Available online at www.ijpab.com

DOI: http://dx.doi.org/10.18782/2320-7051.3028

ISSN: 2320 – 7051

Int. J. Pure App. Biosci. **5 (4):** 199-203 (2017)

Research Article

International Journal of Pure & Applied Bioscience

OPEN ACCESS

Determine the Level of Knowledge and Adoption of Sugarcane Production Technology among the Trained Farmers and Untrained Farmers

Ravi S. Gurjar, Sangeeta Kuswaha, Mukesh Singh, Sarita Singh* and Krishanakant Kaurav

Ph.D Scholar Brauss Mhow, Technical Assitant NFAM Gwalior, Scientist KVK Rajgarh Research Associate CIAE Bhopal, SMS (ATMA) Hoshangabad (M.P.), India

*Corresponding Author E-mail: soni0751@gmail.com

Received: 26.05.2017 | Revised: 8.06.2017 | Accepted: 9.06.2017

ABSTRACT

Sugarcane is the most important cash crop. India rank first both in respect of area and total production among the sugarcane growing countries of the world. Even if, there is tremendous opportunity of making further progress in relation to increase the sugarcane production by way of adoption of modern technology in sugarcane cultivation.

The adoption of improved technology of sugarcane by the farmers is not uniform due to several reasons. Hence, this study is being undertaken to identify the various factors in relation to adoption of improved agriculture technology for sugarcane cultivation.

Training and education are lifelong requirement to improve the living standard of large number of people in the villages. The significance of training for development and mobilization of human resources energies has been recognized long back, but finding out ways for improving effectiveness of training received attention only recently. Keeping this views, Krishi Vigyan Kendra's are the grass-root level training institutions, designed for bridging the gap between the available technologies at the one end and their application for increased production at the other. Information regarding agricultural inputs, like improved seeds, suitable manures and fertilizers, plant protection manures and credit requirement etc, need urgent attention for fulfilling these tasks. Training is an important component of human resources development.

In recent years, cultivation of sugarcane is very popular due to non-availability of sugar & high price of sugar. The various extension agencies are continuously making efforts to create awareness among the farmers about cultivation of sugarcane. Govt. Institute, Non Govt. Organization, Private agencies and Krishi Vigyan Kendras are playing major role for promoting the cultivation of sugarcane and conducting Training programme, Exhibition, Kisan Mela, Sangosthi and other programme for dissemination of information about cultivation of sugarcane with low cost and environmentally safe condition. The success of any training programme depends greatly on the perception of the trainees towards it. Hence it is worthwhile to assess the impact of cultivation of cane training programmes in term of trainees' perception so that the farmers may adopt these technologies and enhance their production with low cost and environmentally safe condition. The success of any training programme depends greatly on the perception of the trainees towards it. Hence it is worthwhile to assess impact of training on production level of sugarcane crop in terms of trainee's perception.

Key words: *Sugarcane, Fertilizers, Exhibition, Krishi Vigyan Kendras.*

Cite this article: Gurjar, R.S., Kuswaha, S., Singh, M., Singh, S. and Kaurav, K., Determine the Level of Knowledge and Adoption of Sugarcane Production Technology among the Trained Farmers and Untrained Farmers, *Int. J. Pure App. Biosci.* **5(4):** 199-203 (2017). doi: http://dx.doi.org/10.18782/2320-7051.3028

INTRODUCTION

Sugarcane (*Saccharum officinarum*) is an important agro-industrial crop in India, occupying 4.0-million-hectare area. Sugarcane belongs to the grass family (Poaceae), an economically important seed plant family that includes maize, wheat, rice, and sorghum and many forage crops. The main product of sugarcane is sucrose, which accumulates in the stalk internodes. Sucrose, extracted and purified in specialized mill factories, is used as raw material in human food industries or is fermented to produce ethanol. Ethanol is produced on a large scale by the Brazilian sugarcane industry.

It is grown in two distinct agro-climatic regions: the tropical and sub-tropical; Maharashtra, Karnataka, Gujarat, Madhya Pradesh and Tamil Nadu being the important cane growing states in tropical region while Uttar Pradesh, Punjab, Haryana and Bihar are the four important states growing sugarcane in North India. Uttar Pradesh in sub-tropical and Maharashtra in tropical region, however, occupy the top position as far as sugarcane crop area and sugar industry are concerned. The average cane yield in India is about 70.0 tonnes per hectare while the sugar recovery is around 10.0 percent. However, there is potential of increasing the average cane yield to 100 tonnes per hectare and sugar recovery to 11.0 percent, if new technologies are transferred to the farmers' fields.

Sugarcane has a sucrose content of 10–18% and a fiber content of 10–15% at harvest. The stems or stalks develop from buds, and are ready for harvesting 10–24 months later. It is essentially a plant of the warm tropics and grown best when frequent heavy rainfall is interspersed with bright sunshine. It is very sensitive to temperature below 15 ^{o}C growth is very slow, and growth ceases when the temperature exceeds 35 ^{o}C. The optimum temperature range for sugarcane growth is 20–30 ^{o}C. There are many factors affecting sugarcane production such as choice of cane variety, climatic and soil conditions and availability of water.

The world demand for sugar is the primary driver of sugarcane agriculture. Cane accounts for 80% of sugar produced; most of the rest is made from sugar beets. Sugarcane predominantly grows in the tropical and subtropical regions, and sugar beet predominantly grows in colder temperate regions of the world. Other than sugar, products derived from sugarcane include falernum, molasses, rum, *cachaça* (a traditional spirit from Brazil), bagasse and ethanol. In some regions, people use sugarcane needs to make pens, mats, screens, and thatch. The young unexpanded inflorescence of *tebu telor* is eaten raw, steamed or toasted, and prepared in various ways in certain island communities of Indonesia.

MATERIALS AND METHODS

Locale of the study:

The study was conducted in Kareli block of Narsinghpur district of Madhya Pradesh. There are six blocks in the district namely-Narsinghpur, Kareli, Gotegoan babai-Chicahli, Saikheda and Chawarpatha. There are five tehsils namely-Narsinghpur, Kareli, Gotegoan,Gadarwara, Tendukhera and 220.

Narsinghpur district is situated in the central part of Madhya Pradesh & Madhya Pradesh is located in the Central part of India. Narsinghpur district holds a special importance being located in the Country.It attracts special attention because of its natural situation as well. On the Northern ends Vindhyachal & on the southern ends throughout the lengths are Satpura ranges of Mountains. In the Northern part river Narmada flows from East to West which is a sacred as holy as river Ganga. Narsinghpur district has received many natural gifts as Narmada Kachhar .In the ancient period, this area was ruled by many Rajvansh including great historical worrier Rani Durgawati which was refured by various names in that period. In the Eighteenth Century Jat Sardars got constructed a large Temple, in which Idol of Lord Narsimha placed & worshiped & so in the name of Lord Narsimha the village. Gadariya Kheda become "Narsinghpur" & later on it become headquarter of the district.

Selection of the respondents

A village wise list of trained farmers, who were trained in sugarcane production technology was prepared and from each village fifteen trained and fifteen untrained farmers was selected by using simple random sampling method. Thus, the total sample was consisted of 120 respondents for the study.

RESULTS AND DISCUSSION

Knowledge and adoption of sugarcane production technology among the trained farmers and untrained farmers.

Since the majority of farmers in India are poor, they do not want to take risk at the cost of sufferings of their family members if they perceive and have a fear to lose their existing level of production. All farmers want food, fiber and money with which they could buy other commodities for family use. They want security, if they perceive that they will be secured if they adopt the new agricultural practices, and can get more yield, they may try innovations in their fields.

Table 1: Practice wise level of knowledge of sugarcane production technology among the trained and untrained farmers

S.N.	Practices	Level of knowledge			
		Trained farmers (N=60)		Untrained farmers (N=60)	
		Complete	Partial	Complete	Partial
1	Field preparation	55 (91.67)	05 (08.33)	49 (81.67)	11 (18.33)
2	Improved variety	46 (76.67)	14 (23.33)	21 (35.00)	39 (65.00)
3	Seed treatment	38 (63.33)	22 (36.67)	15 (25.00)	45 (75.00)
4	Time of sowing & method	54 (90.00)	06 (10.00)	46 (76.67)	14 (23.33)
5	Irrigation management	40 (66.67)	20 (33.33)	24 (40.00)	36 (60.00)
6	Manure & fertilizer application	43 (71.67)	17 (28.33)	25 (41.67)	35 (58.33)
7	Plant protection	38 (63.33)	22 (36.67)	18 (30.00)	42 (70.00)

It has been observed that the farm population has not been able to harvest the modern technology as expected because the majority of the farmers do not adopt the improved technology. The main reasons for low adoption or poor preferential adoption and non-adoption of the improved technology in India are lack of technological knowledge, improper guidance, poor availability of resources, small and scattered holdings, poor socio-economic conditions, illiteracy, backwardness and high rate of population growth. Under such circumstances, the prime need is to enhance farmers, field productivity. As, agriculture alone contributes more than 15 per cent of the gross national income, thus there seems to be no other alternative for increasing crop production than to adopt the improved technologies.

The data presented in Table 4.10 showing level of knowledge of sugarcane production technology among the trained and untrained farmers in the study area.

It can be observed from the above Table that out of 60 trained farmers 91.67 per cent had complete knowledge in respect of field preparation while 08.33 per cent had partial knowledge. It is also observed that out of 60 untrained farmers 81.67 per cent had complete knowledge in respect of field preparation while 18.33 per cent had partial knowledge.

Regarding improved variety, 76.67 per cent trained farmers had complete knowledge while 23.33 per cent had partial knowledge. In case of untrained farmers, 25.00 per cent had complete knowledge while 75.00 per cent had partial knowledge.

About seed treatment 63.33 per cent of the trained farmers had complete knowledge while 36.67 per cent of them had partial knowledge. In case of untrained farmers, 25.00 per cent of had complete knowledge while 75.00 per cent of them had partial knowledge.

In case of time of sowing & method 90.00 per cent trained farmers expressed complete knowledge while 10.00 per cent expressed partial knowledge. In case of untrained farmers, 76.67 per cent expressed complete knowledge while 23.33 per cent had partial knowledge.

Regarding irrigation management, 66.67 per cent trained farmers while 33.33 per cent expressed partial knowledge. In case of untrained farmers, 40.00 per cent had complete knowledge while 60.00 per cent had partial knowledge.

With regards to manure & fertilizer application 71.67 per cent of the beneficiaries gained complete knowledge while 28.33 per cent gained partial knowledge. Similarly, 41.67 per cent of the untrained farmers gained complete knowledge while 58.33 per cent gained partial knowledge.

In case of plant protection 63.33 per cent trained farmers expressed complete knowledge while 36.67 per cent expressed partial knowledge. In case of untrained farmers, 30.00 per cent expressed complete knowledge while 70.00 per cent had partial knowledge.

The above findings are in accordance with the findings of Garg[5] and Poswal *et al.*[6]

Overall knowledge of sugarcane production technology among the trained and untrained farmers-

The data in Table: 2 out of the total 60 trained farmers, majority 60.00 per cent respondents had medium knowledge about sugarcane production technology category, while 25.00 per cent respondents had high level of knowledge about sugarcane production technology and only 15.00 percent of the respondents had low level of knowledge about sugarcane production technology. The overall mean and SD score of this category was found to be 12.68 and 3.96 respectively.

Table 2: Distribution of the respondents according to their knowledge about sugarcane production technology among the trained and untrained farmers

S.N.	Categories	Trained farmers	Percentage	Untrained farmers	Percentage
1	Low	09	15.00	17	28.33
2	Medium	36	60.00	35	58.33
3	High	15	25.00	8	13.34
Total		**60**	**100.00**	**60**	**100.00**
Mean		12.68		10.72	
SD		3.96		3.65	
t		2.014*			

*significant at 0.05 level of probability

Similarity, of the total 60 untrained farmers, majority 58.33 per cent respondents had medium knowledge about sugarcane production technology category, while 28.33 per cent respondents had low level of knowledge about sugarcane production technology and only 13.34 percent of the respondents had high level of knowledge about sugarcane production technology. The overall mean and SD score of this category was found to be 10.72 and 3.65 respectively. The t-test indicated that the mean score of trained farmers Vs untrained farmers varied significantly, from each other.

Thus, it can be concluded that majority of the trained as well as untrained farmers were in

medium category regarding knowledge about sugarcane production technology.

CONCLUSION

Level of knowledge regarding sugarcane production technology-

The significant majority of the trained farmers had complete knowledge in all the practices while no partial knowledge was observed. In case of untrained farmer's partial knowledge was observed in almost all the practices except field preparation while complete knowledge was not observed.

Extent of adoption regarding sugarcane production technology-

The significant majority of the trained farmers had complete adoption in following practices i.e. field preparation, improved variety, and time of sowing & method and manure & fertilizer application while partial adoption was observed in rest of the practices. In case of untrained farmer's complete adoption was observed in field preparation and time of sowing & method while partial adoption was observed in rest of the practices.

REFERENCES

1. Srinivas, A. and Sailaja, A., A Review on Impact of Training Programmes Conducted by Different Training Institutes. *Indian Journal of Research,* **2(2):** 266-267 (2013).
2. Ranawat Yogita, Ram H., Bareth L.S. and Sisodia S.S., Knowledge of trained and untrained farmers about improved maize cultivation. *Progressive Agriculture*, **3(2):**57-59 (2012).
3. Akhilesh Kumar, and Srivastava, J.P., Effect of Training Programme on Knowledge and Adoption Behaviour of Farmers on Wheat Production Technologies. *Indian Res. J. Ext. Edu.*, **7(2&3):** 41-43 (2007).
4. Latoria, S.K. and Jaulkar, A.M., Adoption beghaviour of sugarcane growers. *Indian Res. J. Ext. Edu*., **3(1):** 53-55 (2003).
5. Garg, A.K., A study on adoption gap of recommended sugarcane technology among the farmers of Kailarash block of Morena district (M.P.) M.Sc. (Ag.) Thesis (unpublished) JNKVV, College of Agriculture Gwalior (2008).
6. Poswal, C.S., Mathur, G.P. and Tyagi, S.K. Constraints in adoption of improved sugarcane technology in District Muzaffarnagar (Western U.P.). *International Journal of Agricultural Sciences*, **1(1):** 87-90 (2005).