad, the trained farmers got significantly higher mass media exposure scores than the untrained farmers.

g. Scientific orientation

Table 9 reveals the distribution of trained and untrained farmers in Palghat and Wynad district based on their scientific orientation scores.

Majority of the trained and untrained farmers belonged to the high group based on scientific orientation scores.

Mean scientific orientation score was higher for the trained farmers, both in Palghat and Wynad district. In Palghat district the mean scores were 11.8 and 9.57 for trained farmers and untrained farmers respectively. In Wynad district, the trained farmers got 11.23 and untrained farmers got 9.90. It is represented in the Fig.5.

Result of Mann-Whitney analysis is presented in Table 4.

The test revealed that in Palghat district, the trained farmers got significantly higher scientific

orientation scores. But in Wynad, though the mean score for the trained farmers was higher, the difference was not found to be significant.

h. Farming experience

Distribution of farmers based on farming experience is presented in Table 10.

In Palghat district, the mean farming experience score was found to be slightly higher for trained farmers. The mean score was 26.98 while for the untrained farmers, it was 26.73.

In Wynad, the mean score for trained farmers was lower. The score was 23.65 for the trained farmers, while for the untrained farmers the mean score was 26.25. The Fig.5 represents this.

Result of Mann-Whitney analysis is presented in Table 4. It was found that both in Palghat and Wynad there was no significant difference between trained farmers and untrained farmers, in their farming experience.

2. Impact of training

2.a Impact on extent of knowledge

2.a.1 Extent of knowledge of trained farmers and untrained farmers.

Table 9. Distribution of farmers based on scientific orientation

Category	Palghat				Wynad			
	Trained		Untrained		Trained		Untrained	
	Frequency	%	Frequency	%	Frequency	%	Frequency	%
Low	4	10.00	11	27.50	9	22.50	8	20.00
High	36	90.00	29	72.50	31	77.50	32	80.00
Total	40	100.00	40	100.00	40	100.00	40	100.00
Mean score	11.80		9.57		11.23		9.90	

Table 10. Distribution of farmers based on farming experience

Category	Palghat				Wynad			
	Trained		Untrained		Trained		Untrained	
	Frequency	%	Frequency	%	Frequency	%	Frequency	%
Low	17	42.50	20	50.00	24	60.00	20	50.00
High	23	57.50	20	50.00	16	40.00	20	50.00
Total	40	100.00	40	100.00	40	100.00	40	100.00
Mean score	26.98		26.73		23.65		26.25	

The data are presented in Table 11. It was seen that more than 70 per cent of the trained farmers in Palghat district got knowledge scores more than 6, out of the maximum attainable score of 12. But only five per cent of the untrained farmers got scores above six.

In Wynad district, 42.5 per cent of the trained farmers got scores above six. Among the untrained farmers nobody had scores more than six.

2.a.2 Difference in extent of knowledge between trained and untrained farmers

Results of Mann-Whitney analysis is presented in Table 12.

The Z values in both the districts were found to be significant at one per cent level. This revealed that there was significant difference between trained and untrained farmers in their extent of knowledge about improved paddy cultivation practices.

Hence hypothesis A-1 was accepted.

2.b Impact on attitude towards high yielding varieties of paddy

The Table 12 revealed the results of Mann-Whitney test.

Table 11. Distribution of farmers based on knowledge score

Score	Palghat				Wynad			
	Trained		Untrained		Trained		Untrained	
	Frequency	%	Frequency	%	Frequency	%	Frequency	%
0 - 2	0	0	9	22.50	0	0	12	30.00
2 - 4	7	17.50	22	55.00	1	2.50	22	55.00
4 - 6	4	10.00	7	17.50	22	55.00	6	15.00
6 - 8	12	30.00	0	0	16	40.00	0	0
8 - 10	15	37.50	0	0	1	2.50	0	0
10 - 12	2	5.00	2	5.00	0	0	0	0
Total	40	100.00	40	100.00	40	100.00	40	100.00
Mean score	7.50		3.82		6.40		3.17	

Z value for Palghat was 6.57 and for Wynad, 7.29. Both were significant at one per cent level. It revealed that there was significant difference between trained and untrained farmers in their attitude towards high yielding varieties of paddy.

2.c Impact on attitude towards soil testing

The data are presented in Table 12. The Z values were 6.77 and 7.10 for Palghat and Wynad respectively. Both values were significant at one per cent level.

Significant difference between trained and untrained farmers in their attitude towards soil testing was obtained.

2.d Impact on attitude towards application of chemical fertilizers

The results from Table 12 indicated that there was significant difference between trained farmers and untrained farmers in their attitude towards use of chemical fertilizers.

2.e Impact on attitude towards plant protection chemicals

The data are presented in Table 12. The Z valuerwere significant which showed that there was

Table 12. Difference between trained farmers and untrained farmers in impact variables (Mann-Whitney test)

	Variable	Palghat district		Wynad district	
		Z-value	Significance	Z-value	Significance
1.	Knowledge	5.66	Significant at 1%	7.00	Significant at 1%
2.	Attitude towards HYV	6.57	"	7.29	"
3.	Attitude towards soil testing	6.77	"	7.10	"
4.	Attitude towards fertilizer application	6.68	"	4.82	"
5.	Attitude towards plant protection chemicals	7.05	"	5.96	"
6.	Attitude towards combined practices	7.49	"	7.24	"
7.	Adoption	5.61	"	7.88	"

significant difference between trained and untrained farmers in their attitude towards plant protection chemicals.

2.f Impact on the attitude towards combined improved cultivation practices of paddy

2.f.1 Degree of attitude towards improved practices

The data are presented in Table 13.

The results indicated that in Palghat district all the trained farmers got total attitude scores above 60, while only 40 per cent of the untrained farmers got scores more than 60.

In Wynad also all the trained farmers got attitude scores more than 60. Only 37.5 per cent of untrained farmers got scores above 60.

2.f.2 Difference in attitude towards combined practices

Result of the Mann-Whitney test is presented in Table 12.

The Z values in Palghat and Wynad were 7.49 and 7.24 respectively, which were significant at one per cent level. Hence it was concluded that there was significant difference between trained and untrained farmers thereby accepting the hypothesis A-2.

Table 13. Distribution of farmers based on total attitude score

Range of scores	Palghat				Wynad			
	Trained		Untrained		Trained		Untrained	
	Frequency	%	Frequency	%	Frequency	%	Frequency	%
< 50	0	0	6	15.00	0	0	5	12.50
50 - 60	0	0	18	45.00	0	0	20	50.00
60 - 70	7	17.50	16	40.00	7	17.50	13	32.50
70 - 80	9	22.50	0	0	20	50.00	1	2.50
> 80	24	60.00	0	0	13	32.50	1	2.50
Total	40	100.00	40	100.00	40	100.00	40	100.00
Mean score	81.13		58.42		78.43		57.62	

2.g Impact on adoption of improved paddy cultivation practices

2.g.1 Extent of adoption of improved practices

Distribution of farmers based on adoption quotient is given in Table 14.

In both the study districts, 80 per cent of the trained farmers got adoption quotients ranging from 25 to 75. But majority of the untrained farmers got quotients less than 25.

2.g.2 Difference in extent of adoption

Results of Mann-Whitney analysis is presented in Table 12.

The Z values of 5.61 and 7.88 for Palghat and Wynad respectively were significant at one per cent level indicating that there was significant difference between trained farmers and untrained farmers in their adoption of improved paddy cultivation practices. Hence the hypothesis A-3 was accepted.

3. Factors influencing impact of training

Results of Kruskal-Wallis test is presented in Table 15 and 16. The data from Table 15 reveal the relationship of independent variables with the dependent

Table 14. Distribution of farmers based on adoption quotient

Range of quotient	Palghat				Wynad			
	Trained		Untrained		Trained		Untrained	
	Frequency	%	Frequency	%	Frequency	%	Frequency	%
< 25	7	17.50	33	82.50	8	20.00	38	95.00
25 - 50	26	65.00	5	12.50	30	75.00	2	5.00
50 - 75	7	17.50	2	5.00	2	5.00	0	0
> 75	0	0	0	0	0	0	0	0
Total	40	100.00	40	100.00	40	100.00	40	100.00
Mean quotient	38.05		16.45		33.54		10.29	

variables in Palghat district. The data in Table 16 relates to Wynad district.

3.a Age and dependent variables

3.a.1 Age and knowledge

There was no significant relationship between age and knowledge. This was confirmed by the test results from both the districts. Hence hypothesis B-1 was rejected.

3.a.2 Age and attitude

No significant relationship could be found between these two variables, in Palghat or Wynad. Hence hypothesis C-1 was rejected.

3.a.3 Age and adoption

In the case of adoption also, age had no significant relationship. The results from both the study areas were in conformity. Hence hypothesis D-1 was rejected.

3.b Education and dependent variables

3.b.1 Education and knowledge

In Palghat district education status of the trained farmers was found to be significantly related

Table 15. Result of Kruskal-Wallis test - Palghat district

Independent variable	Dependent variable	Value of statistic	Significance
Age	Knowledge	0.17	N.S.
	Attitude	3.60	N.S.
	Adoption	1.38	N.S.
Education	Knowledge	9.19	Significant at 5%
	Attitude	5.58	N.S.
	Adoption	3.34	N.S.
Economic status	Knowledge	4.25	N.S.
	Attitude	7.06	Significant at 5%
	Adoption	7.40	Significant at 5%
Social participation	Knowledge	0.99	N.S.
	Attitude	0.10	N.S.
	Adoption	5.04	N.S.
Extension contact	Knowledge	4.96	N.S.
	Attitude	13.60	Significant at 5%
	Adoption	12.16	Significant at 5%
Mass media exposure	Knowledge	8.80	Significant at 5%
	Attitude 6	6.03	Significant at 5%
	Adoption	7.06	Significant at 5%
Scientific orientation	Knowledge	2.07	N.S.
	Attitude	0.65	N.S.
	Adoption	0.73	N.S.
Farming experience	Knowledge	6.00	Significant at 5%
	Attitude	5.43	N.S.
	Adoption	4.64	N.S.

χ^2 value at 5% = 5.99

to their knowledge. But this was not in conformity with the finding in Wynad, where no significant relationship could be found between these two variables.

Since the results were contradictory, the hypothesis B-2 was neither accepted nor rejected.

3.b.2 Education and attitude

No significant relationship was found out between these two variables. Hence it was concluded that education status of the trained farmers was unrelated to their attitude thus rejecting the hypothesis C-2.

3.b.3 Education and adoption

Results indicated that adoption by the trained farmers was not at all influenced by their education status. This was the case in both the districts. Hypothesis D-2 was rejected.

3.c Economic status and dependent variables

3.c.1 Economic status and knowledge

No significant relationship could be found out between economic status and knowledge. This result was the same both in Palghat and Wynad.

It was concluded that economic status of the trained farmers was not related to their knowledge of the improved paddy cultivation practices. Hence the hypothesis B-3 was rejected.

3.c.2 Economic status and attitude

In Palghat district significant relationship was obtained between economic status and attitude towards improved paddy cultivation practices. This relationship could not be obtained among the tribal farmers in Wynad.

Due to the contradictory results, the hypothesis C-3 could neither be accepted nor rejected.

3.c.3 Economic status and adoption

Significant relationship was obtained between these two variables as evidenced by the results from Palghat district. But results from Wynad did not support this. Hence the hypothesis D-3 was neither accepted nor rejected.

3.d Social participation and dependent variables

3.d.1 Social participation and knowledge

Social participation did not have any significant relationship with the knowledge of the

Table 16. Result of Kruskal-Wallis test - Wynad district

Independent variable	Dependent variable	Value of statistic	Significance
Age	Knowledge	5.14	N.S.
	Attitude	3.27	N.S.
	Adoption	4.93	N.S.
Education	Knowledge	2.61	N.S.
	Attitude	0.80	N.S.
	Adoption	2.17	N.S.
Economic status	Knowledge	5.05	N.S.
	Attitude	0.14	N.S.
	Adoption	4.84	N.S.
Social participation	Knowledge	0.62	N.S.
	Attitude	3.21	N.S.
	Adoption	0.99	N.S.
Extension contact	Knowledge	1.68	N.S.
	Attitude	4.19	N.S.
	Adoption	3.91	N.S.
Mass media exposure	Knowledge	3.65	N.S.
	Attitude	2.67	N.S.
	Adoption	1.38	N.S.
Scientific orientation	Knowledge	0.03	N.S.
	Attitude	2.02	N.S.
	Adoption	0.84	N.S.
Farming experience	Knowledge	7.58	Significant at 5%
	Attitude	0.29	N.S.
	Adoption	2.82	N.S.

χ^2 value at 5% = 5.99

trained farmers. This was confirmed by the results from both the districts.

Hence hypothesis B-4 was rejected, concluding that social participation and knowledge are unrelated.

3.d.2 Social participation and attitude

No significant relationship could be found out between social participation and attitude in any of the two districts.

Hence it was concluded that social participation was not related to the attitude towards improved paddy cultivation practices and hypothesis C-4 was rejected.

3.d.3 Social participation and adoption

Results from Palghat and Wynad indicated that there was no significant relationship between social participation and adoption by the trained farmers. Hence hypothesis D-4 was rejected.

3.e Extension contact and dependent variables

3.e.1 Extension contact and knowledge

There was no significant relationship between extension contact of trained farmers and their knowledge about the improved cultivation

practices of paddy. The results were similar in both the districts. Hence hypothesis B-5 was rejected.

3.e.2 Extension contact and attitude

Results from Palghat district indicated that there was significant relationship between extension contact and attitude towards improved paddy cultivation practices. Results from Wynad did not conform to this finding. Hence the hypothesis C-5 was neither accepted nor rejected.

3.e.3 Extension contact and adoption

It was found that extension contact had significant relationship with adoption, as evidenced by the results from Palghat district. Results from Wynad did not indicate this.

Hence hypothesis D-5 was neither accepted nor rejected.

3.f Mass media exposure and dependent variables

3.f.1 Mass media exposure and knowledge

Results from Palghat proved that mass media exposure significantly related to the knowledge of the farmers. But results from Wynad did not conform to this. Hence hypothesis B-6 was neither accepted nor rejected.

3.f.2 Mass media exposure and attitude

Mass media exposure was found to be significantly related to attitude of the farmers, as evidenced by the results from Palghat, though results from Wynad did not conform to this finding. Due to this contradiction, the hypothesis C-6 was neither accepted nor rejected.

3.f.3 Mass media exposure and adoption

Mass media exposure and adoption were found to be significantly related to each other, as evidenced by the results from Palghat, though such a result was not obtained from Wynad.

Since contradictory results were obtained, hypothesis D-6 was neither accepted nor rejected.

3.g Scientific orientation and dependent variables

3.g.1 Scientific orientation and knowledge

Only non-significant relationship could be found out between these two variables; from the results obtained from both the districts. Hence hypothesis B-7 was rejected.

3.g.2 Scientific orientation and attitude

It was revealed from the results from both

the districts that scientific orientation did not have any significant relationship to the attitude of the trained farmers towards the improved paddy cultivation practices. Hence hypothesis C-7 was rejected.

3.g.3 Scientific orientation and adoption

It was found that there was only non-significant relationship between scientific orientation and adoption in both the districts. Hence hypothesis D-7 was rejected.

3.h Farming experience and dependent variables

3.h.1 Farming experience and knowledge

Results from both the districts indicated that there was significant relationship between farming experience of the trained farmers and their knowledge about the improved paddy cultivation practices. Hence hypothesis B-8 was accepted.

3.h.2 Farming experience and attitude

No significant relationship was indicated between these two variables, from the results obtained from Palghat and Wynad district.

Hypothesis C-8 was rejected concluding that there was no significant relationship between farming experience and attitude.

3.h.3 Farming experience and adoption

No significant relationship was found out between farming experience and adoption from the results obtained from Palghat and Wynad. Hence hypothesis D-8 was rejected.

Relationship between variables is diagrammatically represented in the Fig.6.

4.a Motivational pattern of trained farmers

The results of paired comparison technique are presented in Table 17 and Table 18.

In Palghat district, the motivational hierarchy was as follows

Economic motive

Innovativeness

Prestige motive

Affiliation motive

Self-actualization motive

Achievement motivation

FIG.6 DIAGRAMATIC REPRESENTATION SHOWING THE RELATIONSHIP OF KNOWLEDGE, ATTITUDE AND ADOPTION WITH INDEPENDENT VARIABLES

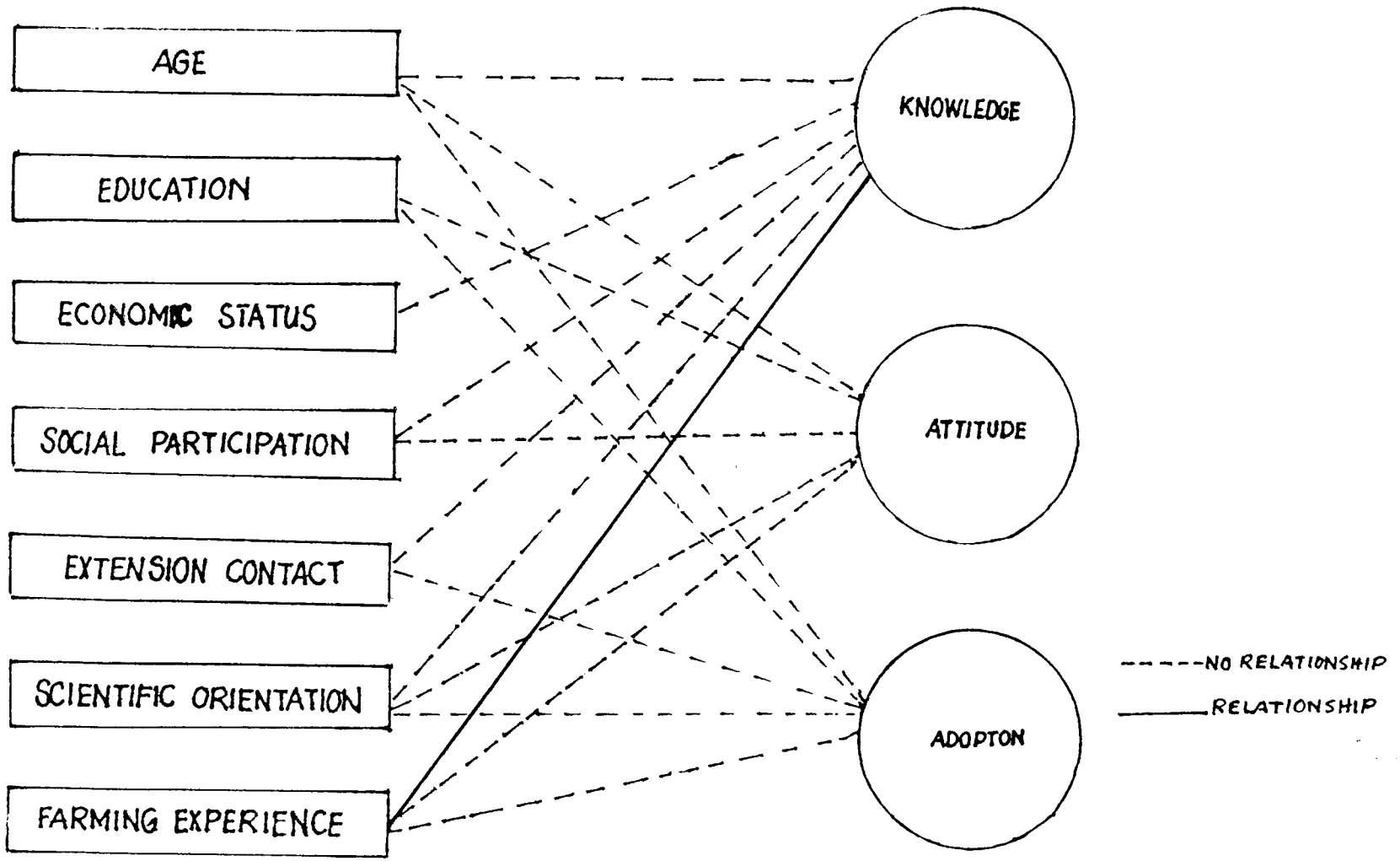


Table 17. Motivational pattern of trained farmers - Palghat district Z-Matrix

	Economic motive	Innovati-veness	Prestige	Affiliation motive	Self actualization	Achievement motivation
Economic motive		-1.282	-0.842	-1.250	-1.440	-1.150
Innovativeness	1.282		-0.842	-1.282	-1.282	-1.440
Prestige	0.842	0.842		0.189	-0.755	-0.842
Affiliation motive	1.150	1.282	-0.189		-0.319	-0.385
Self actualization	1.440	1.282	0.755	0.319		-1.440
Achievement motivation	1.150	1.440	0.842	0.385	1.440	
Total	5.864	3.564	-0.276	-1.539	-2.356	-5.257
Mean	1.172	0.712	-0.055	-0.093	-0.329	-0.949
+ 0.949	2.121	1.661	0.894	0.856	0.620	0

Table 18. Motivational pattern of trained farmers - Wynad district . Z-Matrix

	Economic motive	Innovati-veness	Affiliation motive	Prestige	Self-actualization	Achievement motivation
Economic motive		-0.755	-0.842	-1.056	-0.935	-0.842
Innovativeness	0.755		-1.036	-1.440	-0.935	-1.440
Affiliation motive	0.842	1.036		-0.935	-1.036	-1.036
Prestige	1.036	1.440	0.935		-0.674	-1.150
Self-actualization	0.935	0.935	1.036	0.674		-1.282
Achievement motivation	0.842	1.440	1.036	1.150	1.282	
Total	4.410	4.096	1.129	-1.607	-2.298	-5.750
Mean	0.882	0.819	0.225	-0.099	-0.341	-0.850
+ 0.850	1.732	1.669	1.075	0.751	0.509	0

In Wynad,district, the hierarchy was,

Economic motive

Innovativeness

Affiliation

Prestige motive

Self-actualization motive

Achievement motivation

4.b Motivational pattern of high adopters and low adopters

The results are presented in Table 19, Teble 20 and Table 21.

Motivational hierarchy for low adopters was as follows

Economic motive

Innovativeness

Affiliation motive

Prestige

Self actualization

Achievement motivation

Motivational hierarchy of high adopters was

Innovativeness

Economic motive

Affiliation motive

Table 19. Motivational pattern of low adopters . Z-Matrix

	Economic motive	Innovati- veness	Affiliation motive	Prestige	Self actualization	Achievement motivation
Economic motive		-0.310	-0.970	-1.282	-1.282	-1.282
Innovativeness	0.322		-1.282	-1.282	-0.842	-1.282
Affiliation motive	0.966	1.282		-0.674	-0.674	-0.674
Prestige	1.282	1.282	0.674		-0.842	-0.674
Self actualization	1.282	0.842	0.674	0.842		-1.282
Achievement motivation	1.282	1.282	0.674	0.674	1.282	
Total	5.134	4.378	-0.230	-1.722	-2.358	-5.194
Mean	1.026	0.875	-0.046	-0.056	-0.329	-1.038
+ 1.038	2.064	1.913	0.993	0.082	0.709	0

Table 20. Motivational pattern of high adopters . Z-Matrix

	Innovativeness	Economic motive	Affiliation motive	Prestige	Self-actualization	Achievement motivation
Innovativeness		1.282	-1.282	-1.282	-1.282	-1.282
Economic motive	-1.282		-0.385	-0.212	-0.385	-0.385
Affiliation motive	1.282	0.380		-0.755	-1.282	-1.282
Prestige	1.282	0.180	0.755		-0.755	-1.282
Self-actualization	1.282	0.380	1.282	0.755		-0.755
Achievement motivation	1.282	0.380	1.282	1.282	0.755	
Total	3.846	2.602	1.652	-0.212	-2.949	-4.986
Mean	0.769	0.520	0.330	-0.042	-0.211	-0.603
+ 0.603	1.372	1.123	0.933	0.561	0.392	0

Table 21. Ranking of motives of high adopters and low adopters

Low adopters		High adopters	
Motive	Rank	Motive	Rank
Economic motive	1	Economic motive	2
Innovativeness	2	Innovativeness	1
Affiliation	3	Affiliation	3
Prestige	4	Prestige	4
Self-actualization	5	Self-actualization	5
Achievement motivation	6	Achievement motivation	6

Spearman's Rank correlation coefficient = 1

Prestige

Self-actualization

Achievement motivation

Rank correlation coefficient was 1 which meant that there was perfect agreement in ranking. Hence it was concluded that the high adopters did not differ from low adopters in their motivational pattern. Hence hypothesis E-1 was rejected.

5.a Perception about training methodology

The data relating to the perception of the trained farmers about the training methodology are presented in the Table 22.

Time of training:

95 per cent of trained farmers from Palghat district and all the trained farmers from Wynad reported that the time selected for the training was satisfactory.

Venue of training:

All the trained farmers in Palghat and Wynad were of opinion that the venue selected for training was satisfactory.

Duration of training:

22.5 per cent of the respondents from Palghat

Table 22. Perception of trained farmers about the methodology of training

	Opinion	Palghat		Wynad	
		Frequency	%	Frequency	%
Time of training	Satisfactory	38	95.0	40	100.0
	Unsatisfactory	2	5	0	0
Venue	Appropriate	40	100.0	40	100.0
	Inappropriate	0	0	0	0
Duration	Sufficient	31	77.50	40	100.0
	Insufficient	9	22.5	0	0
Opportunity for skill practice	Sufficient	7	17.5	39	97.5
	Insufficient	33	82.5	1	2.5
Use of audiovisual aids	Sufficient	34	85.0	39	97.5
	Insufficient	6	15.0	1	2.5
Field visit	Adequate	26	65.0	40	100.0
	Inadequate	14	35.0	0	0
Arrangements	Adequate	40	100.0	40	100.0
	Inadequate	-	-	-	-

district reported that the duration was insufficient. All the farmers from Wynad were of opinion that the duration was sufficient.

Opportunity for skill practice:

While more than 80 per cent of the farmers from Palghat considered the opportunity for skill practice to be insufficient, only 2.5 per cent of tribal farmers thought so.

Use of audio-visual aids:

Majority of the farmers from both the districts perceived that there was sufficient use of audio-visual aids for the training.

Field visit:

35 per cent of the Palghat farmers was of opinion that the opportunity for field visit was inadequate. But none of the tribal farmers from Wynad reported so.

Arrangements at venue:

All the trained farmers from both the districts considered the arrangements made at the venue of training to be adequate.

5.b Perception about the content of training

The results are presented in the Table 23

and Table 24.

Perception on coverage of topic:

Results from Palghat district indicated that the rank order of topics based on the perceived coverage was as follows:

Fertilizers and their application

Chemicals and plant protection operations

High yielding variety and their characteristics.

Transplanting and sowing

Seeds and seed treatment

Liming

Weed control

Soil testing

From Wynad district, the ordering of topics based on coverage was as

Chemicals and plant protection operations

Fertilizers and their application

High yielding varieties and their characteristics

Liming

Transplanting, sowing

Soil testing

Weed control

Seed and seed treatment

Table 23. Perception of trained farmers about the content of training - Palghat district

Sl. No.	Topic	Coverage		Utility	
		Score	Rank	Score	Rank
1.	High yielding variety and their characters	67	3	53	3
2.	Seeds, seed treatment	57	5	48	5.5
3.	Transplanting, sowing	62	4	47	7.5
4.	Soil testing	53	8	47	7.5
5.	Liming	56	6	48	5.5
6.	Fertilizers and their application	74	1	70	2
7.	Chemicals and p.p. operations	71	2	71	1
8.	Weed control	54	7	51	4

Table 24. Perception of trained farmers about the content of training - Wynad district

Sl. No.	Topic	Coverage		Utility	
		Score	Rank	Score	Rank
1.	High yielding variety and their characteristics	63	3	61	3
2.	Seeds, seed treatment	42	8	57	6
3.	Transplanting, sowing	48	5	56	7.5
4.	Soil testing	46	6	58	5
5.	Liming	50	4	59	4
6.	Fertilizers and their application	76	2	73	2
7.	Chemicals and application	77	1	74	1
8.	Weed control	44	7	56	7.5

Perception on utility of topic:

Based on the usefulness of topics covered in the training, Palghat farmers ranked the topics as follows (in the decreasing order of usefulness)

Chemicals and plant protection operations
Fertilizers and their application
High yielding varieties and their characteristics
Weed control
Seeds, seed treatment/liming
Transplanting, sowing/soil testing

From Wynad, the ranking was as follows:

Chemicals and plant protection operations
Fertilizers and their application
High yielding varieties and their characteristics, liming
Soil testing
Seeds and seed treatment
Transplanting, sowing/weed control

6. Suggestions for future training

The results are presented in Table 25.

Venue of training:

In Palghat district 82.5 per cent of the respondents preferred a training in farmers' field

Table 25. Suggestions for future trainings

		Palghat		Wynad	
		Frequency	%	Frequency	%
Venue	Farmer's field	33	82.5	21	52.5
	KVK	5	12.5	15	37.5
	Anywhere	2	5.0	4	10.0
Duration	1 day	26	65.0	35	87.5
	3 days	12	30.0	5	12.5
	1 week	2	5.0	0	0
	> 1 week	0	0	0	0
Method of teaching	Lecture	0	0	1	2.5
	Discussion	40	100.0	39	97.5
Use of Audio-visual aids	More needed	40	100.0	4	100.0
	Less needed	0	0	0	0
	Not needed	0	0	0	0
Method demon-stration	More needed	40	100.0	40	100.0
	Less needed	0	0	0	0
	Not needed	0	0	0	0
Use of printed notes	Needed	40	100.0	40	100.0
	Not needed	0	0	0	0

and 12.5 per cent preferred on-campus training. From Wynad 52.5 per cent preferred training in farmers' field while 37.5 per cent preferred training at KVK station.

Duration of training:

In Palghat district 65 per cent of the respondent farmers preferred one day training and 30 per cent farmers preferred to have three day trainings. But in Wynad 87.5 per cent farmers preferred one day training.

Method of teaching:

Majority of the farmers in both the districts preferred discussion method than the lecture method.

Use of audio-visual aids:

All the respondent farmers reported that there should be more use of audio-visual aids in the training.

Method demonstration:

All the farmers needed more of method demonstrations.

Issue of printed notes:

All the farmers reported that printed notes

should be issued to them at the time of training.

7. Constraints faced by the farmers

No major constraints were faced by the farmers. Since the trainings were conducted after proper consultation with them, they did not face any problems in attending the trainings.

8. Training needs of farmers

The results are presented in Table 26 and 27.

Based on the needs expressed by the farmers, ranking was done for different topics of training.

For the Palghat farmers the ranking of topics was as follows (based on the decreasing order of importance).

Nutrient elements, fertilizer use and methods of application.

Plant protection chemicals and their use. High yielding varieties of paddy and their characteristics.

Weed control operations-chemicals and their use. Use of biofertilizers/plant protection equipment and their repairs.

Table 26. Training needs as perceived by trained farmers

No.	Topic	Most needed Frequency		Needed Frequency		Not needed Frequency	
		Palghat	Wynad	Palghat	Wynad	Palghat	Wynad
1.	HYV of paddy and their characteristics	12	28	28	12	-	-
2.	Seeds and sowing	2	2	38	38	-	-
3.	Seed treatment	3	4	37	36	-	-
4.	Weed control operations, chemicals and their use	8	5	32	35	-	-
5.	Soil testing	4	6	36	34	-	-
6.	Use of bio-fertilizers	5	3	35	37	-	-
7.	Liming materials and liming	2	2	38	38	-	-
8.	Nutrient elements, fertilizers, methods of application	36	27	4	13	-	-
9.	Plant protection chemicals and their use	27	28	13	12	-	-
10.	Details on pp equipments, their repair	5	0	35	40	-	-
11.	Details about pumpset, tractor, tillar, minor repairs	2	0	38	40	-	-

Table 27. Training needs - rankings obtained

No.	Topic	Palghat		Wynad	
		Score	Rank	Score	Rank
1.	HYV of paddy and their characteristics	58	3	68	1.5
2.	Seeds and sowing	42	10	42	8.5
3.	Seed treatment	43	8	44	6
4.	Weed control operations, chemicals and their use	48	4	45	5
5.	Soil testing	44	7	46	4
6.	Use of bio-fertilizers	45	5.5	43	7
7.	Liming materials and liming	42	10	42	8.5
8.	Nutrient elements, fertilizer use, method of application	76	1	67	3
9.	PP chemicals and their use	67	2	68	1.5
10.	Details on PP equipments, their repair	45	5.5	40	10.5
11.	Details about pumpset, tractor, tillers, minor repair works	42	10	40	10.5

Soil testing

Seed treatment

Seeds and sowing/liming materials and liming/details about pumpset, tractor, tillars and minor repair works.

From Wynad district, the ranking was as follows:

High yielding varieties of paddy and their characteristics/plant protection chemicals and their use.

Nutrient elements, fertilizer use, methods of application

Soil testing

Weed control operations - chemicals and their use

Seed treatment

Use of bio-fertilizers

Seeds and sowing

Liming materials and liming

Details on plant protection equipments and their repair. Details about pumpset, tractors, tillers, minor repair works.

Discussion

CHAPTER - V

DISCUSSION

The discussion of the findings of the study are presented below:

1. Typology of trained farmers

It was concluded from the study that most of the trained farmers in both the districts belonged to the middle age group of 30 to 50 years.

The trained farmers from Palghat district were significantly higher in their educational status, mass media exposure and scientific orientation, when compared to the untrained farmers. They got only lower scores for social participation and extension contact. But this difference in social participation and extension contact with that of untrained farmers was not significant. Though trained farmers in Palghat district were having comparatively higher economic status and farming experience, no significant difference was obtained between trained and untrained farmers.

Farmers with higher educational status will be normally more receptive to the newer information they obtain from attending the trainings. Combined with more exposure to mass media sources and scientific orientation towards agriculture, this will naturally make the training

efforts fruitful.

From Wynad it was observed that the trained farmers had significantly higher economic status, extension contact and mass media exposure, when compared to the farmers who were untrained. But the trained farmers were found to be having significantly lower social participation. Tribal farmers irrespective of whether they were trained or not, got only very low scores for social participation. This was quite reasonable due to the general backwardness of the study area and also the backwardness of the tribal farmers.

Though the trained tribal farmers had slightly higher mean education scores, the difference was not significant. Educational status of the tribal farmers in general had been very low.

2. Impact of training

2.a. Impact on extent of knowledge.

Results of the study showed that in both the study areas, trained farmers got significantly higher knowledge scores, when compared to the scores obtained by untrained farmers. This clearly proved that the training by the Krishi Vignan Kendra had been highly successful in imparting greater knowledge about the improved paddy cultivation practices to the farmers. Those farmers who were untrained, got only very low scores in the

knowledge test. Hence it could be concluded that the training had significant impact on the knowledge about improved paddy cultivation practices.

This result was in accordance with the findings obtained by Kamalsen (1971), Pimprikar et al. (1974), Ramakrishna (1980), Joshi & Rao (1981), Rahiman Kunju et. al. (1981), Rahiman Kunju & Nothilal Nehru (1982) and Joshy & Thorat (1984). All these studies put forth the conclusion that the training efforts had been effective in improving the knowledge of the trainees in the subject on which training was given.

2. b. Impact on attitude towards high yielding varieties of paddy

Significant difference was obtained between trained farmers and untrained farmers in their attitude towards high yielding varieties of paddy. Trained farmers obtained significantly higher attitude scores when compared to the untrained farmers. From this result it could be concluded that the training had been effective in creating a favourable attitude towards the high yielding varieties of paddy.

2.c. Impact on attitude towards soil testing

The trained farmers differed significantly from the untrained farmers in their attitude towards soil testing in both the districts. The trained farmers

obtained significantly higher attitude scores when compared to the untrained farmers. Hence it was concluded that the training was successful in developing a favourable attitude towards soil testing.

2.d. Impact on the attitude towards application of chemical fertilizers.

Significant difference was found out between trained farmers and untrained farmers in their attitude towards application of chemical fertilizers. This also pointed to the effectiveness of training. Training had really helped in developing a favourable attitude among farmers towards chemical fertilizers and their application.

2.e. Impact on the attitude towards plant protection chemicals.

In this respect also, the trained farmers had significantly higher scores than those obtained by untrained farmers. It was concluded from this result that, there was significant impact of training on the attitude towards plant protection chemicals. The training by KVK could create a favourable attitude towards plant protection chemicals in those farmers who were trained.

Thus the study revealed that, in the case of attitude towards scientific practices of paddy cultivation, there was significant difference between trained farmers and untrained farmers. This meant that, the KVK training had significant impact in developing a favourable attitude

towards all the improved paddy cultivation practices.

This result was supported by similar results obtained by researchers like Kamalsen (1971) and Pimprikar et al. (1974). They also reported significant changes in attitude due to participation in training.

2.f. Impact on adoption of improved paddy cultivation practices

Results revealed that, in both the districts, the trained farmers had significantly higher adoption quotient when compared with that of untrained farmers. It was evident that the KVK training had significantly influenced the adoption behaviour of farmers. There was significant impact on the adoption of improved paddy cultivation practices like use of high yielding varieties of paddy, use of chemical fertilizers, seed treatment using chemicals, use of plant protection chemicals and liming. It was concluded that the training had significant impact on the adoption behaviour of farmers.

These results were in conformity to the findings obtained by Patel and Patel (1968) Kamalsen (1971), Pimprikar et al. (1974), Krishna & Jalihal (1976), Muthiah et al. (1978), Thangaraju (1979), Ramakrishna (1980), Rahiman Kunju et al. (1981) and Joshy and Thorat (1984). They also reported increased adoption due to the participation in training.

The study revealed that the trainings conducted by the Krishi Vignan Kendras were highly useful in effecting favourable changes in the knowledge, attitude and adoption of farmers.

3. Factors influencing impact of training

3.a. Age and dependent variables

3.a.1 Age and Knowledge

Irrespective of the differences in age, the trained farmers acquired knowledge about the improved paddy cultivation practices. Acquisition of knowledge could be considered to be independent of the differences in age.

The result that age has no relationship with knowledge was supported by similar findings by Gopal (1974), Singh & Prasad (1974), Kaleel (1978) and Shavinder & Dhaliwal (1984).

3.a.2. Age and attitude

It was concluded that age did not have any significant relationship with the attitude of the farmers towards improved paddy cultivation practices.

This was in conformity to the results obtained by Das & Sarkar (1970), Reddy & Reddy (1977) and Surendran (1982).

3.a.3. Age and adoption

No relationship was indicated between age and

adoption. Irrespective of the differences in age, the trained farmers adopted the different improved cultivation practices of paddy.

Similar results were obtained by Chand & Gupta (1966), Perumal (1970), Ramamurty (1973), Karim & Mehboob (1974), Ramakrishnan (1974), Sinha et al. (1974) and Singh (1983).

3.b. Education and dependent variables

3.b.1 Education and Knowledge

The significant relationship between education and knowledge indicated in Palghat District was not supported by the findings from Wynad.

In Wynad the respondents were tribal farmers. Among these tribal farmers, educational status was comparatively very low. The tribal people, whether they were trained or untrained had only limited educational status. The variability in education status scores was not there as to produce any significant relationship between education and knowledge among the tribal farmers.

From the results from Palghat it was concluded that in a society where there was great variation in education level, education status had a significant influence on the knowledge acquired.

3.b.2 Education and attitude

The conclusion that there was no significant

relationship between education status of the trained farmers and their attitude towards improved paddy cultivation practices was supported by findings obtained from researchers like Reddy & Reddy (1977) and Surendran (1982).

3.b.3 Education and adoption

Adoption of improved practices of cultivation of paddy was not influenced significantly by their education status.

Similar result was obtained by Nair (1974) and Sinha et al. (1974).

3.c. Economic status and dependent variables

3.c.1 Economic status and knowledge

No significant relationship was found out between these two variables. This was supported by findings obtained by Supe & Salode (1975).

3.c.2 Economic status and attitude

Significant relationship was observed between these two variables in Palghat, though it was not supported by the results from Wynad. In Wynad there was only very low variability in the economic status of farmers. Farmers mostly belonged to lower economic strata and much variability was not observed.

In Palghat district where there was great variation in the economic status of the respondents, there was significant association between economic status and

attitude.

3.c.3 Economic status and adoption

Due to low variability in the economic status scores in Wynad district, no significant relationship was obtained between these two variables. But the results from Palghat indicated significant relationship between econonic status of the trained farmers with their adoption of improved paddy cultivation practices.

3.d. Social participation and dependent variables

It was concluded that social participation did not have any significant relationship with any of the impact variables viz. knowledge, attitude or adoption.

In both the districts, the trained farmers were having only very low social participation. The lack of variation in social participation scores might be the reason for not obtaining any relationship with knowledge, attitude or adoption.

3.e. Extension contact and dependent variables

3.e.1 Extension contact and knowledge

No significant relationship could be identified between these two variables.

3.e.2 Extension contact and attitude

In Palghat district significant reletionship

was indicated between extension contact and attitude. But this was not supported by the findings from Wynad. It was because of the lower extension contact scores obtained by tribal farmers and the lack of adequate variability in their extension contact scores.

3.e.3 Extension contact and adoption.

Results from Palghat indicated significant relationship between extension contact and adoption.

Due to low variability in extension contact scores among tribal farmers, this relationship could not be obtained from Wynad.

3.f Mass media exposure and dependent variables.

3.f.1 Mass media exposure and Knowledge

Though not supported by results from Wynad, significant relationship between mass media exposure and knowledge was evidenced from the Palghat findings. In Wynad the tribal farmers in general had very limited access to mass media sources. So there was not much variability in their scores for exposure to mass media sources.

3.f.2 Mass media exposure and attitude

Due to contradictory results, no conclusions were drawn.

3.f.3 Mass Media exposure and adoption

Due to low variability in the scores obtained by tribal farmers in Wynad, no significant relationship was obtained between mass media exposure and adoption. But results from Palghat indicated significant relationship.

Due to the contradictory nature of results from two districts, no conclusions were drawn, regarding the relationship of these two variables.

3.g Scientific orientation and dependent variables

Scientific orientation did not show any significant relationship with any of the variables viz.knowledge, attitude or adoption.

This was because of the lack of adequate variability in the data. Most of the farmers got high score for scientific orientation.

3.h Farming experience and dependent variables

3.h.1 Farming experience and knowledge

The conclusion that there was significant relationship between farming experience of the trained farmers and their knowledge about improved cultivation practices of paddy was supported by findings obtained by Gopal (1974).

3.h.2 Farming experience and attitude

No significant relationship was identified between these variables.

3.h.3 Farming experience and adoption

Farming experience of the trained farmers was not found to be related to the adoption of improved paddy cultivation practices.

4. Motivational pattern of trained farmers

It was found that in both the districts, the main motive behind attending the training was economic motive. The farmers expected that whatever new knowledge or skill they acquire from the training would be useful in their field, and that this would ultimately lead to higher profitability and economic gain.

Innovativeness was the next important motive among the farmers. The innate curiosity to know about anything new or experience anything new is basic human nature. So naturally, the farmers, with the motive of just knowing about something new participated in training.

Affiliation motive was found to be more strong than prestige motive among the tribal farmers, while among other farmers it was the other way. Among tribal farmers the tendency to move along with others, to participate in

training while others participated in it was found to be more predominant. But Palghat farmers instead of exhibiting mere affiliation tendency, wanted to prove their capabilities and to build up prestige among others.

No significant difference could be obtained between the motivational pattern of low adopters and high adopters. Though the study revealed the pattern of motivation for the trained farmers in both the districts the elucidation of the relationship of motivational pattern with the impact variables would require furthur analysis.

5. Perception about the training methodology

It was seen that a large majority of the farmers were satisfied with respect to the selection of time of training and selection of venue. The training was conducted after proper consultation with the farmers. And in most cases the time and venue were fixed according to their convenience in attending the training. So they were all satisfied about it. From Wynad district none of the farmers reported to the contrary.

All the tribal farmers perceived the duration to be sufficient, while about 20 percent of farmers from Palghat was of opinion that duration may be increased so that full coverage of topics could be had.

Majority of the Palghat farmers expressed that

the skill training was insufficient. They wanted more of skill practices in the training session. But Wynad farmers were found to be satisfied with the present level of skill training.

Palghat farmers were more advanced when compared to the tribal farmers in Wynad. And they placed high expectations on the conduct of training.

As regards the use of audio-visual aids, opportunity for field visit and arrangements made at the venue, majority of the trained farmers expressed their satisfaction.

6. Suggestions for future training.

Majority of the farmers preferred to have trainings conducted in farmer's field, than institutional training. This observation was in line with the findings reported by Gopal (1974), Shete (1978), Vashistha et al. (1978), Chandrasekaran (1981), Savarimuthu (1981) and Arumugam (1980).

Discussion method was more preferred than the lecture method by most of the trainees. Similar result was obtained by Savarimuthu (1981). Majority of the farmers preferred to have one day trainings, in both the districts.

All the farmers were of opinion that, more audio-visual aids should be used for training. They

preferred to have more of method demonstrations. Majority suggested that printed notes should be issued at the time of training.

7. Constraints faced by the farmers

Since all the training were conducted after proper consultation with the farmers, and after due consideration of their convenience in attending the training, the farmers did not face any constraints.

8. Training needs.

In both the districts, the topics on which farmers needed furthur training most were,

High yielding varieties of paddy and their characteristics,

Nutrient elements, fertilizer use and methods of application and

Plant protection chemicals and their use

Results on this line were reported by authors like Patil and Kale (1972), Gopal (1974), Mani (1974), Shete (1978), Vashistha et al. (1978), Chandrasekaran (1981), Ram & Mathur (1981), Savarimuthu (1981), Singh and Singh (1981), Kokate & Tyagi (1983), and Sreatha & Patel (1984).

Summary

CHAPTER-VI

SUMMARY

Krishi Vigyan Kendra is an institution for vocational training in agriculture and allied subjects for practicing farmers, village youth, farm women and fishermen. The training design of Krishi Vignan Kendra is based on the principles of teaching by doing and learning by doing. The skill training and need based training are the two important components of the KVK programmes.

The study was undertaken for the analysis of trainings conducted by Krishi Vignan Kendras under Kerala Agricultural University, sponsored by the Indian Council of Agricultural Research.

The specific objectives of this study were:

1. To identify the typology of farmers trained by KVKs
2. To study the motivational pattern of farmers for participation in the training.
3. To ascertain the impact of KVK training programmes on the knowledge about, attitude towards and adoption of improved practices.

4. To find out the trainees' perception about the training methodology and content of KVK training programmes

5. To find out the constraints in training, as experienced by farmers

6. To find out the training needs of the trained farmers

The study was conducted in Palghat district and Wynad district, which were the jurisdiction of Pattambi KVK and Ambalavayal KVK respectively. Ex-post-facto design was followed in the study. 80 trained farmers and 80 untrained farmers were selected as respondents for the study from the two areas, thus making a total sample size of 160. Two-stage sampling design was followed for this.

The data were collected through personal interviews with respondent farmers. Impact of trainings on paddy cultivation only were studied. The interview schedule for trained farmers consisted of six parts - the typology of farmers, motivational pattern, impact of training, perception study, constraint and training need analysis.

The dependent variables included in the study were knowledge about improved paddy cultivation practices, attitude towards improved practices and

adoption of the improved practices. The independent variables were age, education, economic status, social participation, contact with extension agency, mass media exposure, scientific orientation and farming experience. Motivational pattern for attending training, perception about training methodology and content, constraints faced by farmers, further training needs of farmers etc. were also included in the study.

Measurement techniques used were as follows:

Variable	Measurement technique
Knowledge	Simple knowledge test
Attitude towards improved paddy cultivation practices	Scale used by Kamarudeen (1981)
Adoption	Adoption index by Singh & Singh (1974)
Age	Simple question
Education	Scoring procedure by Trivedi (1963)
Economic status	Economic status scale
Social participation	Scoring procedure by Kamarudeen (1981)
Contact with extension agency	Scoring procedure by Nair (1969)
Scientific orientation	Scale used by Supe (1969)
Farming experience	Simple question
Motivation	Scale used by Raghudharan (1972)

The statistical techniques used were Kruskal-Wallis test, Mann-Whitney test and percentage analysis.

The results of the study are summarised as follows:

A. Typology of trained farmers

1. The trained farmers in Palghat district were of middle age, and they were significantly higher in their education status, mass media exposure and scientific orientation compared to the untrained farmers.

2. The trained tribal farmers were also of the middle age group, and they were significantly higher in their economic status, extension contact and mass media exposure, compared to the other farmers. The social participation of trained tribal farmers was significantly lower than that of untrained farmers.

B. Impact of training

1. The trained farmers in both the study areas had significantly higher knowledge, on improved paddy cultivation practices, when compared to the other farmers.

2. In both the study areas, the trained farmers had more favourable attitude towards higher yielding

varieties of paddy, when compared to other farmers and this difference was significant.

3. In both the study areas, the trained farmers had more favourable attitude towards soil testing, when compared to the untrained farmers and this difference was significant.

4. Trained farmers in both the areas had more favourable attitude towards chemical fertilizers, when compared to the other farmers, and this difference was significant.

5. Trained farmers in both the areas had more favourable attitude towards plant protection chemicals, when compared to the other farmers and this difference was significant.

6. There was significant difference between trained and untrained farmers in their attitude towards combined improved cultivation practices of paddy. The trained farmers in both the districts had more favourable attitude.

7. There was significant difference between trained and untrained farmers in their adoption of improved paddy cultivation practices. Trained farmers in both the study areas got significantly higher adoption quotients.

C. **Factors influencing impact of training**

1. Age of the trained farmers did not have any significant relationship with their knowledge about, attitude towards or adoption of improved paddy cultivation practices.

2. Education of the trained farmers did not have any significant relationship with their attitude towards or adoption of improved paddy cultivation practices. No conclusions were drawn regarding relationship between education and knowledge.

3. Economic status of trained farmers did not have any significant relationship with their knowledge about improved paddy cultivation practices. No conclusions were drawn regarding relationship of economic status with attitude oh adoption.

4. Social participation of trained farmers did not have any significant relationship with their knowledge about, attitude towards or adoption of improved paddy cultivation practices.

5. Extension contact of trained farmers did not have any significant relationship with their knowledge about improved paddy cultivation practices. Regarding relationship of extension contact with attitude and adoption, no conclusions could be drawn.

6. No conclusions were drawn regarding the relationship of mass media exposure with knowledge, attitude and adoption.

7. Scientific orientation of trained farmers did not have any significant relationship with their knowledge about, attitude towards or adoption of improved paddy cultivation practices.

8. Farming experience of the trained farmers and their knowledge about improved paddy cultivation practices were significantly related. But it was not related to their attitude or adoption.

D. Motivational pattern of trained farmers

1. In both the study areas, economic motive, innovativeness, prestige motive and affiliation motive were the most important motives of farmers in attending the training. Among the tribal farmers, affiliation motive was stronger than prestige.

2. There was no significant difference between high adopters and low adopters in their motivational pattern.

E. Perception about training methodology

1. Most of the farmers were satisfied about the time selected for training and the venues of training.

2. 22.5 per cent of farmers from Palghat wanted a longer duration of training, while the tribal farmers perceived the duration to be sufficient.

3. Palghat farmers wanted more of skill practices to be included in the programme.

4. Majority of the farmers were satisfied regarding the use of audio-visual aids, opportunity for field visit and arrangements made at the venue.

F. Suggestions for future training

1. Majority of the farmers preferred to have a training in the farmers' field.

2. Discussion method was the preferred method of teaching than lecture method.

3. One day training was preferred by majority of farmers.

4. Majority of farmers preferred to have more use of audio-visual aids, more of method demonstration.

G. Constraints

No constraints were faced by farmers in attending the training.

H. Training needs

The farmers needed further training most on

topics like

High yielding variety of paddy and their characteristics

Nutrient elements, fertiliser use and methods of application

Plant protection chemicals and their use

To conclude, the study revealed that the trainings by Krishi Vignan Kendras under Kerala Agricultural University were effective in increasing the knowledge level of farmers about the improved paddy cultivation practices, creating favourable attitude towards improved practices and also in increasing the adoption of improved practices.

In general, it was seen that the farmers were satisfied about the methodology adopted in the conduct of trainings. But they also reported their desire to have more skill trainings, more use of audio-visual aids, issue of printed notes and their preference for discussion method of teaching. These suggestions will be helpful in the future conduct of the training programmes.

Suggestions for future research

1. The study concentrated only on trainings in Agriculture and that too specifically on paddy cultivation. Similar studies may be conducted in fields like Animal Husbandry, Fisheries, Home Science and other fields on which KVK gives training.

2. Factors influencing the impact of training needs further detailed studies. No conclusive evidence could be drawn regarding the relationship of certain variables in this study, due to contradictory results. Hence further research in this field is essential.

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* Originals not seen

Appendices

Appendix-I Training courses organized by K.V.K., Pattambi during 1984-'85

	Topic	Duration	No. of training	Off/on campus	No. of trainees
A.	AGRICULTURE				
	Scientific cultivation of				
1.	Rice	1 day	59	off	1154
2.	Coconut	1 day	40	off	747
3.	Banana	1 day	17	off	295
4.	Vegetable	1 day	5	off	82
5.	Pepper	1 day	1	off	16
6.	Sweet potato	1 day	1	off	15
7.	Ginger	1 day	1	off	17
8.	Arecanut	1 day	1	off	24
9.	Gingelly	1 day	1	off	7
10.	Weedicide application in garden land	1 day	1	on	6
11.	Budding and grafting for tribal youths	3 days	1	on	5
			128		2368
B.	ANIMAL PRODUCTION				
1.	Backyard poultry management	1 day	8	off	106
2.	Management of milch animals	1 day	14	off	201
			22		307
C.	FISHERIES				
1.	Composite inland pisciculture	1 day	11	off	150
2.	Economic processing of fish	1 day	19	off	190
			30		340
D.	HOME SCIENCE				
1.	Low cost balanced meal	1 day	3	off	40
2.	Low cost nutrition food	1 day	1	off	26
3.	Infant feeding	1 day	2	off	50
4.	Preservation of Banana	1 day	1	off	10
			7		126
E.	INTEGRATED TRAINING FOR TRIBAL YOUTH				
	Agriculture, A.H., Fisheries etc.	30 days	2	on	40
	GRAND TOTAL		189		3181

Appendix-I (Contd.) Training courses organized by K.V.K.for Tribals, Ambalavayal during 1984-'85

Sl. No.	Name of training programme	Duration	Number of courses	Number of trainees
1.	Training on identification of pests and diseases of ginger and the control	1 day	3	38
2.	Ginger cultivation	1 day	2	25
3.	Identification of pest and diseases of rice and their control	2 days	3	87
4.	Calf rearing	1 day	3	45
5.	Training on principles and methods of plant protection	2 days	2	30
6.	Refresher training course for the tribals on plant protection	1 day	3	85
7.	Inter cropping pulses with tapioca	1 day	3	45
8.	Training on management of pepper	1 day	2	30
9.	Refresher training on coffee cultivation	1 day	2	30
10.	Training on pests and disease of pepper and their control	1 day	3	45
11.	Training on application of lime and fertilizers in the intercropped area	1 day	3	45
12.	Training on integrated methods of plant protection	1 day	2	30
13.	Training on plant protection equipments, use and maintenance	1 day	3	45

Appendix-I (Contd.)

Sl. No.	Name of training programme	Duration	Number of courses	Number of trainees
14.	Clean milk production	1 day	3	44
15.	Training on preparation and use of plant protection chemicals	1 day	3	44
16.	Training on soil testing for higher crop production	1 day	2	29
17.	Rice cultivation in Wynad	1 day	2	29
18.	Training on balanced diet	1 day	2	30
19.	Training on soil and water conservation	1 day	2	30
20.	Training on public health and environmental situation	1 day	3	45
21.	Training on cultivation of summer vegetables	1 day	2	30
22.	Training on plant protection of summer vegetables	1 day	2	30
23.	Training on multiple cropping in paddy fields	1 day	2	30
24.	Training on management of goats	1 day	2	45
25.	Kitchen gardening	1 day	2	30
26.	Training on propagation techniques	1 day	4	57
27.	Training on maternal nutrition and nutritional needs of children	1 day	2	30

Appendix-I (Contd.)

Sl. No.	Name of training programme	Duration	Number of courses	Number of trainees
28.	Training on poultry management	1 day	1	12
29.	Training on preservation of fruits and vegetables	1 day	2	28
30.	Training on low cost diets	1 day	2	30
31.	Training on protein calorie malnutrition	1 day	3	45
32.	Training on contagious disease and deficiency diseases	1 day	3	45
33.	Training on health care and immunization	1 day	2	30
34.	Training on labour saving devices, hay box and janatha fridge	1 day	3	45
35.	Training on major cases of morbidity and mortality	1 day	2	29
36.	Training on first aid	1 day	3	44
37.	Training on seed treatment of ginger	1 day	1	15
38.	Training on plant protection in paddy nursery	1 day	1	15
	T O T A L		91	1423

Appendix-II Interview schedule

No. **Date:**

Name and address of farmer :

A. TYPOLOGY

1. Age :

2. Educational Status : **Illiterate/can read only/can read and write/primary/middle/ high school/graduate and above**

3. Economic status

a) Land holding

		Area
i) Garden land	**Single crop**	
ii) Wet land	**Double crop**	
iii) Total area	**Punja**	

b) Annual income

i) Main **ii) Subsidiary** **iii) Total**

c) House type

No house

Hut

Thatched house

Tiled house

Terraced house

Electrified

Plastered

Appendix-II (Contd.)

d) Material possessions

	Item	Number	Cost	Total cost
i)	Agril. Implements			
	Iron plough			
	Bullock cart			
ii)	Farm power			
	Pumpset			
	Tractor			
	Power tiller			
	Sprayer			
iii)	Livestock			
	Bullocks			
	Cows			
	Buffalos			
	Goat			
	Poultry			
iv)	Other possessions			
	Cycle			
	Bike			
	Radio			
	T.V.			
	Other gadgets			

Appendix-II (Contd.)

4. Social participation

Sl. No.	Name of organisation	Member	Office bearer	Frequency of participation: Attends all meetings	Not attend all meetings	Not attend any of the meetings
1.	Panchayat					
2.	Co-operative Societies					
3.	Agril.Development advisory Committee					
4.	Discussion groups					
5.	Farmers Clubs					
6.	Others					

5. Contact with extension agency

Sl. No.	Name and extension agency	Frequency of contact: Two or more times a week	Once in a week	Once in a fort-night	Once in a month
1.	Demonstrators				
2.	Jr. Agricultural Officers				
3.	ADAS/DDAS/JDAS				
4.	University Scientists				
5.	Representatives from firms				

Appendix-II (Contd.)

8. Farm experience (in years)

B. MOTIVATIONAL PATTERN

I attended the training because,

a. I wanted to make my cultivation profitable/my friends also attended

b. I wanted to make my cultivation profitable/I wanted to have a new experience

c. I wanted to make my cultivation profitable/I wanted to become a model farmer and a leader

d. I wanted to make my cultivation profitable/I have enough resources to utilize the new ideas

e. I wanted to make my cultivation profitable/I wanted to be the best farmer in my locality

f. My friends also attended/I wanted to have a new experience

g. My friends also attended/I wanted to become a model farmer and a leader

h. My friends also attended/I have enough resources to utilize the new ideas

i. My friends also attended/I wanted to be the best farmer in my locality

j. I wanted to have a new experience/I wanted to become a model farmer and a leader

k. I wanted to have a new experience/I have enough resources to utilize the new ideas

l. I wanted to have a new experience/I want to be the best farmer in my locality

m. I wanted to become amodel farmer and a leader/I have enough resources to utilize the new ideas

n. I wanted to become a model farmer and a leader/I want to be the best farmer in my locality

o. I have enough resources to utilize the new ideas/ I want to be the best farmer in my locality

Appendix-II (Contd.)

6. Mass Media Exposure

Sl. No.	Sources of information	Frequency of utilization					
		Every-day	Two to six times a week	Once in a week	Once in a fort-night	Once in a month	Never
1.	Newspaper						
2.	Radio						
3.	Journals						
4.	T.V.						
5.	Others						

7. Scientific orientation

	Statements	Agree	Unde-cided	Disagree
a.	New methods of farming give better results to a farmer			
b.	The way of farming by our fore-fathers is still the best to farm today			
c.	Even a farmer with lot of farm experience should use new methods of farming			
d.	A good farmer experiments with new ideas in farming			
e.	Though it takes time for a farmer to learn new methods in farming it is worth the efforts			
f.	The traditional methods of farming have to be changed in order to raise the standard of living of a farmer			

Appendix-II (Contd.)

8. Farm experience (in years)

B. MOTIVATIONAL PATTERN

I attended the training because,

a. I wanted to make my cultivation profitable/my friends also attended

b. I wanted to make my cultivation profitable/I wanted to have a new experience

c. I wanted to make my cultivation profitable/I wanted to become a model farmer and a leader

d. I wanted to make my cultivation profitable/I have enough resources to utilize the new ideas

e. I wanted to make my cultivation profitable/I wanted to be the best farmer in my locality

f. My friends also attended/I wanted to have a new experience

g. My friends also attended/I wanted to become a model farmer and a leader

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i. My friends also attended/I wanted to be the best farmer in my locality

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k. I wanted to have a new experience/I have enough resources to utilize the new ideas

l. I wanted to have a new experience/I want to be the best farmer in my locality

m. I wanted to become amodel farmer and a leader/I have enough resources to utilize the new ideas

n. I wanted to become a model farmer and a leader/I want to be the best farmer in my locality

o. I have enough resources to utilize the new ideas/ I want to be the best farmer in my locality

Appendix-II (Contd.)

C. IMPACT OF TRAINING

I. Knowledge on scientific paddy cultivation

a. Which is the high yielding short duration variety (IR.8/Triveni/Jagannath/H.4)

b. Which is the chemical used for seed treatment (Ekalux/Emisan/Malathion/Blitox)

c. Why is liming done (to reduce acidity/to control pests/to control fungus/ to control nematods)

d. What is the dosage of liming (per hectre) (200 kg/Ha/300 kg./2000 kg./600 kg.)

e. Name a fertilizer containing P_2O_5 (Mussoriephos/Urea/MOP/Ammonium Sulphate)

f. Which is the chemical used as a herbicide (Emisan/Hinosan/Gramoxon/Zineb)

g. Which is the chemical used to control stem borer (Ekalux/Emisan/Hinosan/Bavistin)

h. Which chemical is used to control blast disease (2.4D sodium salt/Ekalux/Kitazin/Lebacyd)

i. At which stage fertilizer P should be applied. (as basal dose/as top dressing/both as basal and top dressing)

j. Azolla is a ..... (Insecticide/fungicide/bio fertilizer/a chemical fertilizer)

k. The recommended number of hills/Sq.m for short duration paddy. (100 hills/30 hills/67 hills/75 hill

l. Draining of water from the field controls ... pest. (Rice bug/case worm/B.P.H./Stem borer)

Appendix-II (Contd.)

II. Attitude towards improved paddy cultivation

		SA	A	UD	DA	SDA
a.	Use of HYV					
	1. If we want to produce enough rice the best way is to cultivate HYV					
	2. High yielding varieties are no better than local varieties					
	3. Cultivation of HYV has brought about a new light in the field of agriculture					
	4. It is not profitable to cultivate HYV of paddy					
	5. The utilization of more input in the cultivation of HYV of paddy is fruitful					
	6. As the HYV of paddy are more frequent in the incidence of pests and diseases, it is uneconomic to cultivate					
b.	Soil testing					
	1. If we want to apply correct doses of fertilizer and lime best way is to do soil testing					
	2. Soil testing is only a waste of money and time					
	3. Soil testing facilities should be increased in our area					
	4. Soil testing results recommend high doses of fertilizers					
	5. All farmers should test their soil for raising paddy crop					

Appendix-II (Contd.)

	SA	A	UD	DA	SDA
6. Educational facilities should be improved to make the people aware of the importance of soil testing					
c. Use of chemical fertilizer					
1. The yield of paddy has been increased considerably by the use of chemical fertilizers					
2. The use of chemical fertilizer is the best way to increase the yield of paddy crops					
3. The paddy crop fertilized became susceptible to pest and diseases					
4. The use of chemical fertilizers make the soil poor					
5. The application of chemical fertilizers is a practically useful practice					
6. The use of chemical fertilizer is the easiest way to increase the yield of paddy.					
d. Use of plant protection chemicals					
1. After the introduction of plant protection chemicals there has been a reduction in the failure of crop due to pests and diseases					
2. The paddy crop applied with the chemicals deteriorates the quality of grains					

Appendix-II (Contd.)

	SA	A	UD	DA	SDA
3. Application of plant protection chemicals is the easy way to save the crop from pests and diseases					
4. Application of plant protection chemicals have created more pollution problems than solving pest and disease problems.					
5. All paddy cultivaters should apply plant protection chemicals					
6. It is worthwhile to invest much in the use of P.P. chemicals					

III. Extent of adoption of improved practices

	Yes/No
1. Have you adopted HYV, If yes,	
a. Name of the variety	
b. Area under HYV	
2. Have you done seed treatment, If yes	Yes/No
a. Name of the chemical	
b. Quantity of seed treated	
c. Area in which treated seeds were sown	
3. Did you apply lime, If yes	Yes/No
a. Name of the liming material	
b. Quantity of liming material	
c. Area in which liming was done	

Appendix-II (Contd.)

4. Did you apply chemical fertilizers Yes/No
If yes

	Basal dose	Top dose	Total(Kg.)
N			
P			
K			

5. Was there any pest/disease attack in your crop in the last season Yes/No

If yes,

a) Name of pests Chemical used Dosage Area treated

b) Name of diseases Chemical used Dosage Area treated

D. PERCEPTION

I. Perception about training methodology

State your perception about the effectiveness of the training conducted

a.	Time selected for training was	Satisfactory/Not satisfactory
b.	Venue selected was	Appropriate/Inappropriate
c.	Duration of training was	Sufficient/Insufficient
d.	Skill training was	Sufficient/Insufficient
e.	Use of A.V. aids was	Sufficient/Insufficient
f.	Opportunity for field visit was	Adequate/Inadequate
g.	Arrangements at the venue was	Adequate/Inadequate

Appendix-II (Contd.)

II. State your suggestions for future training

a. Venue of training is preferable to be at Farmers field/at KVK (on-Campus)/Anywhere

b. Duration of training should be one day/3 day/one week/more than one week

c. Which method of teaching do you prefer to have Lecture method/Discussion method

d. Your opinion about use of A.V. aids more number of aids needed/less number/not needed

e. Your opinion about method demonstration more number needed/less needed/not needed.

f. Opinion about issue of printed notes needed/not needed

III. Perception about the content of training

Please say whether the topics were covered properly and whether they were useful

Sl. No.	Topic	Coverage			Utility		
		Covered in detail	Not in detail	Not covered	most useful	useful	not useful
1.	HYV and their characters						
2.	Seeds, seed treatment						
3.	Transplanting, sowing						
4.	Soil testing						
5.	Liming						
6.	Fertilisers and their application						
7.	Chemicals and P.P. operations						
8.	Weed control						
9.	Farm machinery						
10.	Post harvest operations						

E. CONSTRAINTS

What constraints did you face in the training programme.

F. TRAINING NEEDS

State your future training needs

No.	Topic	most needed	needed	Not needed
1.	HYV of paddy and their characteristics			
2.	Seeds and sowing			
3.	Seed treatment			
4.	Weed control operations chemicals and their use			
5.	Soil testing			
6.	Use of biofertilizers			
7.	Liming materials and liming			
8.	Nutrient elements, fertilizer use, Methods of application			
9.	Plant protection chemicals and their use			
10.	Details on P.P. equipments, their repair			
11.	Details about pumpset, tractor, tillars. Minor repair works.			

TRAINING PROGRAMMES OF KERALA AGRICULTURAL UNIVERSITY KRISHI VIGNAN KENDRAS - AN ANALYSIS

By

K. V. SANJEEV

ABSTRACT OF THE THESIS

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ABSTRACT

A study was conducted in Palghat and Wynad district to analyse the training programmes undertaken by Krishi Vignan Kendras at Pattambi and Ambalavayal. Impact of training with respect to the knowledge about, attitude towards and adoption of improved paddy cultivation practices was assessed. The study also aimed at identifying the motivational pattern of farmers for participation in training, their perception about training, suggestions for future trainings, and their training needs.

Ex-post-facto design was used for the study. Data were collected from 80 trained farmers and 80 untrained farmers from Palghat and Wynad. Statistical analysis was done using non-parametric procedures.

The study revealed that participation in training improved the knowledge of farmers about improved paddy cultivation practices, created favourable attitude towards improved paddy cultivation practices and there was increased adoption of the various practices.

Of the eight independent variables considered in the study, only farming experience was found to be significantly related to the impact variables, and that too only to the knowledge of farmers.

Major motives of farmers in attending the training were economic motive, innovativeness, prestige motive and affiliation motive. Among tribal farmers in Wynad, affiliation motive was found to be stronger than prestige motive.

Majority of the trained farmers perceived the training to be satisfactory with regard to the time of training, venue of training, use of audio-visual aids, opportunity for field visit and arrangements made at the venue.

Training in the farmers' field was preferred by majority of the farmers to institutional training. They preferred discussion method to lecture method.

They wanted to have more of method demonstrations and issue of printed notes and preferred a training duration of one day.

Areas in which farmers needed further trainings were high yielding varieties of paddy and their characters, fertilizers and their application and use of plant protection chemicals.