STUDY ON THE AGRICULTURAL INFORMATION SUPPORT PROVIDED THROUGH RADIO TO FARMERS BY KAU

BY
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THESIS

submitted in partial fulfilment of the requirement for the degree
MASTER OF SCIENCE IN AGRICULTURE
Faculty of Agriculture
Kerala Agricultural University

DEPARTMENT OF AGRICULTURAL EXTENSION
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1984

DECLARATION

I hereby declare that this thesis entitled "Study on the agricultural information support provided through radio to farmers by KAU" is a bonafied 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.

Vellayani,
8.6.85

SUNNY PHILIP

C E R T I F I C A T E

Certified that this thesis entitled "Study on the agricultural information support provided through radio to farmers by KAU" is a record of research work done independently by Sri.SUNNY PHILIP under my guidance and that it has not previously formed the basis for the award of any degree, fellowship or associateship to him.

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SUNNY PHILIP

C O N T E N T S

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LIST OF TABLES

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LIST OF ILLUSTRATIONS

ABBREVIATIONS

tcv	- total content value
JAO	- Junior Agricultural Officer
AD	- Assistant Directors
AIR	- All India Radio
NS	- Not significant
SE	- Standard Error
Cv	- Coefficient of variance.

INTRODUCTION

INTRODUCTION

Technological break through has facilitated evolution of a post industrial-information society. The international communication net work could change the total fabric of the global society. Consequently, distance is not a function as it was and time, the most precious resource can now be better spent.

Still communication technology can be harnessed both for socially constructive and destructive purposes depending on who utilises it and how (Wimal Dissanayake 1983). As Krishnamurthy (1980) wished mass media could raise the consciousness of the deprived and downtrodden millions and arm them for immediate liquidation of inequalities, for which, media systems have to be strengthened and decentralised.

Javed Jabbar (1983) stresses the need to rediscover and redefine the original essence of mass media to strengthen their role as dynamic means of information, and Venkatappaiah (1984) wants it to be an agent of development, rural oriented and decentralised with regard to content and transmission. Mass media can bridge the gap of ignorance and misunderstanding, but Ahammad Mustabha Hassan (1983)laments, the developing countries do not depend much on them as sources of information.

Among the many mass media radio is compared favourable and considered superior to other media. Burke, Jacinta (1980) considered it playing a more important role than TV in the lives of the rural folk in Australia. It had cut across the literacy and economy barriers. People have implicit faith in it (Sunil Misra 1983). Radio is described to have the least elite-bias in the third world and widely distributed there. But in many developing countries the broadcasting structure has been modelled on western pattern and Adkins G.R. (1982) is very much doubtful about its appropriateness for nations with different culture.

Radio has several advantages as well. It is a low cost educational tool, with immediate appeal and better combination with other instructional modes (illegible).

Communication experts are really proud of a well built hardware and mature soft ware. The radio broadcast has matured both technologically and programme wise, since its' inception in 1920's. Even the approach and strategy had taken a revolutionary turn with the new concept of 'narrow casting'.

Importance of harnessing the wireless media and broadcasting infrastructure for agricultural growth and farm development was well conceived even in its infancy. An ESCAP survey in 1981 concluded that farm broadcasting

holds a unique and vital place in Asian and pacific countries, though only 1.5 per cent of broadcasting time was devoted for agricultural and rural development items as revealed by Colin Fraser (1983), FAO expert.

Many nations of the third block have made best use of their broadcast media resources and established radio schools and teaching programmes. 'San Rafael' of Bolivia, Radio schools in Urugay, Radio ECCA in Canary islands, Radio primaria of Mexico, Dzup in Philippines etc. are worth mentioning. Kenya Radio correspondence project was highly commended in USAID report (Eilers 1982). Robert Hornik et al. (1981) described the two way radio net works of Radio schools in Australia, established as early as in 1933.

Coming to India, the broadcasting media are well built with 90 main stations and 162 transmitters, altogether covering 90 per cent of population and 85 per cent of area, through a total daily broadcast of 1500 hours in 15 national languages and 250 dialects and feeding 50 million receiving sets, spare it's time significantly for educational and developmental concent. Sunil Misra (1983) qualified it as the most important medium of India in terms of its reach and coverage.

The pioneer venture of development communication through radio was the introduction of community listening

in 1935. It grew sizeably through public encouragement and government subsidies and reached its peak in 1969 with 2.6 lakh community sets.

Farm Forum projects were started in India, for the first time in Poona in 1956 in collaboration with UNESCO. Now we have this programme in 64 AIR Stations in the new name - Farm and Home Units.

In India farm broadcasting has become increasingly popular and widespread with many new programmes like 'farm school on the air', agricultural quizes, folk tales, folk songs etc. Sohoni (1983), qualified the Indian experiments as highly innovative in the field of developmental communication.

The unique experiment 'Farm school on the air' programme, that had a humble beginning in 1973 in Trichur and Vijayawada, has now ramified to 30 stations of AIR, all over India. Chowla (1983) indicated that registered listeners remarked this programme as extremely useful. Rajamani and Sinha (1983) also reported from Coimbatore that this innovative programme could reap rich harvests, in terms of adoption of new technology.

Need for the study:

Since its introduction in the AIR station Trichur, for the first time in India, the Farm school on the air'

programme had been an effective instrument in disseminating the latest agricultural innovations to the farm folk of Kerala. Over a dozen of lessons so far broadcasted served the specific needs and interests of hundreds of scheduled listerns.

But it took more than a decade to decide to have an over view of what happened and how best or worst. This study can best serve the scientists who give the lessons, media-men and media researchers for the future.

It is high time to throw light on this programme and bring to light the listening behaviour of its audience. It is also imperative to examine whether this programme had been instrumental in influencing the farmer listeners' attitude and at last to explore the relations of these variables to the personal characteristics of the listeners.

Objective of the study

1. To analyse the programme content of the 'farm school on air'
2. To study the level of knowledge and attitude of the farmer listeners on the programme content.
3. To assess the extent of adoption of the recommended practices by the farmer listeners.

4. To evaluate the listening behaviour of farmer listeners involved in the programme in terms of their personal characteristics.

5. To make a comparison of different modes of presentation in terms of listener's preference.

Scope of the study:

The 'Farm school on the air' is a sponsored programme of Kerala Agricultural University with the participation of the scientists of the University to offer lessons for the farm serials. This study could highlight the importance of such a programme and delineate the trend of the registered farmer-listeners in terms of their acquisition of knowledge through the programme. Apart from the trend the sponsoring agency could also take advantage of the findings of the study towards improving the quality leading to effective communication.

Limitations of the study:

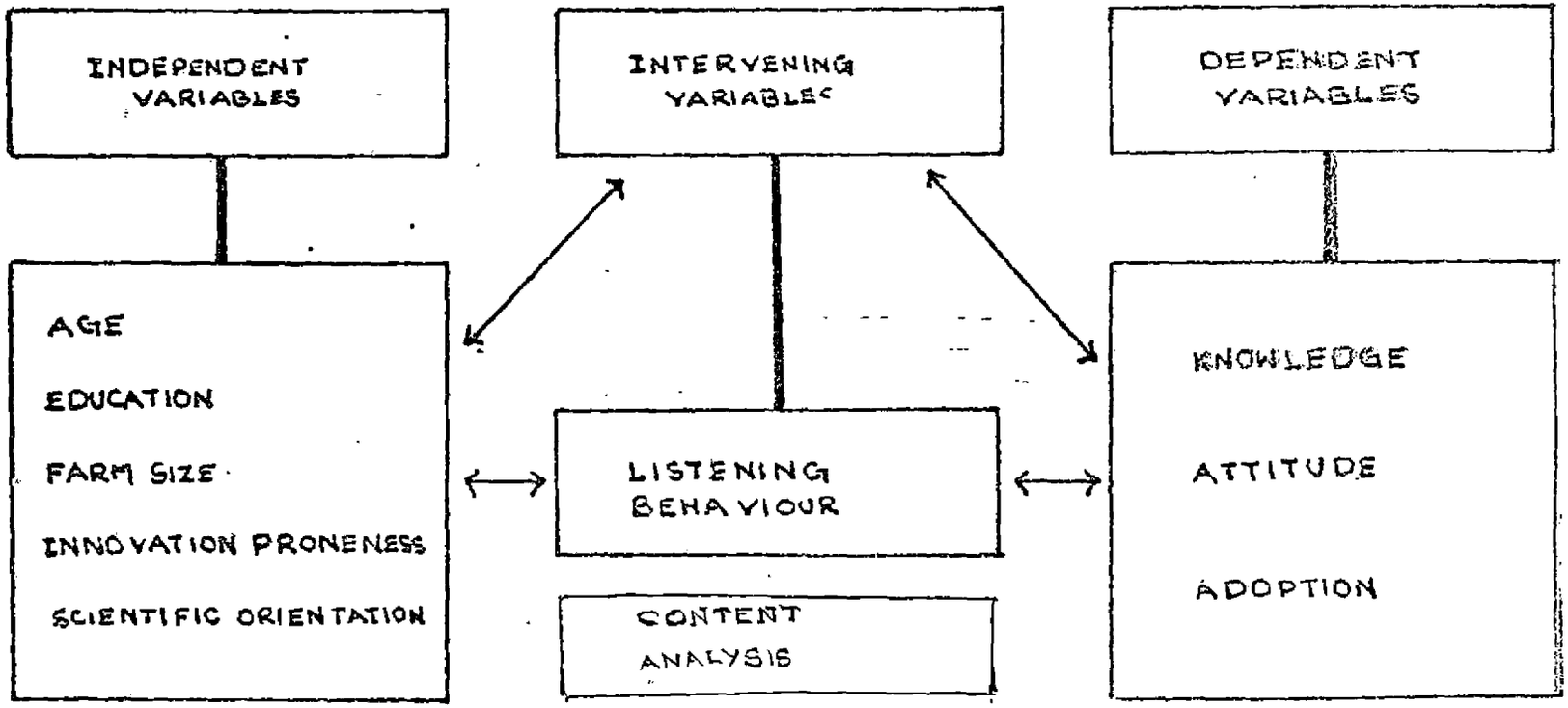
Out of the registered listeners for the 'Farm school on the air' on plant protection numbered to more than 1800, only a small sample could be interviewed due to the limited facilities available. They were scattered throughout the State. The study also had its limitation pertaining to the

singleness of the radio with that of other media in communicating to the farming community. More or less a combination of the media is likely to influence the adoption of the practises dealt within the lessons.

Future lines of work:

The study on 'Farm school on the air' has been an investigative type. This study can be taken up on a comprehensive manner leading to find out the impact of the programme. Further target groups could be identified for each programme in order to analyse the transfer of technology achieved through the farm broadcast.

Fig.1 - THEORETICAL FRAMEWORK OF THE STUDY



THEORETICAL ORIENTATION

2. THEORETICAL ORIENTATION

This chapter is intended to provide a theoretical base for this empirical investigation, on a conceptual frame work. It will lead to identification and selection of relevant variables for the study. The relevant literature reviewed is presented in this chapter under the following titles and sub titles.

(a) CONTENT ANALYSIS

(b) INTERVENING VARIABLE - LISTENING BEHAVIOUR
- relation with other variables
- regularity
- duration
- intensity
- frequency
- time
- source preference. etc
- mode preference

(c) INDEPENDENT VARIABLES

1 Age

2 Education

3 Farm size

4 Scientific orientation

5 Innovation proneness

(a) DEPENDENT VARIABLES

1 Knowledge

2 Attitude

3 Adoption

(a) CONTENT ANALYSIS

Sheahan (1979) placed weather and market informations as very important programmes to rural farmer listeners of Australia. According to Pandey and Roy (1978) messages must be related to felt needs and purpose clearly stated, timely and with actual examples. It must be summarised at the end and the economics of the practices given. Chandrakandan (1980) revealed that the listeners of farm school on air want lessons on oil seeds (46%), rice vegetables, fruits, pesticides etc.

ESCAP report (1981) suggested that farm broadcasts should contain accurate and timely information about farms, food, weather, markets etc. It emphasized the need for a closer relationship between audience and broadcasters. Athimuthu, P (1982) identified in a content analysis of the Agricultural pages of two Tamil dailies, the most useful areas of information as agro-industries, marketing, weather reports and new research findings in the order of preference.

Chandrakandan (1982) described good messages as having its purpose clearly stated, related to felt needs, written in familiar words and timeliness. Singh S.N. and Vijaya raghavan, K (1983) found that radio can promote agricultural development by providing market information, weather information, pest and disease news and help in adoption of new technology. Elelyn.C. David (1983) instructed that in distance teaching programmes using radio the broadcasts lessons and basic curriculum must have an integration. He stressed that broadcasts must be supplemented with other teaching methods. Eley O.Gomez (1984) found that programmes of importance to farmer listaners of Australia are practical farming advices, new management practices, interviews with other farmers, market reports, weather reports and technical advices. A content analysis of Farm broadcast by Manoharan (1977) revealed that most of the talks were timely and needed by the listeners. He estimated the coverage of different areas as Agronomy (22%), Animal Husbandry (22%), Plant Protection (8%) Agricultural Economics (11.3%) by time.

In an evaluation report of SITE programme, Agarwal (1978) argued for the increased use of dialects for better understanding and increased receptivity. Chandrakandan (1980) reported the acceptance of colloquial presentation of

lessons in farm school by 88 per cent of listener-farmers. Chandrakandan (1980) suggested slow delivery, summarisation at the end, supplying print lessons and giving incentives to listeners for improving the Farm school programme. Pandey and Roy (1978) stressed the need to present different ideas well connected, important ideas repeated and reinforced and stress for key ideas and all with natural way of talking. Chandrakandan (1982) stated that good presentations must create a mental picture in the audience, with ideas smoothly connected. It should be natural and tactful and important points must be repeated.

Ramshankar and Ariel, R.C. (1981) wanted the radio broadcasts to be presented in correct language with apt words and pronounced clearly, the important points to be repeated for reinforcement of gained knowledge.

Goel, D.R. (1980) studied the school broadcast programme and made many observations regarding content and presentation of lessons. He enlisted the major points of serious concern - good audibility, effective pronounciation, logical sequence of teaching points, correct pacing, suitability of content and appropriate language.

Berelson, Bernard (1952) defined content analysis as a research technique used for objective systematic and quantitative description of the manifest content of communication. According to Best, W.John (1963) content analysis can serve the following purposes to describe prevailing practices, relative importances, level of difficulty, types of errors, symbols, identify literary styles etc. Kerlinger, Fred, N (1964) commended on content analysis as it was to observe the behaviour of the people indirectly through the communications they have produced. Chatterjee (1976) reported that content analysis reveal the nature and strength of the stimuli in the content and identify grammatical, linguistic and structural mistakes. It also helps quantitative categorisation of the messages.

Chandrakandan (1980) in his study considered the following factors of the lessons broadcasted in the farm school on air programme, namely, usefulness of lessons, sufficiency of information, speed of delivery and voice acceptance.

(b) LISTENING BEHAVIOUR

John Knight (1973) considered two components of the listening behaviour for his study. They were regularity and duration of listening. He defined listening behaviour as hearing with or without close attention, yet making conscious efforts to hear.

Tampi, A.M. (1979) in a study of impact of farm broadcast with rural radio forum convenors as the respondents detailed their listening habits. A good majority of them (63%) listened to the programmes regularly, 44 per cent of them were active listeners. In general listening was very selective and recall partial. Sekhar, V. (1982) found that farm broadcast listening behaviour of extension workers was influenced by education. Sekhar, V. (1982) found that significant inter-correlations also exists between the three variables such as awareness, knowledge and farm broadcast listening behaviour.

Chandrakandan (1982) found a profound relation exists between radio listening behaviour and knowledge gain of listener farmers. Rajamani, M and Sinha, B.P. (1983) found that listening behaviour along with many other personal variables influenced the knowledge gain and adoption of behaviour of listeners of farm school on air' in Coimbatore district in Tamil Nadu.

REGULARITY

Singh and Sandhu (1971) reported that 40.77 per cent of farmers were listening regularly, 28.85 per cent several days a week, 8.46 per cent once a week, 16.15 per cent less than once a week, while 5.77 per cent had seldom or never listened to them.

Singh (1972) found that 44 per cent of listeners listened to farm programmes everyday in a week, 39% listened to them often and 17% listened twice a week. Shakya (1973) found that his respondents favoured to have the frequency of thrice per week in respect of farm. They favoured a duration of 20 minutes for agricultural broadcasts.

DURATION

Singh (1972) reported that 68 per cent of his listener-respondents desired an increase of 10 to 30 minutes over the existing 30 minutes duration. Knight (1973) found that majority of farm broadcast listeners (45.64%) listened to the programme daily and also found that a great majority (83%) listened to agricultural programme for 20 to 30 minutes in a day. Badrinarayanan (1977) reported that 50 per cent of his farm broadcast listeners listen to the entire farm broadcast at night. Among the rest about 43 per cent listen to most part of the programme, while a few 7 per cent listen only for some time. Chandrakandan (1980) reported that 47 per cent of farmer listeners preferred a duration of 20 minutes for broadcast lessons. Nearly one fourth of them think that 15 minutes is sufficient. Nehru (1980) reported that the farmer listeners wanted the duration of the 'Karshika mekhala varthakal' to be increased from the present 5 minutes. They were satisfied with the duration of all other programmes.

Sekhar, V. (1982) found that the most suited duration for radio broadcast programmes was 10 to 15 minutes. Sridhar, V.R. (1983) advocated 30 minutes to one hour duration for farm telecast programmes as it was desired by 69 per cent of the viewers in his study.

INTENSITY:

Sekhar, V. (1982) estimated that only 10 per cent were intensive listeners, though 61 per cent were full time listeners. The proportion of casual listeners was 29 per cent. Rajendran (1982) found majority of the group listeners heard radio programmes in their leisure time and attend it chit-chatting.

FREQUENCY.

Nehru (1980) found that farmers are satisfied with the frequency of the programmes, that was Agricultural news every day Karshika rangam - once a week, Radio grama rangam twice a week and Vayalum veedum once in every two days. Chandra-kandan (1980) found 38 per cent of listeners of farm school on air want it to be broadcasted once in a week, while 35 per cent twice and 25 per cent thrice a week.

TIME

Chandrakandan (1980) found majority (44%0 of listeners of farm school on air want no change of the time of broadcast.

The second most desired time was 8 p.m. Rajendran (1982) found the most suitable time for community listening of radio was 7 to 8.30 p.m. Sekhar (1982) found that the most acceptable time for the listeners were 7-7.30 a.m. and 8 to 8.30 p.m. Sridhar, V.R. (1983) in a study of the farm telecast viewers found 7 to 8 p.m. was the ideal time of telecast for the vast majority (72.5%) of farmers. Eley D. Gomez (1984) studied the listening behaviour of Australian farmers and reports that they listen radio for less than 3 hours a day. The morning period before 9 a.m. was the most popular time.

Purpose of listening, Source preference and Programme preference

Sridhar, V.R. (1983) found that progressive farmers are the most preferred source of information and persuasion for the farm telecast viewers. Nehru (1980) found that 'Karshika mekhala varthakal' (Farm News) was the most popular agricultural programme. Karshika rangam, radio rural forum and Vayalum veedum were the next in the order. Sekhar, V. (1982) reported that announcements question-answers and discussions were the regularly listened programmes. Usefulness and timeliness were the factors responsible for regularity of listening. According to Chandrakandan (1980) a vast majority of the listeners 87 per cent joined farm school on air programme in Tamil Nadu, to know about new findings and to adopt it and get benefitted.

MODE PREFERENCE

Alamgeer (1970) revealed that among the several techniques adopted in Farm Broadcast of the AIR Trichi, dialogue, interview with the progressive farmer, announcement and forecasts, questions and answers including give programme farm news and social stories were the six techniques preferred by the farmers. Parthasarathy (1971) found that among the several techniques adopted in the farm broadcasts talk by specialists was preferred as the first choice followed by dialogues, success stories narrated by the farmer, interview the progressive farmers and Villuppattu (tottsong) in the descending order.

Singh and Sandhu (1971) reported that the order of preference the mode of presentation were discussion, lecture, features and dramas, interview with farmers, question and answers views and reviews, poetical symposium and farm news. Singh (1972) found 54 per cent of the listeners wanted farm programmes to be delivered through discussion mode of delivery and 28 per cent were in favour of interview mode and only 12 per cent wanted lecture or straight talk type of presentation.

Shakya (1973) while conducting a study on radio owing young and adult farmers in Nepal revealed that among the mode of presentation of farm radio programmes, discussion

mode secured the 1st rank, dramatic mode was second and straight talk or lecture was the least liked mode by both the young and adult farmers. Knight (1973) observed that interview with the farmers, question and answers, dialogue - interview and scientists, straight talk - discussion announcement and documentary were the order of listeners preference in respect of farm broadcasts. Jalihal and Srinivasamurthy (1974) found that dramatic presentation and interview were preferred by listeners. Sabarathanam and Rajaram (1975a) observed that interview with farmers was ranked first by the respondents followed by talks by farmers and dialogues. Pandey and Roy (1977) reported that discussion mode resulted better retention.

Tampi A.M. (1979) compared the different farm broadcast programmes and modes of presentation and found farm news was the most preferred programme, followed by farm interview, talks of specialists and question-answers. Discussions and interviews were identified as the most accepted modes of delivery.

Chandrakandan (1980) found the straight talk method of presentation was acceptable by 62 per cent of listeners and not to 30 per cent. Still the great majority better like a variety of presentation. Interview with scientists was the most liked one.

Nehru (1980) in a study of radio rural forum listeners found that the most preferred mode of delivery of farm broadcasts was interview. Discussions and question-answers were the other desired modes. Abraham, S. (1981) reported that presentation with rural songs was the most preferred mode. The second best was discussion with farmers. Sekhar (1982) found that the most preferred mode of delivery of farm broadcast were question-answer, dramatised discussion and interview in that order.

Valdecanas, O.C. (1982) opined that content analysis of media releases provide indications for realizing the relative potential of various mass media promoting utilization of research findings. Manoharan (1977) examined several factors contributing to the content quality and identified seven idea presentation factors and six composition factors that had remarkable influence over the content value. Of these seven factors contributed 75 per cent of the total variations in the content value. They are

- telling the listeners what they are going to hear
- using local example
- quoting research results
- summarizing at the end
- using active verbs
- limiting the number of words and
- using statistics springly.

(c) INDEPENDENT VARIABLES

AGE

Sabarathnam and Rajaram (1975) found that the age of the radio listening farmers ranged from the lowest of 20 years to the maximum of 60 years with a mean of 39.97 and a standard deviation of 8.47 and majority belonged to middle age group. A study by Chandrakandan (1980) revealed that the listeners of farm school on air programme in Tamil Nadu were mostly young preferably less than thirty years in age. Nehru (1980) found age was not significantly related to listening behaviour of farmers. Sekhar (1982) found age having negative relation with farm broadcast listening behaviour of village level workers. Selvanayagam (1980) found that young farmers gained more knowledge than mid-adult and late-adult groups. Parshad, R. (1981) stated that age has significant influence on knowledge gain of the listeners who were village level workers in his study.

Subramonyan (1975) found that age and education influence retention of knowledge. Doraiswamy (1977) found no correlation between age and education. Chandrakandan (1982) stated that young farmers could gain and retain more knowledge than middle aged and old. The latter groups showed no significant difference between them. Use adoption also is influenced by age.

EDUCATION

Sunil Misra (1983) wrote that radio had cut across the literacy and economy barriers, and the radio listeners comprised all literacy and economy classes. Thus according to him it is a media used by all categories of people. Jalihal and Srinivasamurthy (1974) in their study revealed that the radio owners generally had low to medium educational standard and read the news papers. Regular listening to farm broadcast was associated with the educational level of the radio owning farmers.

Sabarathnam and Rajaram (1975) found that 38.34 per cent of the radio listening farmers had primary education and 24.45 per cent were only able to read and write. According to Chandrakandan (1980) listeners of 'Farm school on the air' programmes in Tamil Nadu were mostly literate. More than three fourth of them had formal schooling with 50 per cent having school education and 30 per cent college education.

Nehru (1980) found education along with many other independent variables influenced the listening behaviour and mass media exposure behaviour of adoption behaviour, communication behaviour.

Sekhar, V. (1982) found that education and experience have positive and significant correlation with farm broadcast listening behaviour of village level workers.

Knowledge gain also was significantly influenced by these variables. Subramanyan (1975) found that education and age influenced retention of knowledge. Doraiswamy (1977) got contradictory results. Sripal, K.B. (1978) established a positive relationship between education and knowledge gain.

According to Selvanayagam (1980) farmers studied upto secondary level gained more information than those having only primary education. Selvaraj (1981) found that difference in education resulted marked influence on knowledge gain. Misra and Sinha (1981) concluded that formal education of farmers was important for knowledge gain. Balasubramonian (1980) found education along with many other personal characteristics contributed to innovativeness of adopter farmers. Ganorkar (1980) found higher educational level resulted in increased rate of adoption of high yielding varieties. Chandrakandan (1982) found listerate farmer-listeners could retain more than illiterate listeners. But different levels of literacy showed no significant difference. Education was found to have significant effect on use-adoption.

Study by Chaturvedi, V and Braham Prakash (1983) revealed that education was positively related to knowledge and attitude but its impact on the adoption behaviour not significant.

FARM SIZE

Sabarathnam and Rajaram (1975) found that a majority (67.78%) of the radio listeners were small land holders. Only 19.33 per cent of respondents had 5 to 10 acres of land and 14 per cent of the listeners had more than 10 acres of land. According to Chandrakandan (1980) all categories of farmer were there among the radio listeners. Thirty nine per cent had small holdings of 5 acres or less and 35 per cent belonged to 5-10 class.

Rajendran, C. (1982) in an analysis of community radio listening found that the listeners were mostly (88%) small farmers while the non-listeners owned medium to large farms. Nehru (1980) found farm size as significantly related to the listening behaviour, mass media exposure behaviour, source utilisation behaviour and communication behaviour. Chandrakandan (1982) found farm size with other variables like age, education and attitude influenced retention of knowledge, gain of knowledge and symbolic adoption. Patel and Singh (1970) observed that with larger size of holding, the acceptance of new practices was greater than otherwise. Subramoniyam and Lekshmanna (1973) also observed that farm size had positive and highly significant relationship with adoption.

Rajendran, C. (1982) while comparing the listeners and non-listeners of community radio sets found that the

listeners had medium to high cropping intensity while non-listeners had low cropping intensity.

SCIENTIFIC ORIENTATION

Singh K.N. (1973) reported that key communicators had more scientism than communicator and non-communicator categories of farmers. Reddy and Reddy (1975) found farmers with high scientific orientation to be more innovative in farming.

Sandhu and Darbarilal (1976) found significant correlation between value orientation and communication behaviour. Murthy, A.S. (1972) reported significant correlation between value orientation and communication behaviour of farmers.

Study by Rao and Reddy (1980) evidenced significant correlation between scientific orientation and interpersonal communication behaviour of farmers. Vijayaraghavan and Subramoniam (1981) also established significant correlation between scientific correlation and communication behaviour of farmers. Naik (1981) reported scientific orientation of contact and other farmers as independent of their attitude towards T&V system. Study by Kamarudeen (1981) established significant positive relationship between scientific orientation and attitude of farmers towards demonstrated agricultural practices.

INNOVATION PRONENESS

Reddy and Reddy (1975) established relationship between innovativeness of farmers and their scientific orientation. Balasubramonian U.A. (1980) reported that mass media exposure behaviour, extension contact, nature of family, perception of cost and profit, education, and social participation significantly contributed towards innovativeness of farmers.

Moulik (1965) found positive association with adoption of farm practices and innovation proneness of the farmers. Bhilegaonkar (1976) also established positive association between adoption and innovation proneness of the farmers. Subramonyan, V.S. (1981) concluded that four 'farmers own situation' variables- economic, farming, social and personal - significantly influence innovativeness of small farmers with the first one as the most powerful predictor of it.

(d) DEPENDENT VARIABLES

KNOWLEDGE

Shete (1978) on studying the tribal farmers reported that the subject matter areas of interest are high yielding varieties, plant protection techniques and use of fertiliser in the order mentioned.

Chandrakandan (1982) found farmer-listeners have gained knowledge considerably in all areas of subject matter, still they found it difficult in case of names of chemicals and varieties. Practices with economic viability, practical feasibility and easiness were well understood.

Tampi, A.M. (1979) studied the influence of radio listening on the knowledge and adoption of farm practices. He found exposure to radio broadcasts resulted in medium level of understanding and knowledge in majority of the rural radio forum convenors in Trivandrum district of Kerala. According to Chandrakandan (1980) exposure to radio broadcast resulted in significant gain in knowledge. Ninety per cent farmers had medium or low level of knowledge, with a mean score of 9.97 out of maximum possible 25, in the pre-broadcast phase. While 75 per cent of the farmers had medium or high level of knowledge in the post-broadcast phase, with a mean score of 16.03 out of 25. Again Chandrakandan (1982) revealed that 28 per cent of the listener farmers could acquire skills completely and 50 per cent partially and 22 per cent could acquire anything. Hence simple skills can be very well taught through radio.

Sharma and Dey (1970) observed that the extent of retention after fifteen and thirteen days of broadcast was 16 per cent and 10.88 per cent respectively, among radio rural forum members. Chandrakandan (1982) found that two-third of the information was retained by the farmer listeners, after 30 days of the broadcast.

Subramanyan (1975) found age and education influence retention. But Doraiswamy (1977) found no correlation. Chandrakandan (1982) found that young farmers could retain more and significantly higher than middle aged and old. But middle aged and old listeners did not differ significantly between them. Pandey and Roy (1977) reported that discussion mode has resulted better retention. Chandrakandan (1982) studying the four modes of delivery of farm broadcast found all the four modes namely, Discussion, question-answer, interview and farm-news as effective in communicating the technology but with considerable difference in their effectiveness.

Chandrakandan (1982) found age, education, farm size, urban contact and attitude of the farmer listeners to have significant influence on their retention of knowledge. Somasundaram and Singh (1978) reported that the only variable associated with knowledge gain was market perception.

Sripal, K.B. (1978) established a positive relationship between knowledge gain and education, mass media exposure and value orientation.

Somasundaram and Singh (1978) found age, education, urban contact, extension contact, economic motivation, attitude towards HYV and scientific orientation as significantly correlated with knowledge gain in case of adoptors. Selvanayagam (1980) found that young farmers gained more knowledge than mid-adult and late-adult groups. According to Selvanayagam (1980) farmers studied upto secondary level gained more information than those having only primary education. Selvaraj (1981) stated that only with education and value orientation a significant difference was noticed with respect to knowledge gain and retention.

Misra and Sinha (1981) concluded that formal education of farmers in general was important for knowledge gain. Selvaraj (1981) found that the involvement of poly-perceptory organ was more effective in knowledge gain by the listeners compared to involvement of disensory organs and meno-sensory organs. Parshad, R (1981) stated that the contribution of the variables age and decision making capacity towards knowledge gain of village level workers was to the extent of 9.1 per cent only. Sekhar, V. (1982) in a study of farm broadcast listening behaviour of extension personal

found 75 per cent of them had medium awareness of the programmes. The 13 per cent had low and 12 per cent high levels of awareness. Education and experience were found to have positive and significant correlation and age had negative correlation. Chandrakandan (1980) established that age, social participation, farm size, Radio listening behaviour, urban contact, extension contact, secular orientation and attitude had significant influence on knowledge gain of farmer listeners.

Sekhar, V (1982) found education, experience and training, significantly influencing the knowledge gain of farmer broadcast listeners who were extension personnel of the State department. Chandrakandan (1982) reported that significant increase in knowledge was resulted due to exposure to skill communication. Seventy two per cent of the listeners could gain adequate knowledge relative to skill, hence radio could be considered as an effective media for desseminating knowledge dimension regarding skill practice.

ATTITUDE

Rajendran (1982) found all the listener farmers of community radio sets had high level of favourable attitude towards radio listening. Chandrakandan (1982) found attitude of listeners had a profound influence on their

knowledge gain retention of knowledge and symbolic adoption. Vellaichamy, H. (1979) ranked radio as the third credible source for small farmers while it was the second credible source for marginal farmers. Ravi, K.C. (1979) identified radio and news papers as the most credible sources of information for tapioca growers of Tamil Nadu. Kuthiala B.K. (1980) complained that radio could not function as an effective change agent. The information input provided by it was inadequate. It was rather a status symbol in the rural areas.

Chandrakandan (1980) placed radio as the most important source of information followed by letters from communication personnel, friends, neighbours and relatives. As a source of motivation radio was ranked first by 69 per cent farmers and friends-neighbours-relatives by 25 per cent. Escalda, M.M. (1981) identified radio as the most effective channel for communicating rural development information and extension technicians as the most preferred source. His respondents, included radio listeners, station managers and programme directors.

Sekhar (1982) in a study among the extension workers in Tamil Nadu found that the listeners placed radio as the third best source of information. It was preceded by 'higher

officials' and farm journals only. News paper scores the fifth rank in credibility. Sunil Misra (1983) placed radio as a highly credible source of information with motivational and educational roles. He wrote people have implicit faith in it. Chandrakandan (1980) reported 23 per cent of farmer listeners of farm school on air think it as highly useful and 70 per cent moderately useful, while 7 per cent consider it not at all useful. Sekhar (1982) reported that 86 per cent of the listeners opined that the quality of farm broadcast was very high, 92 thought that it had high usefulness and 47 per cent considered it as timely and complete.

ADOPTION

Rogers (1962) defined adoption process as the mental process through which in individual processes from first hearing about an innovation to its final adoption. Rogers and Shoemaker (1971) defined adoption as a decision to continue full use of an innovation as the best course of action.

Tampi, A.M. (1979) studying the listening habit and adoption behaviour of rural radio forum convenors, found that a vast majority of the listeners gained knowledge and developed favourable attitude, just 40 per cent decided to practice what they learned.

Sundararajan et al. (1978) reported that 46 per cent of listeners had used improved seeds, 39 per cent improved agronomic and plant protection measures. According to Chandrakandan (1980) many farmer listeners of farm school on air programme, decided to adopt the advocated practices. The assumed rate of symbolic adoption was very high among them. Rajendran (1982) found very low rate of adoption among the community listeners. Only 9 out of 50 listeners adopted some recommendation at least. Chandrakandan (1982) estimated that one third of the listeners who learned the practice decided to adopt it. He also found that use adoption of the skill was practically nil though symbolic adoption was very high. It was because of the recommendation not fitting the situations.

Chandrakandan (1980) found that use of improved seeds and new cropping systems were two innovative ideas (generally) accepted by two third of pulse growers who were listeners of farm school on air programme, while only one third could adopt new agronomic, microbiological and crop protection techniques. Nehru (1980) found adoption behaviour of radio rural forum listeners as positively and significantly influenced by their education, radio ownership, social

participation, media exposure behaviour, listening behaviour, communication behaviour and source utilisation behaviour. These variables together contribute to 59 per cent of variability with communication behaviour as the most contributing factor.

Study by Chandrakandan (1982) established correlation between use adoption and variables like credit behaviour, radio listening behaviour, media participation, personal localite exposure and urban contact.

Johnston, M. (1982) in an evaluation of the effectiveness radio broadcasts in changing the food consumption habits found the response was very high. The results showed that 95 per cent of the listeners adopted at least practice recommended. Chandrakandan (1982) found varied relations between use adoption and education. Education had significant effect on use adoption but only at 5 per cent level of significance. Persons with very high education had low use adoption score.

Chandrakandan (1982) found young farmers had higher use adoption but middle aged and old did not differ significantly.

METHODOLOGY

3. METHODOLOGY

The methodology adopted in this study is described in the following sections.

1) Procedure for content analysis.
2) Selection of sample
3) Collection of data
4) Measurement of the intervening variable
5) Measurement of independent variables
6) Measurement of dependent variables
7) Statistical techniques adopted.

I. Content Analysis

Manoharan (1977) made a content analysis of talks in farm broadcast calculating the "total content value" of talks based on 23 selected factors that include both composition factors and idea presentation factors. These factors were treated as independent variables and contribution of each to TCV was found. The relationships of talker's attributes with TCV also were worked out.

Sekhar (1982) measured the quality of farm broadcasts in three dimensions viz. timeliness, completeness and clarity (of tone, language and content).

In this study a qualitative analysis of the content was made with respect to eight characters identified as indices and yardsticks of a good piece of broadcast with

technical content. Professionals and linguists were consulted with for selecting these characteristics which were defined as follows.

(1) Transition:- refers to the translation and transformation of the technical know-how and content into farmer's language.

(2) Coverage:- indicates to what extent the narration and detailing are complete and also to the technical perfection.

(3) Utility:- refers to the usefulness of the lessons to farmers in general either in imparting knowledge and/or transfering skill.

(4) Comprehension:-degree of understandability of the 'know-how' and know-why' built in the lessons.

(5) Stress on key points:- Examining how salient points are stressed, repeated and reinforced in the body of lessons.

(6) Illustrativeness:- How the technical matter of the lesson is picturised for the imagination of the listeners of the non-visual medium (radio).

(7) Relevence: - refer to what extent the content of the lessons useful and meaningful to the listerner in particular.

(8) Favourableness:- refers to the acceptability and applicability of the content of the lessons to the listener farmers.

The score obtained for all these characters were added together to get the 'total content value' of each lesson. From the thirty seven lessons, a sample of three was selected to be valued by the judges. The judges were asked to mark the lesson as 'good' 'average' or 'bad' with scores 3,2 and 1 respectively. Valuation was separate and independent for each criteria.

Mode of delivery of the lessons, content of the lesson and author of the script were the three criteria considered for deciding the sample of the content. Hence three lessons namely, Organochlorine Insecticides, Inorganic fungicides and Pests and diseases of Arecanut were finally selected purposively from each group. Each lesson represented the major content areas such as insecticides, fungicides and crop pest management. The 'sample content' truly represented all delivery-modes content areas and author groups. (vide Appendix II & III

The sample content was given for valuation and scoring to three groups of judges, altogether numbering sixty. Subject Matter Specialist-Plant Protection (SMS-PP) of the Department of Agriculture and Agricultural Development Officers who had training in Plant Protection formed the first group

Junior Agricultural Officers were the second set of twenty, and selected progressive farmers, mostly college educated, formed the third group of judges.

II. Selection of Sample:

From farmers who have registered in the AIR Trichur as 'Scheduled listerners' of the 'Farm school on the air' on plant protection broadcasted during 1983, Seventy five listeners were selected using simple random sampling. The listerners thus selected belonged to Kottayam, Ernakulam, Trichur and Malappuram districts. The district-wise break-up of the respondents is given as follows.

Ernakulam	- 11
Kottayam	- 27
Trichur	- 22
Malappuram	- 15
Total	- 75

III. Collection of data

A pilot study using a draft interview schedule was undertaken with twenty five farm broadcast listeners as respondents. They were not scheduled listeners and hence not included in the main study. Based on the experiences of the pilot study the draft schedule was modified wherever

necessary and finalised (final interview schedule given in Appendix-IV)

The data were collected from the respondents through personal interview.

IV. Measurement of Intervening variable - Listening behaviour:

Singh and Sandhu (1971) defined listening behaviour as the regularity with which the farmers hear the selected farm programmes together with the extent of attention paid to the programme. He used a five point scoring to measure it.

Knight and Singh (1975) measured listening behaviour in terms of regularity and duration of listening. Responses to regularity were categorised as daily (5), more than twice a week (4), twice a week (3), once a week (2), rarely (1) and not at all (0) with the scores given along with.

Badarinarayanan (1977) defined regularity, duration and intensity were the three major components of listening behaviour. A four point scoring pattern was used by him.

Nehur (1980) measured listening behaviour in terms of preparedness, expectations, hearing attention, regularity, duration and seeking. The components were measured with a set of statements and the responses were classified into categories as most (3), simetimes (2), rarely (1) and never (0) with the scores as given in the parenthesis.

Chandrakandan (1982) defined and measured radio listening behaviour of farmers with regard to frequency and number of farm broadcast programme listened by a person. He used the following scoring pattern.

Category		Score
Non-listeners		0
Rare listeners	(25% of the prog.)	1
Occasional listeners	(26-50% ")	2
Frequent listeners	(51-75% ")	3
More frequent "	(76-99% ")	4
Regular "	(all the prog.)	5

Sekhar, V. (1982) measured listening behaviour of farm broadcast listeners in terms of regularity, duration and intensity of listening of three selected agricultural programmes.

The scoring procedure was as follows:

Intensity	Score
Taking notes	4
Silent listening	3
Eat, dress etc.	2
Reading/Calling etc.	1

Regularity	Score
listen 20% programmes	1
" 20-40% "	2
" 40-60% "	3
" 60-80% "	4
" 80-100% "	5

Duration	
listen completely	2
" partially	1
Nil listening	0

In this study four components viz. regularity, intensity, duration and purpose were considered to measure the listening behaviour of farmers. It was measured with respect to four selected daily agricultural broadcasts of AIR, namely "Gramasthema Varthakal, Vayalum Veedum and Kampola Nilavaram".

A 'two way mixed-matrix' was used for the purpose of scoring.

Listening behaviour

Programme	Regularity +	Intensity +	Duration +	Purpose
1. 'Gramaskhema Varthakal'	Everyday - 3	Involved - 4	Completely - 2	Educational - 3
	Most often-2	Focussed - 3	Partially - 1	Entertainment-2
2. 'Vayalum Veedum'	Casually - 1	Full time- 2		
3. 'Kampola Nilavaram'		Engaged - 1		Accidental - 1
4. 'Farm school on the air'				

Total score _____

V. Measurementof Independent variables

1. Age:

Age of the respondent was calculated as the number of years completed since his birth to the date of interview.

2. Education:

Trivedi (1963) used the following scoring system to measure the level of education.

Illiterate	- 0
Can read only	- 1
Can read and write	- 2
Primary level	- 3
Middle school level	- 4
High school level	- 5
Graduate level	- 6
Above	- 7

In this study it was modified and the following scoring system followed.

Illiterate	- 0
Can read and write	- 1
Primary school level	- 2
High school level	- 3
Collegiate	- 4

3. Farm size:

In this study farm size was measured as the number of acres of land possessed by the respondent. It includes owned land and leased in area and excludes leased out.

4. Scientific orientation:

Kamarudeen (1981) operationalised scientific orientation as the degree to which a farmer is oriented to the use of scientific methods in decision making in farming. Scientific orientation can be operationally defined as those aspects of respondent's orientation, which commits him to the observance of certain norms and standards based on scientific principles, that influence his behaviour.

In this study scientific orientation is defined as the extent and degree of scientism in the positive operational behaviour of the farmers.

For the purpose of measurement of this variable the scale developed by Supe (1969) was used.

5. Innovation proneness:

Rogers (1960) defined innovativeness as the degree to which an individual is earlier than other in his social system to adopt new ideas.

Shailaja (1981) measured innovativeness with respect to adoption of high yielding varieties. She used a set of 5 statements on a 3 point continuum as always, sometimes and never to which the scores assigned were 2,1 and 0 respectively.

Pillai (1984) defined innovation-proneness in terms of the behaviour pattern of the farmers who have interest in and desire to seek changes in farming techniques and to introduce such changes into their operations when practical and feasible.

Moulik (1965) developed a self rating scale to measure the innovation-proneness of farmers. The scale consisted of three set of statements, each set again containing three separate statements with weights 3,2 and 1 indicating high, medium and low degrees of innovation-proneness. After obtaining the most to least choices for each of the three sets of statements, the scoring was done by summing up the ratios of the weight of the 'most like' statements to the weight of the 'least like' statement.

One's readiness to accept and orient towards the new plant protection practices was reckoned as innovation proneness in the context of this study.

The self rating scale developed by Moulik (1965) was used to measure innovation proneness of the respondent farmers.

IV. Measurement of Dependent variables

6. Knowledge:

Abdul Muis (1983) in his study of the impact of TV exposure among traditional peasants of Indonesia operationalised knowledge as follows.

"Knowledge is the degree to which an individual is acquainted with or aware of something new to him including technical know-how". It was measured with respondents knowledge of new goods, names of well known persons, public figures, new methods and so on.

Shankariah and Singh (1967) measured knowledge of the respondents about improved methods of vegetable cultivation based on a teacher mode test.

Singh and Singh (1974) followed a simple technique to measure knowledge of the respondents using selected questions. The total knowledge score of each respondent was calculated as follows.

$$\text{Knowledge score} = \frac{X_1}{n} \times 100$$

where X_1 = number of questions answered correct.

n = total number of questions asked.

Singh and Prasad (1974) measured knowledge by working out knowledge quotient, calculated as follows:

$$KQ = \frac{\text{obtained knowledge score}}{\text{Actual total score}} \times 100$$

Chandrakandan (1980) measured knowledge gain of farmer listeners by categorising them into five classes.

Score	Class
0 - 5	Poor
5.1 - 10	Low
10.1 - 15	Medium
15.1 - 20	High
20.1 - 25	Very high

Pre-broadcast and post-broadcast knowledge scores were compared for significant differences using K-S Kolmogory-Shirvov test.

Paired-t-test was used to confirm significance of the difference of the mean scores.

Mc Nemar test was also applied.

Chandrakandan (1982) operationalised knowledge gain as the quantum of information newly learnt by an individual due to the exposure to the broadcast. He used 'difficult' and discrimination indices for selection of items to measure it. The scale had a score range of 0-25.

$$\text{Difficulty index} = \frac{\text{No. of correct responses for the ith item}}{\text{Total number of respondent.}}$$

$$\text{Discrimination index} = \frac{\text{No. of correct responses in the high group} - \text{No. in low group}}{\text{No. of responses in criterion group.}}$$

He also measured retention of knowledge feeding the knowledge gain items to the listeners after 30 days of broadcast. The scale had a score range of 0-25.

In this study knowledge is operationalised as the knowledge of the listeners on the content of the 'Farm school on air' on plant protection.

It was measured using teacher made test with items selected from the curriculum of the farm school on air on plant protection.

The following procedure was adopted for selecting the knowledge test items and framing the 'knowledge test set'.

Many experts of Kerala Agricultural University who wrote the script of the lessons and contributed to farm school on the air on plant protection were consulted and complete content of the course was studied a make a question bank inclusive of all plant protection casen of important crops of Kerala. Finally a set of forty questions to test the knowledge was prepared. This set was further subjected to relevency and difficulty tests.

Twenty subject Matter Specialists (SMS) on plant protection of the department of Agriculture, Kerala were selected as judges for relevency and difficulty judgements. They were asked to differentiate the forty questions in two categories each based on the above two criteria namely 'relevent or not relevent' and 'difficult or easy'.

The judged materials were tabulated and compounded, the total difficulty and relevency scores of each question were calculated based on relevency and difficulty indices a final set of fifteen questions were selected.

Each question carried two mark. Perfect answering enjoyed two mark and partially correct answering deserved only one mark. Thus the total knowledge score of the respondent vary within the range of '0-30'.

7. Attitude

Sekhar (1982) selected programme preference, mode of delivery, duration and timing as the criteria to study the opinion of the listeners about the farm broadcast programmes.

Chandrakandan (1982) defined attitude towards farm broadcast as the degree of positive or negative disposition associated with farm broadcast. He developed a scale to measure it using the method of equal appearing intervels by Thirstone and Chave (1929). This cale consisted of six statements (given in Appendix).

In this study attitude is operationalised as the positive or negative effect of the farmer towards the 'Farm school on air' programme of the AIR. It is measured using the scale developed by Chandrakandan (1982) after modifying it with respect to 'farm school on the air' programme.

8. Adoption

Wilkening (1952) used an index for measuring the adoption of improved farm practices. The index used was the percentage adopted to the total number of practices applicable. He suggested differential weights in the adoption index.

Marsh and Coleman (1955) used a practice adoption score computed as the percentage of applicable practices.

Chattopadhyay (1963) considered potentiality, extent of adoption weightage of each practice and time taken in developing an adoption quotient.

Supe (1969) used an unweighted practice adoption score. He selected 10 practices of cotton and for each practice the total score for complete adoption was -6. The practices were divisible and were assigned partial scores for partial adoption.

Jaiswal and Dave (1972) developed an adoption quotient with the components such as extent of adoption and potentiality of each practices.

Nehru (1980) modified the formula developed by Jaiswal and Dave (1972) and used in his study.

$$\text{Adoption quotient} = \frac{e/p \times 100}{N}$$

e = extent of adoption of each practice

p = potentiality of adoption of each practice

N = total number of practices.

Chandrakandan (1982) measured adoption of individual practices in 4 dimensions such as applicability, potentiality, magnitude and weightage. He calculated adoption quotient with the following formula.

$$A.Q = \frac{\sum_{i=1}^{m} \left(\frac{ei}{Ei} + \frac{qi}{Qi}\right) wi}{2 \sum_{i=1}^{m} wi} \times 100$$

ei = Area adopted with regard to i^{th} practice

Ei = potential area " "

qi = quantity adopted " "

Qi = quantity recommended " "

Wi = weightage assigned to " "

m = number of applicable practices.

In this study, to measure the rate of adoption of recommended plant protection practices, a slightly different

method was followed, because the use of plant protection is necessitated only by infection and/or infestation. The mere willingness and conviction do not tend one to do it.

Hence in this study correct knowledge, proper understanding and determination to adopt it at the correct time in the right manner, preceded by practice of relevent prophylatic or precautionary measures, is reckoned as full adoption. Due reduction or addition has been done in cases of adoption and/or non-adoption, at the time of need, if any.

The recommended package of plant protection practices were categorised into pre-incident and post-incident measures. A set of fifteen pre-incident measures was used to measure adoption of the farmer listeners. The scoring procedure is as follows.

Measurement of adoption

Selected P.P. Cases	Used prophylatic measures		No incidence	If incidence used curative measures	
	Yes	No		Yes	No
1)	3	0	+1	+1	-1
2)					
3)					
.					
.					
.					
.					
upto 15)					

Total score

7. Statistical techniques adopted.

1. Friedman's Test

Friedman's two-way analysis of variance by ranks (Xr^2) is a nonparametric approach to test differences in a single sample measured under at least two conditions.

By formula

$$X_r^2 = \frac{12}{Nk(k+1)} \sum (\sum Ri)^2 - 3N(k+1)$$

Where X_r^2 = the test statistic

k = the number of measurements

N = the total number of cases or respondents

Ri = the sum of ranks for anyone measurement.

Friedman's test was used in the content analysis to ascertain the difference if any between the lessons selected, and also between the judge-categories employed.

2. t test was employed to find out the significance differences between the mean scores of the dependent and independent variables. The following formula used for the purpose of analysis.

When SD1 = SD2

$$t(n-1) = \frac{(X_1 - X_2)}{\sqrt{\frac{S1^2 + S_2 2}{n-1}}}$$

when SD1 ≠SD2

$$t_{(n-1)} = \frac{(\bar{X}_1 - \bar{X}_2)}{\sqrt{\frac{S1^2 + S_2^2}{n}}}$$

Where $\bar{X}_1$ = mean of X_1 series

$\bar{X}_2$ = mean of X_2 series

$S1^2$ = variance of X_1 series

$S2^2$ = variance of X_2 series

n = total number of observation

3. Thurstone's paired comparison Technique:

The four modes of presentations and four farm information sources were presented to the respondents in pairs in all possible combinations separately. The total number of pairs was $\frac{n(n-1}{2}$ (there n = 4 each). From the responses the F, P and Z matrices were constructed and scale values for each mode and information source were found out. The scale values of modes and information sources were placed on a least preferred to most preferred continuum to show the ranks and relative position of each.

4. Analysis of variance tests:

The Anova tests were used to compare the three strata with respect to the intervening and dependent variables. Thus anova tests were used to compare the three strata with respect to the degree of contact of farmers with research

station and research worker. Knowledge about improved agricultural technology, attitude towards improved agricultural practices, adoption of different recommended practices and the farmer's perception about research station and research workers. The inference were made at 0.05 level of significance.

5. Correlation -

Correlation coefficient is a measure of the association between two or more variables. Correlation Coefficient was worked out to test the relationship between the dependent variables and different independent variables. Intercorrelation analysis was carried out to find the correlation among the different independent variables.

Test of significance -

The observed value of correlation coefficient was compared with the tabulated value for (n-2) degrees of freedom for 0.05 level of significance. To test the significance of correlation coefficient, the table for the values of the correlation coefficient for different levels of significance was used (Pillai, 1957).

6. Path analysis also was carried out to find out the direct and indirect effects of the independent variables on the dependent variables ~~and results of which are given in the Appendix.~~ It is not discussed as the effects are mostly not significant.

RESULTS

4. RESULTS

Results of this study is presented in the following Sections.

I. CONTENT ANALYSIS

II. INTERVENING VARIABLE-LISTENING BEHAVIOUR

III. COMPARISON OF DIFFERENT GROUPS OF FARMER LISTENERS (Listening behaviour and other variables)

IV. COMPARISON OF DIFFERENT GROUPS OF FARMER LISTENERS (Independent and dependent variables)

V. RELATIONSHIP OF DEPENDENT VARIABLE WITH THE INTERVENING AND INDEPENDENT VARIABLES

I. CONTENT ANALYSIS:

Content analysis of the sampled lessons was made with respect to the eight characters identified by the three categories of judges selected. (Fig.3)

Table 1 denotes significant difference between the officers of the department of Agriculture and farmers with regard to their judgement on the 'total content value' of the three lessons randomly selected for the study. At the sametime they exhibited uniform judgement on the content of the lessons broadcasted through the 'Farm school on the air' programme.

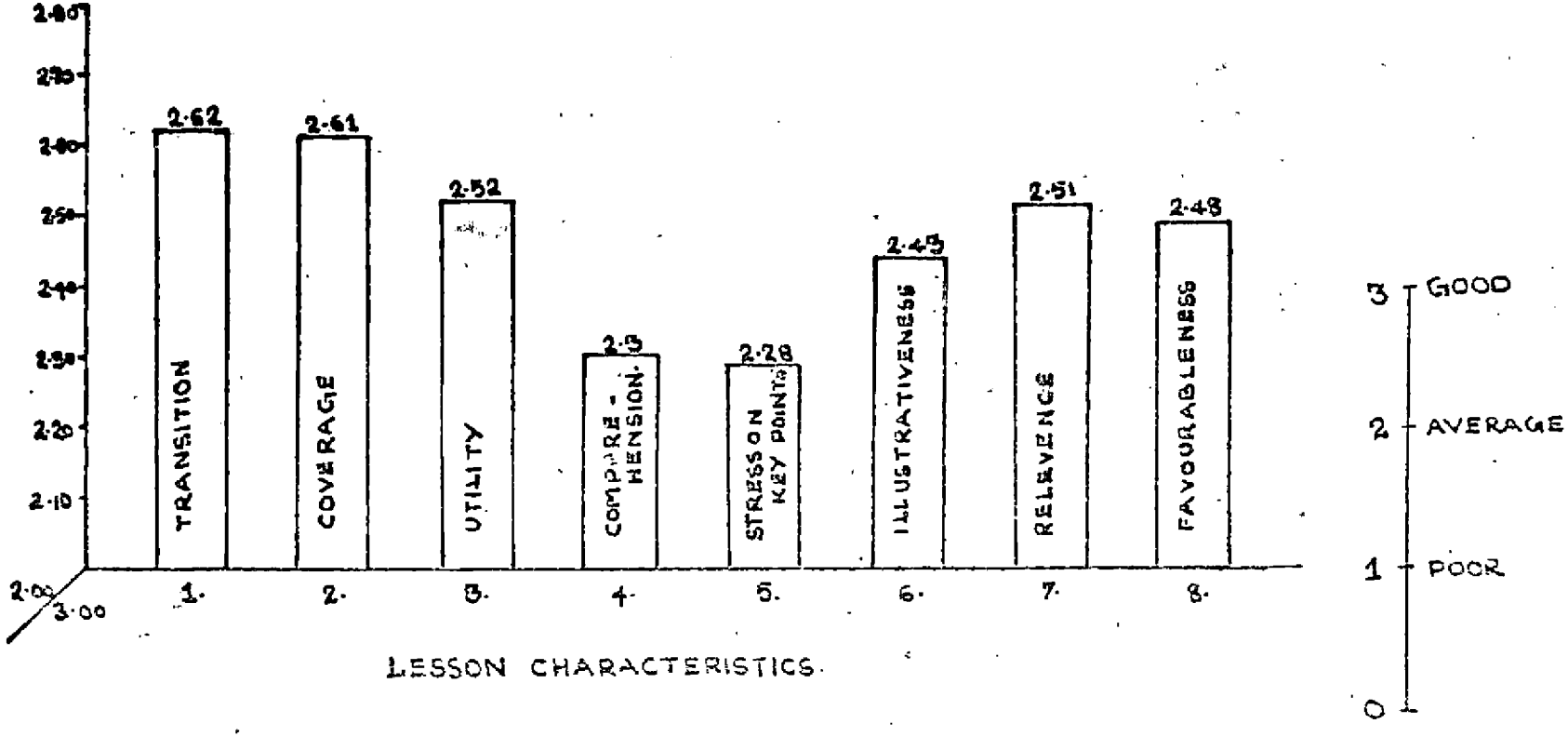
Table 1. Mean 'Total content value ' score of sampled lessons

Judges' Response (N = 60)

Category-wise					Lesson-wise					
Category	Mean score	SE		t value	Lessons	Mean score	SE		t value	
A Assistant Directors	20.35	2.5464	(A-B)	1.1828	I Organo chlorine insecti-cides	19.72	2.422	I-II	0.369	NS
B JAOs	19.82	2.3619	(A-C)	3.0682*	II Inorganic fungicides	19.55	2.605	I-III	0.383	NS
C Farmers	18.92	2.5590	(B-C)	2.4489*	III Pests and diseases of Arecanut	19.89	2.4397	II-III	0.738	NS

NS - not significant
* Significant at 5% level of probability

FIG. 2. THE MEAN CONTENT VALUES OF THE 'SAMPLED LESSON CONTENT'.



According to Table 2,namely, Friedman's Two way Analysis of variance of the mean content values, worked out for analysing the judges response on the content characteristics (lesson and category-wise) revealed only non-significant difference of response with regard to eight selected characteristics pertaining to the three lessons. Whereas significant difference was evidenced in the response among officials and farmers with regard to these characteristics.

It is also seen that transition and coverage have been valued the highest followed by utility relevence, favourableness. Stress on key points, illustrativeness and comprehension respectively.

As per table 3 significant difference was noticed in the value of the content of the lessons as expressed by the judges with regard to lesson-I and III only. Regarding lesson-I coverage and illustrativeness of the content revealed highest value response amongst JAOs followed by Assistant Directors and farmers respectively. Whereas utility and relevence have been significantly valued in the highest order by the Assistant Directors followed by farmers and JAOs.

Table 2. FRIEDMAN'S TWO WAY ANALYSIS of variance of the 'Mean content value scores' of the Sampled lesson content

Lesson characteristics	MEAN RESPONSE SCORE OF JUDGES							
	Lessons			Judges category			Over all mean scores	Rank
	I	II	III	A	B	C		
1. Transition	2.57 (3)	2.62 (2)	2.68 (1)	2.7 (1)	2.6 (2)	2.57 (3)	2.62	I
2. Coverage	2.57 (2.5)	2.68 (1)	2.57 (2.5)	2.67 (2)	2.72 (1)	2.43 (3)	2.61	II
3. Utility	2.57 (2)	2.35 (3)	2.63 (1)	2.75 (1)	2.4 (2.5)	2.4 (2.5)	2.52	III
4. Comprehension	2.3 (2)	2.3 (2)	2.3 (2)	2.35 (1)	2.28 (2)	2.27 (3)	2.30	VIII
5. Stress on key points	2.2 (3)	2.38 (1)	2.25 (2)	2.25 (3)	2.33 (1)	2.27 (2)	2.28	VI
6. Illustrativeness	2.47 (1)	2.45 (2)	2.38 (3)	2.42 (2)	2.65 (1)	2.23 (3)	2.43	VII
7. Relevence	2.63 (1)	2.35 (3)	2.55 (2)	2.68 (1)	2.37 (3)	2.48 (2)	2.51	IV
8. Favourableness	2.57 (1)	2.42 (3)	2.45 (2)	2.53 (1)	2.47 (2)	2.43 (3)	2.48	V
	R_1 15.5 R_2 17 R_3 15.5			R_1 12 R_2 14.5 R_3 1.5				
	$\chi_r^2 = 0.1875$ (N.S)			$\chi_r^2 = 6.0625^*$				

Figures in brackets are ranks.
* Significant at 5% level of probability N.S - Not significant.

Table 3. Significant responses of the judges on the value of content of the lessons

Lesson	Lesson characteristics	Judges category	Judges' response Mean score	SE		t value
I Organo chlorine insecticides	Coverage	A	2.6	0.503	(A-C)	2.1074*
		B	2.85	0.366	(B-C)	4.142*
		C	2.25	0.5501		
	Utility	A	2.85	0.366	(A-C)	2.2125*
		B	2.35	0.574	(A-B)	3.3641*
		C	2.20	0.6345		
	Illustrativeness	A	2.5	0.523		
		B	2.7	0.675	(A-B)	2.60*
		C	2.2	0.7678		
II Inorganic fungicides	-	-	-	-		N.S.
III Pests and diseases of Arecanut	Utility	A	2.85	0.366		
		B	2.5	0.635	(A-B)	2.210*
		C	2.55	0.605		
	Favourableness	A	2.75	0.444		
		B	2.45	0.686	(A-C)	3.4034*
		C	2.15	0.676		

* Significant at 5% level of probability

In the case of lesson-II no significant response was noticed in their value response, whereas regarding lesson-III only utility and favourableness revealed highest value response by the Assistant Directors followed by JAOs and farmers.

II. INTERVENING VARIABLE- LISTENING BEHAVIOUR

(a) Duration and time of broadcast

Table 4 expresses the preferences of the farmers with regard to duration and time of broadcast of lessons under the 'Farm school on the air' programme, in which majority (90.7%) of the farmer listeners preferred a programme between 10 and 20 minutes, of whom about half of them preferred 15 minutes programme. 85.3% of the listeners preferred the farm serials to be broadcasted in the evening between 6 and 9 p.m. One third of them preferred 7-8 p.m.

Table 4. Duration and time of broadcast of lessons as preferred by Farmer-listeners of 'Farm School on the air' programme

(N = 75)

Farmer listeners	Duration of broadcasts (in minutes)					Broadcast time						
						Morning			Evening			
	10	15	20	25	30	6-7	7-8	8-9	6-7	7-8	8-9	9-10
Number of respondents	19	32	17	3	4	3	3	5	10	28	19	7
Percentage	25.3	42.7	22.7	4	5.3	4	4	6.7	13.3	37.3	25.3	9.3

(b) Mode preference

As per Table 5 the highest mean denoted against the question-answer method indicates its highest preference by the listener farmers, while offering lessons under the 'Farm school on the air' programme.

Table 5. Comperative preference of farmer-listeners on the modes of broadcast under the 'Farm school on the air' programme

(N = 75)

Modes of presentation	Interview	Talk	Question Answer	Discussion
Interview	-	0.253 19 -0.665	0.720 54 0.583	0.467 35 -0.083
Talk	0.746 56 0.665	-	0.800 60 0.842	0.533 40 0.583
Question Answer	0.280 21 0.083	0.200 15 0.842	-	0.280 21 0.583
Discussion	0.533 40 0.083	0.467 35 -0.083	0.72 54 0.583	-
Sum	0.165	-1.590	2.008	-0.581
Means	0.0412	-0.397	0.502	-0.145
Mean + 0.3975	0.4387	0.000	0.899	0.252

In figures are the f values, underlined are the P values and other figures are z values.

This mode preference has been followed by interviews, discussion and talks.

Fig 4 MODE PREFERENCE BY THE FARMER LISTENERS

(Paired Comparison judgements expressed in percentages)

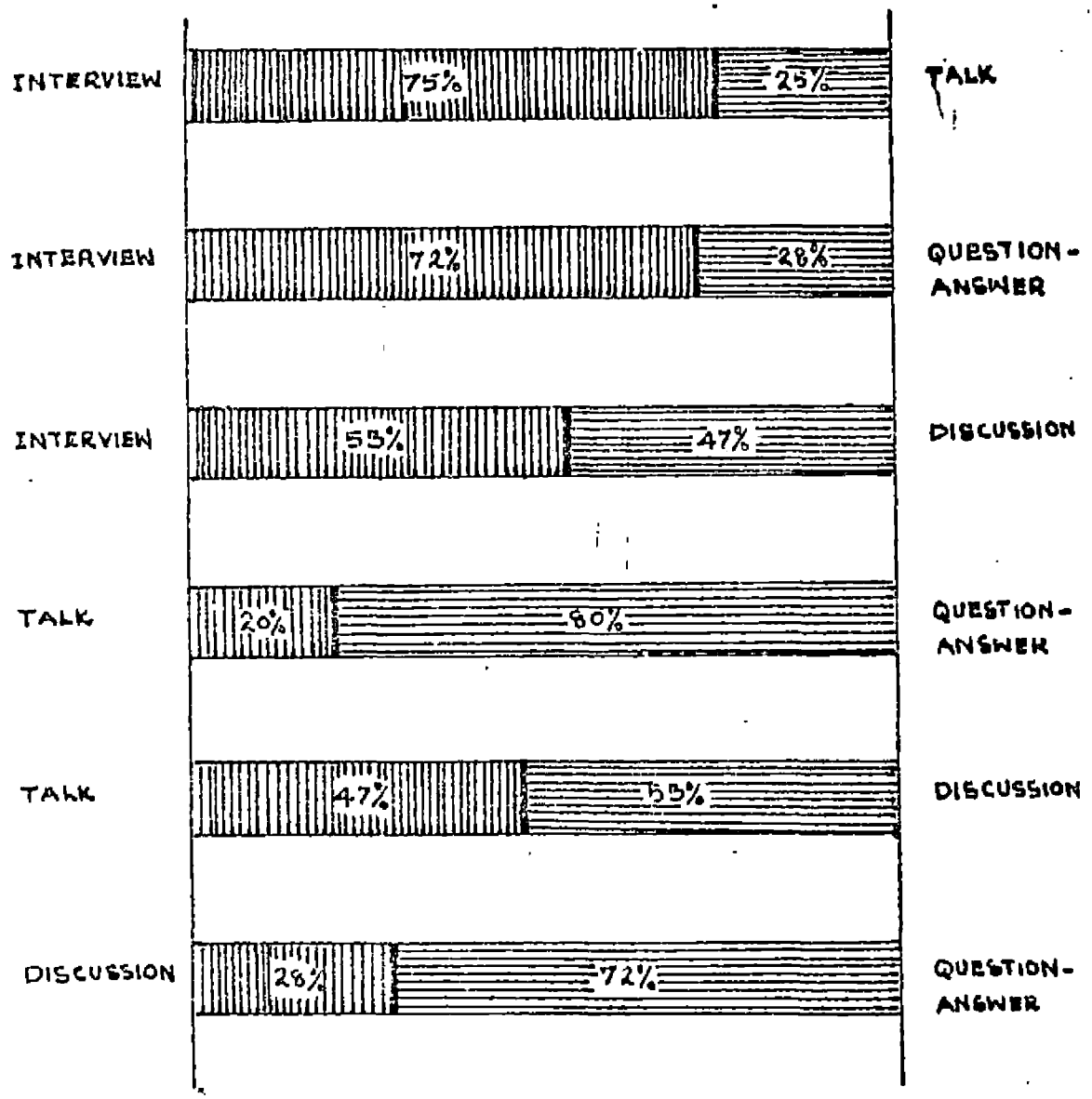


FIG.3. MODE PREFERENCE BY THE FARMER LISTENERS

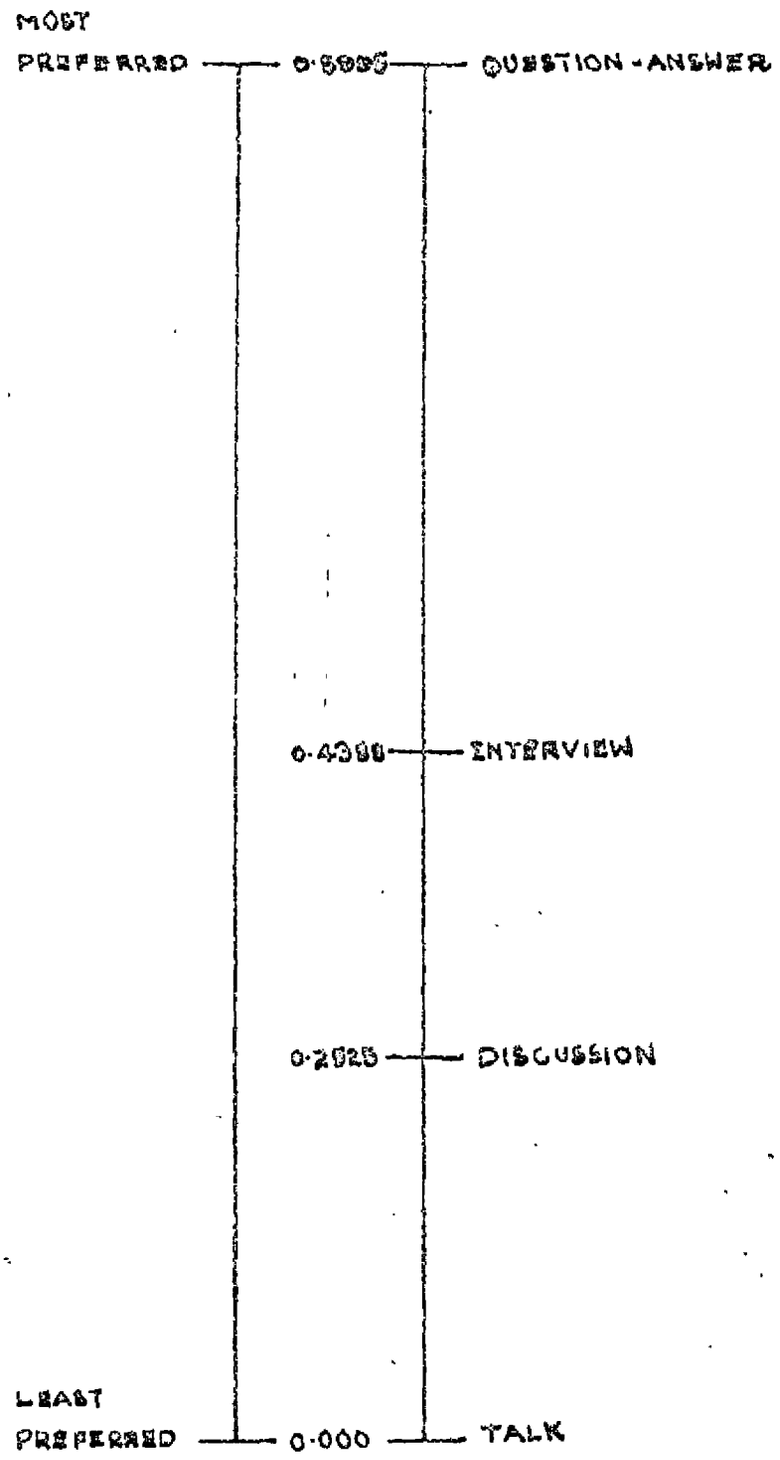
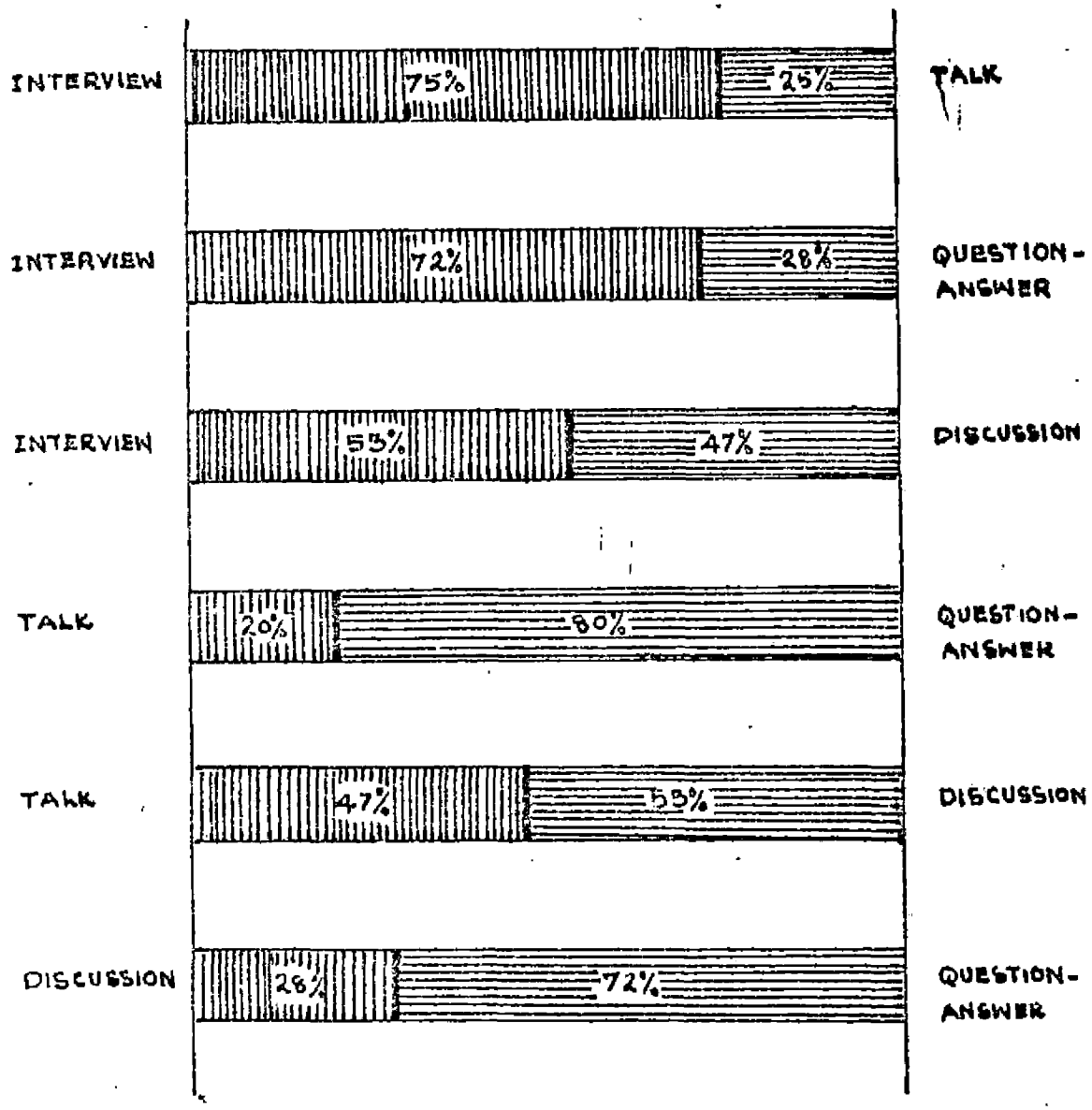


Fig 4 MODE PREFERENCE BY THE FARMER LISTENERS

(Paired Comparison judgements expressed in percentages)



(c) Credibility of farm information sources

Table 6 indicates that the agricultural experts has been found to be most credible to farmer listeners as compared to radio.

Table 6. Credibility of farm information sources evidenced by the farmer listeners (N = 75)

Sources	Radio	News paper	Agricultural experts	Other farmers
Radio	-	0.373 28 0.324	0.520 39 0.050	0.253 19 -0.665
News paper	0.626 47 0.321	-	0.640 48 0.358	0.320 24 0.468
Agricultural experts	0.480 36 0.050	0.360 27 -0.358	-	0.133 10 -1.112
Other farmers	0.746 56 0.662	0.680 51 0.468	0.866 65 1.108	-
Sums	0.9330	-0.2140	1.5160	-2.2450
Means	0.2332	-0.0535	0.3790	-0.5613
Mean + 0.5613	0.7946	0.5078	0.9403	0

In figures are the f values, underlined are the P values and other figures are z values.

That is followed by News paper and other farmers least credibility has been assigned to ' other farmers'.

FIG. 5. CREDIBILITY OF FARM INFORMATION SOURCES BY THE FARMER LISTENERS

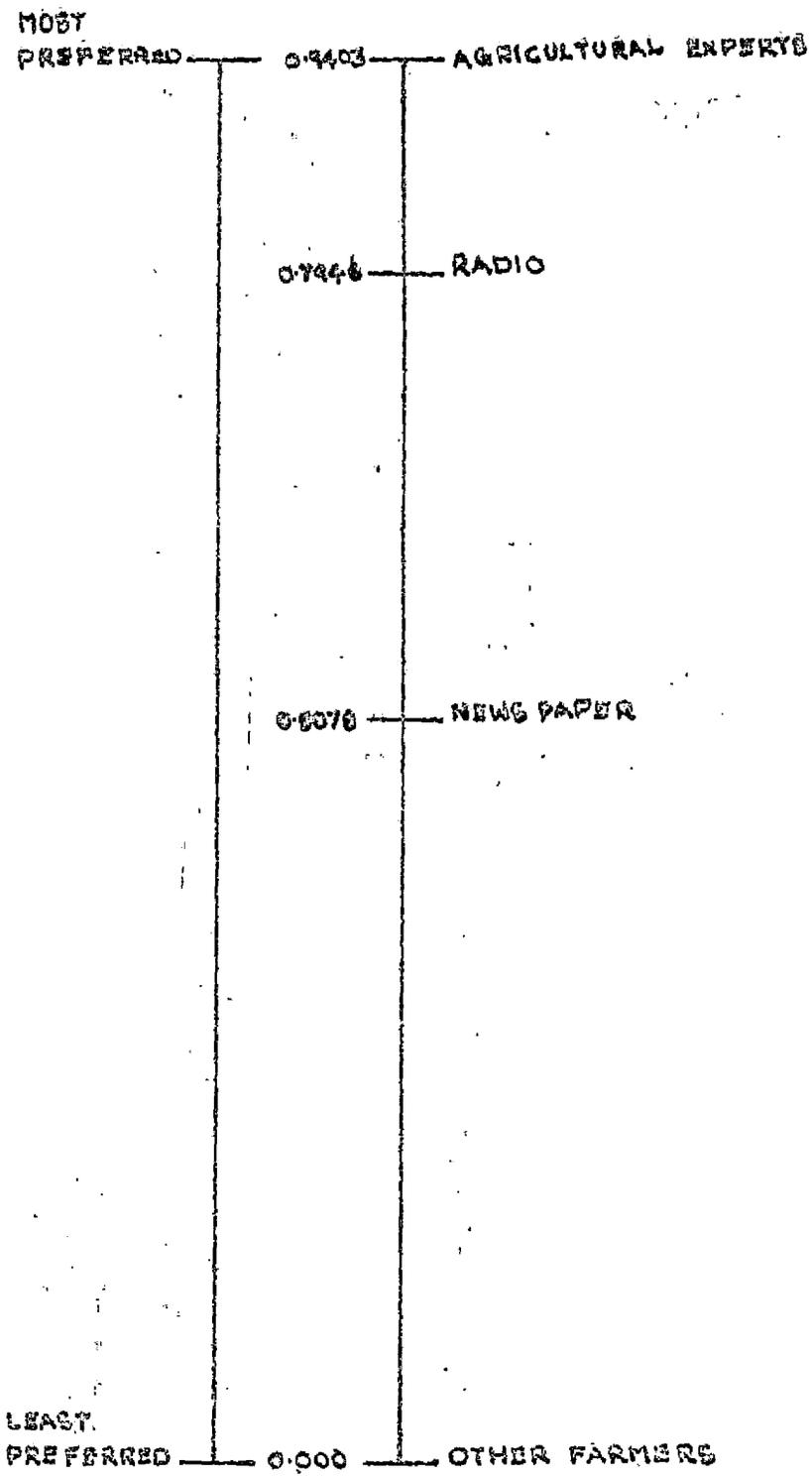
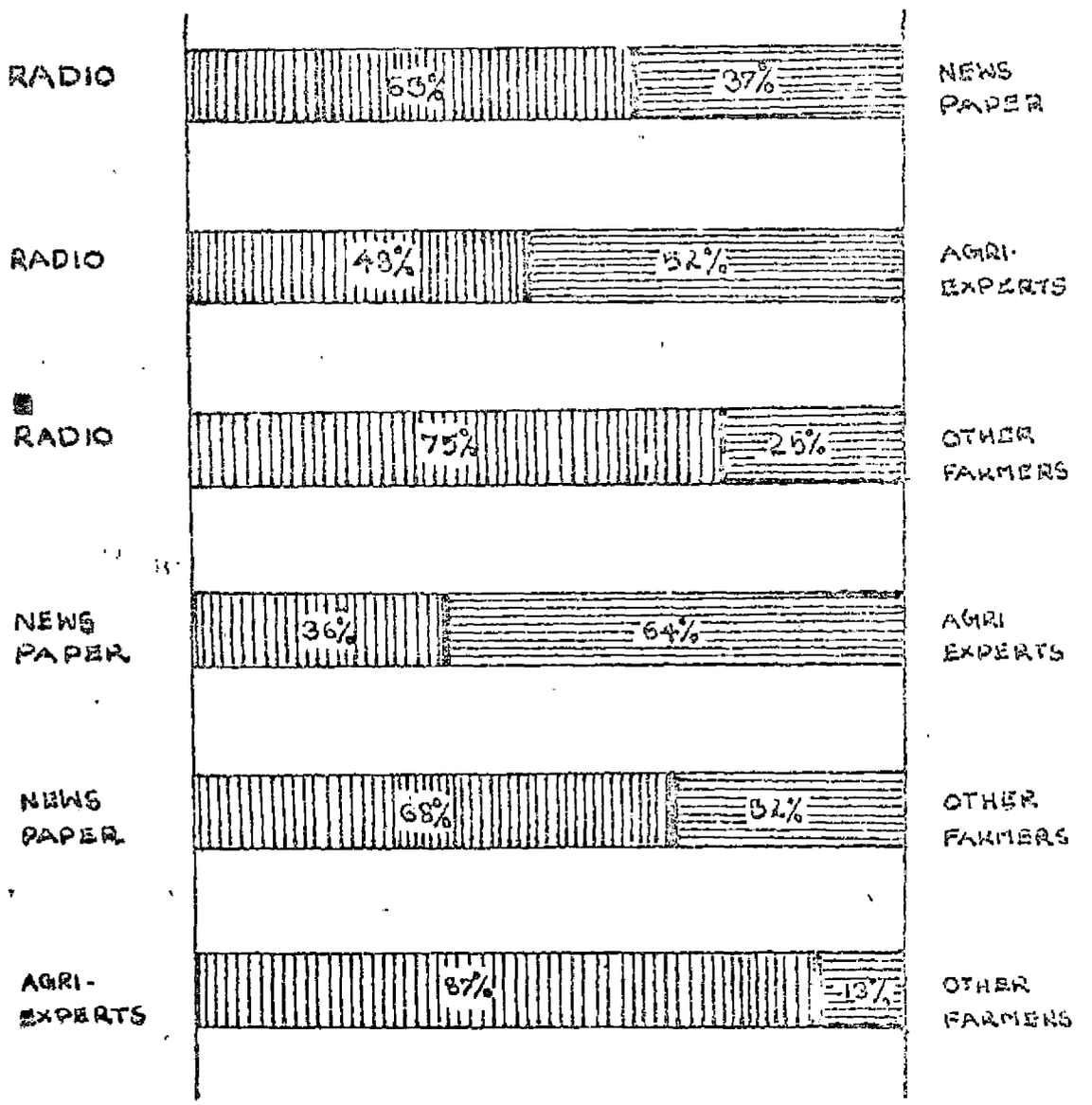


Fig. 6 CREDIBILITY OF FARM INFORMATION SOURCES BY THE FARMER LISTENERS-

(paired comparison judgements expressed in percentages)



(d) Listening characteristics:

Table 7. Listening characteristics of Farmer-listeners of "Farm school on the air" programme (N = 75)

(a) Regularity of listening

	Every day	Most often	Casual
Frequency	18	30	27
Percentage	24	40	36

Mean score = 1.88

(b) Intensity of listening

	Involved	Focussed	Full time	Engaged
Frequency	13	39	13	10
Percentage	17.3	52	17.3	13.3

Mean score = 2.73

(c) Duration of listening

	Complete	Partial
Frequency	45	30
Percentage	60	40

Mean score = 1.6

(d) Purpose of listening

	Educational	Entertainment	Accidental
Frequency	52	16	7
Percentage	69.36	21.30	9.34

Mean score = 2.6

More than half of the farmer listeners (52%) enrolled under the 'Farm school on the air' programme intensively listened the whole programme purpositvely with an intention to utilize the information in their farming practices. But majority (76%) of these listeners did not listen all the lessons of the serials. Only one-fourth (24%) of the listeners regularly listened the programme and only one-fifth (17.3%) listened the serials with high degree of intensity of involvement, in the lessons listened by them. One-fifth (21.3%) of the farmer-listeners listened it as an entertainment.

Comparing the means of listening characteristics the result evidences only a mediocre importance to the farm serial programme.

III COMPARISON OF DIFFERENT GROUPS OF FARMER LISTENERS - (LISTENING BEHAVIOUR AND OTHER VARIABLES)

(a) Age and Listening behaviour of farmer listeners

It is seen from Table 8 that as age decreased the listening behaviour score increases as evidenced by the highest mean listening score for the age group less than 29 years'.

Table 8. Listening behaviour and age compared (N=75)

Age (years)	Mean listening score	SE		t values
Low (< 29) (N = 17)	31.70	6.07	(L-H)	1.955*
Medium (29-56) (N = 47)	30.82	6.78	(L-M)	0.464 (NS)
High (> 56) (N = 11)	26.82	6.43	(M-H)	1.748*

* Significant at 5% level of probability

Accordingly the table indicates a significant difference between high and low age groups namely 'older farmers' and 'young farmers' respectively. The medium and high age groups also differ significantly. Still it is interesting to note that the mean listening score of the 'young farmers' is only slightly higher than the medium listening category of the 'medium age' category.

(b) Education and listening behaviour.

Table 9 indicates no significant difference in listening behaviour between the two categories of farmer listeners based on their educational status.

Table 9. Listening behaviour and level of education compared (N = 75)

Level of Education	Mean listening score	SE	t value
Low (upto 7th class) (N = 31)	29.64	6.730	0.8334 (NS)
High (7th class and above) (N = 44)	30.97	6.719	

NS - Not significant

This denotes that farmers irrespective of educational status are listening to farm serials in par.

(c) Farm size and listening behaviour of the farmer listeners

It is seen that in the case of education in ' farm-size' also the small holders and big land holders were similar, in their listening behaviour evidenced by table given below.

Table 10. Listening behaviour of small and big farmers compared (N = 75)

Farm-size	Mean listening score	SE	t value
1. Small farmers (<5 acres) (N = 46)	30.84	6.222	0.6776 (NS)
2. Big farmers (5 acres and above) (N = 29)	29.75	7.40	

NS - Not significant

A non-significant difference is indicated by the t value. Majority of the farmers (46) were small and marginal farmers.

(d) Listening behaviour and knowledge of farmer listeners

Table 11 indicates that farmers having different levels of listening differ significantly in their knowledge as seen below.

Table 11. Listening behaviour and knowledge compared

(N = 75)

Level of listening (score)	Mean knowledge score	SE	't' value
1. Low (< 24) (N = 12)	11.33	4.459	(L-M) 2.61*
2. Medium (24-37) (N = 54)	14.74	3.738	(L-H) 3.916*
3. High (> 37) (N - 9)	18.11	2.472	(M-H) 2.566*

* indicates significance at 5% level of probability

The low medium and high categories differ significantly in their levels of knowledge. The table indicates that higher knowledge is acquired through increased listening.

(e) Listening behaviour and attitude of farmer listeners

Table 12 below indicates that farmers having different levels of listening differ significantly in their attitude.

Table 12. Listening behaviour and attitude compared (N = 75)

Level of listening (score)	Mean attitude score	SE	't' value
1. Low (< 24) (N = 12)	8.92	1.311 (L-M)	0.18 NS
2. Medium (24-37) (N = 54)	9.01	1.595 (L-H)	1.81*
3. High (> 37) (N = 9)	10.10	1.537 (M-H)	1.875*

NS - Not significant

* Significant at 5% level of probability.

Thus farmers having high listening behaviour score have significantly higher attitude scores, indicating their more favourableness towards 'Farm school on the air' programme. The low and medium categories of farmer listeners are in par in their attitude towards the farm serial.

(f) Listening behaviour and adoption of farmer listeners

In the case of listeners of 'Farm school on the air' programme, the farmers having different levels of listening differ significantly in extent of adoption as shown in the able below.

Table 13. Listening behaviour and adoption

(N = 75)

Level of listening (score)	Mean adoption score	SE		't' value	
1. Low (< 24) (N = 12)	15.33	8.978	(L -M)	1.562	NS
2. Medium (24-37) (N = 54)	19.70	8.153	(L -H)	2.113*	
3. High (> 37) (N = 9)	24.00	8.7	(M -H)	1.430	NS

NS - Not significant
* Significant at 5% level of probability.

The low and high listening groups amongst the farmers differed significantly in their level of adoption but they do not differ from the medium level of listeners who also does not differ with the high listener group in adoption.

IV. COMPARISON OF DIFFERENT GROUPS OF FARMER LISTENERS (Independent and dependent variables)

(a) Age and knowledge of farmer listeners.

It is seen from Table 14 that there seems to be no significant difference between the three age groups of farmer listeners in their level of knowledge.

Table 14. Knowledge and age of farmer listeners compared (N = 75)

Age (years)	Mean knowledge score	SE		't' value	
1. Low (< 29) (N = 17)	15.47	4.3	(L-M)	-0.648	NS
2. Medium (29-56)	14.70	4.07	(L-H)	1.547	NS
3. High (> 56)	12.91	3.83	(M-H)	1.305	NS

NS - Not significant

Though not significant higher the age less the level of knowledge amongst farmer listeners. Hence the three age groups are considered to be in par in their knowledge acquired through the farm broadcast.

(b) Education and knowledge of farmer listeners.

With regard to the level of knowledge of the farmer listeners no significant difference existed between the low and high education groups of listeners as indicated in the Table 15.

Table 15. Knowledge and level of education of farmer listeners

(N = 75)

Level of education	Mean knowledge score	SE	't' value
1. Low (< 7th class) (N = 31)	14.32	3.70	0.6792 NS
2. High (7th class and above) (N = 44)	14.95	4.22	

NS - Not significant.

The high education group is having a slightly higher mean knowledge score but the difference is insignificant.

(c) Farm size and knowledge of farmer listeners

According to Table 16, as in the case of education no difference in knowledge has been evidenced in respect of the size of holding the listeners possessed.

Table 16. Knowledge of farmer listeners- small and big farmers compared

(N = 75)

Farm size	Mean knowledge score	SE	't' value
1. Small farmers (< 5 acres) (N = 46)	14.15	4.452	1.2093 NS
2. Big farmers (5 acres and above) (N = 29)	15.34	3.456	

NS - Not significant

Table 16 indicates the knowledge of the farmer listeners is in par irrespective of their farm size.

(d) Age and attitude of farmer listeners

It is seen from Table 17 that there is no significant difference in attitude between the different age groups of the listeners of ' Farm school on the air' programme.

Table 17. Age and attitude of farmer listeners compared (N = 75)

Category (Age)	Mean attitude score	SE		't' value	
1.Low (< 29) (N = 17)	9.17	1.944	(L-M)	0.1959	
2.Medium (29-56) (N = 47)	9.27	1.596	(L-H)	0.9824	NS
3.High (56 and above) (N = 11)	8.54	0.820	(M-H)	1.4856	NS

NS - Not significant

It indicates high favourableness of all age groups of farmers towards 'Farm School on the air' programme.

(e) Education and attitude of farmer listeners

Table 18 indicates no significant difference in the attitude of farmer listeners having low and high levels of education.

Table 18. Level of education and attitude of farmer-listeners (N = 75)

Level of Education	Mean attitude score	SE	't' value
1.Low (upto 7th class) (N = 31)	8.90	1.535	1.119 NS
2.High (7th class and above) (N = 44)	9.31	1.596	

NS - Not significant

It is evident that both low and high education groups have equaly favourable attitude towards the farm serial 'Farm school on the air'.

(d) Farm size and attitude of farmer listeners

Table 19 evidenced no significant difference with regard to the holdings of the farmer listeners in their attitude towards 'Farm school on the air' programme.

Table 19. Farm size attitude of farmer-listeners (N = 75)

Farm size	Mean attitude score	SE	't' value
1. Small farmers (< 5 acres) (N = 46)	9.109	1.622	0.255 NS
2. Big farmers (5 acres & above) (N = 29)	9.206	1.52	

NS - Not significant

It is evident that both small and big land holders have equally favourable attitude towards the 'Farm school on the air' programme.

(g) Age and adoption of the farmer listeners.

Table 20 indicates that the rate of adoption of the farm practices recommended through 'Farm school on the air' is in par irrespective of the age of the farmer listeners.

Table 20. Age and rate of Adoption of farmer-listeners compared (N = 75)

Age (years)	Mean adoption score	SE		't' value	
1. Low (age < 29) (N = 17)	21.06	(10.81)	(L-M)	-0.836	NS
2. Medium (29-56) (N = 47)	18.83	(8.598)	(L-H)	0.699	NS
3. High (> 56) (N = 11)	18.45	(6.165)	(M-H)	1.361	NS

NS - not significant

Thus the young, middle aged and old farmer listeners do not significantly differ in the rate of adoption.

(h) Education and adoption of farmer listeners

Adoption has not been found to be different amongst the listeners of 'Farm school on the air' in respect of their different levels of education as indicated by the table below.

Table 21. Education and rate of Adoption of farmer-listeners (N = 75)

Level of Education	Mean adoption score	SE	't' value
1. Low (upto 7th class) (N = 31)	18.80	8.58	0.28221 NS
2. High (7th class and above) (N = 44)	19.386	8.843	

NS - Not significant

The low and high education categories do not differ significantly though latter has a slightly higher adoption score.

(i) Farm size and adoption of farmer listeners

According to Table 22 significant difference has not been evidenced in the extent of adoption of small and big land holders among the listeners of 'Farm school on the air' programme.

Table 22. Farm size and rate of adoption of farmer-listeners compared (N = 75)

Farm size	Mean adoption score	SE	't' value
1. Small farmers (< 5 acres) (N = 46)	18.47	8.653	0.983 NS
2. Big farmers (5 acres and above) (N = 29)	20.550	8.998	

NS - Not significant

It indicates a uniform rate of adoption of recommended farm practices through the Radio serial by the listeners of 'Farm school on the air' irrespective of the size of holding.

(j) Knowledge and adoption of armer listeners

Table 23 indicates that farmers having high level of knowledge exhibit significantly higher rate of adoption.

Table 23. Rate of adoption of farmer-listeners comparing low, medium and high knowledge categories

(N = 75)

Level of knowledge (score)	Mean adoption score	SE		't' value	
1. Low (< 11) (N = 13)	14.769	7.57	(L-M)	-1.562	NS
2. Medium (11-18) (N = 48)	18.937	7.937	(L-H)	2.113*	
3. High (18 and above) (N = 14)	25.928	8.21	(M-H)	1.43	NS

NS - Not significant
* Significant at 5% level of probability.

The low and medium knowledge categories and medium and high categories of farmer listeners do not differ significantly in their mean adoption score, while the low and high knowledge categories significantly differ in their knowledge acquired through the 'Farm school on the air' programme.

V. RELATIONSHIP OF DEPENDENT VARIABLES WITH THE INTERVENING AND INDEPENDENT VARIABLES

a) Knowledge

The correlation matrix for the variables under study (Table 24) revealed that the personal characters, namely, farm size and listening behaviour were positively and significantly correlated with knowledge.

Other characters like age, education, innovation proneness and scientific orientation were not significantly correlated with the dependent variable knowledge.

Among the independent variables a significant negative correlation was noticed for age with education.

The ANOVA (Table 25) shows that the regression of knowledge with the independent and intervening variables is significant. The linear regression of the variables as per Table 26 showed that 30 per cent of the variation in knowledge is explained by these variables.

$$Y_1 = 37.8332 + \underset{(0.0358)}{0.0025}\, x_1 - \underset{(0.5079)}{0.1658}\, x_2 + \underset{(0.1063)}{0.2572}\, x_3^* - \underset{(0.1497)}{0.2843}\, x_4 - \underset{(0.46)}{0.1464}\, x_5 + \underset{(0.0666)}{0.3020}\, x_6^* \quad \text{--- Equation I}$$

Where Y_1 - Knowledge

x_1 - age

x_2 - education

x_3 - farm size

x_4 - innovation proneness

x_5 - scientific orientation

x_6 - listening behaviour

R - square = 0.3009

Multiple regression coefficient (R) = 0.5485

(* indicate significant, the figures in the brackets are standard errors of the regression coefficients)

b) Attitude:

Table 27 gives the correlation matrix for the dependent variable attitude with intervening and independent variables. None of the correlations are significant - indicating that none of the independent variables has significant association with the dependent variable attitude (Table 28).

The fitted regression was also found to be insignificant and hence indicates that the independent variables even together do not make any significant effect on the dependent variable attitude.

According to Table 29 about 6 per cent of the variation in attitude was explained by the independent variables under study. The relationships between the dependent variable with independent variables and intervening variable are given by the equation (E2).

$$Y_2 = 23.9884 - \underset{(0.153)}{0.0075}\ x_1 + \underset{(0.217)}{0.0948}\ x_2 - \underset{(0.045)}{0.0026}\ x_3 + \underset{(0.064)}{0.0755}\ x_4 + \underset{(0.1965)}{0.175}\ x_5 + \underset{(0.028)}{0.0275}\ x_6 \quad = \text{Equation 2}$$

Where Y_2 = attitude, x_1 - age,

x_2 - education

x_3 - farm size

x_4 - innovation proneness

x_5 - scientific orientation

x_6 - listening behaviour.

R - square = 0.056873

Multiple regression Coefficient (R) - 0.238481

(Figures in the brackets are the standard errors of the regression coefficients)

The R-square value was only 0.056873 indicating that the intervening variable and all the independent variables taken for regression analysis together explained only about 6 per cent of the variation in the variable attitude.

(c) Adoption

Table 30 is the correlation matrix for the intervening and independent variables and the dependent variable, namely, adoption. Listening behaviour was the only variable having significant correlation with the dependent variable adoption as per Table 31.

But the regression value of adoption on the intervening and independent variables was significant (Vide Table 32). Seventeen per cent of the variation in adoption was explained by the variables. The regression coefficient for listening behaviour alone was found to be significant.

The relationship between the dependent variable adoption and the intervening and independent variables are given by the equation 3.

$$Y_3 = (-1.62245 - \underset{(0.081)}{0.0356}\, x_1 + \underset{(1.14)}{1.0588}\, x_2 - \underset{(0.24)}{0.0136}\, x_3 + \underset{(0.34)}{0.2503}\, x_4 + \underset{(1.04)}{1.4655}\, x_5 + \underset{(0.15)}{0.4357}\, x_6^{*}) = \text{Equation 3.}$$

Where Y_3 = adoption

x_1 - age
x_2 - education
x_3 - farm size
x_4 - innovation proneness
x_5 - scientific orientation
x_6 - listening behaviour

R - square = 0.17355
Multiple regression coefficient (R) - 0.41659
(* indicates significe of the regression coefficients. Values in the brackets are standard errors of the regression coefficient)

Table 24. Correlation matrix for dependent variable (Knowledge) and independent and intervening variables.

	X_1	X_2	X_3	X_4	X_5	X_6	X_7
X_1	1	-0.4778	-0.0116	0.1572	-0.0417	-0.1866	-0.0849
X_2		1	0.1558	-0.1266	-0.0591	0.0678	0.0485
X_3			1	0.1109	-0.0919	0.0445	0.2542*
X_4				1	0.0559	0.0227	-0.099
X_5					1	-0.0374	-0.0788
X_6						1	0.4745*
X_7							1

* Significant at 5% level of probability.

X_1 - Age, X_2 - Education, X_3 - Farm size, X_4 - Innovation proneness

X_5 - Scientific orientation, X_6 - Listening behaviour, X_7 - Knowledge.

Table 25. Analysis of variance table showing the influence of intervening and independent variables on knowledge of listeners of 'Farm school on the air' programme.

Source	ANOVA Table for the dependent variable - Knowledge			
	df	SS	MS	F
Regression	6	397.3867	66.23112	4.88*
Error	68	923.2799	13.57765	

R- square = 0.300899

* Significant at 5% level of probability.

Table 26. Regression coefficient and t value for the dependent variable knowledge

Variable	Reg. Coefficient	SE	t value
Age	0.0025	0.0358	0.0700
Education	-0.1650	0.5079	0.318
Farm size	0.2572*	0.1063	2.4194*
Innovation Proneness	-0.2043	0.1497	1.317
Scientific orientation	-0.1444	0.4600	0.139
Listening behaviour	0.3020*	0.0666	4.118*

R-square = 0.300895

Intercept =37.33316

* Significant at 5 level of probability.

Table 27. Correlation matrix for the dependent variable attitude and independent and intervening variable

	X_1	X_2	X_3	X_4	X_5	X_6	X_7
X_1	1	-0.4778*	-0.0116	0.1572	-0.0417	-0.1866	-0.0996
X_2		1	-0.1558	-0.1266	-0.0597	0.0673	0.0744
X_3			1	0.1109	-0.0913	0.0445	0.0145
X_4				1	0.0559	0.0227	0.1324
X_5					1	-0.0374	0.1096
X_6						1	0.1316
X_7							1

* Significant at 5% level of probability.

X_1 - Age, X_2 - Education, X_3 - Farm size, X_4 - Innovation proneness

X_5 - Scientific orientation X_6 - Listening behaviour, X_7- Attitude.

Table 28. Analysis of variance table showing the influence of intervening and independent variables on attitude of listeners of Farm school on the air programme.

Source	ANOVA Table for the dependent variable attitude			
	df	SS	MS	F
Regression	6	10.1659	1.69431	0.68 NS
Error	68	168.5808	2.47913	

R^2 = 0.0568731

NS - Not significant

Table 29. Regression coefficients and t value for the dependent variable attitude.

Variable	Reg. coefficient	SE	t value	
Age	-0.0075	0.0153	0.4886	NS
Education	0.0948	0.2170	0.4369	"
Farm size	-0.0026	0.0454	0.0571	"
Innovation proneness	0.0755	0.0640	1.1810	"
Scientific orientation	0.7151	0.9165	0.818	"
Listening behaviour	0.0275	0.0285	0.9646	"

R -square = 0.056873

Intercept = 23.988396

NS - Not significant.

Table 30. Correlation matrix for the intervening and independent variables and dependent variable - adoption.

	X_1	X_2	X_3	X_4	X_5	X_6	X_7
X_1	1	-0.4778*	-0.0116	0.1572	-0.0417	-0.1866	-0.1541
X_2		1	0.1558	-0.1265	-0.0596	0.0673	0.1649
X_3			1	0.1108	-0.0913	0.0445	0.0507
X_4				1	0.0559	0.0227	0.0576
X_5					1	-0.0374	-0.1687
X_6						1	0.3514*
X_7							1

* Significant at 5% level of probability

X_1 - Age, X_2 - Education, X_3 - Farm size, X_4 - Innovation proneness

X_5 - Scientific orientation, X_6 - Listening behaviour, X_7 - Adoption

Table 31. Analysis of variance table showing the influence of the intervening and independent variables on adoption of listeners of Farm school on the air programme.

Source	ANOVA Table for the dependent variable adoption			
	df	SS	MS	F
Regression	6	992.5118	165.41864	2.38*
Error	68	4726.2082	69.50306	

R^2 = 0.17355

* Significant at 5% level of probability

Table 32. Regression Coefficients and t values for the dependent variable - adoption

Variables	Reg.coefficient	SE	t value
Age	-0.0356	0.0810	0.4387
Education	1.0588	1.1492	0.9214
Farm size	-0.0136	0.2405	0.0565
Innovation proneness	0.2503	0.3387	0.7389
Scientific orientation	-0.4655	1.0407	1.4082
Listening behaviour	0.4357*	0.1508	2.8893*

* Significant at 5% level of probability

R- square = 0.173555

Intercept = 1.622445

The R-square value is 0.1735 and it indicates that 17.35 per cent of the variation in the variable adoption is explained by those selected for regression analysis.

DISCUSSION

5. DISCUSSION

The discussion of results is presented under the following sections.

I. CONTENT ANALYSIS

II. INTERVENING VARIABLE-LISTENING BEHAVIOUR

III. INDEPENDENT AND DEPENDENT VARIABLES

IV. RELATIONSHIP OF THE DEPENDENT VARIABLES WITH INDEPENDENT AND INTERVENING VARIABLE

I. Content Analysis

The three lessons selected for the content analysis showed no significant difference with regard to their total content value as indicated by the Table 1. Still all lessons scored comparatively high 'total content value' scores - 19.72, 19.55 and 19.89 respectively out of a maximum tcv score of 24. While there is significant difference in the tcv scoring by the different categories of judges (Table 1). The first category consisting of Assistant Directors gave the highest tcv score which was significantly higher than the score given by the third category consisting of farmers, but it was not significantly higher than the value assigned by the second category - Junior Agricultural Officers. The mean tcv score assigned

by the second category - (Junior Agricultural Officers) was also significantly higher than that by the third category (Farmers).

The results evidently showed that the farmers assigned relatively lower scores to the sampled lesson content they valued and the officials put higher scores. This is an indication that farmers want a much more enriched content and expect a better content quality, than their official counter parts.

When the overall mean scores (Table 2) obtained by each of the selected characteristics were arranged from the highest to the lowest, the order of these characteristics was transition, coverage, utility, relevence, favourableness 'stress on key points', illustrativeness and comprehension. Thus the lessons can be said to have good transition, coverage, utility and relevence but only average 'favourableness' stress on key points', illustrativeness and comprehension. This result indicates that the quality of the content was only average with respect to the very important content characteristics, which ought to have higher scores.

All the three lessons selected for analysis showed the same pattern with respect to the eight selected content characteristics and the mean values were not different

from one another as indicated by the non-significant Xr^2 value obtained by Friedmans analysis of variance. The category-wise response of the judges showed significant difference in the Friedman's test. Evidently the farmer-judges considered that the quality of the content ~~quality~~ was only average with respect all content characteristics except transition which was considered good. While officials gave higher scores for more characteristics. According to the first category (Assistant Directors) of judges the lessons were 'good' in transition, coverage, utility, relevence and favourableness and average in other respects. The lessons were good in transition, coverage and illustrativeness only according to JAOs.

In the case of the first lesson Organochlorine insecticides the different categories of judges differed in their judgement with respect to three characters - coverage, utility and illustrativeness (Table 3). The second lesson evidenced no difference with regard to any characteristics considered, while in the case of the third lesson differed in the judge categories differed in their judgement with respect to the mean scores put for utility and favourableness.

Thus the three lessons of the 'Farm school on the air' on plant protection, selected for the content analysis in this study showed no difference to one another with respect to eight selected characteristics viz. transition, coverage, utility, favourableness, comprehension, stress on key points, relevence and illustrativeness, and the total content value. While the three categories of judges viz. Assistant Directors, Junior Agricultural Officers and farmers marked significant difference in their judgement of the sampled lesson content. The officials gave high scores and the farmer judges always gave lesser scores, significantly lower than the officials.

II. INTERVENING VARIABLE - LISTENING BEHAVIOUR

The findings (Table 4) indicate that the farmer listeners prefered 15 minutes programme broadcasted between 7.00 -9.00 p.m. as against the present 20 minutes programme broadcasted between 7.05 - 7.20 a.m. and 7.05 - 7.20 p.m. This evidently shows that farmers do not prefer the morning programme of the 'Farm school on the air' at present broadcasted at present by Trichur and Calicut Stations of All India Radio. This may be due to their pre-occupation or busy engagements in farm practises

in the field. Accordingly they may not be able to sit and listen the broadcast in the morning.

The above findings are in conformity with those of Chandrakandan (1980), Sekhar (1982) Rajendran (1982) and Sridhar (1983). While Singh (1972) and Knight (1973) advocated 20 to 30 minutes duration. But Gomez (1984) found 9.00 a.m. as the most ideal time of broadcast.

Question-Answer was found to be the best mode of delivery followed by interview, discussion and the least prefered talk (Table 5).

Sekhar (1982) found question-answer as the best mode of delivery and similar findings were reported by Knight (1973) also. 'Talk' was reported to be least prefered by Singh (1972), Shakya (1973), Tampi (1979) and Nehru (1980).

Question-answer mode was considered best by the listeners for conveying comparatively difficult subjects and questions were exactly what they wanted to know. 'Talks' were boraing and monotonous to them.

Agricultural experts, Radio, Newspaper and 'other farmers' are the important sources of farm information in the decreasing order of credibility (Table 6) as expressed by the farmer listerners of 'Farm school on

the air' programme.

Vellaichamy (1979), Ravi, K.C. (1979), Chandrakandan (1980), Escalda M.M. (1981) and Sunil Misra (1983) reported radio as the most credible source. Sekhar (1982) placed it as the third best source of information. Contrasting findings were given by Kuthiala (1980) who described radio as only a status symbol in rural areas and Sridhar (1983) who considered progressive farmers as the most credible source of information.

The high amount of credibility attached to radio was much expected from a specified and selective category of radio listeners who volunteered to join the 'Farm school on the air' programme.

Results (Table 7) indicates that one fourth of the listeners hear the programme everyday and 40 per cent most often and 36 per cent casually.

Singh and Sandhu (1971) reported regular listening by 41 per cent of farmers. Singh (1972) found that 44 per cent of listeners are regular every day listeners. Knight (1973) also gave similar report (46%).

Lower rate in 'every day' listening evidenced by this study may be due to the inconvenient broadcast time.

It is found that (Table 7) a good majority of farmer listeners are involved or focussed listeners. The intensity was much higher than many past reports by Sekhar (1982) who reported only 10 per cent were 'intensive listeners and Rajendran (1982) who found majority are leisure time listeners.

High intensity of listening evidenced in this case was expected from a selective and specific catagory of listeners who volunteered to register under this programme.

It is indicated (Table 7) that 60 per cent are complete listeners and the rest heard it partially.

This finding is in line with those of Badarinarayanan (1977) who reported that 50 per cent were complete listeners and Sekhar (1982) who found that 61 per cent were full time listeners.

It is found (table 7) that 70 per cent of the listeners heard the programme with educational objective. The stray listeners were only 30 per cent of the total.

Chandrakandan (1980) also reported a high rate (87%) of purposive listening by listeners of 'Farm school on the air' programme.

High rate of purposive listening is expected from selective and specific listeners like those who have registered under 'Farm school on the air' programme.

III. INDEPENDENT AND DEPENDENT VARIABLES:

(a) Listening behaviour

It is seen that young farmers are better liesteners (Table 8). They might be more innovative to adopt latest technology. Significant difference in the listening behaviour of low and high are groups of farmers may be due to the lower understanding capacity and literacy levels of aged farmer-listeners. More or less the aged farmers shall at times be skeptic to such scientific practices.

The listening behaviour of the farmers of low and high literacy levels were in par (Table 9). It may be due to the simple manner of presentation to suit with farmers having different levels of education.

Farm size also showed no significant difference (Table 10). Every farmer was likely to listen the agricultural information irrespective of their holding size because they happened to register under the 'Farm school on the air' programme.

As expected the farmers with higher listening behaviour scores were having higher knowledge (Table 11). The farmer groups with low, medium and high listening behaviour scores differed in their level knowledge level. The farmer listeners having high level of listening in

terms of regularity duration and intensity were having a significantly more favourable attitude towards the 'Farm school on the air' programme (Table 12). It is natural that the farmers having more favourable attitude listen the lessons of 'Farm school on the air' regularly, intensively, completely and purposively. Similarly good listeners are better adoptors also (Table 13). It may be due to tendency of farmers who adopt better to intentionally listen the programme.

Different groups of farmer listeners categorised based on age, education and farm size do not show significant difference in their level of knowledge (Tables 14, 15 and 16). Both young and old listener farmers evidenced same level of knowledge with regard to the content of the lessons broadcasted through the 'Farm school on the air'. This might be due to the simplicity of lessons. Level of knowledge of listeners having low and high level of education was in par since the treatment of the lessons has been done taking care of different levels of education of farmer listeners. Insignificant difference in knowledge between the small and big land holders can be accounted as the non-consideration of 'farm size' by the teachers of the lessons of the 'Farm school on the air' while preparing the lessons.

Different groups of farmer listeners categorised based on the difference in age, education and farm size showed no significant difference (Tables 17, 18 and 19) in their attitude towards 'Farm school on the air' programme. This is an anticipated result since category of listeners registered under 'Farm school on the air' programme will be quite uniform with regard to their crop orientation, and also due to non-consideration of the respondent categories in terms of their age, education, farm-size or any other personal characteristics in enrolling them as scheduled listeners.

The farmer listeners were grouped into low, medium and high categories with respect to age, education and farm size and when their rates of adoption were compared no significant difference was noted (Tables 20,21 and 22). But difference was there in case of low and high knowledge categories (Table 23). The high knowledge category was having significantly higher rate of adoption of the farm practices recommended through broadcasted farm serials.

The reasons that can be attributed to the above results are non-consideration of the personal characteristics like age, education and farm size in the enrolment of scheduled listeners, preparation of the lessons to

considering all categories and types of farmers and not taking into consideration any target group in particular.

The variables of this study included the independent variables namely age, education, farm size, innovation proneness and scientific orientation, which had been compared with intervening variable namely listening behaviour and dependent variables namely knowledge, attitude and adoption. This study has shown that different age groups differed in their listening behaviour. Accordingly listener-groups viz.'below 29 years of age', between 29 and 56' and ' above 56' exhibited different listening behaviour. The findings indicates their difference in regularity, duration, intensity and purpose of listening the lessons of 'Farm school on the air'.

This finding has been supported by the studies of Chandrakandan (1980), Sekhar (1982) and Chandrakandan (1982) about farm broadcast listeners.

Such a difference is likely because majority of the farmer-listeners happened to be selected under the study are above 29 years.

Other independent variables namely education, farm-size, innovation proneness and scientific orientation of the farmer listeners were not found to be related with the listening behaviour.

There are many contrasting reports against this finding, but Chandrakandan (1982) found that different groups of farmer listeners categorised based on education, farm size and other personal variables, showed no significant difference in their listening behaviour.

The vast majority of the scheduled listeners of the 'Farm school on the air' programme were having high level of scientific orientation and innovation proneness and hence grouping them into different categories based on these two variables was meaningless. More over such groups showed no significant difference in their listening behaviour, level of knowledge, attitude or extent of adoption, may be because they were all much proned to innovation and scientifically oriented.

Normally the farmer listeners are registered under the 'Farm school on the air' programme on a voluntary basis. The AIR has not prescribed any criteria for selecting or screening them. This is likely to result in a heterogenous group of farmer listeners in respect to their education, farm size, innovation proneness, and scientific orientation. But all are very homogenous in their favourable attitude, interest in the programme and crop orientation.

It is quite interesting to note that the different categories of farmer listeners made, based on the levels of the independent variables showed no significant difference with regard to the dependent variables of the study namely knowledge, attitude and adoption of the farmer listeners.

The planning of the programme and preparation of the content of the lessons of 'Farm school on the air' programme is being done without the consideration of any personal characteristics of the listeners likely to come under the purview of the 'Farm school on the air' programme. This has resulted in such an incompatibility between their personal characteristics and the knowledge provided through the lessons broadcasted. It is likely that such an approach out of the experience gained by the study may produce no better response or results to a specific category of farmer listeners under varied categories or groups of each and every independent variable considered under this study.

The homogeneity of the farmer-listeners registered under this programme by virtue of their keen interest, favourable attitude, similar crop orientation, has in a great way masked their difference with respect to these personal characteristics.

A comparable difference has been evidenced in the intervening variable namely, listening behaviour of the farmer-listeners in respect to their knowledge, attitude and adoption of the farming practices recommended through the lessons broadcasted. The listening behaviour under study comprised of the following components of listening behaviour viz. regularity, intensity, duration and purpose of listening.

The listener farmers with high level of listening have significantly higher knowledge, more favourable attitude, and higher rate of adoption than the farmers of low and medium levels of listening. It is a much expected result that good listeners have higher knowledge, much more favourable attitude and higher rate of adoption.

This finding is in agreement with that of many authors like Tampi A.M. (1979), Sekhar, V. (1982), Chandrakandan (1982) and Rajamani and Sinha (1983).

This result reinforces the fact that radio-broadcasts can function effectively as an agent of change and development by disseminating the new know-how and know-why among the farmers.

RELATIONSHIP OF THE DEPENDENT VARIABLES WITH INTERVENING AND INDEPENDENT VARIABLES

Knowledge :-

Discussing on the relationships of the dependent variable knowledge, with other variables, a significant relationship was found only with regard to one of the independent variable namely, farm size and the intervening variable listening behaviour. This indicates that the farmers having different farm holdings acquired the knowledge from the lessons in accordance to their farm size. Similarly their listening behaviour was also attuned to the dependent variable knowledge.

Nehru (1980), Chandrakandan (1982) and Patel and Singh (1970) also reported similar findings.

As the farm size increased the knowledge of the farmer-listeners on the practises broadcasted also increased. This was found to be due to the potentiality of the information on the farm prictices broadcasted in relation to their need for acquisition of the same, thus the increase in their relationship with the knowledge and listening behaviour.

Attitude :-

The study evidences no relationship between personal characteristics and attitude of the farmer listeners of the

'Farm school on the air' programme.

Since the registration of farmer listeners under 'Farm school on the air' programme is on a voluntary basis it is quite evident that their attitude towards the programme will be in par. The objective of listening the broadcasts though may vary with individuals the overall consideration on the positive out comes on the adoption of the recommended practices is likely to be same.

Adoption:-

It is seen from the study that significant relationship existed between listening behaviour and adoption. This finding can be a support to the similar relationship of listening behaviour with knowledge gained by farmer-listeners through 'Farm school on the air'. Evidently it is clear that adoption has been the main consideration of the farmer listeners which encouraged them to listen the programme regularly, intensively and purposively. Authors like Tampi, A.M. (1979), Rajamoni and Sinha (1983), Nehru (1980) and Chandrakandan (1982) also reported existence of similar relationship between listening behaviour and adoption by the farmer-listeners.

The results lead to the conclusion that increased listening helps acquiring more knowledge and results in higher rate of adoption by the listener farmers.

SUMMARY

6. SUMMARY

The highly innovative programme " Farm school on the air" was first ever started in India in Trichur and Vijayawada stations of AIR in 1972. More than a dozen of farm serials have been offered coping to the needs of the specific target groups of farmer listeners with regard to crops and livestock management. The 'Farm school on the air' is broadcasted twice a week from Trichur and Calicut Stations on Thursdays and Saturdays.

No research work had been undertaken on this programme so far. The 'Farm school on the air' programme on plant protection offered during 1983 by AIR, Trichur was selected for this study with the following objectives.

1. To analyse the programme content of the 'Farm School on the air' on plant protection.
2. To study the level of knowledge and attitude of the farmer listeners on the programme content.
3. To assess the extent of adoption of the recommended practices by the farmer listeners.
4. To evaluate the listening behaviour of farmer listeners involved in the programme in terms of their personal characteristics.
5. To make a comparison of different modes of presentation in terms of listener's preference.

In 'Farm School on the air' on plant protection 37 lessons were offered by the experts. Different modes like question-answer, discussion, interview and talk were adopted to deliver the lessons. Taking into consideration the subject matter areas, experts, and mode of delivery three lessons, namely 'Organo chlorine Insecticides', Inorganic fungicides' and Pests and diseases of Arecanut' were selected for the content analysis. Content analysis was carried out with respect to 8 content characteristics identified and defined based on review of past research and in consultation with experts.

The selected lessons were valued in terms of its quality with respect to each of these 8 content characteristics and the scores awarded for each character were added to get the 'total content value' of each lesson. The sampled lesson content was thus valued by three category of judges namely Assistant Directors, Junior Agricultural Officers and farmers.

Age, education, farm size, innovation proneness and scientific orientation were the independent variables. Listening behaviour was considered as the intervening variable for this study. Knowledge, attitude and adoption were the dependent variables. Age was measured in number of years, education using Trivedi's Scale- modified, Farm size in

number of acres, innovation proneness using the scale of Moulik (1965) and Scientific orientation using the scale developed by Supe (1969).

Among the dependent variables knowledge on the content of the lessons on plant protection was measured by teacher-made test. The test items were selected using difficulty and relevency indices. Attitude was measured using the scale developed by Chandrakandan (1982). Adoption of plant protection practices recommended was measured using 15 selected practices suggested to be adopted as prophylatic measures.

The listening behaviour was measured in terms of regularity, intensity, duration and purpose of listening. Each of these components were measured in different continuum and scored accordingly. The best time of broadcast was identified using ranking method. The mode preference and credibility of farm information sources were measured by Thurstone's method of paired comparison.

A pilot study was undertaken using 25 non-scheduled listeners of Kottayam District to finalise the materials and methods of the study and the interview schedule was finalised accordingly. Seventy five scheduled farmer listeners of the 'Farm school on the air' programme were selected by

simple random sampling method.

Data was collected through personal interview. Paired comparison technique, students 't' test, Friedman's test, Analysis of variance, correlation and regression analysis were the various statistical techniques used in this study.

The salient findings of this study are the following.

1. Content analysis revealed that the lessons did not differ from each other in the content characteristics. The lessons were valued to be good in transition, coverage, utility and relevence and average in comprehension, stress on key points, illustrativeness and favourableness. The official categories and farmers differed in their judgement. The officials gave relatively higher scores for the sampled lesson content.

2. The best time of broadcast was identified as between 7-8 p.m.

3. The most accepted duration was 15 minutes.

4. The preference of different modes of delivery was question-answer, interview, discussion and talk in the decreasing order.

5. The credibility of different sources of farm information was agricultural experts, radio, newspaper,

and other farmers' in the decreasing order.

(6) Different age groups of farmer listeners were compared with respect to their listening behaviour and young farmers were found to listen more regularly, intensively, purposively and completely.

(7) Different groups of farmer listeners based on other independent variables, education, farm-size, innovation-proneness and scientific orientation showed no significant difference in listening behaviour.

(8) Farmers listeners having low, medium and high level of listening showed significant difference in their knowledge, attitude and adoption.

(9) The listener groups based on different levels of the independent variables showed no significant difference in their knowledge, attitude and adoption. Listeners having different levels of knowledge showed significant difference in their adoption.

(10) Results of correlation and regression analysis revealed that farm-size and listening behaviour were significantly correlated with knowledge and 30 per cent of the variation in knowledge was explained by all the variables together.

(11) None of the independent or intervening variables was significantly correlated with attitude, and only 6 per cent of the variation in attitude was explained by all these variables together.

(12) None of the independent variables was found to be significantly correlated with adoption, but listening behaviour was significantly correlated with adoption, 17 per cent of the variation in it was explained by all the variables taken together.

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* Originals not seen.

APPENDICES

APPENDIX- I

The variables, Mean, Standard error and Coefficient of Variance

Variables	Mean	SE	Cv %
1. Age	42.653	13.919	32.134
2. Education	2.893	0.974	33.163
3. Farm size	4.853	4.114	84.767
4. Innovation proneness	11.253	2.917	25.922
5. Scientific Orientation	5.240	0.936	17.159
6. Listening behaviour	30.507	6.523	21.381
7. Knowledge	14.733	4.196	28.182
8. Attitude	9.173	1.544	16.829
9. Adoption	19.520	8.732	44.734

Direct and indirect effect of the independent variables on the dependent variable knowledge.

	X_1	X_2	X_3	X_4	X_5	X_6	r
X_1	0.0083	0.0183	-0.0029	-0.0223	0.0013	-0.0876	-0.0849
	(-9.78)	(-21.55)	(3.42)	(26.27)	(-1.53)	(10.3)	
X_2	-0.0040	-0.0383	0.0393	0.0180	0.0019	0.0316	0.0485
	(-8.25)	(-78.97)	(81)	(37.1)	(3.92)	(65.15)	
X_3	-0.001	-0.0060	0.2522	-0.0157	0.0029	0.0209	0.2542*
	(-0.04)	(-2.36)	(99.21)	(-6.18)	(1.14)	(8.22)	
X_4	0.0013	0.0048	0.0280	-0.142	-0.0018	-0.0107	-0.099
	(-1.31)	(-4.85)	(-28.28)	(143.43)	(1.82)	(10.8)	
X_5	-0.0003	0.0023	-0.023	-0.0079	-0.0322	-0.0176	-0.0788
	(0.38)	(-2.92)	(29.19)	(10.02)	(40.87)	(22.34)	
X_6	-0.0015	-0.0026	0.0112	-0.0.0032	0.0012	0.4695	0.4745*
	(0.32)	(-0.55)	(2.36)	(-0.67)	(0.25)	(98.95)	

X_1 - age
X_2 - education
X_3 - farm size
X_4 - innovation proneness
X_5 - scientific orientation.
X_6 - listening behaviour.

(Figures in the brackets are percentages. Underlined are the direct effects and other values are indirect effects)

* indicates significance at six level of probability.

(Contd.)

Direct and indirect effects of the independent variables on the dependent variable attitude

	X_1	X_2	X_3	X_4	X_5	X_6	r
X_1	-0.0675	-0.0286	0.0001	0.0224	-0.0044	-0.0217	-0.0996
X_2	0.0323	0.0598	-0.0011	-0.01821	-0.0063	0.0078	0.0744
X_3	0.0008	0.0093	-0.0069	0.0158	-0.0097	0.0052	0.0145
X_4	-0.0106	-0.0076	-0.0008	0.1426	0.0059	0.0026	0.1324
X_5	0.0028	-0.0036	0.0006	0.0080	0.1061	-0.0043	0.1096
X_6	0.0126	0.0040	-0.0003	0.0032	-0.0040	0.11627	0.1316

X_1 - age

X_2 - Education

X_3 - Farm size

X_4 - Innovation proneness

X_5 - Scientific orientation

X_6 - Listening behaviour.

Direct and indirect effects of the independent variables on the dependent variable adoption.

	X_1	X_2	X_3	X_4	X_5	X_6	r
X_1	-0.0567	-0.0564	0.0001	0.0131	0.0066	-0.0607	-0.1541
X_2	0.0271	0.1181	-0.0010	-0.0106	0.0094	0.02197	0.1649
X_3	0.0007	0.0184	-0.0064	0.0093	0.0143	0.01457	0.0507
X_4	-0.0089	-0.0149	-0.0007	0.0836	-0.0088	0.0074	0.0576
X_5	0.0024	-0.0070	0.0006	0.0047	-0.1571	-0.0122	-0.1687
X_6	0.0106	0.0079	-0.0003	0.0019	0.0059	0.32557	0.3514*

Underlined are the direct effects and other values are indirect effects.

X_1 - age

X_2 - education

X_3 - farm size

X_4 - innovation proneness

X_5 - scientific orientation

X_6 - Listening behaviour.

APPENDIX- II

FARM SCHOOL ON AIR
=CROP PROTECTION=

TOTAL NO.OF LESSONS X 37

DURATION OF EACH LESSON X 20 MINUTES

SCHEDULE OF BROADCASTS:

Thursdays: 7.05 to 7.25 AM Trichur, Alleppey and Calicut Stations.

Saturdays: 7.05 to 7.25 AM Trichur, Alleppey and Calicut Stations

Sundays : 6.25 P.M. to 6.55 P.M. Calicut Station (Repeat)

Mondays : 7.35 P.M. to 7.55 P.M. Trichur Station (Repeat)

LESSONS COVERAGE AND ANSWERS TO QUERIES:

The lessons will first be broadcasted on Thursdays. This will be repeated on Sundays (Calicut) and Mondays (Trichur). Replies to queries will be broadcast on Saturdays.

REGISTRATION FOR THE SCHOOL:

19th April to 15th May, 1983 at the Directorate of Extension, Kerala Agricultural University, Mannuthy, 680651, Trichur.

INCENTIVE PRIZES:

Listener - farmers will be awarded suitable incentive prizes on the basis of their overall performance.

MODE OF PRESENTATION OF LESSONS:

Lessons will be presented as discussions or features.

APPENDIX- III

FARM SCHOOL ON THE AIR ON PLANT PROTECTION

Lesson No.	Title of the lesson	Author of the script
1	Why crop protection	Dr.C.C.Abraham & Dr.K.M.Rajan
2	Introduction to Crop protection methods	Dr.N.Mohandas & Dr.K.M.Rajan
3	Formulation of Pesticides	Dr(Mrs)A.Visalakshy.
4	Botanical insecticides, Soaps and Oils	Dr.K.V.Mammen
5	Chlorinated hydrocarbons	Dr.K.Sasidharan Pillai
6	Organo-phosphorus insecticides	Dr.C.C.Abraham.
7	Carbomate and Synthetic Pyrethroids	Dr.George Koshy
8	Inorganic fungicides	Dr.Abicheeran.
9	Organic fungicides	Dr.K.M.Rajan
10	Antibiotics and Systemics	Dr.James Mathew
11	Herbicides	Dr.E.Tajudeen & Mr.M.S.Nair.
12	Important herbicides	Mr.K.P.Madhavan Nair & Mr.K.Janardhanan Pillai
13	Pesticide application equipments	P.D.Varghese
14	Integrated Pest Management in Rice	Dr.M.J.Thomas & B.Thomas
15	Diseases of Rice	Mr.V.P.Sukumara Dev & Mr.P.K.Gangadhara Manon.
16	Pest Management in Coconut	Dr.Chandy Kurien & Mr. V.A.Abraham.

(contd..)

Appendix- III (contd.)

Lesson No.	Title	Author of the script
17	Diseases of Coconut and their Management	Dr.N.P.Jayasankar & Mr.Thomas Joseph.
18	Pests and diseases of Arecanut	Mr.T.S.S.Rawther & Mr.G.B.Pillai
19	Pests and diseases of Cashew	Dr.P.J.Joy & Mr.D.Seetharama Rao
20	Control of diseases of Pepper	Dr.Abicheeran
21	Control of Pests of Pepper	Dr.T.Prem Kumar
22	Diseases and Pests of Ginger and Turmeric	Dr.K.K.N.Nambiar & Dr.T.Prem Kumar
23	Diseases and Pests of Banana	Mr.P.C.Jose and Mr.J.S.Charles
24	Pests of major Vegetables and their control	Mr.G.Madhavan Nair
25	Pests of cucurbits and Minor vegetables	Dr.K.P.Vasudevan Nair.
26	Diseases of Vegetables and their control.	Dr. Sukumara Varma.
27	Pests and diseases of tuber crops & their control	Mrs. K.Santha & Dr. K.S.Pillai
28	" " Pulses and Oilseeds	Mr.P.A.Rajan Asari & M.G.Vasavan.
29	" " Cardamom	Mr.D.Joseph & Dr.P.Karunakaran.
30	Crop protection in Cardamom	John M.John & P.K.Zachariah
31	Diseases and pests of Rubber	K.Radhakrishna Pillai & K.Jayaratnam.
32	Nematode pests of Crops and their control	Dr.T.S.Venkatason.

(contd...)

Appendix - IV.

കേരള കാർഷിക സർവ്വകലാശാല•

കോളേജ് ഓഫ് അഗ്രികൾച്ചർ•

വിജ്ഞാന വ്യാപന വിഭാഗം•

(എം•എസ്സ്•സി • ഷീ ജി പ്രോഗ്രാം ഓഫ് സ്റ്റഡി ഫിലിപ്പ്• (82-11-34)

കൃഷിപാഠം പരിപാടിയെപ്പറ്റിയുള്ള പഠനത്തിലെ ചോദ്യാവലി:-

(1) പേര്•

(2) മേൽവിലാസം•

(3) വയസ്സ്•

(4) വിദ്യാഭ്യാസം•

(5) കൃഷി സ്ഥലത്തിന്റെ വിസ്തീർണ്ണം:-

(6)

വിളകൾ	ഇനം•	വിസ്തീർണ്ണം•
എ) തെങ്ങ്		
ബി) നെല്ല്		
സി) കമുക്		
ഡി) വാഴ		
ഇ) പച്ചക്കറികൾ		
എഫ്) റബ്ബർ		
ജി) മറ്റുവിളകൾ		

(7) കൃഷിപാഠം• പരിപാടിയുടെ ശ്രോതാക്കളായ നിങ്ങളുടെ അറിവ് അളക്കാനായി കുറെ ചോദ്യങ്ങൾ കൊടുത്തിരിക്കുന്നു• അവയുടെ ഉത്തരം നൽകുക•

(ശരിയും പൂർണ്ണവുമായ ഉത്തരത്തിന് 2 മാർക്കും, അപൂർണ്ണമായ ഉത്തരത്തിന് 1 മാർക്കും തെറ്റിന് 0 മാർക്കും)

(1) ചാഴിയ്ക്ക് (നെല്ലിന്റെ) എതിരെ ഏറ്റവും ഫലപ്രദമായ കീടനാശിനി ....

(2) 1 % വീര്യമുള്ള 100 ലിറ്റർ ബോർഡോമിശ്രിതം ഉണ്ടാക്കാൻ എത്ര തുരിശ് വേണം? ....

(3) തെങ്ങോലതിന്ന പുഴുവർഗ്ഗ കീടങ്ങളെ നശിപ്പിക്കാൻ പറ്റിയ കീടനാശിനി ....

(4) നെല്ലിന്റെ കുലവാട്ടത്തിന്റെ കാരണം? ....

(5) കുരുമുളകിന്റെ ദ്രുതവാട്ടത്തിന്റെ കാരണം? ....

(6) ഏറ്റവും ഫലപ്രദമായ എലിവിഷം ....

Appendix - III (contd..)

Lesson No.	Title	Author of the script
33	Rodents and Rodent Control	Mr.C.N.Jayasankar & N.Sivasankar
34	Storage pests and their control	Mr.K.Vinodini.
35	Toxic hazards and their control	Mr.K.C.Varghese & Mr.P.Ragunath
36	Pests and disease Surveillance in crops	Mr.A.J.Hathi
37	Insecticide Act and Rules	Mr.B.Perumal Raj.

Appendix - IV.

കേരള കാർഷിക സർവ്വകലാശാല.

കോളേജ് ഓഫ് അഗ്രികൾച്ചർ.

വിജ്ഞാന വ്യാപനവിഭാഗം.

(എം.എസ്.സി. (അഗ്രി) പ്രോഗ്രാം ഓഫ് സ്റ്റഡി ഫിലിപ്പ്. (82-11-34)

കൃഷിപാഠം പരിപാടിയെപ്പറ്റിയുള്ള പഠനത്തിനുള്ള ചോദ്യാവലി:-

(1) പേര്.

(2) മേൽവിലാസം.

(3) വയസ്സ്.

(4) വിദ്യാഭ്യാസം.

(5) കൃഷി സ്ഥലത്തിന്റെ വിസ്തീർണ്ണം:-

(6) വിളകൾ — ഇനം. — വിസ്തീർണ്ണം.

വിളകൾ	ഇനം.	വിസ്തീർണ്ണം.
എ) തെങ്ങ്		
ബി) നെല്ല്		
സി) കമുക്		
ഡി) വാഴ		
ഇ) പച്ചക്കറികൾ		
എഫ്) റബ്ബർ		
ജി) മറ്റുവിളകൾ		

(7) കൃഷിപാഠം. പരിപാടിയുടെ ശ്രോതാക്കളായ നിങ്ങളുടെ അറിവ് അളക്കാനായി കുറെ ചോദ്യങ്ങൾ കൊടുത്തിരിക്കുന്നു. അവയുടെ ഉത്തരം നൽകുക.

(ശരിയും പൂർണ്ണവുമായ ഉത്തരത്തിന് 2 മാർക്കും, അപൂർണ്ണമായ ഉത്തരത്തിനു 1 മാർക്കും തെറ്റിന് 0 മാർക്കും)

(1) ചാഴിയെ (നെല്ലിന്റെ) യ്ക്കെതിരെ ഏറ്റവും ഫലപ്രദമായ കീടനാശിനി ....

(2) 1 % വീര്യമുള്ള 100 ലിറ്റർ ബോർഡോമിശ്രിതം ഉണ്ടാക്കാൻ എത്ര തുരിശ് വേണം? ....

(3) നെൽപാടത്തെ പുല്ലുവർഗ്ഗ കളകളെ നശിപ്പിക്കാൻ പറ്റിയ കീടനാശിനി ....

(4) നെല്ലിന്റെ കലവാട്ടത്തിനു കാരണം? ....

(5) കുരുമുളകിന്റെ ദ്രുതവാട്ടത്തിനു കാരണം? ....

(6) ഏറ്റവും ഫലപ്രദമായ എലിവിഷം ....

(7) കരുമുകിന്റെ കാറ്റുവീഴ്ചയുടെ ലക്ഷണങ്ങൾ? .....

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(8) രോഗത്തിനിരയാകുന്നതെങ്ങിനെ? .....

.....

(9) പച്ചക്കറികളുടെ കീടനിയന്ത്രണത്തിനായി സാധാരണയായി ഉപയോഗിക്കുന്ന – കീടനാശിനികൾ ഏതെല്ലാം? .....

(10) കളനാശിനികളും, കീടനാശിനികളും കലർത്തുന്നത് ഒഴിവാക്കേണ്ടതാണോ? .....

.....

(11) മരുന്നിനിയുടെ വൈറ്റ്ഫ്ലൈ രോഗം എങ്ങിനെ നടയാം? .....

.....

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(12) നെല്ലിന്റെ പ്രധാന കീടരോഗങ്ങളേവ ? .....

.....

(13) ധാന്യങ്ങൾ കേടുകൂടാതെ എങ്ങിനെ സൂക്ഷിക്കാം? .....

.....

(14) ഇഞ്ചിയുടെ മൂടുചീയലിന്റെ ലക്ഷണങ്ങളെന്ത്?

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.....

(15) കാർഷിക രാസവസ്തുക്കൾ കൈകാര്യം ചെയ്യുമ്പോൾ എന്തൊക്കെ – ശ്രദ്ധിക്കണം? .....

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താഴെ കാർഷികപ്രവർത്തികളും ഓരോന്നിനോടും ചേർന്ന് നാല് പ്രതികരണങ്ങളും കൊടുത്തിരിക്കുന്നു. നിങ്ങളുടെ പ്രതികരണം ശരി വ്യക്തമാക്കുക.

1. കാർഷികവൃത്തി. (ബാധകമല്ലാത്തവ വെട്ടിക്കളയുക)	പ്രതികരണങ്ങൾ. ഇതിനെപ്പറ്റി കേട്ടിട്ടുണ്ടോ	ഇതു ലാഭകരമായിരിക്കുമോ	ഇത് ചെയ്യാൻ പ്രയാസമുണ്ടോ?	ആവശ്യം വന്നാൽ നടപ്പാക്കാൻ തീരുമാനിച്ചിട്ടുണ്ടോ
	(1)	(2)	(3)	(4)
(1) നെല്ലിന്റെ സംയോജിത കീട-രോഗനിയന്ത്രണ മാർഗ്ഗം ( )	ഉണ്ട്/ഇല്ല	ഉണ്ട്/ഇല്ല	ഉണ്ട്/ഇല്ല	ഉണ്ട്/ഇല്ല
(2) നെല്ലിന്റെ ചാഴിയുടെ രാസികനിയന്ത്രണം ( )	ഉണ്ട്/ഇല്ല	ഉണ്ട്/ഇല്ല	ഉണ്ട്/ഇല്ല	ഉണ്ട്/ഇല്ല
(3) നെല്ലിന്റെ തണ്ടുതുരപ്പന്റെ രാസികനിയന്ത്രണം. ( )	ഉണ്ട്/ഇല്ല	ഉണ്ട്/ഇല്ല	ഉണ്ട്/ഇല്ല	ഉണ്ട്/ഇല്ല
(4) തെങ്ങിന്റെ കൊമ്പൻ ചെല്ലിയുടെ നിയന്ത്രണം.	ഉണ്ട്/ഇല്ല	ഉണ്ട്/ഇല്ല	ഉണ്ട്/ഇല്ല	ഉണ്ട്/ഇല്ല
(5) തെങ്ങിന്റെ ചെമ്പൻ ചെല്ലി ആക്രമണത്തിനെതിരെ കീടനാശിനിപ്രയോഗം.	ഉണ്ട്/ഇല്ല	ഉണ്ട്/ഇല്ല	ഉണ്ട്/ഇല്ല	ഉണ്ട്/ഇല്ല
(6) കമുകിന്റെ പൂങ്കുല പുഴു തിന്നാതിരിക്കാൻ സംരക്ഷിച്ച്.	ഉണ്ട്/ഇല്ല	ഉണ്ട്/ഇല്ല	ഉണ്ട്/ഇല്ല	ഉണ്ട്/ഇല്ല
(7) കശുമാവിന്റെ തടിതുരപ്പന്റെ നിയന്ത്രണം. ( )	ഉണ്ട്/ഇല്ല	ഉണ്ട്/ഇല്ല	ഉണ്ട്/ഇല്ല	ഉണ്ട്/ഇല്ല
(8) പച്ചക്കറികളുടെ കായ്തുരപ്പന്റെ നിയന്ത്രണം.	ഉണ്ട്/ഇല്ല	ഉണ്ട്/ഇല്ല	ഉണ്ട്/ഇല്ല	ഉണ്ട്/ഇല്ല
(9) പാവൽ, പടവലം ഇവയിൽ പഴയീച്ച ( )യുടെ ആക്രമണത്തെ രാസികമായി നേരിടൽ. (	ഉണ്ട്/ഇല്ല	ഉണ്ട്/ഇല്ല	ഉണ്ട്/ഇല്ല	ഉണ്ട്/ഇല്ല

	1	2	3	4
(10) പയറിന്റെ മുഞ്ഞയായ ചെള്ളിനെതിരെ കീടനാശിനി പ്രയോഗം.	ഉണ്ട്/ഇല്ല	ഉണ്ട്/ഇല്ല	ഉണ്ട്/ഇല്ല	ഉണ്ട്/ഇല്ല
(11) നെല്ലിന്റെ പോളരോഗം കുലവാട്ടം അവയുടെ രാസിക നിയന്ത്രണ മാർഗങ്ങൾ.	ഉണ്ട്/ഇല്ല	ഉണ്ട്/ഇല്ല	ഉണ്ട്/ഇല്ല	ഉണ്ട്/ഇല്ല
(12) തെങ്ങിന്റെ കൂമ്പുചീയൽ ഓലകരിച്ചിൽ അവയുടെ നിയന്ത്രണം?	ഉണ്ട്/ഇല്ല	ഉണ്ട്/ഇല്ല	ഉണ്ട്/ഇല്ല	ഉണ്ട്/ഇല്ല
(13) കുരുമുളകിന്റെ വാട്ടം ( ) രാസിക നിയന്ത്രണം.	ഉണ്ട്/ഇല്ല	ഉണ്ട്/ഇല്ല	ഉണ്ട്/ഇല്ല	ഉണ്ട്/ഇല്ല
(14) ഏലത്തിന്റെ അഴുകൽ രോഗത്തിന്റെ രാസിക നിയന്ത്രണം.	ഉണ്ട്/ഇല്ല	ഉണ്ട്/ഇല്ല	ഉണ്ട്/ഇല്ല	ഉണ്ട്/ഇല്ല
(15) എലി നശീകരണത്തിനുള്ള വിവിധ മാർഗങ്ങൾ.	ഉണ്ട്/ഇല്ല	ഉണ്ട്/ഇല്ല	ഉണ്ട്/ഇല്ല	ഉണ്ട്/ഇല്ല

രോഗ-കീടബാധയെക്കുറിച്ച് ചില കർഷകർക്കുള്ള ഉൽക്കണ്ഠകൾ നടപടികൾ താഴെ കൊടുക്കുന്നു. അവയിൽ നിങ്ങൾക്ക് യോജിക്കാനാവുന്നവ അനുസരിച്ച് ഉള്ള പ്രതികരണം വ്യക്തമാക്കുക. (അനുയോജ്യമായതിൽ ✓ ഇടുക)

ഉൽക്കണ്ഠകൾ (ബാധകമല്ലാത്തത് വെട്ടിക്കളയുക)	ഉൽക്കണ്ഠകൾ ഉണ്ടാകാറുണ്ട്	ഉൽക്കണ്ഠകൾ ഒട്ടു മിക്കതും ഒഴിവാക്കാറുണ്ട്	രോഗകീടബാധ ഉണ്ടാകുമ്പോൾ പ്രതിവിധി ചെയ്തു ഫലം ചെയ്തോ?
(1) നെൽവിത്തുകൾ പാകുന്നതിനു മുമ്പ് കുമിൾനാശിനിയിൽ മുക്കാറുണ്ടോ?	ഉണ്ട്/ ഇല്ല	ഉണ്ട്/ ഇല്ല	ഉണ്ട്/ ഇല്ല
(2) ആരോഗ്യമുള്ള വിത്തുകൾ തന്നെ തെരഞ്ഞെടുക്കാറുണ്ടോ?	ഉണ്ട്/ ഇല്ല	ഉണ്ട്/ ഇല്ല	ഉണ്ട്/ ഇല്ല
(2) മുളകിന്റെ രോഗാണു രോഗ ബാധിതമായ അവശിഷ്ടങ്ങൾ നശിപ്പിക്കാറുണ്ടോ?	ഉണ്ട്/ ഇല്ല	ഉണ്ട്/ ഇല്ല	ഉണ്ട്/ ഇല്ല
(3) തെങ്ങിലെ കീടങ്ങളെ നശിപ്പിക്കാൻ കീടനാശിനികൾ ഉപയോഗിക്കാറുണ്ടോ?	ഉണ്ട്/ ഇല്ല	ഉണ്ട്/ഇല്ല	ഉണ്ട്/ ഇല്ല
(4) തെങ്ങിന്റെ മണ്ടചീയൽ ബാധിച്ചതെങ്ങിലും പ്രതിവിധി എടുക്കാറുണ്ടോ?	ഉണ്ട്/ ഇല്ല	ഉണ്ട്/ ഇല്ല	ഉണ്ട്/ ഇല്ല
(5) വാഴയുടെ കൂമ്പടപ്പിനെതിരെ നടപടി സ്വീകരിക്കാറുണ്ടോ?	ഉണ്ട്/ ഇല്ല	ഉണ്ട്/ഇല്ല	ഉണ്ട്/ ഇല്ല
(6) ഞാറ്റടിയെ കുമിളിൽ ഒഴിവാക്കാൻ വിത്ത് ശ്രദ്ധിക്കാറുണ്ടോ?	ഉണ്ട്/ ഇല്ല	ഉണ്ട്/ ഇല്ല	ഉണ്ട്/ ഇല്ല

(7) നെല്ലിന്റെ കീട രോഗ നിയന്ത്രണ പ്രതിരോധ ശക്തിയുള്ള വിത്തുകൾ ഉപയോഗി ക്കാറുണ്ടോ?	ഉണ്ട്/ഇല്ല	ഉണ്ട്/ഇല്ല	ഉണ്ട്/ഇല്ല
(8) ഞാറിന്റെ വേരുപടലം ലായനിയിൽ മുക്കി നടാറുണ്ടോ?	ഉണ്ട്/ഇല്ല	ഉണ്ട്/ഇല്ല	ഉണ്ട്/ഇല്ല
(9) രോഗപ്രതിരോധ ശക്തി കൂടിയ പച്ചക്കറിവിത്തുകൾ നടാൻ ശ്രമിക്കാറുണ്ടോ?	ഉണ്ട്/ഇല്ല	ഉണ്ട്/ഇല്ല	ഉണ്ട്/ഇല്ല
(10) കൃഷിയിൽ ഒഴിവാക്കാൻ പച്ചക്കറി വിത്തുകൾ ഉൽ പാദനത്തിൽ നടാറുണ്ടോ?	ഉണ്ട്/ഇല്ല	ഉണ്ട്/ഇല്ല	ഉണ്ട്/ഇല്ല
(11) കൃഷിയിടത്തിന്റെ മണ്ണിലെ പോഷകങ്ങളെ നിയന്ത്രി ക്കാൻ ശ്രമിക്കാറു- ണ്ടോ?	ഉണ്ട്/ഇല്ല	ഉണ്ട്/ഇല്ല	ഉണ്ട്/ഇല്ല
(12) തെങ്ങിൻചെല്ലിയുടെ ആക്രമണം തടയാൻ നടപടികളെടുക്കാറുണ്ടോ?	ഉണ്ട്/ഇല്ല	ഉണ്ട്/ഇല്ല	ഉണ്ട്/ഇല്ല
(13) നെല്ലിൽ കീടബാധ കുറയ്ക്കാൻ കീടനാശിനികൾ പാടശേഖരത്തിലെ മറ്റു കർഷകരൊന്നിച്ചും ചെയ്യാറുണ്ടോ?	ഉണ്ട്/ഇല്ല	ഉണ്ട്/ഇല്ല	ഉണ്ട്/ഇല്ല
(14) പാവൽ, പടവലം, കോവൽ കായ് ഈച്ചയുടെ ആക്രമണം തടയാൻ കായ്കൾ പൊ തിഞ്ഞു വയ്ക്കാറുണ്ടോ?	ഉണ്ട്/ഇല്ല	ഉണ്ട്/ഇല്ല	ഉണ്ട്/ഇല്ല
(15) കീടരോഗനിയന്ത്രണ - മാർഗ്ഗങ്ങൾ കൃത്യസമയത്ത് ചെയ്യാറുണ്ടോ? ഇതിന് വിദഗ്ദ്ധരുടെ സഹായം തേടാറുണ്ടോ?	ഉണ്ട്/ഇല്ല	ഉണ്ട്/ഇല്ല	ഉണ്ട്/ഇല്ല

താഴെ കൊടുത്തിരിക്കുന്ന 4 റേഡിയോ പ്രോഗ്രാമുകൾ നിങ്ങൾ എപ്രകാരം കേൾക്കുന്നു?

എ,ബി,സി,ഡി എന്നീ 4 വിഭാഗങ്ങളിലും അനുയോജ്യമായ കോളത്തിൽ ✓ നൽകി പൂരിപ്പിക്കുക.

പ്രോഗ്രാമുകൾ	എപ്പോഴൊക്കെ കേൾക്കുന്നു? (ഫ്രീക്വൻസി)			എങ്ങനെ കേൾക്കുന്നു (പങ്കാളിത്തം)				എത്രസമയം കേൾക്കുന്നു (ദൈർഘ്യം)		എന്തിന് കേൾക്കുന്നു? (ലക്ഷ്യം)		
	എന്നും	മിക്കപ്പോഴും	വല്ലപ്പോഴും	ഒറ്റയ്ക്കിരുന്ന്	ഗ്രൂപ്പുകളായി കേൾക്കുന്നു	കുടുംബമായി കേൾക്കുന്നു	മറ്റു ജോലിയിലേർപ്പെട്ട് കേൾക്കുന്നു	മുഴുവനും	കുറച്ചു മാത്രം	പഠിക്കാനായ്	വിനോദത്തിനായ്	യാദൃച്ഛികമായി കേൾക്കുന്നു
(1) ഗ്രാമീണ വാർത്തകൾ (കാർഷിക മേഖലാവാർത്തകൾ)												
(2) വയലും വീടും												
(3) കാലാവസ്ഥാ നിലവാരം												
(4) കൃഷിപാഠം												

താഴെ കൊടുത്തിരിക്കുന്ന ചോദ്യങ്ങൾക്ക് ഉത്തരം നൽകുക. (✓ / ✗ നൽകുക)

(1) റേഡിയോയിൽ കൃഷിപാഠം പരിപാടിയുടെ ദൈർഘ്യം എത്രയാണിഷ്ടം? (✓ നൽകിയാൽ മതി) 10 മിനിറ്റ്/15 മിനിറ്റ്/ 20 മിനിറ്റ്/25 മിനിറ്റ്/30 മിനിറ്റ്.

(2) റേഡിയോയിൽ കാർഷിക-ഗ്രാമീണ പരിപാടികളുടെ സമയം ഉചിതമാണോ? ഉണ്ട്/ഇല്ല

(3) കൃഷിപാഠം പ്രക്ഷേപണം ചെയ്യുന്നതിന് നിങ്ങൾക്ക് ഏറ്റവും സൗകര്യം?

രാവിലെ 6-നും 7നും ഇടയ്ക്ക്/ 7നും 8നും ഇടയ്ക്ക്/ 8നും 9നും ഇടയ്ക്ക്

ഉച്ചകഴിഞ്ഞ് 7നും8നുമിടയ്ക്ക്/7നും8നുമിടയ്ക്ക്/ 8നും 9നും ഇടയ്ക്ക്/9നും 10നും ഇടയ്ക്ക്.

താഴെ കൊടുത്തിരിക്കുന്ന പ്രസ്താവനകളോട് നിങ്ങളുടെ പ്രതികരണം

വ്യക്തമാക്കുക :

	യോജിക്കുന്നു	വിയോജിക്കുന്നു
	ഇഷ്ടപ്പെട്ടു	ഇഷ്ടപ്പെട്ടില്ല.

അ (അ) പുതുകൃതികളെപ്പറ്റി അഭിപ്രായം
അറിയാൻ ശ്രമിക്കാറുണ്ട്, പക്ഷേ അവയെല്ലാം
കൃതികൾ പ്രയോജനപ്പെടാറുണ്ടെന്ന്
തോന്നുന്നില്ല. (2)

(ആ) ഒരു പുതിയ കൃതിയിറങ്ങിയാൽ
അത് വാങ്ങി വായിക്കാൻ ശ്രമിക്കുന്നവർ
കുറവാണെന്ന് തോന്നുന്നില്ല (3)

(ഇ) പുതിയ കൃതികളെപ്പറ്റി ധാരാളം
കേൾക്കാറുണ്ട്. പക്ഷേ അവ പഴയ കൃതികളോട്
ഒപ്പമെത്തുമോ? (1)

ആ (അ) കഴിഞ്ഞ കാലങ്ങളിലെ ധാരാളം
പുതിയ കൃതികളെപ്പറ്റി കേട്ടിട്ടുണ്ട്.
അവയെല്ലാം ഞാൻ വായിച്ചിട്ടു
ണ്ട്. (3)

(ആ) പുതിയ കൃതികൾ നല്ലതാണെന്ന
റിയാൻ അവ വായിക്കണമെന്ന്
തോന്നിയിട്ടുണ്ട്. (2)

(ഇ) അവയെല്ലാം പഴയ കൃതി
കളോട് ചേർന്ന് നിൽക്കുന്ന
വിശ്വാസം (1)

ഇ (അ) ഒരു പുതിയ കൃതി വായിച്ചാൽ
ഞാൻ അതിനെ വിലയിരുത്തും (2)

(ആ) ഇന്നും നമ്മുടെ പൂർവികരായ കവി
കളുടെ കൃതികൾ വളരെ വിശിഷ്ടമായ
തുകൊണ്ട് പഴയവയിൽ മാത്രം
ശ്രദ്ധിക്കേണ്ടതില്ല (1)

(ഇ) എപ്പോഴും പുതിയ കൃതികൾ വി
ലയിരുത്താനുള്ള അവസരങ്ങൾ
ഞാൻ തീർച്ചയായും നല്ലതാ
ണ്. (3)

മാതൃകാതോട്ടത്തിൽ നിന്നും കാർഷിക വിജ്ഞാനം നേടുന്നതിനെ

ഉപാധി എന്നനിലയ്ക്ക് താങ്കൾ ആശ്രയിക്കുന്നതു ഏതു സ്രോതസ്സിനെയാണ്?

1. നേരിട്ട് – ഫാം
2. നേരിട്ട് – കാർഷികവിദഗ്ധർ
3. നേരിട്ട് – മറ്റുകർഷകർ
4. ഫാം – കാർഷികവിദഗ്ധർ
5. ഫാം – മറ്റുകർഷകർ
6. കാർഷിക വിദഗ്ധർ – മറ്റുകർഷകർ

മനോഭാവ മാപിനികൾ:-

മാതൃകാതോട്ടത്തിലെ പ്രദർശനങ്ങളെപ്പറ്റി നിങ്ങളുടെ അഭിപ്രായം

രേഖപ്പെടുത്തുക:

	അനുകൂലിക്കുന്നു	പ്രതികൂലിക്കുന്നു
1. പുതിയ കൃഷിരീതികൾ പഠിപ്പിക്കുന്നതിൽ കൂടുതൽ ഫലപ്രദമാണ്.		
2. പുതിയ കൃഷിരീതികളെ നേരിൽ കാണേണ്ടത് ആവശ്യം.		
3. പരിചയസമ്പന്നരായ കർഷകർപോലും പുതിയ കൃഷിരീതികൾ സ്വീകരിക്കുന്നുണ്ട്.		
4. മറ്റു കർഷകർ പുതിയ കൃഷിരീതികൾ പരിചയപ്പെടുന്നുണ്ട്.		
5. പുതിയ കൃഷിരീതികൾ പഠിക്കാൻ സമയവും പണവും വളരെ വേണമെങ്കിലും അത് പ്രയോജനപ്രദമാണ്.		
6. കർഷകരുടെ ജീവിതനിലവാരം മെച്ചപ്പെടുത്താൻ പല സഹായക കാർഷികരീതികൾ ഉതകുന്നതാണ്.		

നിരീക്ഷണം:- മാതൃകാതോട്ടത്തിലെ പ്രദർശനങ്ങളെപ്പറ്റി നിങ്ങളുടെ അഭിപ്രായം

രേഖപ്പെടുത്തുക:

	അഭിപ്രായമില്ല.	പൂർണ്ണമായി യോജിക്കുന്നു	പൂർണ്ണമായി വിയോജിക്കുന്നു.
1. നേരിട്ടുള്ള കൃഷിപാഠങ്ങൾ കൊണ്ട് കർഷകർക്ക് വളരെ പ്രയോജനമുണ്ട്.			
2. കൃഷിപാഠങ്ങൾ കൊണ്ട് വെറും സമയനഷ്ടമാണ്.			
3. പഠിപ്പിച്ച കൃഷിപാഠങ്ങൾ കൊണ്ട് കൃഷി വിജ്ഞാനം ഉപയോഗിക്കുന്നവർ കുറവാണ്.			
4. കൃഷിപാഠത്തിലെ പ്രഭാഷണങ്ങൾ ഉയർന്നതരം ഭാഷയിൽ കൃഷിക്കാർക്കുപോലും മനസ്സിലാകാത്തതാണ്.			
5. കൃഷിപാഠത്തിലെ പ്രഭാഷണങ്ങൾ മറ്റുള്ളവരേക്കാൾ കർഷകർക്കുള്ള ലാഭം വർദ്ധിപ്പിക്കുന്നുണ്ട്.			
6. കൃഷിപാഠപരിപാടികളെ കുറിച്ചുള്ള അറിവ് വളരെ കുറവായി കാണുന്നില്ല.			

കൂടിച്ചേരലിന്റെ അവസരത്തിന് താഴെ പറയുന്ന ഓരോരുത്തരോടുമിടിച്ചും ഏത് ഉപാധിയാണ് നമ്മൾ സ്വീകരിക്കുക:

1. സ്നേഹം — പ്രതിഷേധം
2. സ്നേഹം — ചോദ്യോത്തരം
3. സ്നേഹം — ചർച്ച
4. പ്രതിഷേധം — ചോദ്യോത്തരം
5. പ്രതിഷേധം — ചർച്ച
6. ചോദ്യോത്തരം — ചർച്ച

STUDY ON THE AGRICULTURAL INFORMATION SUPPORT PROVIDED THROUGH RADIO TO FARMERS BY KAU

BY

SUNNY PHILIP

ABSTRACT OF THE THESIS

submitted in partial fulfilment of the requirement for the degree

MASTER OF SCIENCE IN AGRICULTURE

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ABSTRACT

This study titled "Study on the Agricultural Information support provided through radio to farmers by KAU" was carried out with the following objectives.

1. To analyse the programme content of the 'Farm School on the air' on plant protection.

2. To study the level of knowledge and attitude of the farmer listeners on the programme content.

3. To assess the extent of adoption of the recommended practices by the farmer listeners.

4. To evaluate the listening behaviour of farmer-listeners involved in the programme in terms of their personal characteristics.

5. To make a comparison of different modes of presentation in terms of listeners preferences.

The salient findings of this study are the following:

The lessons of 'Farm School on the air' on plant protection in general were valued to be good in transition, coverage utility and relevance, and average in comprehension, stress on key points illustrativeness and favourableness. The different content characteristics were ranked in the order namely transition, coverage, utility, relevance, favourableness, 'stress on key points' illustrativeness and comprehension.

The most suited time was found to be7 to 8 p.m. for the broadcast of 'Farm school on the air' and 15 minutes was considered to be the ideal duration. The question-answer mode was ranked the best for the delivery of lessons followed by interview, discussion and talk. Radio as a source of farm information enjoyed high credibility second to 'agricultural experts' and higher than 'newspaper'.

The study also revealed that one fourth of scheduled listeners of the programme were very regular. One fifth were involved deeply in the programme and 60 per cent listened the programme completely. A majority of the listener farmers heard it with a purpose.

Listening behaviour decreased with increase in age of the listeners. Their levels of listening had a marked influence in their knowledge, attitude and adoption.

Farm size and listening behaviour was significantly correlated with their knowledge. No variable was significantly correlated with attitude. Listening behaviour was the only variable significantly correlated with adoption.