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Journal of Pharmacognosy and Phytochemistry

Available online at www.phytojournal.com

E-ISSN: 2278-4136
P-ISSN: 2349-8234
JPP 2017; SP1: 319-323

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An explorative study on communication behaviour of banana growers in Tiruchirapalli district of Tamil Nadu

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Abstract
In India, the vast majority (85 percent) who indulge in farming constitutes small and marginal category only. The small and marginal farmers accessing less information and from fewer sources than did medium and large-scale farmers. Due to lack of right information in right time, the farmers were worst affected by poor yield and poor returns from the farming. To take vital farm decisions, timely farm information is imperative and thereby the communication channels play the pivotal role in farm information dissemination. A study was conducted to explore the communication behaviour among the banana growers in Trichy district of Tamil Nadu. Among the respondents, one-third of farmers (32.5 per cent) were consulting and receiving agro information from their relatives and friends where as banana grower association serving 29.5% of the farmers and 27.6% of the respondents getting information from media.

Keywords: marginal farmers, banana growers

Introduction
The agricultural information plays a crucial role in accelerating agricultural productivity, farm profitability and in turn leads to up scaling of rural income. The information is the key source for making vital decisions from sowing to selling of produce. The farmers are using both formal and informal sources for their information needs. The communication sources vary from Agricultural extension officers to neighbor and relatives. The farmers are using print media such as Newspapers and Journals to electronic media such as Television and Radio. The reliability, rechablity of every communication sources unique and has their own advantages and disadvantages. The National Sample Survey Organization (NSSO) has documented that at the all-India level, only 40% of farmer households have access to one or more sources of information (NSS, 2005). The NSSO found that of the sixteen different sources for accessing information on modern technology for farming, about 16.7% of the farmers got their information on a daily basis from other progressive farmers in their villages. The percentage of farming households accessing information through 'other progressive farmers' and 'input dealers' was highest in states of Pre- bifurcated Andhra Pradesh (63 percent) and West Bengal (61 percent).

Mobile phone usage in agriculture
Now-a-days, use of mobile phones is multipurpose, majority of the farmers use mobiles to know the market price of products and some of them directly communicate with the customers for selling their goods or products for better price. Mobile phone has reduced the communication gap between farmers' agriculture scientists, traders and farmers. In Indian rural areas uses of mobile phones have grown day by day and different organizations have launched different technologies in agriculture to increase the production. According to De Janvry *et al.*, 1991 [3], Grameen, 2007 [7], Chhachhar, *et al.*, 2014 [2], Fafchamps &Vargas Hill 2005 [4] the uses of mobile phones play a positive role among the farmers to increase their productivity and income, because it helps the farmers to communicate buyers and sellers directly to sell their products in attractive prices. The use of mobile phone helps the famers to get more advantages (Lee *et al.*, (2013) [10]. The farmers and users can be connected through mobile phones without any mediator. Aker and Mbiti (2010) [1] indicated that mobile phones have reduced the gap between rural and urban areas connecting the farmers and market customers. Mobile phones were used by farmers in Ghana, to negotiate with traders to obtain best prices for bananas. The use of mobile phones helps the farmers to save their money, time and energy. In Ghana, farmers in Tamale send text messages to thousand kilometers away

from their cities to learn about the prices of corn oil and tomatoes (Muto *et al.*, 2011) [12]. Mobile phones have provided good facilities and access to the information about agriculture from nearby market to distance market in West African countries. However, many farmers who live in remote areas and they have no proper access of communication technologies in their areas.

The mobile phone coverage and usage were increased 10% in the year 2003 and 2005 among farmers' probability of market participation. Muto and Yamano (2009) [13] reported that the farmers from Uganda used mobile phones to get market information on agriculture products well in advance. The use of mobile phone induces the market participation of farmers producing and selling perishable crops like banana. Mobile phones are much useful to increase the knowledge as well as dispose the agriculture products for a good price. Murthy (2009) stated that mobile phones have provided a platform to farmers for sharing and getting the information about agriculture.

In developing countries farmers use short message services (SMS) in mobile phones for updating of weather forecast and use of pesticides in their farms. Kefela (2011) [8] reveals that farmers from Bangladesh directly contact buyers to get the rice, vegetables, and coffee prices from international traders. Two decades ago it was very difficult for farmers to know information about their productions from the market. In Nigeria 73% of farmers use mobile phones to exchange the agricultural information while 56% merchants use mobile phone (Godson Okwuchukwu and Chinonye Faith 2013) for selling farm products.

Methodology

The data was collected in quantitative methods, simple random selection and purposive sampling technique was used for selection of the respondents. About 750 questionnaires were distributed in five selected blocks (each block 150 questionnaires) such as Thottiayam, Lalgudi, Andanallur, Mannachanallur, and Tiruverambur in Tiruchirappalli district. The survey was administered in a single stage by trained research assistants. Finally, 644 duly filled in questionnaires were collected from the respondents for the analysis. The rest 106 questionnaires found with unfilled and errors.

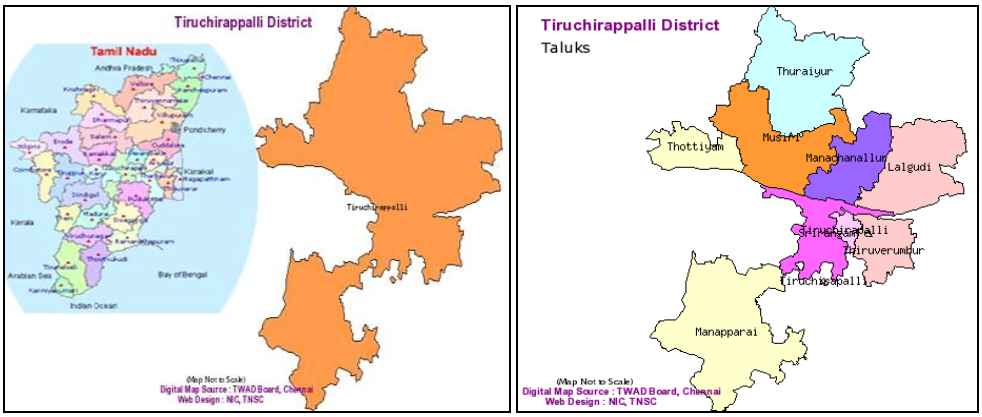

Fig 1: Map Showing the Study Area Tiruchirappalli District of Tamil Nadu, India

Result and Discussion

Agencies (communicator) providing immediate information against the farmers queries/ doubts on banana cultivation practices.

Table 1 shows that the agencies/ communicator (Media, National Research Centre for Banana (NRCB)-Scientists, Tamil Nadu Agricultural University (TNAU)-Scientists, State Govt. Agricultural/ Horticultural Officers, Krishi Vigyan Kendra (KVK)| officials, Input/ pesticide dealers/ private agri-agents / agri-clinic, Friends/ Relatives/ Co-farmers/ Neighbours, member/ progressive farmers, Agricultural exhibitions, Farmers meeting/ workshop/ seminars/ conference/ trainings and others) providing immediate information against the farmers' queries/ doubts on banana cultivation practices, were analyzed.

Table 1: Agencies (communicator) giving information on banana cultivation practices, immediately against queries/ doubts

Communicator	Never		Rarely		Occasional		often		Always	
	N	%	N	%	N	%	N	%	N	%
Media	22	3.4	56	8.7	204	31.7	184	28.6	178	27.6
National Research Centre for Banana (NRCB)-Scientists	28	4.3	58	9.0	214	33.2	208	32.3	136	21.1
Tamil Nadu Agricultural University(TNAU))-Scientists	84	13.0	64	9.9	187	29.0	175	27.2	134	20.8
State Govt. Agricultural/ Horticultural Officers	83	12.9	70	10.9	232	36.0	147	22.8	112	17.4
Krishi Vignaya Kendra (KVK)| officials	74	11.5	52	8.1	233	36.2	153	23.8	132	20.5
Input/ pesticide dealers/ private agri- agents / agri-clinic	77	12.0	50	7.8	174	27.0	185	28.7	158	24.5
Banana grower association member/ progressive farmers	84	13.0	45	7.0	181	28.1	144	22.4	190	29.5
Friends/ Relatives/ co-farmers/ Neighbours	12	1.9	43	6.7	184	28.6	196	30.4	209	32.5
Agricultural exhibitions	29	4.5	61	9.5	211	32.8	178	27.6	165	25.6
Farmers meeting/ workshop/ seminars/ conference/ trainings	32	5.0	74	11.5	244	37.9	172	26.7	122	18.9
Any others	28	4.3	60	9.3	247	38.4	160	24.8	149	23.1

It is seen from table 1 that 95.6% of the respondents (27.6% always, 28.6% often, 31.7% occasionally, 8.7% rarely) stated that Media (communicator) are giving information on banana cultivation practices, immediately against queries/ doubts and 3.4% stated as never given information.

The immediate communication from National Research Centre for Banana (NRCB- ICAR, Govt. of India)-Scientists give information on banana cultivation practices, immediately

against queries/ doubts received from the respondents 95.7% (21.1% always, 32.3% often, 33.2% occasionally, 9% rarely) and 4.3% of the respondents stated as never given information on banana cultivation practices, immediately against their queries/ doubts.

State Govt. organizations

Tamil Nadu Agricultural University (TNAU) -Scientists have given information on banana cultivation practices, immediately against query/ doubts 86.9% (20.8% always, 27.2% often, 29% occasionally, 9.9% rarely) and 13% of the respondents stated as never received. The State Govt. Agricultural/ Horticultural Officers 87.1% (7.4% always, 22.8% often, 36% occasionally, 10.9% rarely) give information on banana cultivation practices, immediately against query/ doubts and 12.9% never give. The Krishi Vigyan Kendra (KVK) officials were 88.6% (20.5% always, 23.8% often, 36.2% occasionally, and 8.1% rarely) giving information on banana cultivation practices, immediately against queries/ doubts and 11.5% of the respondents stated as never give about banana information.

Private organizations

Through Input/ pesticide dealers/ private agri- agents / agri-clinc agencies were giving information on banana cultivation practices, immediately against query/ doubts 88% (24.5% always, 28.7% often, 27% occasionally, 7.8% rarely) and 12% of the respondents stated never received. The information gathering immediately on banana cultivation practices from Banana grower association member/ progressive farmers, 87% (29.5% always, 22.4% often, 28.1% occasionally, 7% rarely) of the respondents stated as given information on banana cultivation practices, immediately against queries/ doubts and 13% of the respondents stated never.

The important communicator of Friends/ Relatives/ co-farmers/ Neighbours were giving information on banana cultivation practices, immediately against queries/ doubts 98.1% (32.5% always, 30.4% often, 28.6% occasionally, 6.7% rarely) and very small 1.9% of the respondents stated as never give on banana information.

Agricultural exhibitions 95.5% (25.6% always, 27.6% often, 32.8% occasionally, 9.5% rarely) give information on banana cultivation practices, immediately on respondents' queries/ doubts and (4.5%) never given. During the Farmers meeting/ workshop/ seminars/ conference/ trainings 95.5% (18.9% always 26.7% often, 37.9%occasionally, 11.5% rarely) respondents received information on banana cultivation practices, immediately against queries/ doubts and 5% of the respondents stated as never during the occasions. Regarding the others (DVD/ CD/ Film, drama etc.) communicator was giving information on banana cultivation practices, immediately against queries/ doubts 95.6% (23.1% always, 24.8% often, 38.4% occasionally, 9.3% rarely) and 4.3% of the respondents sated as never received information on banana cultivation practices, immediately against queries/ doubts from any other sources.

The respondents may easily approach or access their Friends/ Relatives/ co-farmers/ Neighbours within their neighbourhood for getting immediate information against queries/ doubts on banana cultivation practices. They may not have any hesitation, communication to exchange the information with friends and relatives. This practice may reduce the financial expenses and time. The communication with the counterpart in their own language may help each other to understand the subject. On the other hand the media (newspapers, magazines, journals, mobile phone/ telephone communications, TV, radio etc.,) occupies the second place that helps the farmers to obtain information on banana cultivation practices against queries/ doubts immediately. The use of media has been found to encourage poor farmers towards a greater market participation and diversification to high-value crops. Media-based information and services may influence the farmers to adopt the improved and latest techniques leading to better yields. The respondents getting information on queries/ doubts immediately on banana cultivation practices from the Central Govt. organization of the National Research Centre for Banana (NRCB) occupying in third place, because the farmers may have direct contact with NRCB to get the information on the latest technologies of banana cultivation. Due to this factor the farmers lead a good relationship with the scientist who gives good amount of production. The farmers may feel, NRCB office is located at a long distance and they may feel they have to spend money and time to get the information. The farmers may not spend time and money to get information.

Reddy (1983) [14], Rotty (1983) [15], Gokulraj (1981) [6] reported that the influence of the awareness, knowledge or adoption of improved practices, the direct influences through neighbours, relatives and friends ranked first. Literature ranked second followed by government organizations. These results agree with those of the present study.

In order to identify the factor which is more influencing the respondent towards attitude the Friedman's test analysis was used and the results are given in Table 1.a.

Table 1a: Friedman Test - Agencies (communicator) giving information on banana cultivation practices, immediately against query/ doubts

Communicator	Mean	SD	Mean Rank	Reliability
Media	3.68	1.07	6.38	0.732
National Research Centre for Banana (NRCB)-Scientists	3.60	1.10	6.31	
Tamil Nadu Agricultural University(TNAU))-Scientists	3.33	1.27	5.62	
State Govt. Agricultural/ Horticultural Officers	3.21	1.23	5.15	
Krishi Vignaya Kendra (KVK)| officials	3.34	1.22	5.53	
Input/ pesticide dealers/ private agri- agents / agri-clinic	3.46	1.27	5.98	
Banana grower association member/ progressive farmers	3.48	1.33	6.06	
Friends/ Relatives/ co-farmers/ Neighbours	3.85	1.01	6.94	
Agricultural exhibitions	3.57	1.05	6.15	
Farmers meeting/ workshop/ seminars/ conference/ trainings	3.43	1.07	5.81	
Any other (notices, pamphlets, banner, exhibits etc.,)	3.53	1.08	6.07	

It could be noted from the above table 1.a that among the 11 communicator, the Friends/ Relatives/ co-farmers/ Neighbours were ranked first followed by Media as second and National Research Centre for Banana (NRCB) Scientists ranked third. The reliability was recorded as 0.732 for information on banana cultivation practices, immediately

against query/ doubts by communicators.

The use of Communication method to contact agriculture offices/ scientists for doubts/ clarifications on banana cultivation practices

Table 2 shows the communication using to contact agriculture offices/ scientists for doubts/ clarifications on banana cultivation practices is analyzed regarding Telephone / mobile phone, E- mail / FAX, SMS, Letter, Direct/personal contact and others.

Table 2: Mode of Communication used to contact with agriculture offices/ scientists for doubts/ clarifications on banana cultivation (n=644)

Communicator	Never		Rarely		Occasionally		often		Always	
	N	%	N	%	N	%	N	%	N	%
Telephone / mobile phone	17	2.6	32	5.0	130	20.2	159	24.7	306	47.5
E- mail / FAX	55	8.5	122	18.9	164	25.5	201	31.2	102	15.8
SMS	50	7.8	100	15.5	207	32.1	158	24.5	129	20.0
Letter	83	12.9	185	28.7	204	31.7	95	14.8	77	12.0
Direct/personal contact	36	5.6	49	7.6	131	20.3	153	23.8	275	42.7
others	18	2.8	100	15.5	239	37.1	146	22.7	141	21.9

Table 2 shows that 97.4% (47.5% always, 24.7% often, 20.2% occasionally, 5% rarely) of the respondents use the communication Telephone / mobile phone to contact agriculture offices/ scientists for doubts/ clarifications on banana cultivation practices and 2.6% never availed the facility.

The usage of communication by the respondents through E-mail / FAX to contact agriculture offices/ scientists for doubts/ clarifications on banana cultivation practices is recorded as 91.5% (15.8% always, 31.2% often, 25.5% occasionally, 18.9% rarely) and 8.5% never.

The communication of SMS availed by the respondents using to contact agriculture offices/ scientists for doubts/ clarifications on banana cultivation practices is rated as 92.2% (20% always, 24.5 often, 32.1% occasionally, 15.5% rarely) and 7.8% never.

The communication of Letter using to contact agriculture offices/ scientists for doubts/ clarifications on banana cultivation practices by the respondents is rated as 87.1% (12% always, 14.8% often, 31.7% of occasionally, 28.7% rarely) and 12.9% never.

Similarly the communication through Direct/ personal contact used by the respondents is 94.4% (42.7% always, 23.8% often, 20.3% occasionally, 7.6% rarely) with respect to agriculture offices/ scientists for doubts/ clarifications on banana cultivation practices and 5.6% never contact.

The other communication mode of 97.2% (21.9% always, 22.7% often, 37.1% occasionally, 15.5% rarely) respondents used to contact agriculture offices/ scientists fordoubts/ clarifications on banana cultivation practices and 2.8% of the respondents affirmed as never contact.

The modern digital world telephone/ mobile phone, computer, internet, websites usage in agriculture plays a vital role in disseminating information. The mobile phones help the farmers to communicate easily without spending much time, money and energy. Regular use of Telephone/Mobile phone by the respondents has reduced the communication gap between farmers' agriculture scientists, technical advisor, traders and farmers. In Indian rural areas uses of mobile/ phones has grown day by day and different organizations have launched different technologies in agriculture in order to increase the production and productivity of their produce. The farmers approached the central and state extension officers for getting information on banana cultivations through direct or personal contact with the officers, persons concerned etc. This has to be done in order to get further clarifications and clarity on the better yield and production techniques of bananas productions. The other mode of communication such as notices, pamphlets, brochures, exhibitions, workshops, seminars, etc. was used by farmers and some prefer practical experimentation which is done by workshops, live sessions and dramas that help to be educated more on the newer techniques on banana cultivation.

The results of the studies by earlier workers viz. De Janvry *et al*., (1991) [3], Fafchamps and Vargas Hill (2005) [4], Grameen (2007) [7], Aker and Mbiti (2010) [1], Muto *et al.*, (2011) [12], Lee *et al*, (2013) [10] and Chhachhar *et al.*, (2014) [2] were correlated with the present work on banana and media communication study.

In order to identify the factor which is more influencing the respondent towards attitude the Friedman's test analysis was used and the results are given in table 2.a.

Table 2a: Friedman Test- Mode of Communication using to contact with agriculture offices/ scientists for doubts/ clarifications on banana cultivation

Communicator	Mean	SD	Mean Rank	Reliability
Telephone / mobile phone	4.09	1.05	4.43	0.704
E- mail / FAX	3.27	1.19	3.21	
SMS	3.34	1.18	3.32	
Letter	2.84	1.19	2.52	
Direct/ personal contact	3.90	1.20	4.11	
Any others	3.45	1.08	3.43	

It could be noted from the above table 2.a that among the mode of communication, Telephone / Mobile phone was ranked first followed by Direct/ personal contact ranked second. Any other mode of communication is ranked third. Thus, the reliability is recorded as 0.704.

Conclusion

If the farmers are empowered with information, better is their livelihoods. The correlation between technology and rural development is highly positive. It is important to develop the farmers access to backward (seed, fertilizer, pesticide and other inputs) and forward (trading, wholesaling, export) markets for improving their profitability). This can be done in any of the following ways:

E-media Tools

ICT Portal providing market information (price, demand and supply situation), name and address of service providers and other value chain actors. The portal can also assist in providing critical current issues affecting production and sales of commodities such as farming practices, pest infestation and measures to take, etc. (Policy Framework for Agricultural Extension, MOA, Government of India, 2001). The portal can seek advertisement from the various commercial service providers and value chain actors and can become sustainable. The personalized, site specific, relevant and time bound Agro information will reach the end clientele and makes the innovation and diffusion process easier. Agro market Advisory services can leverage the forward and backward linkages of farmers with markets and conglomeration of stakeholders is possible. The timely market information helps to aware the about market prices, facilitates trade and informs business decisions. The positive impact of Reuters Market Light (RML) mobile services in Maharashtra, India was documented by Fafchamps and Minten (2012) [5]. In 2014, Siva balan *et al*., studied the forward linkage of Tomato growers concluded that the widespread use of ICT tools among the agricultural clusters would bring out not only horizontal integration of vegetable growers but also vertical integration of all the members of the supply chain leading to better the prospects of farm profitability.

The awareness creation on newer advisory services and technology is imperative. The farmers should be completely clarified before subscription of any market advisory services. The training need of the farmers should be identified and suitable addressed (Khurana, and Satvindarkaur, 1996) [9]. Community Radio can be an effective way to reach large number of farmers at a significantly lower cost. This can be highly effective in the remote areas.

Banana clusters

The crop clusters could also play an active role in sharing and exchanging critical backward and forward linkage information in collaboration with the various value chain actors and service providers (Mc Cluskey and Desmond O', Pourke., 2001) [11]. They can hold workshops or discussion meetings with these actors on weekly basis to update information and knowledge.

Initiatives of ICAR

Mera Gaon Mera Gaurav

Under "*Mera Gaon Mera Gaurav*" scheme, which aims to organise interactive meeting with village people and delivering suggestions for their betterment of livelihood, created awareness about the importance of soil testing in agriculture/horticulture as well as timely recommendations for agricultural activities. This periodical visits may establish a linkage between knowledge centres and farmers. (ICAR-NRCB Annual Report 2016-2017)

The shorter shelve life period of the banana and middle men interferences considerably reduces the farm profitability. The farm profitability can be increased only when the farmers are updated with latest technology as well linked directly with the markets. It is concluded that the communication barriers between Govt. offices or Govt. research institutes and media and farmers should be bridged by way of using interactive communications methods with suitable ICT interventions.

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