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Extent of Adoption of "Novel Organic Liquid Nutrients" in Fruits and Vegetable Crops

P.K. Modi[1], S.M. Chavan, P.D. Verma

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ABSTRACT

Background: Novel organic liquid Nutrients have been developed based on banana pseudostem comprising of 10 macro and micro nutrients and 2 hormones, which are naturally synthesized. It is developed by Navsari Agricultural University, Navsari in Year 2009-10 under management and value addition of banana pseudostem (NAIP-II) project. To know the extent of adoption of Novel organic liquid nutrients in fruit and vegetable crops, a study was formulated to know the correlation of different factors and characteristics for adoption of the product.

Methods: This study was conducted in the Vyara, Valod, Songadh and Dolvan blocks of Tapi district of Gujarat through Krishi Vigyan Kendra, NAU, Vyara, Tapi during 2018-19. In the study, the sample size was of 100 respondent were selected through stratified random sampling method and determine the correlation of dependent and independent variable on knowledge and adoption of Novel organic liquid nutrients in fruits and vegetable crops.

Result: In this study revealed that the adoption of Novel organic liquid nutrients up to 59 per cent in fruit crops and 76 per cent in vegetables crops among farmers. The data on correlation for extent of adoption of Novel organic liquid nutrients in fruits and vegetable crops were showed significantly results with education, training and knowledge at 5 per cent (0.1965) level of probability.

Key words: Adoption, Hormones, Micronutrients, Novel organic liquid nutrients.

INTRODUCTION

Promotion of organic farming through Navsari Agricultural University, Navsari had took the new initiative in 2009-10 on management and value addition of banana pseudostem under NAIP-II project. Banana pseudostem is an absolute waste. Novel organic liquid Nutrients have been developed from banana pseudostem comprising of 10 macro and micro nutrients and 2 hormones, which are naturally synthesized (Anonymous, 2010). Novel organic liquid nutrients internationally patented in year 2012 by Navsari Agricultural University, Navsari (Salunkhe *et al*., 2013). This product has been tested on number of crops and shown very good result in terms of growth, number of branches, initiation of flowering, number of fruit setting and reduce fruit drop in number of crops like mango (Patel *et al*., 2018), sapota, cucurbits, brinjal, okra (Chotaliya *et al*., 2018), watermelon, chilli, Indian bean, papaya, guava *etc*., which ultimately increase yield and quality as well as reduce cost of cultivation. For popularization of this technology from 2013-14 to 2018-19, various activities *viz*., trainings, demonstration, field days, delivering lectures as resource persons, group discussions, method demonstrations, agricultural technology dissemination week, group discussion, khedut shibir, on spot advocacy, farmers seminar, KVK at village and farmers visited to KVK, *etc.* were conducted at Krishi Vigyan Kendra, NAU, Vyara, Tapi. With this view to know the extent of adoption of Novel organic liquid nutrients in fruit and vegetable crops, a study was formulated to know the correlation of different factors and characteristics for adoption of the product.

Krishi Vigyan Kendra, Navsari Agricultural University, Vyara, Tapi-394 650, Gujarat, India.

[1]Fruit Research Station, Navsari Agricultural University, Gandevi-396 360, Navsari, Gujarat, India.

Corresponding Author: P.K. Modi, Fruit Research Station, Navsari Agricultural University, Gandevi-396 360, Navsari, Gujarat, India. Email: pmodi.horti@gmail.com

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MATERIALS AND METHODS

A study was conducted in the Vyara, Valod, Songadh and Dolvan blocks of Tapi district of Gujarat through Krishi Vigyan Kendra, NAU, Vyara, Tapi during 2018-19. In the study, the sample size was of 100 respondent, who trained/ purchased/ front line demonstrations on novel organic liquid fertilizer purposively from KVK, Vyara, Tapi. Farmers were selected through stratified random sampling method. Level of knowledge and extent of adoption of practices of Novel organic liquid nutrients were the dependent variables. Among the independent variables, the socio-personal variables were age, land size, education, family type, family size, occupation, scientific orientation. Adoption was measured with the help of teachers made interview schedule. Score 1 was given for adoption and score 0 was given for non-adoption (Kunwar *et al.,* 2015).

The data analysed with appropriate statistical tools such as frequency, percentage, mean, standard deviation and

correlation analysis, which is used to quantify the association between two continuous variables (*e.g.* between an independent and a dependent variable or between two independent variables). The outcome variable is also called the response or dependent variable and the risk factors and confounders are called the predictors, or explanatory or independent variables (Nzomoi *et al*., 2007).

RESULTS AND DISCUSSION

Profile of respondents

The data in Table 1 revealed that 59 per cent of the farmers belonged to middle age group, while 36 per cent and 5 per cent belonged to young age and old age group, respectively. It is evident from Table 1 that 8 per cent of the farmers were illiterate and 20 per cent of the farmers had education up to primary school, followed by secondary school 21 per cent, higher secondary school 30 per cent, diploma 4 per cent, graduate 13 per cent and post graduate 4 per cent. The data of Table 1 indicated that majority of 87 per cent farmers doing farming with animal husbandry. The data portrayed in Table 1 indicated that majority of 77 per cent farmers having land up to 2 ha. The information presented in Table 1 revealed that more than 66 per cent farmers had acquired trainings. However, remaining 33 per cent farmers had not received training.

Table 1: Distribution of tribal farmers according to their characteristic. n=100

Sr. No.	Characteristics	Per cent
1.1	**Age**	
a	Young age (below 35 yrs)	36.00
b	Middle age (35 to 50 yrs)	59.00
c	Old age (above 50 yrs)	05.00
1.2	**Education**	
a	Illiterate	8.00
b	Primary	20.00
c	Secondary	21.00
d	Higher Secondary	30.00
e	Diploma	4.00
f	Graduate	13.00
g	Post graduate	4.00
1.3	**Occupation**	
a	Agriculture	11.00
b	Agriculture with Animal husbandry	87.00
c	Agriculture with service	0
d	Agriculture with other enterprise	2.00
e	Agriculture with service and other enterprise	0
1.4	**Land Holding**	
1	0.10-1.00 ha	40.00
2	1.00-2.00 ha	37.00
3	2.00-4.00 ha	13.00
4	>4.00 ha	10.00
1.5	**Training**	
1	Acquired	67.00
2	Not acquired	33.00

Level of knowledge

It is clear from the results of Table 2 that majority of 66 per cent farmers having medium level of knowledge about the use of Novel organic liquid fertilizer. Whereas, 13 per cent farmers had low and 21 per cent farmers had higher level knowledge.

Level of adoption

It is evident from the data inferred in Table 3 that majority of 76 per cent farmers had medium to higher level adoption. However, only 24 per cent of the farmers were in the low level of adoption.

Table 2: Distribution of farmers according to level of knowledge of Novel organic liquid nutrients. n=100

Level of Knowledge	No. of respondents
Low (<13)	13
Medium (13 to 17)	66
High (>17)	21
Mean	15.39
SD	2.20

Table 3: Distribution of farmers according to level of adoption of Novel organic liquid nutrients n=100

Level of adoption	No. of respondents
Low (<11)	24
Medium (11 to 13)	55
High (>13)	21
Mean	11.74
SD	1.74

Table 4: Practice-wise extent of adoption. n=100

Sr. No.	Selected practices	Adoption (Per cent)
1	Dose 1 per cent in vegetables	76
2	Dose 2 per cent in fruit crops	59
3	Application @ vegetative stage	45
4	Application @ flowering stage	62
5	Application @ fruiting stage	81
6	Before flowering stage in mango	5
7	Flowering stage mango	17
8	Pea stage in mango	10
9	Used for nutrient requirements (Macro and micro both (10 nutrients - N P K Ca Mg Ca S Cu Mn Zn and B)	100
10	Used for hormones requirement (GA_3 and Cytokinin)	100
11	Method of application (Spray)	100
12	Used for reduce flower bud drop	85
13	Used for quality improvement	78
14	Used in okra	100
15	Used in watermelon	67
16	Used in Clusterbean	35
17	Used in brinjal	42
18	Used in creeper vegetables	30
19	Used in mango	32

Table 5: Relationship between independent variables and dependent variables of novel organic liquid nutrients users. n=100

Sr. No.	Independent variables	Correlation co-efficient (r) adoption
X_1	Age	-0.02607
X_2	Education	0.32342*
X_3	Land holding	0.01883
X_4	Occupation	0.04628
X_5	Training	0.65592**
X_6	Knowledge	0.83701**

*Significant at 5 per cent level of probability (0.1965).

Practice-wise adoption

An effort was also made to know the practice-wise extent of adoption about the Novel organic liquid fertilizer. The practices namely used for nutrients and hormones requirements as well as method of application were adopted by all the respondents. It is indicated from the data inferred in Table 4 that practices regarding doses and stages of application (fruiting stage) adopted by the farmers to the tune of 76 per cent and 81 per cent, respectively. It was interested to note that the use of Novel organic liquid nutrients in okra crop, after that in watermelon.

Relationship

The data portrayed in Table 5 indicated that education, training and knowledge were significantly associated with the adoption of Novel organic liquid nutrients by the farmers. However, age, occupation and land holding were associated not-significantly.

CONCLUSION

It is clearly indicated from the results of study that majority of the farmers under young to middle age group, educated up to primary to higher secondary. Agriculture and animal husbandry were the main occupation, having land up to 2.0 ha. Majority of farmers comes under medium to high level of knowledge and adoption. Out of selected 6 independent variables, three variables namely education, training and knowledge were significantly associated with adoption. On the basis of findings, it is clear that there must be intensive efforts to provide proper training to accelerate the rate of adoption. Not only that different programmes *i.e.* khedut shibir, field day, *etc.* also be organized to create the awareness among the farmers about the importance of Novel organic liquid nutrients.

REFERENCES

Anonymous (2010). RKVY Project, Navsari Agricultural University, Navsari.

Chotaliya, K., Masaye, S.S. and Patel, A. (2018). Effect of different levels of nitrogen and novel organic liquid fertilizer on growth and soil properties of Okra [*Abelmoschus esculentus* (L.) Moench] cv. GAO-5. International Journal of Chemical Studies. 6(5): 3077-3081.

Kunwar, B., Dhakal, D. and Panta, H.K. (2015). Determinants of smallholders' adoption of off-season vegetable production technology in Okhaldhunga district of Nepal. Journal of Institutional Agriculture and Animal Science. 33-34: 221-228.

Nzomoi, J.N., Byaruhanga, J.K., Maritim, H.K. and Omboto, P.I. (2007). Determinants of technology adoption in the production of horticultural export produce in Kenya. African Journal of Business Management. 1(5): 129-135.

Patel, R.J., Patil, S.J., Tandel, B.M., Ahlawat, T.R. and Amarcholi, J.J. (2018). Effect of micronutrients and banana pseudostem sap at different pH levels of foliar spray solution on fruit quality of mango (*Mangifera indica* L.) cv. Kesar. Inter--national Journal of Chemical Studies. 6(5): 852-854.

Salunkhe, J.R., Patel, A.M., Patil, R.G., Pisal, R.R. (2013). Effect of banana pseudostem sap as liquid fertilizer in onion. Indian Journal of Agriculture Research. 47(3): 258-262.