

Preference Ranking of Agro Advisory Mobile Messages Sent in Rice Crop to Farmers via e-Group

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ABSTRACT

Technology backstopping to the farmers by the scientists and extension workers facilitate farmers to take up right crop intervention at right time thus preventing crop loss and adding to the yields. As mobile phones are increasingly used by the farmers, this opportunity was used to send mobile messages through governmental platform mKisan portal in rice through e-group. Need based, timely mobile messages were sent to a group of 60 farmers in an e-group. Messages were sent in both kharif and rabi seasons on the themes soil sampling and testing, land preparation, new improved varieties - seed rate & contact address for seed purchase, weed management, nutrient management, pest management, disease management, suggestions during weather aberrations, mechanization for harvesting & contact address for straw baler. Farmers preference for messages in kharif and rabi were compared to know if there exists any difference. In kharif season, farmers growing rice crop preferred to get mobile messages on suggestions during weather aberrations, followed by new improved varieties, seed rate & contact address for seed purchase, soil sampling and testing, pest management, etc. While in rabi season, farmers growing rice crop preferred to get mobile messages on new improved varieties, seed rate & contact address for seed purchase, pest management, nutrient management, etc in the order of preference.

Key words: Mobile messages; Technology backstopping; preference ranking; Garret value;

Farming is not so linear as we think. Farming is not just influenced by seed, fertilizer, irrigation, plant protection chemicals. It depends on several other factors namely weather conditions, timely crop management practices, management of pests, diseases to save crops and gain better results. Farmers requires constant information input at every stage for better crop outputs. The information should be timely and locally applied. The information input need is fulfilled by the scientists working in the field of extension. Reach, affordability, acceptability, personalized with privacy are the issues in information dissemination to farmers.

Mobile phones are increasingly used by the farmers. Mobile technologies have created new channels to communicate with others. This opportunity could be harnessed in agriculture by the scientists for sending technical information to the farmers. Even there are some government platforms like mKisan portal where the scientists can sent the mobile messages to farmers

free of cost. Messages could be sent to several number of farmers at a time in a group approach. Such cost effective outreach solutions tailored to needs of the farmers are the need of the hour. Farmers growing same crop almost at the same time in a district were organized in the form of a group with the help of their mobile phone numbers called e-group. crop based agricultural information is communicated through this e-group.

In Krishna district of Andhra Pradesh an e-group with 60 farmers growing rice both in kharif and rabi seasons was organized to send timely and needful agro advisories in the form of mobile messages. At this juncture a study was planned to know if there exists any difference in the perceived preference of the farmers for the mobile messages sent via e-group in kharif and rabi seasons.

METHODOLOGY

This study was conducted in Krishna district of

Andhra Pradesh. An e-group with 60 farmers growing rice crop both in kharif and rabi seasons was organized to send timely and needful agro advisories in the form of mobile messages using mKisan portal. Based on regular field visits, diagnostic visits, queries from the rice growing farmers nine need based messages were formulated in rice crop and sent via e-group. The messages were based on the themes namely information on soil sampling and testing, land preparation, new improved varieties - seed rate & contact address for seed purchase, weed management, nutrient management, pest management, disease management, suggestions during weather aberrations, mechanization for harvesting & contact address for straw baler.

The themes of the messages sent both in kharif and rabi seasons remained same. The messages designed for kharif season were sent to the farmers via e-group. Later after completing of the season, the farmers were asked to assign the ranks for all the messages sent in Kharif. Messages on the same themes were also sent to the farmers in rabi season via e-group. Again the respondents were asked to assign the rank for all the messages sent in rabi season. Based on the ranks obtained percent position was estimated.

$$\text{Percent position} = \frac{R_{ij} - 0.5}{N_j} \times 100$$

Where,

R_{ij} = Rank given to the ith variable by the jth respondent

N_j = Number of variables ranked by the jth respondent

With the help of Garret’s table, the percent position estimated was converted into scores using the table given by *Garret and Woodworth (1969)*. Then for each message, the scores of each respondent were added and then total Garret value was arrived. Based on the highest total Garret value, ranks were assigned to the messages sent in both kharif and rabi separately.

RESULTS AND DISCUSSION

The results pertaining to ranking of mobile messages in rice crop sent via e-groups is presented in Table 1. Percent position and Garret values are presented in Table 2. Calculation of Garret value and ranking of mobile messages in rice crop sent via e-group is presented in Table 3 and graphical representation of the preference of mobile messages sent via e-group in kharif and rabi presented in Fig 1.

The message sent on the theme ‘suggestions for weather aberrations’ in kharif was ranked I by 25 respondents, followed by II (8), III (3), IV (5), V (4), VI (1), VII (2), VIII (1) and IX by 1 respondent as presented in Table 1. Total Garret value recorded was 4104 accounting to 84.44 per cent with Rank 1 for the

Table 1. Ranking of mobile messages in rice crop sent via e-group

Item	Season	I	II	III	IV	V	VI	VII	VIII	IX
Suggestions during weather aberrations	<i>Kharif</i>	25	8	13	5	4	1	2	1	1
	<i>Rabi</i>	11	12	2	4	0	5	7	8	11
New improved varieties, seed rate etc.	<i>Kharif</i>	7	16	11	9	4	5	1	1	6
	<i>Rabi</i>	23	4	11	9	2	1	5	2	3
Soil sampling and testing	<i>Kharif</i>	10	19	6	2	1	5	5	11	1
	<i>Rabi</i>	4	13	3	5	3	2	4	12	14
Pest management	<i>Kharif</i>	2	6	4	9	8	14	11	2	4
	<i>Rabi</i>	19	8	7	2	8	2	1	12	1
Mechanization for harvesting	<i>Kharif</i>	7	6	4	3	2	8	9	16	5
	<i>Rabi</i>	8	5	8	6	4	8	6	11	4
Nutrient management	<i>Kharif</i>	1	4	2	8	13	14	9	4	5
	<i>Rabi</i>	14	9	3	9	6	10	8	1	0
Land preparation	<i>Kharif</i>	6	9	4	1	3	8	4	14	11
	<i>Rabi</i>	3	3	5	6	14	11	9	5	4
Weed management	<i>Kharif</i>	1	1	3	16	9	9	5	11	5
	<i>Rabi</i>	9	4	6	8	11	3	12	5	2
Disease management	<i>Kharif</i>	0	2	15	3	8	7	5	9	11
	<i>Rabi</i>	15	18	1	5	2	2	3	9	5

Table 3. Calculation of Garret value and ranking of mobile messages in rice crop sent via e-group

Item	Season	I	II	III	IV	V	VI	VII	VIII	IX	Total	%	Rank	
													Kharif	Rabi
Suggestions during weather aberrations	<i>Kharif</i>	2025	897	496	504	50	44	38	31	19	4104	84.44	1	7
	<i>Rabi</i>	891	828	124	224	0	220	266	248	209	3010	61.93		
New improved varieties, seed rate & contact address for seed purchase	<i>Kharif</i>	567	1104	682	504	200	220	38	31	114	3460	71.19	2	1
	<i>Rabi</i>	1863	276	682	504	100	44	190	62	57	3778	77.74		
Soil sampling and testing	<i>Kharif</i>	810	1311	372	112	50	220	190	341	19	3425	70.47	3	9
	<i>Rabi</i>	324	897	186	280	150	88	152	372	266	2715	55.86		
Pest management	<i>Kharif</i>	162	414	248	504	400	616	418	62	76	2900	59.67	4	2
	<i>Rabi</i>	1539	552	434	112	400	88	38	372	19	3554	73.13		
Mechanization for harvesting & Contact address for straw baler	<i>Kharif</i>	567	414	248	168	100	352	342	496	95	2782	57.24	5	6
	<i>Rabi</i>	648	345	496	336	200	352	228	341	76	3022	62.18		
Nutrient management	<i>Kharif</i>	81	276	124	448	650	616	342	124	95	2756	56.71	6	3
	<i>Rabi</i>	1134	621	186	504	300	440	304	31	0	3520	72.43		
Land preparation	<i>Kharif</i>	486	621	248	56	150	352	152	434	209	2708	55.72	7	8
	<i>Rabi</i>	243	207	310	336	700	484	342	155	76	2853	58.70		
Weed management	<i>Kharif</i>	81	69	186	896	450	396	190	341	95	2704	55.64	8	5
	<i>Rabi</i>	729	276	372	448	550	132	456	155	38	3156	64.94		
Disease management	<i>Kharif</i>	0	138	930	168	400	308	190	279	209	2622	53.95	9	4
	<i>Rabi</i>	1215	1242	62	280	100	88	114	279	95	3475	71.50		

Table 2. Percent position and Garret value

Percent position	Calculated value	Garret value
100(1-0.5)/9	5.51	81
100(2-0.5)/9	16.66	69
100(3-0.5)/9	27.62	62
100(4-0.5)/9	38.00	56
100(5-0.5)/9	50.00	50
100(6-0.5)/9	61.14	44
100(7-0.5)/9	72.22	38
100(8-0.5)/9	83.33	31
100(9-0.5)/9	94.44	19

message based on total Garret value compared to the other messages sent in kharif as presented in Table 3. In rabi the message sent on the theme 'suggestions for weather aberrations' was ranked I by 11 respondents, followed by II (12), III (2), IV (4), V by none, VI (5), VII (7), VIII (8) and IX by 11 respondents. Total Garret value recorded was 3010 accounting to 61.93 per cent with Rank 7 for the message based on total Garret value compared to the other messages sent in rabi. This could be accounted for the reason that in kharif, weather aberrations like cyclones, dry spells, etc needed more attention for which farmer wanted information backstopping on nutrient management, prophylactic

measures for pest and disease incidence, etc to prevent crop loss. In rabi, weather aberrations are less compared to kharif. The results are in conformity with that reported by *Ganesan et al. (2013)*.

The message sent on the theme 'new improved varieties, seed rate & contact address for seed purchase' in kharif was ranked I by 7 respondents, followed by II (16), III (11), IV (9), V (4), VI (5), VII (1), VIII (1) and IX by 6 respondents. Total Garret value recorded was 3460 accounting to 71.19 per cent with Rank 2 for the message based on total Garret value compared to the other messages sent in kharif. In rabi the message sent on the theme 'new improved varieties, seed rate & contact address for seed purchase' was ranked I by 23 respondents, followed by II (4), III (11), IV (9), V (2), VI (1), VII (5), VIII (2) and IX by 3 respondents. Total Garret value recorded was 3778 accounting to 77.74 per cent with Rank 1 for the message based on total Garret value compared to the other messages sent in rabi. This could be accounted for the reason that the information on new improved varieties, seed rate & contact address for seed purchase is very important as good seed variety decides the final yields. The results are in conformity with that reported by *Ganesan et al. (2015)*.

The message sent on the theme 'soil sampling and

testing' in kharif was ranked I by 10 respondents, followed by II (19), III (6), IV (2), V (1), VI (5), VII (5), VIII (11) and IX by 1 respondent. Total Garret value recorded was 3425 accounting to 70.47 per cent with Rank 3 for the message based on total Garret value compared to the other messages sent in kharif. In rabi the message sent on the theme 'soil sampling and testing' was ranked I by 4 respondents, followed by II (13), III (3), IV (5), V (3), VI (2), VII (4), VIII (12) and IX by 14 respondents. Total Garret value recorded was 2715 accounting to 55.86 per cent with Rank 9 for the message based on total Garret value compared to the other messages sent in rabi. This could be accounted to the reason that soil sampling and testing is usually done in summer season prior to kharif and is rarely done prior to rabi.

The message sent on the theme 'pest management' in kharif was ranked I by 2 respondents, followed by II (6), III (4), IV (9), V (8), VI (14), VII (11), VIII (2) and IX by 4 respondents. Total Garret value recorded was 2900 accounting to 59.67 per cent with Rank 4 for the message based on total Garret value compared to the other messages sent in kharif. In rabi the message sent on the theme 'pest management' was ranked I by 19 respondents, followed by II (8), III (7), IV (2), V (8), VI (2), VII (1), VIII (12) and IX by 1 respondent. Total Garret value recorded was 3554 accounting to 73.13 per cent with Rank 2 for the message based on total Garret value compared to the other messages sent in rabi. The results could be accounted for the reason that pest management is an important to be concentrated by the farmers for good yields. The findings are in conformity with that reported by *Ganesan et al. (2013)*; *Nargawe. and Mishra (2019)*.

The message sent on the theme 'mechanization for harvesting & Contact address for straw baler' in kharif was ranked I by 7 respondents, followed by II (6), III (4), IV (3), V (2), VI (8), VII (9), VIII (16) and IX by 5 respondents. Total Garret value recorded was 2782 accounting to 57.24 per cent with Rank 5 for the message based on total Garret value compared to the other messages sent in kharif. In rabi the message sent on the theme 'mechanization for harvesting & Contact address for straw baler' was ranked I by 8 respondents, followed by II (5), III (8), IV (6), V (4), VI (8), VII (6), VIII (11) and IX by 4 respondents. Total Garret value recorded was 3022 accounting to 62.18 per cent with Rank 6 for the message based on total Garret value

compared to the other messages sent in rabi. The results corresponds to it priority for the operation in rice cultivation.

The message sent on the theme 'nutrient management' in kharif was ranked I by 1 respondent, followed by II (4), III (2), IV (8), V (13), VI (14), VII (9), VIII (4) and IX by 5 respondents. Total Garret value recorded was 2756 accounting to 56.71 per cent with Rank 6 for the message based on total Garret value compared to the other messages sent in kharif. In rabi the message sent on the theme 'nutrient management' was ranked I by 14 respondents, followed by II (9), III (3), IV (9), V (6), VI (10), VII (8), VIII (1) and IX by none of the respondents. Total Garret value recorded was 3520 accounting to 72.43 per cent with Rank 3 for the message based on total Garret value compared to the other messages sent in rabi. Nutrient management is very important in rabi than in kharif which corresponds to the results. The results are in conformity with that reported by *Ganesan et al. (2015)*; *Prasad et al. (2015)* and *Chavhan (2019)*.

The message sent on the theme 'land preparation' in kharif was ranked I by 6 respondents, followed by II (9), III (4), IV (1), V (3), VI (8), VII (4), VIII (14) and IX by 11 respondents. Total Garret value recorded was 2708 accounting to 55.72 per cent with Rank 7 for the message based on total Garret value compared to the other messages sent in kharif. In rabi the message sent on the theme 'land preparation' was ranked I by 3 respondents, followed by II (3), III (5), IV (6), V (14), VI (11), VII (9), VIII (5) and IX by 4 respondents. Total Garret value recorded was 2853 accounting to 58.70 per cent with Rank 8 for the message based on total Garret value compared to the other messages sent in kharif. The results corresponds that the farmers are well aware of the operation. The findings are in conformity with that reported by *Bhaskar (2013)*.

The message sent on the theme 'weed management' in kharif was ranked I by 1 respondent, followed by II (1), III (3), IV (16), V (9), VI (9), VII (5), VIII (11) and IX by 5 respondents. Total Garret value recorded was 2704 accounting to 55.64 per cent with Rank 8 for the message based on total Garret value compared to the other messages sent in kharif. In rabi the message sent on the theme 'weed management' was ranked I by 9 respondents, followed by II (4), III (6), IV (8), V (11), VI (3), VII (12), VIII (5) and IX by

2 respondents. Total Garret value recorded was 3156 accounting to 64.94 per cent with Rank 5 for the message based on total Garret value compared to the other messages sent in rabi. Information on weed control is more required in rabi than kharif. The findings are in conformity with that reported by Prasad *et al.* (2015); Nargawe. and Mishra (2019).

The message sent on the theme 'disease management' in kharif was ranked I by none of the respondents, followed by II (2), III (15), IV (3), V (8), VI by 7 respondents, VII by 5 respondents, VIII by 9 respondents and IX by 11 respondents. Total Garret value recorded was 2622 accounting to 53.95 per cent with Rank 9 for the message based on total Garret value compared to the other messages sent in kharif. In rabi the message sent on the theme 'disease management' was ranked I by 15 respondents, followed by II (18), III (1), IV (5), V (2), VI (2), VII (3), VIII (9) and IX by 5 respondents. Total Garret value recorded was 3475 accounting to 71.50 per cent with Rank 4 for the message based on total Garret value compared to the other messages sent in rabi. Information on disease control is more required by the farmers in rabi season because of their incidence than in kharif. The findings are in conformity with that reported by Ganesan (2013) and Prasad *et al.* (2015).

CONCLUSION

Rice is an important crop not only in the study area but in India as a whole. Sending agro advisories to farmers using governmental platforms is very cost effective. Farmers preference towards agro advisories as mobile messages indicates its use at farmers end. In kharif season, farmers growing rice crop preferred to get mobile messages on suggestions during weather aberrations, followed by new improved varieties, seed rate & contact address for seed purchase, soil sampling and testing, pest management, mechanization for harvesting & contact address for straw baler, nutrient management, land preparation, weed management, disease management. While in rabi season, farmers growing rice crop preferred to get mobile messages on new improved varieties, seed rate & contact address for seed purchase, pest management, nutrient management, disease management, weed management, mechanization for harvesting & contact address for straw baler, suggestions during weather aberrations, land preparation, soil sampling and testing. Such studies would guide the scientists, extension personnel and other stakeholders to make a note of the farmers feedback and concentrate more on these issues during the crop season.

REFERENCES

- Bhaskar, G. (2013). Mobile SMS application in agricultural information dissemination: A case on KVK, Bhabaleshwar SMS alerts. *Reading Material - Training Program on Application of ICTs in Modified Extension Reforms*, National Institute of Agricultural Extension Management (MANAGE), Hyderabad, India.
- Chavhan, P. N. (2019). Impact of mobile based agro advisory services by state department of agriculture in Marathwada region. *Ph. D. (Ag.) Thesis*, Vasantnao Naik Marathwada Krishi Vidyapeeth, Parbhani.
- Ganesan, M.; Karthikeyan, K.; Prashant, S. and Umadikar, J. (2013). Use of mobile multimedia agricultural advisory systems by Indian farmers: Results of a survey. *J. of Agril. Ext. and Rural Devl.*, **5**(4): 89-99.
- Ganesan, M.; Jayalakshmi, U. and Suma, P. (2015). Assessment of mobile voice agricultural messages given to farmers of Cauvery Delta Zone of Tamil Nadu, India. Also available at ci-journal.net/index.php/ciej/article/view/1067/1133
- Garret, H. E. and Woodworth, R. S. (1969). *Statistics in psychology and education*. Vakils, Fetter and Simons Pvt. Ltd., Bombay. Pp.329
- Prasad, M.V.; Mary Rani, K. L.; Arulraj, S. and Hemanth, K. G. (2015). Oil palm Kisan Mobile Message Services - A new paradigm in technology dissemination. *Indian Res. J. of Ext. Edu.*, **15** (2):100-104
- Nargawe, L. and Mishra, D. Y. (2019). Exposure of beneficiaries of Kisan Mobile Advisory Services (KMAS) towards diverse sources for agricultural information: A study in Barwani district of Madhya Pradesh. *Indian J. of Ext. Edu.*, **55**(1):149-152.

