

ASSESSMENT OF KNOWLEDGE OF AGRO-INPUT DEALERS GAINED THROUGH CERTIFICATE COURSE ON INSECTICIDE MANAGEMENT

N. B. Jadav¹, S. J. Parmar² and H. C. Chhodvadia³

¹ Director of Extension Education, J. A. U., Junagadh – 362001

² Assistant Professor, Department of Agricultural Extension, J. A. U., Junagadh – 362001

³ Associate Director of Extension Education, J. A. U., Junagadh – 362001

Email: dr_nbjadav@jau.in

ABSTRACT

Agriculture is the backbone of Indian economy and has a crucial role to play in the country's economic development. Agro-input dealers are an important mediator for transfer of technology among the farmer in rural area. Agro input dealers trained about insecticide management that significantly increased their knowledge. The study was conducted to assess the knowledge of Agro-input dealers gained through certificate course on insecticides management and to ascertain relationship between attributes of respondents and their knowledge gained through certificate course on insecticides management. The study was conducted in South Saurashtra Agro-climatic Zone in which total 405 agro-input dealers was selected for the study who were participated in the certificate course in the year 2021-22 at different centres of certificate course like Junagadh, Amreli, Khapat, Targhadiya, Dhari and Kodinar. The study revealed that after the completion of the certificate course, majority of agro-input dealers were from medium to high level knowledge group and course can be significantly increase the knowledge of agro-input dealers about insecticide management. The positive and significant relationship like education, numbers of university visit, numbers of training received and use of university technological product, revealed that these all variables had pivotal contribution in increase in knowledge of agro-input dealers. In addition to this, those agro-input dealers had contacted university by any means they get knowledge about insect pest management and insecticide management. The young farmers had more enthusiastic to acquire the knowledge about insecticide management. The regular and effective technology transfer of nearby recommended technological know-how, regular training should be imparted to young, educated and university contact farmers. May they were as change agents in the future.

Keywords: knowledge gain, agro-input dealers, certificate course, insecticide management

INTRODUCTION

The core of the Indian economy and a major factor in the growth of the national economy is agriculture. For the great majority of Indians, agriculture is the most important aspect of their country's economy. Here, the fortunes of agriculture greatly influence not just the inhabitants but the entire population.

The Agriculture service sector has been made significant contribution in present for development where the governments have traditionally taken a dominant role in its provision. In India, more than 70 per cent of the operational holdings are small and marginal. Moreover, 70 per cent of the net sown area is rain fed, subjected to external vagaries, where the Agro-input dealers are mostly poor in resources and the institution and infrastructural support are very weak (Sulaiman and Gadewar, 1994).

A vibrant, dynamic, innovative and multi service provider system with active participation is thus required to be put in place to not only uptake the technologies but also

to help in addressing the emerging problems of Agro-input dealers. Insecticide is one of the important critical inputs in agriculture. The insecticides are mostly marketed by dealers, distributors and retailers. Most of the farmers are dependent on dealers for information related to insecticides management. However, majority of the insecticides dealers do not have formal education in agriculture. It is essential therefore to impart technical knowledge on insecticide management and advisory based on scientific recommendations.

In this context, the National Institute of Plant Health Management (NIPHM) has been entrusted the role of coordinator for the 72 hours certificate course for insecticide dealers and distributors and to equip them to acquire professional competency on insecticide and advisory services thereof. This program may be organized for a period of 12 weeks for 12 days for 6 hours per day with classes once in a week for existing insecticide dealers and distributors who are yet to comply the requirement of essential qualification. The program consist of both class room session and hands on experience by the resource persons from the State Agricultural

Universities (SAUs), Krishi Vigyan Kendra (KVKs), Central and State Research Institutions, Nation Institute of Plant Health Management (NIPHM), National Institute of Agricultural Management (MANAGE), State Agricultural Management And Extension Training Institute (SAMETIs), other government recognized institutes and other experts on the subject and field exposure visits to nearby agricultural farms, plots of agricultural university, research organization, KVKs, innovative farmers field, etc. The field visit may help them to acquire knowledge on recent advancement in insecticide management. Hence, the study was undertaken to measure the knowledge gain of agro-input dealers through certificate course.

OBJECTIVES

- (1) To access the knowledge of Agro-input dealers gained through certificate course on insecticides management
- (2) To ascertain relationship between attributes of respondents and their knowledge gained through certificate course on insecticides management

METHODOLOGY

“Ex-post facto” research design was applied for this study. Kerlinger, F. (1969) stated that “Ex-post facto” design is worthy is apply when the independent variable has already acted upon. The study was conducted in the South Saurashtra Agro-climatic Zone. From this Junagadh, Amreli, Khapat, Targhadiya, Dhari and Kodinar were selected because it is

the centres of certificate courses. From this districts total 405 agro-input dealers were selected for the study who are participated in certificate course during the year of 2021-22. The data were collected from the respondents through personal contact using a well-structured interview schedule. The interview schedule was filled by respondents while starting the certified course at different centers (Junagadh, Amreli, Khapat, Targhadiya, Dhari and Kodinar); the same questionnaire was filled after the completion of the course with same respondents at different center during the year 2021-2022. In the study, paired t-test was applied to measure the difference between the before and after knowledge of agro-input dealer. Data collected for the study was analysed using tools like frequency, percentages and coefficient of correlation.

RESULTS AND DISCUSSION

Distribution of agro-input dealers according to their knowledge

In the present study knowledge refers to know-how about insecticide management by the agro-input dealers. Knowledge about insecticide management course is very important for the agro input dealers. The farmers have more trust on the agro-input dealers as they are more localized. There is a high need that proper recommendations should be communicated for sustainable usage of inputs and for proper understanding by the farmers about the product and process. The data regarding level of knowledge are given in Table 1.

Table 1: Distribution of the respondent on the basis of their knowledge gain before and after completion of certificate course (n=405)

Sr. No.	Knowledge level	Before		After	
		Frequency	Percentage	Frequency	Percentage
1	Very Low (17 to 30)	71	17.54	05	01.25
2	Low (30-43)	141	34.82	42	10.37
3	Medium (43-56)	168	41.48	194	47.90
4	High (56 to 69)	15	3.70	150	37.03
5	Very high (69-82)	10	2.46	14	03.45

Data in table 1 indicated that with using an arbitrary method knowledge level of agro-input dealers can be categorised in five categories. Out of which majority (47.90 per cent) of agro-input dealers had medium level of knowledge followed by high with 37.03 per cent level of knowledge after completion of certificate course. Only 11.62 per cent of agro-input dealers are have very low to low level of knowledge after completion of certificate course. The probable reason might be that most of the respondents were educated, so they could easily understand and acquire skills and knowledge and respondents have received more training, number of

university visit and more use of university technological product. This study is more or less corroborated with Bhople *et al.* (2001), Adrija *et al.* (2021) Staudacher *et al.* (2021) and Lucinda *et al.* (2023).

Relationship between attributes of respondents and their knowledge gained through certificate course on insecticides management

A paired sample t-test was applied to evaluate the impact or effectiveness of certificate course for agro-input dealers.

Table 2: Paired t-test to know effectiveness of certificate course for agro-input dealers.

(n=405)

Particulars	Variable 1	Variable 2
Mean	39.90617284	56.04691
Stdev	9.3930	9.5305
Variance	88.22879844	90.83195
Observations	405	405
Pearson Correlation	0.496586841	
Hypothesized Mean Difference	0	
df	404	
t Stat	-34.21100681	
P(T<=t) one-tail	1.0806E-121	
t Critical one-tail	1.648634049	
P(T<=t) two-tail	2.1611E-121	
t Critical two-tail	1.965853275	

The results shows significantly increase in the knowledge score of agro-input dealers before (M= 39.90, SD=9.39) to after (M= 56.04, SD=9.53).

Paired Samples Test									
Mean		Paired Differences					t	df	Sig. (2-tailed)
		Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference					
				Lower	Upper				
Pair 1	VAR00001 - VAR00002	-16.14074	9.49478	.47180	-17.06823	-15.21325	-34.211	404	.000

The results in the table also showed that $t(404) = -34.211, p < .001$ (two-tailed).

The mean increase in test score was 16.14 with a 95% confidence interval ranging from -17.068 to -15.213 (showed in above table).

$$\begin{aligned} \text{Eta square effect} &= \frac{t^2}{t^2 + (N-1)} \\ &= \frac{(-34.211)^2}{(-34.211)^2 + (405-1)} \\ \text{Eta square effect} &= 0.74 \end{aligned}$$

The eta square statistics (0.742) indicated a large effect with substantial different in the test scores obtained in before and after certificate course.

Table 3: Correlation between knowledge of agro input dealers after certificate course completion and profile of agro-input dealers.

(n=405)

Sr. no.	Independent variable	r-value
X ₁	Age	-0.12093*
X ₂	Education	0.12209*
X ₃	Duration of license holding	0.06607 ^{NS}
X ₄	Size of land holding	0.01827 ^{NS}
X ₅	Annual income	0.045754 ^{NS}
X ₆	Size of family	-0.09006 ^{NS}
X ₇	Visit to University (no.)	0.0980484*
X ₈	No. of training received	0.19484**
X ₉	Use of University technological products	0.22337**

*= Significant at 0.05 level

**= Significant at 0.01 level

NS=Not significant

The data revealed from the table no. 3 that there was a negative and significant relationship between age of agro-input dealers and knowledge gained after completion of course, it means young age agro-input dealers gained more knowledge as compare to the old age agro-input dealers. This is because of the young age agro-input dealers are more educated as compare to the old age agro-input dealers.

The variables like education, number of visit to university, number of training received and use of university technological product had significant and positive relationship between knowledge of agro-input dealers after certificate course completion. The positive and significant relationship revealed that the agro-input dealers having higher education are gained more knowledge during the course as well as those agro-input dealers who had more numbers of visit university, use of university technological product i.e. seeds, biopesticides, literatures and received any type of training they had got primary knowledge regarding management of pest and disease. Variables like duration of license holding, size of land holding and annual income had non-significant relationship between knowledge of agro-input dealers. It means that long term licence holding, higher annual income and more land holding are not play significant role in increasing knowledge of agro-input dealers.

This result is in line with Salunkhe and Movaliya (2016), Lucinda *et al.* (2023); Singh *et al.* (2023); Patel *et al.* (2023); Patel *et al.* (2023); Pankeand Justice *et al.* (2024).

CONCLUSION

It can be concluded that majority of agro-input dealers were shifted from low to medium level of knowledge group to high level of knowledge group after the completion of certificate course on insecticide management. In addition to this calculated 't' resulted significantly increase in the knowledge of agro-input dealers and also the eta square effect is 0.74 means large effect observed after the completion of course in terms of knowledge. The negative and significant relationship between age and knowledge of agro-input dealers shows that young age dealers gained more knowledge as compared to old age dealers. Furthermore, positive and significant relationship with education, number of university visit, use of university technological product, number of training received revealed that any type of university contact, may resulted in getting primary knowledge about management of insect/pest. In nutshell it is prove that certificate course, training definitely increase the knowledge level of agro-input dealers. So, regular training may impart for update the knowledge of agro-input dealers about new technological know-how and for effective training and courses educated and university contacted dealers will be selected.

IMPLICATIONS

- (1) The results of the study are useful in knowing the characteristics of the agro-input dealers and their relationship with knowledge; and thereby help to serve as guideline for policy makers, planners and extension workers to plan and implement coastal area farmer's development efforts.
- (2) The government should encourage and monitor the various certificate courses for agro-input dealers and make sure whether these programmes have reached the intended beneficiaries or not.
- (3) The outcome of the study indicated that enhanced knowledge, improved customer services, compliance with regulations, risk mitigation and business growth opportunities.

CONFLICT OF INTEREST

All authors declare that they have no conflict of interest.

REFERENCES

- Adrija Borah, Sundar Barman, Rekhamoni Gogoi and Indrajit Barman. 2021. A Study on Effectiveness of Advisory Services Rendered by Agro-Input Dealers in Jorhat District, Assam. *International Journal of Current Microbiology and Applied Science*, 10(08): 42-50.
- Bhople, R. S.; Shinde, P. S. and Dhule, S. S. 2001. Knowledge and adoption of bio-control pest management in cotton. *Maharashtra Journal of Extension Education*, 20 : 18-21.
- Justice A. Tambo, Keith A. Holmes, Caroline Aliamo, Fredrick Mbugua, Christine Aloit, Fred Muzira, Andrew Byamugisha & Paul Mwambu (2024) The role of agro-input dealer certification in promoting sustainable pest control: insights from Uganda, *International Journal of Agricultural Sustainability*, 22(1): 2299181.
- Kerlinger, F. N. 1969. Foundation of behavioural research. Surjit Pub., New Delhi.
- Lucinda Dunn, Tanya Latty, Floris F. Van Ogtrop & Daniel K.Y. Tan (2023) Cambodian rice farmers' knowledge, attitudes, and practices (KAPs) regarding insect pest management and pesticide use. *International Journal of Agricultural Sustainability*, 21(1): 2178804.

- Panke, Suhas K., Deshmukh, Vasant A. and Kardile, Krushna M. (2023) Awareness of agro input dealers about insecticide label claims. *Guj. J. Ext. Edu.* 35(2):108-114. <https://doi.org/10.56572/gjoe.2023.35.2.0022>.
- Patel, Dhruv, Thorat, G. N. and Patel, J. K. (2023) A scale to measure the attitude of agro-input dealers towards their occupation. *Guj. J. Ext. Edu.* 36(1):1-4. <https://doi.org/10.56572/gjoe.2023.36.1.0001>.
- Patel, Kiran N. and Thakkar, Mehul G. (2023) Perceived benefits of e-retailing of agri inputs by farmers. *Guj. J. Ext. Edu.* 35(1):84-89. <https://doi.org/10.56572/gjoe.2023.35.1.0019>.
- Salunkhe S. R. and Movaliya J. K. 2016. Role of Agro-Service Providers in Agricultural Development. *Advances in Life Sciences*, **5(11)**: 4347-4351.
- Singh, Priti, Joshi, Madhuri and Manhas, J. S. (2023) Problems faced by input dealers during DAESI programme. *Guj. J. Ext. Edu.* 36(2):31-37. <https://doi.org/10.56572/gjoe.2023.36.2.0006>.
- Staudacher, P., Brugger, C., Winkler, M. S., Stamm, C., Farnham, A., Mubeezi, R., Eggen, R. I., & Günther, I. 2021. What agro-input dealers know, sell and say to smallholder farmers about pesticides: A mystery shopping and KAP analysis in Uganda. *Environmental Health*, 20(1): 1–19.
- Sulaiman, R. V. and Gadewar, A. U. 1994. Privatisation of extension services: Implication in the Indian context. *Journal of Rural Reconstruction.*, 27(2): p.41.

Received : March 2024 : Accepted : June 2024