

**RUBBER MAGAZINE AS A CARRIER IN
DISSEMINATING INFORMATION ON IMPROVED
TECHNIQUES IN RUBBER CULTIVATION
AND PROCESSING**

By

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DISSERTATION

Submitted in partial fulfilment of the
requirements for the

Post Graduate Diploma

Course in Natural Rubber Production
Faculty of Agriculture
Kerala Agricultural University

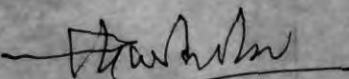
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Vellanikkara, Thrissur

1991

D E C L A R A T I O N

I hereby declare that this dissertation entitled "Rubber Magazine as a carrier in disseminating information on improved techniques in rubber cultivation and processing" is a bonafide record of original work done by me during the course of placement/training and that this dissertation has not formed the basis for award of any degree, diploma, associateship or other similar titles of any other University or Society.

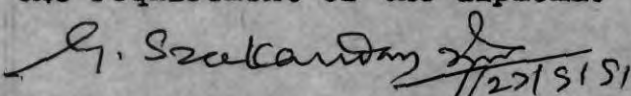
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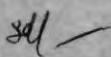
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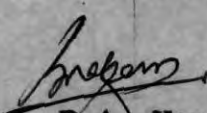
Certified that this dissertation entitled "Rubber Magazine as a carrier in disseminating information on improved techniques in rubber cultivation and processing" is a record of research work done independently by Sri. R.N. Chandra Bose under our guidance and supervision and that it has no previously formed the basis for the award of any degree or diploma to him.

We the undersigned members of the advisory committee of Sri. R.N. Chandra Bose, a candidate for the post Graduate Diploma in Natural Rubber Production agree that the dissertation entitled, "Rubber Magazine as a carrier in disseminating information on improved techniques in rubber cultivation and processing" may be submitted by Sri. R.N. Chandra Bose in partial fulfilment of the requirement of the diploma.


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A C K N O W L E D G E M E N T

I take this opportunity to express my deep sense of gratitude and indebtedness to Dr. G.Sreekandan Nair, Professor and Head, Department of Plantation Crops and Spices, College of Horticulture for his invaluable guidance and encouragement throughout the work for the preparation of this dissertation.

I express my heart-felt gratitude to Sri.P.K.Narayanan Joint Director (Rubber Promotion) Rubber Board for the keen interest he has taken at each stage of the work and the advise and guidance given to me in completing this work.

I gratefully remember the invaluable guidance and supervision provided to me through out the period of this work by Dr. R. Muraleedhara Prasad, Associate Professor, (Agricultural Extension) College of Horticulture.

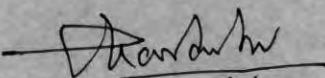
My heart-felt gratitude are also due to Dr.P.A.Nazeem, Associate Professor, College of Horticulture for her sincere advise and guidance in completing this work.

I also acknowledge the valuable assistance provided to me by the Development Officer and Field Officers of the Rubber Board Regional Office, Trichur for carrying out the survey work.

My sincere thanks are also due to Dr.C.C.Abraham,
Associate Dean, College of Horticulture, Vellanikkara
for the sustained interest shown by him in this study.

I also extend my thanks to the authorities of the
Rubber Board and Kerala Agricultural University for
giving me an opportunity to undergo the Post Graduate
Diploma Course in Natural Rubber Production.

Vellanikkara,
24.9.1991.


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I. I N T R O D U C T I O N

Today rubber has become an inevitable part of the civilized world. It has a very significant role in the economic well being of the country. The significance is such that, on many occasions the per-capita consumption of rubber in a country is considered as an index to assess the level of progress that the country has attained.

In India since independence, rubber plantation has shown tremendous progress, both in area under cultivation as well as in production and consumption. In 1950-51 area under cultivation, production and consumption were 6900 hectares 15830 tonnes and 19854 tonnes respectively. By 1989-90 area under cultivation has increased to 440000 hectares while production and consumption increased to 297300 tonnes and 476830 tonnes respectively.

The technological and management support to the cultivation of rubber in India is offered by the Rubber Board constituted under the Rubber (Production & Marketing) Act, 1947 of Govt. of India, and is engaged in generation of technology and transfer of the same among the growers. The Rubber Board make use of all possible channels of communication to reach its audience and one important organ is the Malayalam Farm Magazine "Rubber". Through this magazine the Rubber Board disseminates all necessary informations to

the growers such as cultural practices and other technological options, services and schemes available and solutions to specific problems. The magazine is well appreciated by the growers in the state as indicated by its circulation which is 13,000 copies.

Though the magazine "Rubber" has been accepted as an important medium of transfer of technology by the Rubber Board as well as its clients, no empirical study has been conducted so far, to assess its impact among the readers. Moreover, it is felt to have a review of the magazine through feedback to make necessary modifications in the contents as well as layout for improving the quality. In this background, the present study is designed to assess "Rubber Magazine" as a carrier in disseminating information on improved techniques in rubber cultivation and processing, with the following objectives.

- i. To evaluate the role of Rubber Magazine in disseminating technology among rubber growers.
- ii. To analyse the response of readers in relation to their personal and socio-economic characteristics.
- iii. To suggest measures to improve the quality of the magazine as perceived by the subscribers.

Scope and limitations of the study:

This study was expected to throw lime light to the role of the farm magazine "Rubber" in transfer of technology. In addition, it could identify some of the readers' characteristics as well as preferences along with indications for qualitative improvement which may in turn help the publishers to modify the magazine in a meaningful way.

However, this study cannot claim to be a full proof effort in this direction. Due to the inherent limitations of the investigation, being a project designed in partial fulfilment of the post-graduate diploma programme in natural rubber production, the constraints in terms of time and resources were the important limiting factors. Moreover arbitrary scales were used to measure the variables studied, which may also be considered as a deviation from research perfection.

2. REVIEW OF LITERATURE

Any scientific investigation demands sufficient exposure to the knowledge accumulated over the past to delineate the pathway in the right direction. This is very much essential to have a theoretical orientation and to develop a conceptual frame work required for the study. Accordingly, in the contents of the present investigation an effort is made to collect and review the available and related literature in accordance with the objectives of the study.

Oliver (1971) in a research study on agricultural column of the daily news papers found that the agricultural articles had influenced the farmers in early stages of adoption process.

Dubey et al. (1977) in their study on opinion of "Dairy Samachar" readers about the utility of the magazine revealed that a considerable majority of the respondents found "Dairy Samachar" as useful.

Somasundaram & Singh (1978) observed that print medium was the most used channel for giving information by extension workers.

Jayaram (1980) in his study on the evaluation of "Krishi Vignana", a quarterly farm journal in Kannada, found that three columns such as "forthcoming research findings", "hints

to farmers" and "questions and answers", which had different purposes proved useful and served the purpose for which they were intended. Sharma (1983) found out that different type of items namely "Hints to farmers" "Questions and Answers", "services and others" were sufficiently covered as revealed by the subscribers.

Some of the studies tried to identify the relationships between personal and socio economic characteristics of the readers and the perceived utility of the magazine. Khandekar et al. (1975) identified that the age was negatively related to the perceived effectiveness of the magazine. Jayaram (1980) also found a similar relationship in his evaluation of the magazine "Krishi Vignana".

Rajan (1982), studying the "Farm News Service of Kerala Agricultural University, observed that education did not influence the reading of agricultural information by the farmer subscribers. At the same time Saha and Triikka (1989) found in their study that a great majority of the subscribers had higher levels of formal educations.

Andersan and Rayan (1943) in their study on extension leaflets revealed that, large farmers were using the publications more, than the small farmers. Oliver (1971) also indicated that the farm size had a significant influence on the learning attitude of farmers using news paper articles.

The brief review of the literature cited above indicates that the print media, particularly farm magazines have a significant role in dissemination of agricultural technology among the literate class of farmers. The preference of treatment of the message might also vary from one reader to another depending upon many personal and situational factors. Needless to say, that the personal and socio economic variables have significant influence on the reading behaviour of the farmer subscribers.

This overview explains without any doubt, the necessity to take up an investigation on the role of Rubber magazine as a carrier of information to the rubber growers along with an attempt to reveal the influencing factors and scope of improvement as perceived by its users.

3. M E T H O D O L O G Y

In this chapter, the procedure followed to carry out the investigation, are briefly explained. It includes the selection of study area, selection of samples, collection of data, measurement of variables and techniques used for analysis of data.

3.1 Location of the study

The study was conducted in Trichur District of Kerala state, which was selected due to its advantage of having sufficient number of traditional as well as new subscribers of the farm magazine "Rubber". The area under rubber cultivation in this district is fast growing and thus the number of subscribers too.

3.2 Selection of respondents

Since the study was designed to assess the impact of the magazine on the adoption of technology by rubber growers, the sample included two categories of respondents viz. the subscribers and non-subscribers of the farm magazine from among the rubber growers. In each category, 75 respondents were selected following simple random method, after making complete lists of subscribers of the farm magazine and the non-subscriber cultivators. The total sample size for this study has come to 150.

3.3 Design of the study

The study was conducted in an ex-post-facto design with matched pair. Matching was done between subscribers and non-subscribers to see the impact of the magazine and adoption of technologies.

3.4 Method of data collection

The data were collected by personally interviewing the respondents using a structured interview schedule. The items contained in the schedule were arbitrary scales to measure the selected variables developed after review of related studies and discussion with experts in agricultural extension research. A translated version of the interview schedule (Appendix 1) was prepared for easiness in data collection. Much care was taken to arrange the items in the schedule, depicting the variables under investigation, in a logical manner to keep up the frame of reference of the respondents.

3.5 Operationalisation and measurement of variables

The variables studied in this investigation were operationalised and measured as follows.

3.5.1 Reading behaviour

Reading behaviour of the farm magazine was operationalised for the purpose of this study as to contain the regularity and style of reading, preservation of information and perception of its utility. This variable was measured with four sub-dimensions.

a. Regularity in reading

Regularly reads the magazine	- 2
Occasionally reads	- 1
Never reads	- 0

b. Style of reading

1. Reads immediately after getting the copy	- 3
Reads leisurely	- 2
Reads when there is a need	- 1
Does not read	- 0
2. Reads all articles	- 2
Reads only certain articles	- 1
Just skim through	- 0

c. Preservation of informations

Preserves all issues of the magazine	- 4
Preserves only those which are found important	- 3
Take cuttings of certain articles	- 2
Takes notes on the information	- 1
Does not preserve	- 0

d. Perception of utility of the magazine

Verymuch informative and useful	- 2
Some what informative and useful	- 1
Not at all informative and useful	- 0

The score of the variable was derived by adding the scores obtained for the sub-item a,b,c and d.

3.5.2 Age

Age was operationalised in the study as the chronological age of the respondent in completed years.

3.5.3 Education

It is conceived as the extent of education obtained by the individual respondent. This variable was measured using the following items:-

Functionally literate	- 1
Primary school	- 2
High school	- 3
Collegiate education	- 4
Technical education	- 5

3.5.4 Occupation

Occupation was operationalised as a composite variable of main occupation and subsidiary occupation from which the individual respondents derived most of their income. The scoring patterns of this variable was as follows:-

(1) Main occupation

Farming	- 3
Business	- 2
Govt./Private sector service	- 1

(2) Subsidiary occupation

Farming	- 3
Business	- 2
Govt./Private sector employment	- 1

The score of the variable was obtained by adding the scores of (1) and (2).

3.5.5 Annual income

The annual income of each respondent was calculated by adding his annual income from the main occupation and income from the subsidiary occupation and expressed in rupees.

3.5.6 Experience in Farming

Farming experience of the respondent was operationalised as the number of completed years he has been cultivating rubber.

3.5.7 Land utilization

This variable was defined as the extent of utilization of land for farming, particularly for cultivation of rubber. It was measured by a scoring patterns as follows:

- a. Cultivation of rubber - 3
- b. Cultivation of other crops - 2
- c. Non-agricultural purpose - 1

The cumulative score obtained after adding the figures derived by multiplying the area under each category with corresponding score, reflected the score for the variable.

3.5.8 Mass media exposure

Mass media exposure was defined in this study as the extent of exposure of the individual respondent by himself to different mass media channels carrying agricultural information.

This variable was measured by assigning the frequency scores as follows and computing the total for selected media such as news papers, magazines, farm magazines, radio and T.V.

Regular	- 2
Occasional	- 1
Never	- 0

3.5.9 Level of adoption

This variable was operationalised as the degree of individual respondent's practice of the scientifically recommended package of rubber cultivation. This variable was quantified by assigning maximum score to the strict adoption of the recommendation and minimum score to total avoidance of the recommendations and ultimately adding up the total score from different sub-items. The sub-items or practices considered to measure the level of adoption were as follows:

1. Topography, liming and pitting
2. Size of the pit
3. Type of planting material
4. Use of cover crop
5. Manuring pattern
6. Plant protection
7. Tapping
8. Processing
9. Marketing

3.6 Analysis of Data

The data were analysed using statistical techniques such as frequencies, percentages, means, standard deviation, chi-square and t-test.

4. RESULTS AND DISCUSSION

The results yielded from the analysis of data of the study are presented in this chapter with their interpretations.

4.1 Influence of reading behaviour of the farms magazine "Rubber" on adoption of recommended cultural practices.

The results of the analysis of the data to find out the influence of reading behaviour of the farms magazine "Rubber" on the adoption of recommended cultural practice are presented in Table - 1.

The results revealed that there was significant difference between subscribers and non-subscribers of the farm magazine "Rubber" in their levels of adoption of recommended cultural practices. The higher mean score of adoption (21.16) which was significantly superior to that of non-subscribers (18.72) clearly indicated that the subscribers were much higher in their level of adoption. The reason that could be attributed to this difference between the two catagories of respondents was logically obvious ie. upto date informations on the technologies of rubber cultivation and processing have been transferred to the clients from time to time through the farms magazine "Rubber", very effectively.

4.2 Influence of personal and socio economic characteristics on the reading behaviour of the farm magazine Rubber.

The results of the analysis of the data on personal and socio economic characteristics of the subscribers in relation to their reading behaviour of the farm magazine rubber are given in Table - 2.

The results indicate that the variables such as age, income, farming experience and land utilization had significant influence on the reading behaviour of the farm magazine "Rubber". It was further observed that education and occupation were not exerting any significant influence on the reading behaviour of the subscribers.

Age of an individual is a factor which often influences the learning efficiency, according to fundamental educational psychology. The variation in age may make considerable changes in the strive for new cognitive experiences and their application in practical life. This might be, the reason which attributed to the significant influence of age on the reading behaviour of the magazine.

The messages contained in the farm magazine "Rubber", are mostly oriented to help the farmer by making the enterprise more remunerative. As and when the level of income from the farming enterprises is increased, the drive to yield more profits will become evident. This is a general rule governing any sphere of human activity. This might have acted as a important reason to get the result of significant influence on income level of reading behaviour.

Farming experience is another variable which had significant influence on reading behaviour. The more one gets acquainted with a profession the better will be his comprehension of related messages in any communication channel. For him it is easy to catch the message and translate into action. This might be an important cause of the above finding.

In the quantification of the variable land utilization, higher scores were given for cultivation of rubber than other purposes. So it is only natural to derive the conclusion that higher land utilization score means more area under rubber cultivation. Thus the result of getting significant influence for this variable on reading behaviour indirectly reflects the information need of better rubber growers for the improvement of their major enterprise.

The two independent variables such as education and occupation will not have significant influence on reading behaviour. This might be due to the enterprising nature of rubber growers irrespective of their educational level and occupational status.

3 Information sources utilization patterns by subscribers and Non-subscribers.

The finding obtained on the information source utilization pattern of the subscribers and non-subscribers are shown in Table - 3.

It could be clearly seen from the results presented in Table - 3 that there was a considerable difference between the two categories in terms of their media use. This is very much evident in the case of use of agricultural magazine. For the subscribers, agricultural magazines was the second important mass media channel while for the non-subscribers it was not an important one. This finding indicated that the subscribers only known the worth of magazine and hence they use it in a better way.

4.4 Preference of format in the farm magazine "Rubber" by the subscribers.

The results obtained from the analysis of the format preferences by the subscribers of the farm magazine "Rubber" are presented in table - 4.

The findings indicate that the subscribers had a high preferences for cultural operations for each month than other columns. The order of preferences following this was articles on cultural practices and processing, column giving general informations to farmers, question answer column and success stories of farmers, in a descending manner.

It is very much interesting to see that the subscribers of rubber magazine are more serious about the subject matter than getting some message added with spice of life

experience. This is quite unusual for a readership of a popular service magazine. The conclusion that can be derived from this would be that the rubber growers subscribe to the magazine just to get the technical information quickly and in a straight manner. There is no need to motivate them with success stories which have a tinge of entertainment. The farmers are very much conscious about the technological advancement and they are in need of timely information.

4.5 Utility of messages as perceived by the subscriber of the farms magazine Rubber.

The results obtained from the assessment of the utility of the messages as perceived by the subscribers of the magazine are given in Table - 5.

The data ~~table~~ showed that the messages on disease control as well as processing had very high utility. Those were followed by general cultural practices, replanting/newplanting aspects, rain guarding and information about RPS, information about insurance, tapping and importance of soil testing ~~testing~~ in the descending order.

This perception on utility of the messages is a guideline to the publishers for preparing detailed articles in the forthcoming issues. The coverage of such informations with due order of importance would be highly beneficial to the subscribers of the magazine.

4.6 Suggestion by the subscribers for improvement of the farm magazine rubber.

A list of important suggestions put forth by the subscribers for the improvement of the farms magazine "Rubber" were presented in Table - 6.

It could be observed that there is a need to include a regular column on the evaluation of the market trends of the previous month along with a forecast of the price fluctuations in the coming month as desired by many of the subscribers. Articles on wages/wage revision of labour as well as financial assistance and other aspects of manufacturing unit were also found important topics to be covered.

The demand for market analysis is peculiar to a crop like rubber since the cultivator is more interested in better business in addition to the crop production. So this is an area to be looked into by the publishers.

Table 1: Influence of reading behaviour of the farm magazine "Rubber" in the level of adoption of recommended cultural practices.
(N = 75 + 75)

Category	Mean score	t. value
Subscribers	21.16	4.163**
Non-subscribers	18.72	

** Significant at 0.01 level

Table 2: Influence of personal and socio economic characteristics on the reading behaviour of the farm magazine reader by the subscribers.

(N : 75)

Sl.No.	Variable	χ^2 value	Significance
1.	Age	92.108095	**
2.	Education	15.537827	N.S.
3.	Occupation	21.921614	N.S.
4.	Income	523.95533	**
5.	Farming experience	245.89397	**
6.	Land utilisation	212.55555	**

** = Significant at 0.01 level

N.S. = Non Significant.

**Table 3: Information source utilization pattern by
Subscribers and non-subscribers.**

(N = 75 + 75)

Sl.No.	Information sources	<u>Subscribers</u>		<u>Non-Subscribers</u>	
		Score	Rank	Score	Rank
1.	Newspaper	146	I	142	I
2.	Periodicals	110	IV	81	III
3.	Agricultural Magazine	129	II	35	IV
4.	Radio	125	III	131	II
5.	T.V.	43	V	31	V

Table 4: Preference of format in the farm magazine
"Rubber" by the subscribers.

(N = 75)

Sl.No.	Item	% of reads	Rank
1.	Question & Answer column	7.4%	IV
2.	Cultural operations for each month	52.5%	I
3.	Success stories of farmers	1.7%	V
4.	Articles on cultural practices and processing	42.2%	II
5.	Column giving general information to farmers	24.4%	III

Table 5: Utility of messages as perceived by the subscribers of the farm magazine "Rubber".

(N = 75)

Sl.No.	Item	Percentage of readers	Rank
1.	Importance of soil testing in manuring	10.67	VI
2.	Aspects of disease control	25.33	I
3.	Tapping aspects	10.67	VI
4.	Rainguarding aspects	17.33	IV
5.	Processing aspects	25.33	I
6.	Information about RPS	17.33	IV
7.	Replanting/newplanting aspects	18.67	III
8.	General cultural practices	22.67	II
9.	Information about insurance	12.00	V

Table 6: Suggestions by the subscribers for improvement of the farm magazine "Rubber"

(N = 75)

Sl.No.	Item	Percentage of readers who suggested	Rank
1.	Include articles on financial assistance and other aspects of manufacturing	10%	III
2.	Include a regular column on the evaluation of market level of previous months and expected fluctuations.	12%	I
3.	Include articles on wages-wage revision etc. of estate workers	10.67%	II
4.	Include cartoon	6.67%	V
5.	Include picture stories	8%	IV

5. SUMMARY AND CONCLUSION

Rubber is a commercial crop, influencing the national economy to a large extent, is fast expanding in area as well as production. The main reason is the high remuneration it pays to the cultivator. In order to make rubber cultivation more scientific and highly productive, Rubber Board is taking appropriate measures for technology generation and promotion of the enterprise through better crop management. "Rubber" is a popular malayalam farm magazine intended to transfer the technologies to the clients in timely and palatable manner.

In order to assess the impact of the farm magazine among its subscribers and to get feed back for its qualitative improvement, a field investigation was designed with the following specific objectives.

- i. To evaluate the role of Rubber magazine in disseminating technology among rubber growers.
- ii. To analyse the response of readers in relation to their personal and socio-economic characteristics.
- iii. To suggest measures to improve the quality of the magazine as perceived by the subscriber.

The study was conducted in Trichur district among randomly selected 150 respondents of whom 75 were subscribers of the farm magazine and 75 were non-subscribers, but rubber growers. The data were collected by personal interview using a structured interview schedule.

The major findings of the study are summarised as follows:

1. The subscribers of the farm magazine "Rubber" were found to be superior in their level of adoption of recommended cultural practices to the non-subscribers.
2. The personal and socio-economic variables such as age, income, farming experience and land utilization were found to be influencing the reading behaviour of the subscribers while education and occupation had no influence.
3. Agricultural magazines were conceived to be important communication media by the subscribers of the farm magazine "Rubber" while it was not so by the non-subscribers.
4. Majority of the subscribers had a preference for items on cultural operations for each month followed by articles on cultural practice and processing. Success stories got the least preference.
5. The subscribers perceived topics such as disease control processing, cultural practices, replanting/newplanting etc. as the high utility items.
6. There is a demand for inclusion of a regular columns on evaluation of the market trend for the previous month and forecast of fluctuations for the next month and also articles on wages/wage revisions as well as articles on manufacturing aspects.

The findings of this study indicated that the farm magazine "Rubber" is playing a significant role in transfer of farm technology among its potential subscribers/readers. The suggestions put forth by the subscribers are to be considered as a feed back for qualitative improvement of the magazine to serve its audience in a more meaningful way.

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APPENDIX I

RUBBER MAGAZINE AS A CARRIER IN DISSEMINATING INFORMATION ON IMPROVED TECHNIQUES IN RUBBER CULTIVATION AND PROCESSING.

QUESTIONNAIRE

(Translated. Original in Malayalam)

(Expected answers to most of the questions are given in the questionnaire form. Please tick mark the answer which suits you most)

1. Name :
2. Address :
3. Age :
4. Education status :

Formal education	Primary education
High School education	Collegiate education
Technical education	
5. Occupation :

<u>Main occupation</u>	<u>Subsidiary Occupation</u>
Farming	Farming
Business	Business
Employee in Govt./ private sector	Employee in Govt./ private sector.
6. Annual income :

(a) From main occupation:	:
(b) From subsidiary occupation	:
	<hr/>
Total	=====

7. Experience in farming (in years) :
8. Details of land owned:
- (a) Under ownership :
- (b) Under lease right :
- Total
=====
9. Utilization of land :
- (a) Area under rubber :
- (b) Area under other crops :
- (c) Area used for other purpose :
10. Rubber plantation was
- (a) Inherited by me :
- (b) Started by me :
11. Details regarding planting, maintainance and processing:
- (a) Year of planting :
- (b) Topography of land: Flat Undulating Steep
- (c) Mode of lining : Square method Contour method
- (d) Size of pits :
- (e) Planting material used:
- Budded stumps : Clone
- Poly bag plants : Clone
- Field budding : Clone
- Clonal seedlings : Clone
- Unselected seedlings:

(f) Year of planting of cover crop

Planted during the same year of planting

Planted in the second year

Planted in the third year

Planted in the fourth year

not planted.

(g) Manuring pattern :

Once in a year

Twice in a year

Three times a year

Four times a year.

(h) Type of manure and quantity per plant

For immature plants

For mature plants

Mixtures

Mixtures

Straight fertilizers

Straight fertilizers

Usually purchase the manure available in the market and apply it.

Carry out manuring on the basis of soil and leaf analysis.

(i) Spraying

Sprays regularly

Sprays occasionally

does not spray.

(j) Quantity of chemicals used per acre

Copper sulphate Kgs.

Copper Oxichloride Kgs.

Oil Litres.

(k) Tapping

By self

By paid tapper

(l) Sale of produce

An latex

An smoked sheets

(m) Processing

Being done by self

Being done by worker under my supervision

Being done by worker only.

(n) Size of the sieve used

40 Mesh

60 Mesh

Don't know

(o) Acid used for coagulation

Formic acid

Acetic Acid

. m.l. of acid is diluted using m.l.
of water and used for coagulating liq. rubber.

(p) Method of curing the sheets

Sun drying only

Kitchen smoking

Sun drying for one day and then smoking in smoke house

In smoke house only.

(q) Sale of produce

Through private dealers

Through co-operative societies.

No specific pattern

12. Relationship with media.

Media	Read/hear/ see regu- larly	Read/hear/ see occa- sionally	Does not read/hear/se
Newspaper			
Periodicals			
Agricultural Magazine			
Radio			
T.V.			

13. Are you a subscriber of the rubber magazine

Yes

No

14. Reading pattern

Reads regularly

Reads occasionally

Does not read

15. Do you read the magazine even if you are not a subscriber

Yes

No

16. Pattern of reading

(a) Reads as soon as the magazine is received.

Reads lisurely

Reads when it become necessary

Does not read.

(b) Reads all the articles

Reads selected articles

Just skim through the pages.

17. Preservation of information

Keeps all the issues of the magazine

Keeps those which are found essential

Cut out the articles and keep them

Keeps detailed notes.

Does not keep the copies.

18. Utility of the magazine

Highly informative and useful

Some what informative and useful

Not informative and useful.

19. Do you remember any information which you obtained from the magazine and which was useful in you plantations.

1.

2.

3.

20. Have you any suggestion to include any additional columns or subjects in the magazine.

1.

2.

3.

Place :

Date :

Signature.