

UTILIZATION OF INFORMATION SOURCES BY FARMERS UNDER DIFFERENT PRODUCTION SYSTEMS IN UTTARANCHAL AND UTTAR PRADESH

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The significance of information and communication in today's society is apparent. Communication of new information, ideas and technology is an integral part of rural transformation. Many research studies; conferences and seminars have probed this area with a view to discuss some theoretical and practical issues for better utilization of communication and information sources by all the segments of the society for the benefit of society at large. Proper flow of information not only minimizes the communication gap but also opens avenues for people to get well informed. In India, nearly 70 per cent population resides in rural areas and derives their livelihood from agriculture and allied activities to round the year employment. Agricultural development in India largely depends on the action of its framing population scattered all over the country. Progress can only take place when the people know the new technology, understand it and act up upon it (Rajput R. 1993). This requires access to accurate and reliable information through appropriate and dependable sources. Thus the developmental activities cannot be pursued effectively in the absence of good communication infrastructure. Perhaps the oldest and most common approach of rural development communication in the less developed countries is the extension service for the dissemination of useful and practical information on agriculture, nutrition, health and family planning (Khan 1979).

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A whole range of sources of information sources including media is some time available in the rural area but their reach and acceptance as dependable source of farm information cannot be taken granted. The farmer may come across a number of information sources but they pursue only few of them. Vijayraghvan et.al. 1980 observed that farm broadcast, block officials, Village Development Officer, friends and neighbours were most utilized sources of communication by garden land farmers. Personal sources appear to have greater credibility to Indian farmers than other sources. Singh 1986 reported that university scientists were considered most reliable sources followed by block officers, state scientists, progressive farmers and friends for agriculture information. Singh and Kalra 1993 studied the farmers preference for seeking agriculture information and concluded that radio was most preferred medium for this purpose followed by TV, news paper, agricultural magazines, films and audio cassettes. Kukrety 1990 reported almost similar findings. Institutional sources are important at the earlier stage while non-institutional sources appear to be more important at the later stage.

The government has made several efforts so far through various extension activities particularly transfer of technology, for rural development, but it has been observed that there is a wide gap between expected and actual results regarding development in general and agricultural development in particular. Keeping the above facts in mind, it becomes interesting to know the reasons for this gap. From the communication view point it is necessary to know if there is there any lacuna in the communication process? How and from what sources/media do farmers under different production systems get information? What are the preferences of farmers regarding source/media? To answer such questions, a study was under taken to know the utilization pattern of various information sources among farmers under different agriculture production system in Uttaranchal and Uttar Pradesh states of India.

A research study was conducted under action research project "Team of Excellence sub-project on Agricultural Information and Communication" of National Agricultural Technology Project. Total 557 farmers were selected from 12 villages by using census method i.e. all the farmers engaged in particular production system in selected villages were contacted to collect data on various aspects under study.

Sampling plan

Sl. No.	Production	Villages	Total families	No. of farmers in particular production system	No. of farmers selected
1.	Sugarcane based in Bijnor district of Uttar Pradesh	Delpura	80	50	50
		Said Kheri	70	50	50
		Lalwala	75	50	50
2.	Rice-Wheat based in U.S. Nagar district of Uttaranchal	Rameshwarpur	267	50	50
		Dineshpur (Sunder pur ward)	120	50	50
		Fauji Matkota	140	37	37
3.	Vegetable based in Almora and Nainital district of Uttaranchal	Chhara	27	25	25
		Chafi	80	60	60
		Tunacoat Sera	38	35	35
4.	Agri-Hori –livestock based in Tehri Garhwal district Uttaranchal	Chopariyal Gaon	150	101	101
		Nail	40	24	24
		Gaind malla	36	25	25
Total = 557					

Interview schedules containing structured as well as open-ended questions was used to collect the data on various aspects i.e. utilization of informal and formal sources of information; media ownership and utilization pattern, participation in various extension activities, source and media preference etc. Appropriate statistical measures such as frequency, percentage, weighted mean score were used for analysis and interpretation of results.

Major Findings

A. Utilization of informal sources of information

Role of informal sources like local leader, friends, relatives and neighbor is very important in rural setting where people have easy access to such sources. During investigation it was found that 86-93 per cent farmers in sugarcane and agri-horti livestock production system receive agricultural information from neighbours where as in rice-wheat and vegetable production system about two third farmers contact their neighbours for agricultural

information. Eighty six per cent sugarcane growers, 60.83 per cent vegetable growers, 56.93 per cent rice-wheat growers and 79.33 per cent framers in agri-horti livestock production system consult friends for seeking agricultural information. In case of relatives, it was found that 95.33 per cent farmers in sugarcane based production system, 71.33 per cent in agri-horti livestock production system, 64.96 per cent in rice-wheat based production system and 60.83 per cent in vegetable based production system contact their relatives for seeking information on agriculture. Local leaders were contacted by some of the farmers in each production system but in no case they drew more than 44 per cent farmers in any system. (Table 1).

Table 1. Informal Sources of Information

S.No	Sources	Number of farmers in different production system							
		Sugarcane N=150		Rice-Wheat N=137		Vegetable N=120		Agri-horti Stock Live-N=150	
		No	%	No	%	No	%	No	%
1	Local leader	54	36.00	42	30.65	49	40.83	65	43.33
2	Friends	129	86.00	78	56.93	73	60.83	119	79.33
3	Relatives	143	95.33	89	64.96	73	60.83	107	71.33
4	Neighbours	129	86.00	90	65.69	79	65.83	139	92.66
5	Others	2	1.33	00	0.00	00	0.00	00	0.00

Table 2. Consultation/Interpersonal Communication with different Extension function

S.No	Agency	Number of farmers in different production system							
		Sugarcane N=150		Rice-Wheat N=137		Vegetable N=120		Agri-horti Stock Live-N=150	
		No	%	No	%	No	%	No	%
1	VDO	25	16.66	35	25.54	27	22.50	65	43.33
2	ADO	00	0.00	12	8.75	11	9.16	7	4.66
3	BDO	00	0.00	10	7.29	8	6.66	2	1.33
4	LEO	00	0.00	3	2.18	3	2.50	1	0.66
5	NGO	16	10.66	44	32.11	15	12.50	0	0.00
6	VET.	14	9.33	35	25.54	7	5.83	8	5.33
7	KVK/University Scientists	89	59.33	63	45.98	56	46.66	120	80.00

Table 3. Participation in different extension activities

S.No	Agency	Number of farmers in different production system							
		Sugarcane N=150		Rice-Wheat N=137		Vegetable N=120		Agri-horti Stock Live-N=150	
		No	%	No	%	No	%	No	%
1	Farmers meeting	31	20.66	43	31.38	38	31.66	11	7.33
2	Exhibition	30	20.00	53	38.68	16	13.33	8	5.33
3	Farmers training	8	5.33	0	0.00	0	0.00	0	0.00
4	Field visit	3	2.00	0	0.00	3	2.50	0	0.00
5	Demonstration	0	0.00	30	21.89	25	20.83	0	0.00
6	Group discussion	0	0.00	7	5.10	6	5.00	0	0.00

B. Utilization of formal sources of information

Consultation with different extension functionaries for seeking information

Data presented in table 2 indicates that KVK/ university scientists were consulted by maximum farmers in all the production systems. Eighty per cent farmers in agri-horti livestock production system, 59.33 per cent respondents in sugarcane based production system and 45-47 per cent each in rice-wheat and vegetable based production system consult KVK/University scientists for seeking agricultural information. Village Development Officer was the other formal source of information and consulted by 43.33 per cent farmers of agri-horti livestock production system, 22-25 per cent each in rice wheat and vegetable production system and 16.66 per cent farmers of sugarcane based production system. Representatives of non-government organization also worked as another formal source of information in different production systems. About one third farmers of rice-wheat system and 10-13 per cent each sugarcane and vegetable growers contact representatives of NGOs under operation in that area. Other extension functionaries like ADO, BDO, LEO etc were also consulted but in no case they draw more than 10 per cent farmers in any production system.

Participation of farmers in different extension activities for seeking information

Data presented in table 3 indicates that about 20 per cent sugarcane farmers attend exhibition and farmers meeting for seeking information on agriculture.

Approximately 31 per cent vegetable and rice-wheat growers attend farmers meeting for getting acquainted with new information on agriculture where as about 21 per cent farmers attend demonstration for the same. Only 13.33 per cent rice-wheat farmers and 38.68 per cent vegetable growers attended exhibitions. However, other extension activities like field visits, farmers training and group discussion were also attended by some farmers but in no case their number exceed 10 per cent in any production system. None of the farmer in sugarcane and agri-horti livestock production system go for demonstration and group discussion. None of the farmers in agri-horti livestock and rice-wheat production system was found participating in farmers training and field visit.

C. Electronic and print media

Print Media

Date on media ownership and utilization indicates that one third farmers in rice wheat production system and one fourth farmers in sugarcane production system subscribe to the print media. About 37 per cent respondents of vegetable production system and only 8 per cent farmers in agri horti livestock production system subscribe print media. Out of those who subscribe to print media in different production systems, 27-36 per cent farmers in sugarcane, rice wheat and vegetable production system and 16.66 per cent respondents in agri horti livestock production system had this medium for last 2-4 years, however majority (56-70 per cent) in all the production systems was found subscribing to this medium for more than 4 years. Majority of farmers (80-100 per cent) in all production systems use this medium for receiving news and agricultural information. More than two third farmers in different production system use print medium for seeking general information and one fourth to one-third subscribers use print for entertainment. About 60-70 per cent respondents reported that they read newspapers and magazines for getting informed about developmental news. Educational purpose of one third to half of the respondents of rice wheat, vegetable and agri horti livestock production system was also served through this medium. More than 91 per cent subscribers in all four production systems reported that they get information

Table 4. Print Media

S.No	Description	Ownership and utilization in different productions systems							
		Sugarcane N=150		Rice-Wheat N=137		Vegetable N=120		Agri-horti Stock Live-N=150	
		No	%	No	%	No	%	No	%
1	Possession								
	Yes	37	24.66	46	33.57	44	36.66	12	8.00
	No	113	75.33	91	66.42	76	63.33	138	92.00
2	Duration of possession								
	< 2years	1	2.70	1	2.17	3	6.81	2	16.66
	2-4 years	10	27.02	13	28.26	16	36.36	2	16.66
	>4years	26	70.27	32	69.56	25	56.81	8	66.66
3	Utilization of medium for								
	Information	36	97.20	39	84.78	34	77.27	8	66.66
	Education	5	13.50	22	46.82	14	31.81	6	50.00
	Entertainment	13	35.10	16	34.78	16	36.36	3	25.00
	News	36	97.20	46	100.00	35	79.54	12	100.00
	Development News	22	59.40	32	69.56	25	56.81	5	41.66
	Agri. Information	36	97.20	41	89.13	41	93.18	12	100.00
4	Availability of Ag.Inform.								
	Daily	2	5.40	0	0.00	1	2.27	0	0.00
	Casually	34	91.80	45	97.82	41	93.18	12	100.00
	Never	1	2.70	1	2.17	2	4.54	0	0.00
5	Utilization of Information								
	Daily	2	5.40	0	0.00	1	2.27	0	0.00
	Casually	34	91.80	45	97.82	41	93.18	12	100.00
	Never	1	2.70	1	2.17	2	4.54	0	0.00
6	Extent of ag.inf.coverage								
	Adequate	31	83.70	41	89.13	31	70.45	5	41.66
	Inadequate	5	13.50	4	8.69	8	18.18	7	58.33
	Nil	1	2.70	1	2.17	5	11.36	0	0.00
7	Discuss with other								
	Yes	35	94.50	33	71.73	34	77.27	9	75.00
	No	2	5.40	13	28.26	10	22.72	3	25.00
8	Perceived utility								
	High	1	2.70	4	8.69	0	0.00	1	8.33
	Medium	34	91.80	40	86.95	39	88.63	10	83.33
	Low	2	5.70	2	4.34	5	11.36	1	8.33
	Language								
	Hindi	36	97.20	45	97.82	44	100.00	12	100.00
	English	1	2.70	1	2.17	0	0.00	0	0.00

on agricultural and allied field casually and applied to field casually. More than 70 per cent farmers in sugarcane, rice wheat and vegetable production system reported that the coverage of agricultural information in print is casual but adequate whereas 58.33 per cent farmers in agri horti live stock production system reported that coverage is inadequate. About 41 per cent farmers in this production system agreed that coverage of agricultural information in print is casual but adequate. Seventy to 78 per cent farmers in rice wheat, vegetable, agri horti livestock production systems and 94.50 per cent in sugarcane production system reported that they discuss with others after reading news paper or magazine. Perceived utility of print media was reported to be average by majority (More than 83 per cent) in all four production systems. Hindi language was used by all most all respondents except one or two cases in two systems. (Table 4)

Broadcast Media

(i) Television

Status of ownership and utilization of electronic media like television and radio was found higher as compared to print media. Television is possessed by 86.13 per cent rice wheat growers, 63.33 per cent sugarcane growers, 45.00 per cent vegetable growers and 50.66 farmers of agri-horti livestock production system. Out of those who had television in different production systems, half to three fourth farmers in sugarcane, rice wheat and vegetable production system and 36.84 per cent farmers in agri horti livestock production system had this medium for more than four years. Other respondents had this medium for less than 4 years. Respondents who use television for seeking agricultural information, news and entertainment were between 75-100 percent in different production systems. About 40- 66 per cent owners, utilized television for getting general information and 20-48 per cent utilize TV for viewing educational and development programmes in all four production systems. More than 90 per cent respondents in all four production systems reported that on TV there is casual availability of information on agriculture and allied fields and utilize received information casually. About two third farmers each in sugarcane and rice wheat production system , half in vegetable

production system and one third in agri horti livestock system expressed that coverage of agricultural information on TV is casual but adequate. Only 30-39 per cent farmers in sugarcane, rice wheat, vegetable and 65.78 per cent in agri horti livestock production system reported coverage of information on agriculture and allied fields on television is adequate. More than 64 per cent farmers under different production system perceived average utility of development programme on television. Half or more than half of TV owners in all production systems reported that they discuss with others about the programme after viewing. Almost all the owners prefer to see Hindi programme on TV. As for as viewing hours are concerned, maximum rush is observed during evening hours (6-8 pm) in all localities and drew more than 70 per cent respondents. About one third to half of the respondents were also found viewing TV between 8-10 pm. However morning viewers were also found but they were less than 10 per cent in any production system. More than 90 per cent farmers in sugarcane and rice wheat production system devote more than 30 minutes on TV viewing whereas two third to three fourth farmers in vegetable and agri horti livestock production system devotes more than 30 minutes to TV viewing. TV viewers who spent less than 30 minutes on TV viewing were 4-15 per cent in different systems under investigation except agri horti where about one third farmers spent less than 30 minutes on TV viewing. (Table 5)

(ii) Radio

Radio is possessed by 36.49 per cent rice wheat growers, 30.0 per cent sugarcane growers, 43.33 per cent vegetable growers and 50.0 farmers of agri-horti livestock production system.

Out of those who had radio in different production systems, 60-85 per cent farmers in all four production system had this medium for more than four years. Other respondents had this medium for less last 4 years. Respondents who use radio for seeking agricultural information, news and entertainment varied between 82-100 per cent in different production systems. About 40 per cent to one-third owners, utilized radio for getting general information and 26-38 per cent utilize radio for listening to educational and development programmes in all four-production systems.

Table 5 Television

S.No	Description	Ownership and utilization in different productions systems							
		Sugarcane N=150		Rice-Wheat N=137		Vegetable N=120		Agri-horti Stock Live-N=150	
		No	%	No	%	No	%	No	%
1	Possession								
	Yes	95	63.33	118	86.13	54	45.00	76	50.66
	No	55	36.66	19	13.86	66	55.00	74	49.33
2	Duration of possession								
	< 2years	16	16.80	18	15.25	7	12.96	24	31.57
	2-4 years	8	8.40	26	26.03	15	27.77	24	31.57
	>4years	71	74.70	74	62.71	28	51.85	28	36.84
3	Utilization of medium for								
	Development programme	35	36.80	57	48.30	11	20.37	19	25.00
	Information	50	52.63	67	56.77	36	66.66	31	40.78
	Education	20	21.05	41	34.74	14	25.92	17	22.36
	Agril. Information	86	90.50	118	100.0	51	94.44	75	98.68
	News	92	96.80	115	97.45	41	75.92	74	97.36
	Entertainment	89	93.68	110	93.22	44	81.48	73	96.05
4	Availability of Ag.Inform.								
	Daily	1	1.05	0	0.00	1	1.85	9	11.48
	Casually	91	95.70	117	99.15	49	90.74	67	88.15
	Never	3	3.15	1	0.84	4	7.40	0	0.00
5	Utilization of Information								
	Daily	1	1.05	0	0.00	0	0.00	6	7.89
	Casually	91	95.70	118	100.00	51	94.44	70	92.10
	Never	3	3.15	0	0.00	3	5.55	0	0.00
6	Extent of ag.inf.coverage								
	Adequate	64	67.36	71	60.16	28	51.85	26	34.21
	Inadequate	28	29.47	47	39.83	21	38.88	50	65.78
	Nil	3	3.15	0	0.00	6	11.11	0	0.00
7	Perceived utility								
	High	11	11.57	14	11.86	3	5.55	16	21.05
	Medium	68	71.50	100	84.74	36	66.66	48	63.15
	Low	16	16.80	4	3.38	11	20.37	12	15.78

S.No	Description	Ownership and utilization in different productions systems							
		Sugarcane N=150		Rice-Wheat N=137		Vegetable N=120		Agri-horti Stock Live-N=150	
		No	%	No	%	No	%	No	%
8	Discuss with other								
	Yes	81	85.26	59	50.00	31	57.40	60	78.94
	No	14	14.70	59	50.00	23	42.59	16	21.05
	Language								
	Hindi	95	100.00	117	99.15	54	100.00	76	100.00
	Dialects	0	0.00	1	0.84	0	0.00	0	0.00
9	Hours of reception								
	6-8 am	1	1.05	5	4.23	5	9.25	2	2.63
	1-2 pm	5	5.26	5	4.23	4	7.40	2	2.63
	6-8 pm	87	91.57	84	71.18	39	72.22	66	86.84
	8-10 pm	34	35.78	53	44.91	19	35.18	27	35.52
10	Duration in minutes								
	Up to 30	4	4.21	6	5.08	8	14.81	24	31.57
	30-60	40	43.15	61	51.69	29	53.70	20	26.31
	>60	51	53.68	51	43.22	13	24.07	32	42.10

More than 94 per cent respondents in all four production systems reported casual availability of information on agriculture and allied fields and utilize received information casually. About two third farmers in sugarcane and three fourth in rice wheat production system expressed that however coverage of agricultural information on radio is casual but adequate. Only 57.69 per cent farmers in vegetable production system and 30.66 per cent in agri horti livestock production system reported the same. Approximately two third farmers in agri horti livestock production system, one third of sugarcane and vegetable and one fourth in rice wheat 'production system reported that coverage of agricultural information on radio is inadequate. Majority of respondents in all production systems under study (66-77 per cent) perceived average utility of development programme on radio. Only 15-20 per cent respondents perceive low utility of development programme on radio. Majority of farmers in all systems (58-84 per cent) reported that they discuss with others about the programme after listening. Almost all the owners prefer to listen Hindi programme on radio. As for as listening hours are concerned, maximum rush is observed during evening hours (6-8 pm) in all localities

and drew more than 75 per cent respondents. About one fourth to one-third respondents were also found listening radio between 8-10 pm. However morning listeners were also found but they were less than 13 per cent in any production system. More 85 per cent farmers in sugarcane, rice wheat and vegetable production system and 70 per cent farmers in agri horti livestock production system devotes more than 30 minutes to radio listening. Radio listeners who spent less than 30 minutes on radio listening varied 8-14 per cent in each system except agri horti where 30 per cent listeners spent less than 30 minutes on radio listening. (Table 6)

Table 6. Radio

S.No	Description	Ownership and utilization in different productions systems							
		Sugarcane N=150		Rice-Wheat N=137		Vegetable N=120		Agri-horti Stock Live-N=150	
		No	%	No	%	No	%	No	%
1	Possession								
	Yes	45	30.00	50	36.49	52	43.33	75	50.00
	No	105	70.00	87	63.50	68	56.66	75	50.00
2	Duration of possession								
	< 2years	6	13.30	3	6.00	7	13.45	9	12.00
	2-4 years	1	2.22	8	16.00	6	11.53	21	28.00
	>4years	38	84.40	39	78.00	37	71.45	45	60.00
3	Utilization of medium for								
	Development programme	19	42.22	19	38.00	16	30.76	17	22.66
	Information	30	66.60	32	64.00	35	67.30	31	41.33
	Education	12	26.60	15	30.00	19	36.53	14	18.66
	Agril. Information	38	84.40	49	98.00	49	94.23	74	98.66
	News	43	95.50	50	100.00	43	82.69	74	98.66
	Entertainment	41	91.11	50	100.00	49	94.23	72	96.00
4	Availability of Ag. Information:								
	Daily	0	0.00	0	0.00	1	1.92	13	17.33
	Casually	44	97.70	48	96.00	49	94.23	62	82.66
	Never	1	2.20	2	4.00	2	3.84	0	0.00
5	Utilization of Information								
	Daily	0	0.00	0	0.00	0	0.00	7	9.33
	Casually	44	97.70	48	96.00	50	96.15	68	90.66
	Never	1	2.20	2	4.00	2	3.84	0	0.00

S.No	Description	Ownership and utilization in different productions systems							
		Sugarcane N=150		Rice-Wheat N=137		Vegetable N=120		Agri-horti Stock Live-N=150	
		No	%	No	%	No	%	No	%
6	Extent of ag. coverage								
	Adequate	31	68.60	37	74.00	30	57.69	23	30.66
	Inadequate	14	31.11	11	22.00	19	36.53	52	69.33
	Nil	0	0.00	2	4.00	3	5.76	0	0.00
7	Perceived utility								
	High	1	2.20	8	16.00	4	7.69	10	13.33
	Medium	35	77.70	35	70.00	35	67.30	50	66.66
	Low	9	20.00	7	14.00	11	21.15	15	20.00
8	Discuss with other								
	Yes	38	84.40	29	58.00	36	69.23	57	76.00
	No	7	15.50	21	42.00	16	30.76	18	24.00
	Language								
	Hindi	45	100.00	49	98.00	52	100.00	75	100.00
	Dialects	0	0.00	1	2.00	0	0.00	0	0.00
9	Hours of reception								
	6-8 am	4	8.80	4	8.00	3	5.76	10	13.33
	1-2 pm	1	2.20	3	6.00	2	3.84	4	5.33
	6-8 pm	43	95.50	38	76.00	41	78.84	62	82.66
	8-10 pm	12	26.60	18	36.00	17	32.69	21	28.00
10	Duration in minutes								
	Up to 30	4	8.80	7	14.00	4	7.69	23	30.66
	30-60	18	40.00	23	46.00	26	50.00	21	28.00
	>60	23	51.11	20	40.00	19	36.53	32	42.66

Ranking of various sources for seeking Information

Under informal sources friends secured first position in all four production systems (WMS= 327 in sugarcane production system, 296 in agri-horti livestock, 168 in rice wheat and 149 in vegetable based production system). Relatives were found on second position (WMS= 206 in sugarcane production system, 183 in agri-horti livestock, 130 in rice wheat and 107 in vegetable based production system). Third preference of sugarcane growers was found local leader with WMS 87 and progressive farmers were found at the bottom with WMS 60 only. Similar trend was observed in case vegetable and agri-horti livestock production system where third and fourth place goes to local

Table 7. Ranking for information sources/media

S.No	Sources	Weighted Mean Score			
		Sugarcane N=150	Rice-Wheat N=137	Vegetable N=120	Agri-horti Stock Live-N=150
Informal sources					
1	Local Leaders	87	90	94	141
2	Friends	327	168	149	296
3	Relatives	206	130	107	183
4	Progressive farmers	60	99	93	124
Formal sources					
1	University KVK Scientist	278	203	166	339
2	Extension Officer	122	141	83	191
3	Pantnagar help line Service	2	30	25	34
4	NGO/ other agencies	2	72	22	8
Media					
1	T.V	305	371	222	283
2	Radio	161	185	170	240
3	Print	64	107	84	31

leaders and progressive farmers. In case of rice wheat farmers trend was found slightly different as progressive farmers secured third place and fourth position goes to local leaders.

Among formal sources KVK/University scientists were on top with WMS 278 for sugarcane production system, 203 for rice-wheat production system, 166 for vegetable production system and 339 for agri-horti livestock production system. Second preference of farmers for seeking information in all production systems was extension officers (WMS 122 for sugarcane production system, 141 for rice wheat production system, 83 for vegetable production and 191 for agri-horti livestock production). Farmers of agri-horti livestock and vegetable production systems placed Pantnagar Help Line Service at third preference for seeking agricultural information whereas representatives of NGOs and other agencies were placed at third place by farmers of rice wheat production system.

Data on ranking of media indicates that television was most popular medium among the farmers of all the production system under study. The WMS for TV in sugarcane, rice-wheat, vegetable and agri-horti livestock production system were found 305, 371, 222 and 283 respectively. Radio with WMS 161 for sugarcane production system, 185 for rice-wheat production system, 170 for vegetable production system and 240 for agri-horti livestock production system was found at second place. Print media like newspaper and magazines were least preferred medium by the respondents in all production systems (Table 7).

Conclusion and Implications

Information sources play an important role in human resource development. The results indicate that utilization of information sources/media and preferences of respondents varied in all four systems. However on certain aspects trend was also found similar. Electronic media like TV and radio are mostly used and preferred for seeking information on agriculture and development. Informal and formal sources are also used by farmers and results regarding the utilization of such sources are also encouraging. The foregoing information on information sources utilization will be of immense value to those engaged in manpower planning. As the study focused for analyzing existing information sources and farmer's preference for information sources, thus the information generated through this study may benefit to all those engaged in agriculture and rural development particularly designing communication strategies for farmers under different production systems in the area of study.

References

- Khan, A Toab.(1979). Communicators as change agents. *Media Asia* vol. 6(2), pp.90
- Kukrety, Nupur. (1990). A study on utilization of mass media and interpersonal channels for agricultural information in a hill village of Uttar Kashi district. Unpublished M.Sc. Thesis, G.B. P.U.A&T., Pantnagar.

- Malik N. (1999). Perception of farmers about establishing village information center: An exploratory study. Unpublished M.Sc. Thesis G.B.P.U.A.& T. Pantnagar.
- iRajput R (1993). Sources of agriculture information: A Study of Noorpur Block of Bijnor District In Uttar Pradesh. Unpublished M.Sc. Thesis G.B.P.U.A.&T., Pantnagar.
- Vijayraghvan K. and Subramanyam V.S. 1980. Communication behaviour of gardenland and dry land farmers. *Indian Journal of Extension Education* vol.XVI (182)
- Singh N. 1986. Content analysis of agricultural programme broadcast by AIR Rampur. M.Sc. thesis G.B.P.U. A: & T.Pantnagar.
- Singh G.S. and Kalra R.K. 1993. Utilization of mass media sources by farmers. *Indian Journal of Extension Education*. Vol XXIX (1&2)