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## A study on diffusion of farm technologies through electronic media among the banana farmers in Tamil Nadu

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### Abstract

The media influence every aspect of life and every occupation. In the farm sector, the media has much more important role in accessing the agro information needed on daily basis. Mass media communication certainly will improve the agricultural productivity and knowledge of the farmers makes them have protective measurement for agriculture practices. A study was conducted to investigate the listening and watching behavior of farmers and role of Radio and Television on dissemination of agricultural information. It was concluded that 53.7 per cent of the total respondents used to watch Agricultural programmes on *Doordarshan (podhigai)* TV- *Velanmai Seithigal* and *Ponvizhaim Bhoomi* 48.3%. Similarly two fourth of the respondents used to watch Agricultural programmes in *Makkal TV (Malarum Bhoomi)* 38.7% and *Puthiyathalamurai TV (Uzhavukku Uyiruttu)* 39.9%. Significant percentages of the respondents were satisfied at high level with listening to radio programmes. Among the Agricultural programmes, maximum respondents used to listen to *Uzhavarulagam* 30.9%, *Velan Arangam* 20.7% and *Pannai Aasiriyar* 16.5% in All India Radio (AIR), Tiruchirapalli, Tamil Nadu.

**Keywords:** Media communication, Electronic media source, Banana farmers, Agricultural technology dissemination

### Introduction

Media acts as a vehicle to disseminate information from one place to large audiences. Mass media (Radio and Television) contributes to the lives of the local community by providing its contents relating to education, health, environment, agriculture, rural and community development. Earlier studies portraits the influence of Electronic media in every aspect of rural development. In the electronic media, the special farmers' programmes should be launched for an educated farmer at a precise time of the day to improve their knowledge about Transfer of Technology (ToT) on agriculture farming (Sajjad Ali, *et al.*, 2013) [20]. Exclusive documented programs related to farming may provide more information for acquiring knowledge. Mass media communication certainly will improve the agricultural productivity and knowledge of the farmers makes them have protective measurement for agriculture practices. Further, scientific achievements, knowledge-based technologies could be derived to provide more options to farmers and consumers (Escalada and Heong, 2004) [6].

### Roll of Radio and Television in agriculture sector

In India, a specialized agricultural programme 'Farm and Home' was introduced on June 7, 1966 in ten different radio stations including Tiruchirapalli radio station. (<http://allindiaradio.gov.in>). The Farm & Home units of AIR broadcast composite programmes including equal segments of rural development schemes and hard-core agriculture subjects like animal husbandry, fisheries, dry land and wasteland farming and also segments on employment schemes, loan and training facilities, sanitation, health hygiene and nutrition etc. Further Agriculture Broadcast has been expanded as 'Agriculture Extension' entitled '*Kisanvani*' (Farmers Radio) from February, 2004. At present about 100 radio stations broadcast this programme.

'Krishi Darshan' is an Agricultural programmes for Indian farmers introduced in India's first public broadcasting television channel 'Doordarshan' from January 26<sup>th</sup> 1967 aimed at disseminating agricultural information to rural, farming audiences in a particular time slot. Taking a step further, the Indian Council of Agricultural Research (ICAR) has urged the Union government and Planning Commission to come up with a dedicated 24X7 TV channel for airing programmes related to agriculture. ICAR says that it wants to make the farmers of the country aware of modern farming techniques that will benefit their crops ([www.indiantelevision.com](http://www.indiantelevision.com)).

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Narendra Modi, Prime Minister of India, pointed out during the inauguration of the Television Channel 'DD Kisan' (Television Channel for Farmers) in May 26, 2015 that agriculture is given top priority for the development of villages in the country. (www.indiatoday.com). A dedicated *Kisan TV* channel should keep an eye and inform farmers about the changes in weather, global markets etc., so that farmers can plan ahead and take the right decisions well in time (www.indiantelevision.com). The main focus of the channel is to increase the overall production by highlighting the government's major agricultural policies, issues such as livestock expansion, water quality and technology-based farming, which is the future of agriculture sector.

### Methodology

The Quantitative - Survey method was employed to collect

the relevant primary data from the sample respondents with the help of a questionnaire. The data collected from the primary sources of information were arranged systematically and sequentially relevant to the analysis. About 750 questionnaires were distributed in five selected blocks (each block 150 questionnaires) such as Thottiyam, Lalgudi, Andanallur, Mannachanallur and Tiruverambur in Tiruchirappalli District of Tamil Nadu. 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. A simple statistical parameter like percentage was used for the interpretation of data and frequency test, t-test, Chi-square test were conducted. The Uses and Gratifications theory was adopted in this study.

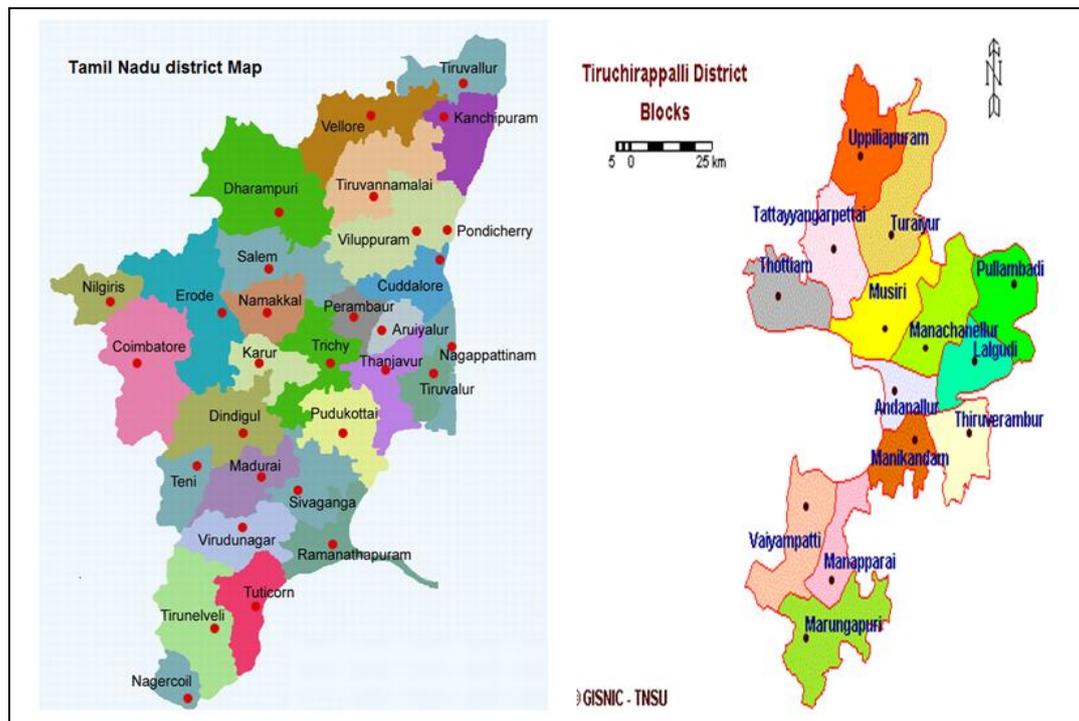


Fig 1: Map Showing the Study Area Tiruchirappalli District of Tamil Nadu, India

### Result and Discussion

#### Listening / watching / of agricultural programmes on electronic media

##### Agricultural programmes listening on Radio (AIR)

The respondents interest in listening on Radio (AIR) towards Agricultural programmes at different level such as *Uzhavar ulagam* (world of farmers), *Velan Arangam* (house of

agriculture), *Pannai Aasiriyar* (farm teacher), *Madalmanikam* (letters to editor), *Neradi Tholai thodarpu* (direct communication), *Velanmai seithisurul* (agricultural newsreel), *Unnal mudium tholaa* (you can do), *Kelvi neram* (question time), *Valammigu velanmai* (wealth of agriculture), *Kaalnadai namakku tholanamma* (friend of veterinary) was analyzed and the results are given in table 1.

Table 1: Agricultural programmes listening on Radio (AIR)

Name of the programmes	No		Yes		Total	Chi square	p
	N	%	N	%			
<i>Uzhavar ulagam</i>	445	69.1	199	30.9	644	225.44	< 0.001**
<i>Velan arangam</i>	511	79.3	133	20.7	644		
<i>Pannai aasiriyar</i>	538	83.5	106	16.5	644		
<i>Madal manikam</i>	576	89.4	68	10.6	644		
<i>Neradi tholai thodarpu</i>	567	88.0	77	12.0	644		
<i>Velanmai seithi surul</i>	560	87.0	84	13.0	644		
<i>Unnal mudium tholaa</i>	589	91.5	55	8.5	644		
<i>Kelvi neram</i>	592	91.9	52	8.1	644		
<i>Valammigu velanmai</i>	569	88.4	75	11.6	644		
<i>Kaalnadai namakku tholanamma</i>	571	88.7	73	11.3	644		

\*\* Highly Significant

Table 1. shows that 30.9% of the respondents are listening to *Uzhavarulagam*, followed by 20.7% of the respondents listen to *Velan arangam*, 16.5% of the respondents listening to *Pannai aasiriyar*, 10.6% of the respondents listening to *Madal manikam*, 12% of the respondents listening to *Neradi tholai thodarpu*, 13% of the respondents listening to *Velanmai seithi surul*, 8.5% of the respondents listening to *Unnal mudium tholaa*, 8.1% of the respondents listening to *Kelvi neram*, 11.6% of the respondents listening to *Valammigu*

*velanmai* and 11.3% of the respondents listening to *Kaalnadai namakku tholan* in Radio medium.

Further, in order to find out the significant association with listening to Agricultural programmes on Radio, a Chi-square test was used and the result of the test (table 1). The 'p' value is less than 0.01 and hence it is concluded that there is highly significant association found with the listening Agricultural programmes on Radio medium.

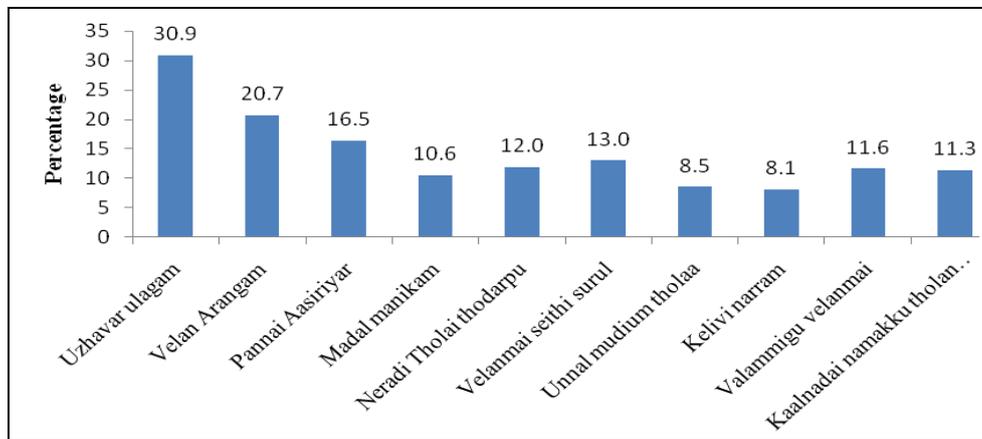


Fig 1a: Programmes listening on Radio

#### Watching Agricultural programmes on Television

The respondents interests in watching on television Agricultural programmes at different programmes such as *Ponvizhaim Bhoomi* (gold yield earth) *Velanmai seithigal* (agricultural news), *Vayalum vazhvum* (land and life), *Success story*, *Velan arivuraigal* (agri instruction), *Vealn sandhai* (agri market), *Weather forecast* on Doordarshan Podhigai - TV), *Malarum boomi*, (flourish earth), *Valarcholai* (growth farm), *Pannai sethi* (farm news) on Makkal - TV, *Uzhavukkuuyiruttu* (farmer's live) on Puthiyathalamurai - TV were analyzed and the results are given in table 2.

It is seen from table 2. that 48.3% of the respondents were watching *Ponvizhaim Bhoomi*, 53.7% of the respondents

watching *Velanmai Seithigal*, 20.5% of the respondents watching *Vayalum Vazhvum*, 27.5% of the respondents watching *Success story*, 22.5% of the respondents watching *Velan arivuraigal*, 20.2% of the respondents watching *Vealn sandhai*, 18.5% of the respondents watching *Weather forecast* and 23.4% of the respondents watching Agricultural technologies on Doordarshan - Podhigai Television.

Similarly 38.7% of the respondents were watching *Malarum Bhoomi*, 14.1% of the respondents watching *Valarcholai* and 21.7% of the respondents watching *Pannai Sethi* on Makkal Television. Further 39.9% of the respondents watching *Uzhavukku Uyiruttu* programme on Puthiyathalamurai Television.

Table 2: Agricultural programmes watching on Television

Television	Programmes	Watch programmes				Total	Chi square	p
		No		Yes				
		N	%	N	%			
Doordarshan Podhigai-TV	<i>Ponvizhaim Boomi</i>	333	51.7	311	48.3	644	409.70	< 0.001**
	<i>Velanmai seithigal</i>	298	46.3	346	53.7	644		
	<i>Vayalum Vazhvum</i>	512	79.5	132	20.5	644		
	<i>Success story</i>	467	72.5	177	27.5	644		
	<i>Velan arivuraigal</i>	499	77.5	145	22.5	644		
	<i>Vealn sandhai</i>	514	79.8	130	20.2	644		
	<i>Weather forecast</i>	525	81.5	119	18.5	644		
Makkal- TV	<i>Agricultural technologies</i>	493	76.6	151	23.4	644	108.79	< 0.001**
	<i>Malarum Boomi</i>	395	61.3	249	38.7	644		
	<i>Valarcholai</i>	553	85.9	91	14.1	644		
Puthiyathalamurai - TV	<i>Pannai Sethi</i>	504	78.3	140	21.7	644		
	<i>Uzhavukku Uyiruttu</i>	387	60.1	257	39.9	644		

\*\* Highly Significant

Further in order to find out the significant of association with watching Agricultural programmes on Television, a Chi-square test was used and result of the test is also shown in the following table 2. It is noted from the table 2 that the 'p' value

is less than 0.01 and hence it is concluded that there is highly significant association found with watching Agricultural programmes on Television.

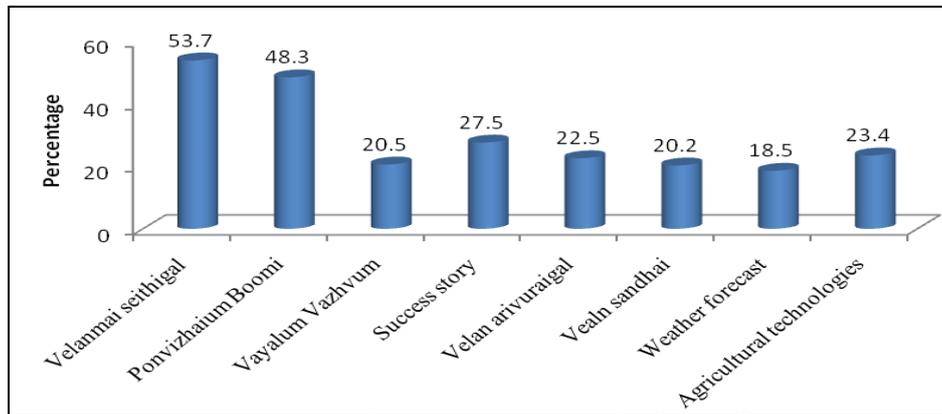


Fig 2a: watch Programmes on doordarshan Podhigai-tv

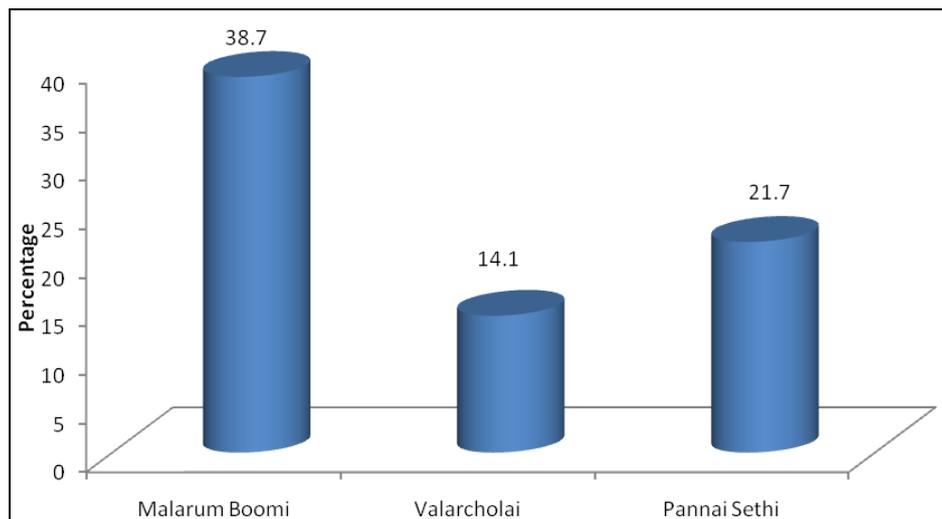


Fig 2b: Watch Programmes on makkal-tv

A large number of farmers have been getting high production after utilizing the sought information from the TV channels. Most of the farm information was telecast under the 'Ponvizhaim Bhoomi' by Doordarshan Podhigai-TV and 'Malarum Bhoomi' by Makkal-TV programmes whereas farmers mostly preferred farm information such as Technology transfer, weather forecast, success story, agricultural marketing, agricultural policy and disease management. Earlier research workers viz. Murty and Abhinov (2012) <sup>[10]</sup>, Alam *et al.*, (2014) <sup>[1]</sup>, Ani, A. and S. Baba. (2009) <sup>[2]</sup> found that a majority of the farmers were watching the TV about agricultural information for agricultural development. The present study is also in

agreement with the earlier studies.

#### Banana cultivation technologies disseminated by electronic media

Table 3. shows the analysis of how much respondents are using the banana cultivation news/ information technologies disseminated by Radio and TV regarding Planting information, Soil management, Pest and disease management, Advance/ new technologies, Water source/ supply, Intercropping, Marketing, Fertilizer input, Crop loan, Crop insurance, Value added products/ post-harvest technology, Weather forecast and Others.

Table 3: Using the banana cultivation news/information technologies disseminated by Radio and TV

Technology	Much lower	Slightly lower	Somewhat	Higher	Much higher
	%	%	%	%	%
Planting information	2.6	7.5	24.4	39.0	26.6
Soil management	4.5	11.3	24.4	36.2	23.6
Pest and disease management	1.4	7.5	23.0	45.8	22.4
Advance/ new technologies	4.8	14.0	25.6	35.2	20.3
Water source/ supply	2.6	10.9	23.9	40.7	21.9
Intercropping	4.2	12.0	26.4	37.3	20.2
Marketing	2.8	14.0	27.8	36.6	18.8
Fertilizer input	1.6	7.5	19.7	47.0	24.2
Crop loan	4.8	18.9	24.5	33.5	18.2
Crop insurance	6.4	20.3	22.4	32.3	18.6
Value added products/ post harvest technology	5.0	15.8	24.4	30.0	24.8
Weather forecast	6.7	21.1	33.1	23.3	15.8
Others	8.5	24.4	32.1	30.9	4.0

Table 3. shows that about the “Planting information” 26.6% of the respondents media use much higher, 39% higher, 2.6% much lower, 7.5% slightly lower, and 24.4% of the respondents somewhat use. The Soil management 1.6% of the respondents use much lower, 7.5% of the respondents use slightly lower, 19.7% of the respondents somewhat use, 47% of the respondents use higher and 24.2% of the respondents use much higher.

Regarding Pest and disease management 1.4% of the respondents use much lower, 7.5% of the respondents use slightly lower, 23% of the respondents somewhat use, 45.8% of the respondents use higher and 22.4% of the respondents use much higher. The advance/ new technologies 4.8% of the respondents use much lower, 14% of the respondents use slightly lower, 25.6% of the respondents somewhat use, 35.2% of the respondents use higher and 20.3% of the respondents use much higher. The Water source/ supply 2.6% of the respondents use much lower, 10.9% of the respondents use slightly lower, 23.9% of the respondents somewhat use, 40.7% of the respondents use higher and 21.9% of the respondents use much higher.

As regards the Intercropping 4.2% of the respondents use much lower, 12% of the respondents use slightly lower, 26.4% of the respondents somewhat use, 37.3% of the respondents use higher and 20.2% of the respondents use much higher. Marketing 2.8% of the respondents use much lower, 14% of the respondents use slightly lower, 27.8% of the respondents somewhat use, 36.6% of the respondents use higher and 18.8% of the respondents use much higher. The Fertilizer input 4.5% of the respondents use much lower, 11.3% of the respondents use slightly lower, 24.4% of the respondents somewhat use, 36.2% of the respondents use higher and 23.6% of the respondents use much higher.

Regarding the Crop loan 4.8% of the respondents use much lower, 18.9% of the respondents use slightly lower, 24.5% of the respondents somewhat use, 33.5% of the respondents use higher and 18.2% of the respondents use much higher. About the Crop insurance 4.8% of the respondents use much lower, 18.9% of the respondents use slightly lower, 24.5% of the respondents somewhat use, one-third (33.5%) of the respondents use higher and 18.2% of the respondents use much higher.

On the subject of Value-added products/post-harvest technology 5% of the respondents use much lower, 15.8% of the respondents use slightly lower, 24.4% of the respondents somewhat use, 30% of the respondents use higher and 24.8% of the respondents use much higher. Regarding Weather forecast” 6.7% of the respondents use much lower, 21.1% of the respondents use slightly lower, 33.1% of the respondents somewhat use, 23.3% of the respondents use higher and 15.8% of the respondents use much higher. Regarding Others 8.5% of the respondents use much lower, 24.4% of the respondents use slightly lower, 32.1% of the respondents somewhat use, 30.9% of the respondents use higher and 4% of the respondents use much higher.

Farmers follow the basic needs of fertilizer input, disease management and planting system in a highly preferable manner with application methods i.e. quality, quantity and mixing formula etc. The source, most of the farmers preferred in farm programmes in television was ‘department staff’ and preferred the private farm specialists and experts from ICAR (Indian Council of Agricultural Research). The radio and television create more awareness to farmers; one of the most critical components for effective technology transfer is a

person’s ability to learn new technology, which can be gained through media exposures. There is also a need for cross disciplinary communication of information from related areas such as new technologies, plant production technology, plant protection technology, post-harvest technology, crop loan, crop insurance, marketing, biotechnology, environmental sciences for sustainable agriculture development so that agricultural productivity can be increased, and farmers economic position improved without degradation of planet earth. In order to identify the factor which is more influencing the respondent towards attitude the Friedman’s test was used and the results obtained are given in table 3a.

**Table 3a:** Friedman Test- Influencing factors relating to pay

Technology	Mean	SD	Mean Rank	Reliability
Planting information	3.79	1.00	<b>7.85</b>	0.886
Soil management	3.63	1.10	7.41	
Pest and disease management	3.80	0.92	<b>7.97</b>	
Advance / new technologies	3.52	1.11	7.02	
Water source / supply	3.68	1.02	7.53	
Intercropping	3.57	1.07	7.26	
Marketing	3.55	1.04	7.12	
Fertilizer input	3.85	0.93	8.09	
Crop loan	3.41	1.13	6.50	
Crop insurance	3.36	1.18	6.33	
Value added products/post-harvest technology	3.54	1.17	6.91	
Weather forecast	3.20	1.14	5.91	
Others	2.98	1.03	5.10	

It could be noted from the above Table 3a that among the 13 factors, ‘Fertilizer input’ was ranked first followed by the “Pest and disease management” as second and “Planting information” ranked third. Thus, the reliability was recorded as 0.886.

### Conclusion

Television programmes which cover both audio and visual nature, programmes that are practical, explanatory oriented and comprehensive information to farmers. Majority of the respondents were medium /low illiterates and so the audiovisual contents are easy to understand by the farmers. The study reveals that the television is the most effective medium than other media (Radio). Television can be given in edutainment (education and entertainment) format to attract the attention of programmes and to impart them for the effective messages. Television telecasts advertisements are also to promote agricultural products (seed, fertilizer, pesticides etc.) as a source of communication. Half of the total respondents used to watch Agricultural programmes on *Doordarshan (podhigai TV)-Velanmai Seithigal* (53.7%) and *Ponvizhaim Bhoomi* (48.3%). Similarly two fourth of the respondents used to watch Agricultural programmes in *Makkal TV-Malarum Bhoomi* (38.7%) and *Puthiyathalamurai- TV Uzhavukku Uyiruttu* programme (39.9%).

Radio is the cheapest medium and carries by the respondents to everywhere for their use and best source to provide agricultural, scientific and technical information to the farmer’s significant percentages of the respondents were satisfied at high level with listening to radio programmes. Among the Agricultural programmes, maximum respondents used to listen to *Uzhavarulagam* (30.9%), *Velan Arangam*

(20.7%) and *Pannai Aasiriyar* (16.5%) in All India Radio (AIR) Tiruchirapalli, Tamil Nadu.

In this study, about 65% of the respondents were satisfied with electronic media (Television and Radio), which disseminate on banana cultivation. In order to Planting information (59.6%), Soil management (65.5%), Pest and disease management (61.6%), Advanced/new technologies (61.5%), Water source/supply (64.0%), Intercropping (57.3%), Marketing (58.7%), Fertilizer management (50.6%), Crop loan (47.5%), Crop insurance (47.0%), Post-harvest technology (38.7%), Weather forecast (39.8%) & others (7.0%).

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