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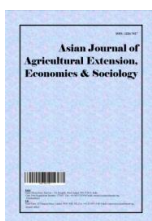
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Relevance and Utility of Different Training Needs of Input Dealers in Jhansi District of Bundelkhand Region

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Authors' contributions

This research work was carried out by the authors APV and VRY under the supervision of the fourth author. All the authors jointly designed interview schedule and personally interviewed the respondents for data collection during the study. However, the authors APV and DP managed the statistical analysis and wrote the protocol. Further, first draft was prepared by the first author, which was checked and finalized by the all authors. All authors read and approved the final manuscript.

Article Information

DOI: 10.9734/AJAEES/2019/v37i430273

Editor(s):

(1) Dr. Fotios Chatzitheodoridis, Professor in Regional Economic - Rural, Development and Policy, University of Western Macedonia, Greece.

Reviewers:

(1) M. V. Chandramathi, India.

(2) D. W. C. Padmini Dambugolla, Sri Lanka.

(3) Pramoda Sarojini, Sri Lanka Foundation Institute, Sri Lanka.

Complete Peer review History: <http://www.sdiarticle4.com/review-history/53341>

Original Research Article

Received 05 October 2019
Accepted 11 December 2019
Published 18 December 2019

ABSTRACT

Agri-input dealers play a vital role in guaranteeing that farming communities have access to some of the essential and critical agricultural input that contribute in boosting the agricultural productivity. Besides this, they also contribute towards strengthening the Agricultural Extension System by providing valuable agro-advisory services to the farmers. It is essential that they are equipped with latest scientific know how through refresher training courses. The present study was conducted during 2018-19 in Jhansi district of Bundelkhand region to ascertain training needs of agri-input dealers. Data was collected personally by using well-structured interview schedule of 57 agri-input dealers. Respondents were found to be young age group (50.88%), one-third had higher secondary education (35.09%), sought financial assistance from bank and other financial institution (36.84%) and identification of trade name, chemical name and properties of pesticides have emerged as the

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most needed training area. Around 84.21 per cent of the respondent's priorities vegetable among crop specific training needs and 84.21 per cent of the respondents had expressed 'most needed' training needs on micro nutrient fertilizers. More than two-third of respondents had expressed their training needs on improved varieties or hybrids of crops for cultivation (89.47%) and training in computer and its application in business is another preferred area. Lack of technical knowledge of different brands of product, fluctuation of sale on season basis and lack of need based training were some of the major constraints faced by agri-input dealers while delivering services. In order to overcome these problems agricultural institution must arrange some training programme which caters the above mentioned training need of input dealers.

Keywords: *Agri-input dealers; training need; farming community; agriculture.*

1. INTRODUCTION

Agricultural production in most parts of India is dominated by smallholder farming systems of low productivity. Valuable natural resource for most part of the countries such as agricultural land is becoming scarce due to degradation by both natural and man-made factor and it has constant pressure to increase its production and productivity due to rise in population. This can be possible only by increasing knowledge of all stakeholders involved in agriculture. Besides this, misuse of pesticides in current scenario is very likely due to heavy burden of population. The harmful and disastrous side-effects of pesticides are now well-established throughout the world. Farmers, agricultural labourers and consumers of agricultural produce are direct users of pesticides. They may be affected by the acute toxicity of these pesticides by consumption of agricultural produce. Chronic toxicity of pesticides affects the whole population. The farming community were found to be largely unaware of correct usage of pesticides. The outreach of agricultural universities and agriculture departments to the farmers was minimal due to less number of extension functionaries [1]. Farmers are mostly guided by the agri-input dealers in selection and use of plant protection measures to control crop losses. Public extension service is centralised and often criticized for not providing varied demand and modern inputs to the farming community that are critical to the attainment of the desired productivity. Private extension providers have entered in fulfilling this demand and involved in the procurement, distribution and delivery of inputs (fertilizers, improved seeds and agro-chemicals) to small-scale farmers. More than three lakh Agri-Input Dealers are operating in rural areas covering almost all parts of the country [2]. Agri-input dealer become one of prime source of farm information and play a vital role in guaranteeing the essential agricultural

inputs that contribute to boosting the agricultural productivity [3]. Although they are not equipped with scientific knowledge. The network of input-dealers has spread to the villages and is accepted as a potent media to reach out to large farming community. In order to enable and potentially utilise this network to serve in a better way, they need to be trained on scientific agriculture [4,5]. Hence, the present study was undertaken with the following specific objectives;

- (i) To study the socio-demographic profile of Agri-input dealers of Jhansi district of Bundelkhand region.
- (ii) To assess the training needs of Agri-input dealers in different aspects of agriculture.
- (iii) To identify the constraints faced by the input dealers.

2. METHODOLOGY

The present study was conducted during 2018-19 in Jhansi district of Bundelkhand Region. Different institutions involved in conducting diploma course for input dealer's viz., State Agricultural Extension Management and Training Institute. The courses for input dealers were christened as Diploma for Agricultural Extension Services for Input Dealers (DAESI). It is delivered through contact classes by agricultural experts and practitioners at district level for 48 days involving field visit spread over a year under the direct supervision of MANAGE, Hyderabad. A total of 57 participants were selected who visited Krishi Vigyan Kendra, Bharari, Jhansi as sample for the present study. Purposive sampling method was used in selection of respondents because the characteristics they possess are most important for the researcher. Data were collected by using pre-tested well-structured interview schedule. After thorough review of relevant literature and in consultation with experts of relevant field the potential training areas were identified. These areas were

appraised by the respondents on three point continuum as 'Most needed' 'Needed' and 'Not needed' for which score 3, 2, and 1 was assigned. Training need was measured by computing the weighted mean score. Different areas of training were ranked as per the weighted mean score. Appropriate statistical tools were used to interpret the data.

3. RESULTS AND DISCUSSION

Socio-demographic profile of the agro-input dealers:

It is evident Table 1 that 50.88 per cent of the respondents belonged to young age group (<35 years) and 36.84 per cent belonged to middle age group. Similar findings were reported by Ogunlade et al. [6] that majority of the agro-input dealers were young (54.00%). Around 35.09 per cent were educated up to higher secondary level and 28.09 have graduate and level. Educated and young people adopting agro-input sector as business are an encouraging trend in the present scenario. About one-third of the respondents (36.84%) had sought financial assistance from bank and other financial institution followed by family/relatives (26.32%). One-seventh of the respondents (15.79%) who had fulfilled their credit needs from friends/partners. The study also reveals that only 8.77 per cent availed credit from local money to maintain and run their business.

Training needs as perceived by the agro-input dealers in pest management:

Training needs of input dealers in different areas of pest management Table 2 revealed that identification of Trade name, chemical name and properties of pesticides have emerged as the most needed training area and is ranked first with weighted

mean score 2.86 followed by Trade name, chemical name and properties of weedicides ranked second with weighted mean score of 2.84. Other identified perceived training areas are diagnostic, characteristic symptom and damage caused by insect pest, control of stored grain pests, IPM and its components, control of non-insect pest-rat, birds, termites, etc., identification of different type of pest, bio-fertilizer-its use and importance with weighted mean score of 2.83, 2.73, 2.62, 2.56, 2.54 and 2.44, respectively. While other areas of pest management are less perceived by input dealers. The findings of the study are in conformity with the study of Mande and Darade [7] who observed that all farm input dealers (100%) have training needs on various aspects of pesticides applications.

Results revealed that Table 3 among crop specific training needs, vegetable ranked first with weighted mean score 2.84 followed by pulses with weighted mean score of 2.70. Training in oilseed, fruit and flowers, tuber crops and wheat crops were the other areas identified by the input dealers for training. Agro-climatic conditions are quite conducive for vegetable and pulse crop cultivation in Jhansi district of Bundelkhand region. Most of the vegetable belonging to cruciferous, solanaceous, cucurbitaceous, leguminous, tuber crops and leafy vegetables suitable for cultivation in Jhansi district. Besides this, farmers need training on judicious use of pesticides because use of pesticide is quite high in vegetable farming. Hence, pest management in vegetables has assumed significance among input dealers. Findings of the study are in conformity with the study of Singh et al. [8].

Table 1. Distribution of respondents on the basis of Socio-demographic profile and source of finance

Sl. no.	Variables	Category	Frequency	Percentage
1.	Age	Young (up to 35 years)	29	50.88
		Middle (36 to 50 years)	21	36.84
		Old (more than 50 years)	7	12.28
2.	Education	Primary	3	5.27
		Middle	5	8.77
		Secondary	13	22.80
		Higher secondary	20	35.09
		Graduate and above	16	28.07
3.	Source of Finance	Bank and other financial institution	21	36.84
		Friends/Partner	9	15.79
		Family/Relative	15	26.32
		No outside source	7	12.28
		Local Money Lender	5	8.77

Table 2. Distribution on the basis of training needs of agro-input dealers in pest management

SN.	Training areas	Most needed	Needed	Not needed	WMS	Rank
1.	Diagnostic and characteristic symptom and damage caused by insect pest	47 (82.46%)	10 (17.54%)	0 (0.00%)	2.83	III
2.	Identification of different type of pest	31 (54.39%)	26 (45.61%)	0 (0.00%)	2.54	VII
3.	Trade name, chemical name and properties of weedicides	48 (84.21%)	9 (15.79%)	0 (0.00%)	2.84	II
4.	Control of non-insect pest- rat, birds, termites, etc.	37 (64.91%)	15 (26.32%)	5 (8.77%)	2.56	VI
5.	Trade name, chemical name and properties of pesticides	49(85.96%)	8(14.04%)	0 0 (0.00%)	2.86	I
6.	IPM and its components	39 (68.42%)	14 (24.57%)	4 (7.01%)	2.62	V
7.	Trade name, chemical name and properties of micro nutrients	23 (40.36%)	27 (47.36%)	7 (12.28%)	2.28	IX
8.	Maintenance, selection, use and care of different sprayers, dusters and their minor repairs	16 (28.07%)	31 (54.39%)	10 (17.54%)	2.10	XI
9.	Precautions in handling- storing and use of antidotes in case of accidents	13 (22.80%)	39 (68.43%)	5 (8.77%)	2.14	X
10.	Control of stored grain pests	42 (73.69%)	15 (26.31%)	0 0 (0.00%)	2.73	IV
11.	Bio-fertilizer-its use and importance	37 (64.91%)	17 (29.83%)	3 (5.26%)	2.44	VIII

Table 3. Distribution on the basis of training needs in crop specific pest management

SN.	Name of the crop	Most needed	Needed	Not needed	WMS	Rank
1.	Wheat	16 (28.07%)	25 (43.86%)	16 (28.07%)	2.00	VI
2.	Pulses	41 (71.93%)	15 (26.32%)	1 (1.75%)	2.70	II
3.	Oilseed	29 (50.88%)	23 (40.35%)	5 (8.77%)	2.42	III
4.	Vegetables	48 (84.21%)	9 (15.79%)	0 (0.00%)	2.84	I
5.	Fruits and Flower	23 (40.35%)	31 (54.39%)	3 (5.26%)	2.35	IV
6.	Tuber crops	33 (57.90%)	22 (38.60%)	2 (3.50%)	2.16	V

Findings revealed Table 4 that more than two third (84.21%) of the respondents had expressed 'most needed' training needs on 'micro nutrient fertilizers' followed by 'integrated nutrient management'(77.19%), bio-fertilizer (57.33%), 'nutrient content in fertilizer'(73.69%), 'Different type of fertilizers' (68.42%), 'method of fertilizer application' (64.91%) and 'implements used for fertilizer application'(61.40%). While respondents 'Needed' training need was expressed about 'soil

testing for fertilizer application' (61.40%) followed by 'cake fertilizer (57.90%). Findings of the study are in line with the study of Waghmode et al. [9] who revealed that respondents had expressed 'most needed' training needs on 'micro nutrient fertilizers' and integrated nutrient management.

Results presented in Table 5 revealed that almost half of the agro-input dealers had

expressed their training needs in all sub-areas related to seeds. More than two-third of the agro-input dealers had expressed their training needs on improved varieties or hybrids of crops for cultivation (89.47%), certification of seeds (85.96%), germination power of seeds (78.95%), seed treatment (77.20%), storage requirement of seeds (70.18%) and ranked first, second, third, fourth and fifth respectively. Only few respondents had expressed that they don't need training on different type of seed (12.28%) and storage requirement of seeds (7.02%) respectively. Findings of the present study are in accordance with the study of Mande and Darade [7] who reported that farm input dealers had expressed training needs on type of seeds, germination of seeds, viability of seeds and improved varieties or hybrids of crops.

Findings revealed Table 6 that application of computer for billing and accounting purposes given utmost importance by agro-input dealers and ranked first with weighted mean score of 2.88 followed by record keeping ranked second with weighted mean score 2.65. Other areas of

training needs as expressed by agro-input dealers in descending order are internet; Email, Scanning, record keeping software and ranked third, fourth and fifth with weighted mean score of 2.60, 2.42 and 1.95 respectively. The application of Information Communication Technology in agri-business has brought about gigantic changes in the workplace of input dealers, especially in the field of agricultural marketing. Using modern ICTs is crucial to most businesses, regardless of its size. Vision of every agri-input dealer is to expand its agri-business and to improve its efficiency. In this context ICT play an important role in providing customer centric services and ultimately leading customer satisfaction.

It is evident Table 7 that 96.49 percent of agri-input dealers lack technical knowledge about different brands of product followed by fluctuation of sale on season basis i.e. 94.74 per cent. Lack of need based training and lack of field experience and field based diagnostic skill accounted 92.98 and 91.22 per cent of the agri-input dealers. Non-availability of bank loan (89.47%), delay in renewal of license (84.21%),

Table 4. Distribution on the basis of training needs related to fertilizer

Sl. no.	Training areas	Most needed	Needed	Not needed	WMS	Rank
1.	Integrated Nutrient Management	44 (77.19%)	13 (22.80%)	0 (0.00%)	2.77	II
2.	Soil testing for fertilizer application	17 (29.83%)	35 (61.40%)	5 (8.77%)	2.21	X
3.	Methods of fertilizer application	37 (64.91%)	18 (31.58%)	2 (3.50%)	2.61	VI
4.	Govt. Laws & Regulations related to fertilizer	32 (56.14%)	22 (38.60%)	3 (5.26%)	2.50	VII
5.	Bio-fertilizers	43 (75.43%)	14 (24.56%)	0 (0.00%)	2.75	III
6.	Micro-nutrients fertilizers	48 (84.21%)	8 (14.03%)	1 (1.76%)	2.82	I
7.	Nutrient contents in fertilizers	42 (73.69%)	11 (19.30%)	4 (7.01%)	2.67	V
8.	Cake fertilizers	13 (22.80%)	33 (57.90%)	11 (19.30%)	2.03	XI
9.	Fertigation	9 (15.78%)	22 (38.60%)	26 (45.62%)	1.70	XII
10.	Implements used for fertilizer application	35 (61.40%)	15 (26.32%)	7 (12.28%)	2.49	VIII
11.	Liquid fertilizer and methods of use	25 (43.86%)	27 (47.37%)	5 (8.77%)	2.35	IX
12.	Different type of fertilizers	39 (68.42%)	18 (31.58%)	0 (0.00%)	2.69	IV

Table 5. Distribution on the basis of training related to seeds

SN.	Training areas	Most needed	Needed	Not needed	WMS	Rank
1.	Seed treatment	44 (77.20%)	13 (22.80%)	0 (0.00%)	2.77	IV
2.	Improved varieties or hybrids of crops for cultivation	51 (89.47%)	6 (10.53%)	0 (0.00%)	2.90	I
3.	Germination power of seeds	45 (78.95%)	12 (21.05%)	0 (0.00%)	2.79	III
4.	Certification of seeds	49 (85.96%)	8 (14.04%)	0 (0.00%)	2.86	II
5.	Different type of seeds	33 (57.90%)	17 (29.82%)	7 (12.28%)	2.46	VI
6.	Storage requirement of seeds	40 (70.18%)	13 (22.80%)	4 (7.02%)	2.63	V

Table 6. Distribution on the basis of training needs in ICT application

SN.	Training areas	Most needed	Needed	Not needed	WMS	Rank
1.	Computer	51 (89.47%)	5 (8.77%)	1 (1.76%)	2.88	I
2.	Record Keeping Software	11 (19.30%)	32 (56.14%)	14 (24.56%)	1.95	V
3.	E-mail, Scanning	32 (56.14%)	17 (29.83%)	8 (14.03%)	2.42	IV
4.	Internet	41 (71.93%)	9 (15.79%)	7 (12.28%)	2.60	III
5.	Record Keeping	39 (68.42%)	16 (28.07%)	2 (3.50%)	2.65	II

Table 7. Distribution on the basis of constraints faced by agri-input dealers while providing agro advisory services

SN.	Type of constraints	Frequency	Percentage	Rank
1.	Lack of capital	43	75.44	VIII
2.	Non-availability of bank loan	51	89.47	V
3.	Fluctuation of selling on seasonal basis	54	94.74	II
4.	Irregular contact with extension worker	31	54.39	IX
5.	Lack of knowledge in maintaining stock book and sales register of the product	21	36.84	X
6.	Lack of need based training	53	92.98	III
7.	High cost in transportation	47	82.46	VII
8.	Lack of technical knowledge about brands of product	55	96.49	I
9.	Delay in renewal of the licence	48	84.21	VI
10.	Lack of field experience & field based diagnostic skills	52	91.22	IV

high cost of transportation (82.46%), lack of capital (75.44%), irregular contact with extension worker (54.39%) and lack of knowledge in maintaining stock book and sales of register of the products (36.84%) accorded

fifth, sixth, seventh, eighth, ninth and tenth rank of constraints faced by agri-input dealers while providing agro advisory services to the farming community respectively. Findings of the study supported by Singh et al. [10] who reported

that lengthy process for renewal of license may be one the reasons for this delay. Nagarajan et al. [11] also revealed that very low profit margins, low technical information/assistance, demand very low/seasonal and lack of access to credit were some of the major constraints faced by agro-dealers.

4. CONCLUSION

Socio-demographic profile reveals that young and educated people are entering the agro-input business. This is an encouraging trend however; this group of people needs to be equipped with scientific information. The study reveals that training needs of input dealers in different areas of pest management; identification of Trade name, chemical name and properties of pesticides and weedicides have emerged as the most needed training area. Among crop specific training need, vegetable crops ranked first followed by pulses. Of the training needs on fertilizer revealed respondents had expressed 'most needed' training needs on 'micro nutrient fertilizers' ranked first followed by 'integrated nutrient management. More than two-third of the agro-input dealers had expressed their training needs on improved varieties or hybrids of crops for cultivation. Lack technical knowledge of different brands of product and fluctuation of sale perceived as most important constraints by agri-input dealers. Agri-input dealers desire to have training on computer application in their agri-business. Agricultural institution offering training to these input dealers must lay emphasis on their preferences while designing and conducting training programme. Along with this, emphasis should be given during training programme that agricultural input agents must advise farmers on judicious use of fertilizer and pesticides in their agricultural crop.

CONSENT

Informed consent of the respondents was taken before conducting the personal interview.

ACKNOWLEDGEMENTS

Authors would like to express sincere gratitude to the respondents who willingly spare their valuable time and efforts in answering the question during personal interview. This research study wasn't part of any funded research project.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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