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Extent of Adoption of Farmers about Capsicum Crop Cultivation Practices under Protected Cultivation (Shade Net) in Kolar District of Karnataka

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ABSTRACT

Vegetable cultivation is an awesome business in India, but under open field conditions by following traditional cultivation practices it is difficult to manage various abiotic and biotic stresses. Mostly to manage biotic stresses farmers spray large amount of different chemicals, this not only enhances the cost of cultivation but it also increases residual toxicity in the freshly produced vegetables, which is ultimately hazardous to human health. To address these challenges Protected cultivation technology i.e., polyhouse, shade net, micro tunnel etc., which have been globally accepted for achieving sustainability in horticulture. The study was undertaken during the year 2016-17 in the Kolar, Malur and Mulbagal taluks of Kolar district based on maximum number of shade net structures growing capsicum as major crop. From each taluk respondents were selected by using purposive sampling procedure to constitute a sample size of 80 for the study. The study reported that cent (100 %) per cent of the respondents were not raising the nursery due to high risk in raising of capsicum saplings. In case of transplanting, more than three fourth (77.50 %) of the respondents are growing IIHR recommended cultivar of capsicum (Indra) and majority (81.25 per cent, 86.25 per cent, 61.25 per cent and 52.50 per cent) of the respondents partially adopted the recommended age of the seedlings (30-35 days), seedling rate (16000-20000), seedling treatment (Imidachlopride @ 0.1ml/L) and spacing (45X30cm) respectively. In case of bio fertilizers, 61.25 per cent and 55.00 per cent of the respondents partially adopted the recommended dosage of bio fertilizers viz, *Trichoderma viridae* (2 Kg) *and Pseudomonas* (2 Kg), respectively. more than fifty (51.25 %) of the respondents fully adopted the recommended days for training (28 DAP) and nearly two third (65.00 %)of the respondents partially adopted the recommended days of pruning (30DAP @ interval of 8-10 days). Majority of the farmers having partial adoption behaviour, therefore need to encourage extension activities such as demonstration , study tours , phone calls etc to make agriculture as profitable sector.

Key words: *Capsicum, shade net, Partial Adoption.*

Agriculture is highly dependent on environment and it is very difficult to get favourable climatic conditions for crop growth and development as per crop need. To raise a healthy disease free crop, spring-summer seasons are considered as most suitable. But, fast climatic changes happening across the globe has changed climatic characteristics of a season, which has resulted in untimely rains and other fluctuations in the spring-summer season, throwing the challenge to develop climate resilient technologies. Therefore, there is need to develop suitable varieties and technologies to sustain these challenges which may come up in the form of various biotic and abiotic factors. Promotion of protected cultivation will certainly help in the creation of large scale self-employment opportunities for unemployed educated youth and will also raise the national economy by sale of high quality produce in domestic and international markets. Under the new era of World Trade Organization (WTO), these kinds of models possess high potential for enhancing the income of farmers opting for quality and offseason vegetable and cut flower cultivation under protected conditions. The production of vegetable and cut flower crops under protected conditions not only provides high water and nutrient use efficiency but it can easily increase the productivity by 3-5 folds over open field cultivation of these crops under varied agro climatic conditions of the country. This technology has very good potential especially in urban and semi urban areas adjoining to the major cities which is a fast growing market for fresh produce of the country (Singh, 2014). Vegetable farming in agri-entrepreneurial models targeting various niche markets of the big cities is inviting regular attention of the vegetable growers for diversification from traditional ways of vegetable cultivation to the modern methods. Under the new era of Foreign Direct Investment (FDI) in retail, these kinds of models posses high potential for enhancing the income of farmers opting for quality and offseason vegetable cultivation through protected cultivation (Singh and Gupta, 2011).

In the World, China has the highest area (2,760,000 ha) under protected cultivation followed by Korea (57,444 ha), Spain (52,170 ha) and Japan (49,049 ha). India has 25,000 ha of area under

protected cultivation. In India, the area under protected cultivation is presently around 25, 000 ha, while the protected vegetable cultivation area is about 2,000 ha. (Chandan and Singh, 2015). Combined efforts of the national boards such as NHM, NHB and RKVY have created awareness and are providing financial assistance to the farmers to adopt protected farming methods for agricultural cultivation. The states that have consistently expanded the area under protected cultivation for the period of 2007 to 2012 are Andhra Pradesh, Gujarat, Maharashtra, Haryana, Punjab, Tamil Nadu and West Bengal. In the coming years, it is expected that the states shall actively engage themselves in promoting protected cultivation in the states through various subsidy schemes, incentive programmes and human resource development for protected cultivation.

Karnataka is the front runner in vegetable cultivation under protected cultivation, especially in poly house and shade nets. Capsicum and tomato are the major crops growing under protected cultivation, which are highly productive as well as remunerative in nature through export. Major focus in the state is on protected cultivation as horizontal expansion takes away required land where food crops are cultivated. In the last 5 years nearly 10,000 poly houses (2000 ha) have been established. The state is promoting this under Rashtriya Krishi Vikasa Yojane (RKVY), National Horticulture Mission (NHM) and Krishi Bhagya Scheme. A sum of about Rs. 300 crores is provided as subsidy to farmers during the past five years.

Kolar district though termed as backward industrial district, has made considerable progress in horticulture. The total horticulture area is 1, 06,262 hectares which comprises of 46.07 per cent of the total cultivable area of district. Agro climatic condition of the district is highly suitable for cultivation of most of the horticulture crops. Major Horticulture crops grown in the district are fruit crops like Mango, Papaya, Guava, Sapota and Banana and vegetables like Tomato, Capsicum, Carrot, Radish, Cabbage and Cauliflower. Spices like Tamarind, Coriander and Dry crops like Aster, Crossandra, Jasmine, Marigold, Rose, Chrysanthemum and Chillies. Plantation crops like Coconut, Cashew nut and Betel vine and other flower crops. The district has greater scope for protected cultivation because of scarcity of water resources. Shade nets and poly houses are the major protected cultivation structures constructed in district. There will be scope for studying the adoption behaviour of capsicum and tomato under protected cultivation in this regard. Some of the studies shown that there is a tremendous scope for development of technologies which is suitable for vegetable production under protected cultivation.

MATERIAL AND METHODS

The study was undertaken during the year 2016-17 in the selected three taluks of Kolar district of Karnataka state. Based on maximum number of shade net structures under protected cultivation, Kolar, Malur and Mulbagal taluks were selected for the study. From each taluk respondents were 32, 28 and 20 selected by using purposive sampling procedure to constitute a sample size of 80 for the study. Majority of the farmers are growing capsicum and tomato under protected cultivation (Shade net). The adoption behaviour was the dependent variable selected for the study.

In the present study adoption referred to the acceptance and practice of some or all the recommended protected cultivation practices of capsicum crop by the respondent. The scores for each one of the individual practices adopted were arrived at considering the relative importance of the items in consultation with specialist of Indian Institutes of Horticultural Research, Bangalore. The answers elicited from the farmers were compared and quantified by giving score of 2, 1 and 0 for full adoption, partial adoption and non adoption respectively. The full adoption is the completely adopting recommended practices in their protected cultivation structure (Shade net) and partial adoption is the slightly deviation from the recommended practices/dosage. The non adoption is the adopting the cultivation practices other than recommended practices/dosage. Based on the total scores, the respondents were grouped into three categories as low, medium and high by using mean and standard deviation as a measure of check. The scale developed by Sengupta (1967) and followed by Singh (2010).

RESULTS AND DISCUSSION

The adoption of any technology and recommended cultivation practices of capsicum in particular depends on various factors such as awareness about practices, extent of change agencies efforts, complexity of practices, timely availability of inputs, characteristics of farmers etc. However, it is true that all the recommended practices will not be adapted to some degree by all the members in a given social system. The findings with respect to adoption of capsicum cultivation practices under shade net by the respondents are presented in the Table 1.

The results of nursery raising was clear from the table 1 that, cent (100 %) per cent of the respondents did not raise the nursery.

This shows the wider adoption of Indra hybrid of capsicum is due to special characters like higher yield, resistance to nematode infestation and long sustaining capability etc., and efforts of the extension functionaries. Non availability of labour and additional investment is the probable reason for not raising the nursery.

The results of cultural practices obtained from the table 1 that, with respect to ploughing, more than fifty (53.75 %) per cent of the respondents belong to partial adoption category. On the other hand, (92.50 %) of the respondents didn't not adopt the digging practices, whereas nearly two third (66.25 %) of the respondents had partially adopted the recommended size of bed (1 meter width and 15 cm height) and bed treatment(4% formalin) for capsicum cultivation. The majority (56.25 %) of the respondents partially adopted the recommended FYM application (100 tons). In case of mulching, nearly (97.50 %) of the respondents did not use crop residue as a mulching and 47.50 per cent of the respondents adopted the recommended plastic mulching (400 gauge of 100 micron and 5cm diameter of holes).

The higher cost of these practices and medium farming experience might be the reasons for partial adoption of most of the cultural practices. Non availability of labour is the probable reason for non adoption of digging practice under shade net.

Regarding transplanting, more than three fourth (77.50 %) of the respondents are growing IIHR recommended cultivar of capsicum (Indra) and majority (81.25 per cent, 86.25 per cent, 61.25 per cent and 52.50 per cent) of the respondents partially adopted the recommended age of the seedlings (30-35 days), seedling rate (16000-20000), seedling treatment (Imidachlopride @ 0.1ml/L) and spacing (45X30cm) respectively. Whereas, more than three fourth (77.50 %) of the respondents partially adopted the drenching of seedlings at one day after transplanting (Copper Oxy Chloride @ 25-30ml/ plant). This might be due to lower education and less knowledge about recommended practices of transplanting.

With respect to fertilizer management, majority (81.25 %, 52.50 %) of the respondents partially adopted the recommended dosage of inorganic fertilizers (20:25:20) and organic fertilizers (Neem Cake@200 Kg) respectively. In case of bio fertilizers, 61.25 per cent and 55.00 per cent of the respondents partially adopted the recommended dosage of bio fertilizers viz, *Trichoderma viridae* (2 Kg), *Pseudomonas* (2 Kg) respectively. The probable reason might be that, lack of knowledge about fertilizer management and high cost.

In case of irrigation and fertigation, nearly three fourth (73.75 %) of the respondents partially adopted the recommended duration for irrigation (Half an hour a day @ discharge rate o@ 4L/hr). On the other hand, more than two third (67.50 %) of the respondents were partially adopted the recommended time for fertigation (3rd week after planting and twice in a week) and 71.25 per cent, 72.50 per cent and 76.25 per cent of the respondents partially adopted the recommended dosage of water soluble fertilizers (19:19:19 @ 4 kg, Potassium Nitrate @ 1.5 kg, Calcium Nitrate @ 1.5 kg) respectively. The lack of technical guidance about irrigation and fertigation and high cost are the reasons.

The results of Integrated Pest Management (IPM) obtained from the table 1 states that, in case of cultural method, nearly cent (100%) per cent of the respondents had full adoption of summer ploughing practice. on the other hand, more than three fourth (85.00 %) of the respondents adopted the recommended burning of previous crop plant debris, whereas, cent (100 %) per cent of the respondents fully adopted the recommended crops for rotation like marigold, cauliflower etc and nearly three fourth (71.25 %) of the respondents fully adopted the recommended trap crops like marigold, sweet corn, bendi etc., The similar results found in Roy *et al.* (2015).

The practices as recommended are the simplicity and low cost of the practices which can be practiced by making use of their own resources without reliance on any external agency are the probable reasons full adoption of cultural practices under IPM in shade net .

In case of mechanical method, nearly two third (62.50 %) of the respondents had partial adopted the recommended pheromone traps (4-5 traps) for pest control, whereas ninety (90.00 %) per cent of the respondents fully adopted the recommended nylon mesh for pest control. In case of removal of infested parts of the plants, nearly cent (100 %) per cent of the respondents full adoption category and nearly half (47.50 %) of the respondents partially adopted the recommended light traps (6 light traps/acre). The high knowledge and low cost is the probable reason for above findings.

In case of chemical method, three fourth (75.00 %) of the respondents had partially adopted the recommended plant protection chemicals such as Chloropyriphos (2 ml/L) or Acephate (1.5g/L) for thrips management, whereas more than three fourth (76.50 %) of the respondents partially adopted the recommended plant protection chemicals such as Dicofol (2ml/L) or Wettable sulphur (2ml/L) for mites control. On the other hand, nearly two third (63.75

Table 1. Distribution of respondents according to adoption behaviour of farmers about capsicum crop cultivation practices under protected cultivation n=80

Sl. No	Package of practices	Recommended dosage/acre	Adoption behaviour					
			FA		PA		NA	
			F	%	F	%	F	%
I	Nursery Raising							
1	Seed rate	160-200 gm	0.00	0.00	0.00	0.00	80.00	100.00
2	Media	Coir pith	0.00	0.00	0.00	0.00	80.00	100.00
3	Depth of sowing	0.5 cm	0.00	0.00	0.00	0.00	80.00	100.00
II	Cultural practices							
1	Ploughing	2-3 times	37.00	46.25	43.00	53.75	0.00	0.00
2	Digging		6.00	7.50	0.00	0.00	74.00	92.50
3	Bed preparation	1 meter width and 15 cm height	24.00	30.00	53.00	66.25	3.00	3.75
4	Bed treatment	4% formalin	27.00	33.75	53.00	66.25	0.00	0.00
5	FYM application	100 tons	26.00	32.50	45.00	56.25	9.00	11.25
6	Mulching							
a.	Residue mulching		2.00	2.50	13.00	16.25	65.00	81.25
b.	Plastic mulching	400 gauge of 100 micron and 5cm diameter of holes	34.00	42.50	38.00	47.50	8.00	10.00
III	Transplanting							
1	seedlings age	3035 days	14.00	17.50	65.00	81.25	1.00	1.25
2	Selection of cultivars	Indra	62.00	77.50	0.00	0.00	18.00	22.50
3	Seedling rate	16000-20000	11.00	13.75	69.00	86.25	0.00	0.00
4	Seedling treatment	Imidachlopride @ 0.1 ml/L	25.00	31.25	49.00	61.25	6.00	7.50
5	Spacing	45X30 cm	38.00	47.50	42.00	52.50	0.00	0.00
6	planting drenching of seedlings	Copper oxy chloride @ 25-30 ml/plant	15.00	18.75	62.00	77.50	3.00	3.75
IV	Fertilizer management							
1	Inorganic Fertilizers	20:25:20	15.00	18.75	65.00	81.25	0.00	0.00
2	Organic manures (Neem cake)	200 kg	38.00	47.50	42.00	52.50	0.00	0.00
3	Bio fertilizers							
	i.*Trichoderma viridae*	2kg	11.00	13.75	49.00	61.25	21.00	26.20
	ii.*Pseudomonas*	2kg	6.00	7.50	44.00	55.00	30.00	37.50
V	Training	28DAP	41.00	51.25	39.00	48.75	0.00	0.00
VI	Pruning	30DAP @ interval of 8-10 days	26.00	32.50	52.00	65.00	2.00	2.50

Table 1 cont.....

VII	Drip irrigation and fertigation							
1	Irrigation	Half an hour a day @ discharge rate @ 4 L/hr	18.00	22.50	59.00	73.75	3.00	3.75
2	Fertigation	3rd week after planting and twice in a week	25.00	31.25	54.00	67.50	1.00	1.25
3	Recommended fertilisers							
i.	19:19:19	4 kg	23.00	28.75	57.00	71.25	0.00	0.00
ii.	Potassium nitrate	1.5 kg	22.00	27.50	58.00	72.50	0.00	0.00
iii.	Calcium nitrate	15 kg	19.00	23.75	61.00	76.25	0.00	0.00
VIII	Integrated Pest Management							
1	Cultural method	Summer ploughing	80.00	100.00	0.00	0.00	0.00	0.00
		Burning of previous crop plant debris	68.00	85.00	0.00	0.00	12.00	15.00
		Crop rotation i.e., cauliflower, marigold	80.00	100.00	0.00	0.00	0.00	0.00
		Growing of trap crops like marigold, sweet	57.00	71.25	0.00	0.00	23.00	28.75
2	Mechanical method	Pheromone traps(4-5 traps/acre)	17.00	21.25	50.00	62.50	13.00	16.25
		Nylon mesh	72.00	90.00	0.00	0.00	8.00	10.00
		Removal of infested parts of the plants	78.00	97.50	0.00	0.00	2.00	2.50
		Light traps (6 traps/acre)	30.00	37.50	38.00	47.50	12.00	15.00
3	Chemical method							
a.	Thrips	Chloropyriphos (2 ml/L) or Acephate (1.5g/L)	18.00	18.75	60.00	75.00	2.00	2.50
b.	Mites	Dicofol (2ml/L) or Wettable sulphur	19.00	23.75	61.00	76.25	0.00	0.00
c.	Aphids	Imidachlopride (0.5ml/L) or Thiomethoxam (0.5g/L)	27.00	33.75	51.00	63.75	2.00	2.50
d.	Fruit borer	Thiodicarb (1ml/L) or carbaryl (3g/L)	22.00	27.50	49.00	61.25	9.00	11.25
		Methomyl baiting procedure	2.00	2.50	0.00	0.00	78.00	97.50
e.	Nematodes	Carbofuran (furadan) @ 20kg /acre	27.00	33.75	53.00	66.25	0.00	0.00
4	Biological methods							
a	Thrips, mites, and aphids	Neem soap @7 ml/L	27.00	33.75	53.00	66.25	0.00	0.00
b	Thrips	NSKE @ 4%	52.00	65.00	23.00	28.75	5.00	6.25
c	Aphids and mites	Pongamia oil @5-8 ml/L	15.00	18.75	63.00	78.75	2.00	2.50
d	Nematodes	Neem cake @ 800 kg/ acre 4-5 days before transplanting to the beds	34.00	42.50	44.00	55.00	2.00	2.50

Table 1 cont.....

IX	Integrated Disease Management							
1	Cultural methods	Summer ploughing/soil solarisation	80.000	100.000	0.000	0.000	0.000	0.000
		Burning of previous crop plant debris	60.000	75.000	0.000	0.000	20.000	25.000
		Crop rotation	79.000	98.750	0.000	0.000	1.000	1.250
		Growing of trap crops like marigold, sweet corn, bendi etc.,	62.000	77.500	0.000	0.000	18.000	22.500
2	Mechanical method	Pheromone traps(4-5 traps/acre)	16.000	20.000	49.000	61.250	15.000	18.250
		Disposal of diseased/infected plants(leafcurl of tomato and capsicum)	70.000	87.500	0.000	0.000	10.000	12.500
3	Chemical methods							
a.	Damping off	Carbendazim (1g/L) or metalaxyl MZ (2g/L) or Copper oxychloride (3g/L) or captan (3g/L) drenched to the base of the plant at about 25-50 ml/plant.	22.00	27.50	58.00	72.50	0.00	0.00
b.	Powdery mildew	Wettable sulphur (2g/L) or Hexaconazole (0.5ml/L)	28.00	35.00	51.00	63.75	1.00	1.25
c.	*Cercospora* leaf spot	Mancozeb (2.5g/L) or Carbendazim (1g/L)	17.00	21.25	63.00	78.75	0.00	0.00
4	Biological methods							
	Powdery mildew of capsicum	Pongamia /Neem oil (7ml/L)	34.00	42.50	45.00	56.25	1.00	1.25
X	Harvesting	70-75 DAP	29.00	36.25	51.00	63.75	0.00	0.00
XI	Packing	CFB cartons (5/7 ply thick)	78.00	97.50	0.00	0.00	2.00	2.50

%) of the respondents partially adopted the recommended chemicals such as Imidachlopride (0.5ml/L) or Thiomethoxam (0.5g/L) for aphids management and nearly two third (61.25 %) of the respondents partially adopted the recommended chemicals such as Thiodicarb (1ml/L) or carbaryl (3g/ L) , meanwhile nearly cent (97.50 %) per cent of the respondents did not adopt the methyl biting procedure for fruit borer management and nearly two third (66.25 %) of the respondents partially adopted the recommended chemical such as Carbofuran (20kg) for nematode management. The reason for partial adoption of recommended chemicals is the lower education and higher cost involved for purchasing of plant protection chemicals.

With respect to biological method, nearly two third (66.25 %) of the respondents had partial adopted the recommended bio pesticide such as neem soap (4 ml/L) for thrips, mites and aphids control, whereas nearly two third (65.00 %) per cent of the respondents fully adopted the recommended bio pesticide such as NSKE @ 4% for thrips control and more than three fourth (78.75 %) of the respondents partially adopted the bio pesticide i.e., pongamia oil (5-8 ml/L) for aphids and mites management. More than half (55.00 %) of the respondents partially adopted the recommended neem cake (800 kg) for nematode control. The lower education and higher cost is the probable reason for above findings. The similar results found in Patil *et al*. (2013)

The results of Integrated Disease Management (IDM) of capsicum obtained from table 1 that, with respect to cultural method cent (100 %) per cent of the respondents were fully adopted the summer ploughing practice. On the other hand, three fourth (75.00 %) of the respondents adopted the recommended burning of previous crop plant debris, whereas, cent (98.75 %) per cent of the respondents were fully adopted the recommended crops for rotation like marigold, cauliflower etc., and more than three fourth (77.50 %) of the respondents fully adopted the recommended trap crops like marigold, sweet corn, bendi etc., past farming experience and lower cost is the probable reason for above findings.

It was evident from Table 1 that, in case of mechanical method, nearly two third (61.25 %) of the respondents had partial adopted the recommended pheromone traps(4-5 traps) for disease control, whereas nearly ninety (87.50 %) per cent of the respondents were fully adopted the disposal of disease infected parts of plant for disease control. The more than half (53.75 %) of the respondents were partially adopted the recommended light traps (6 light traps). The high knowledge and low cost is the probable reason for above findings.

In case of chemical method, nearly three fourth (72.50 %) of the respondents had partially adopted the recommended plant protection chemicals such as Carbendazim (1g/L) or metalaxyl MZ (2g/L) for damping off disease management, whereas nearly two third (63.75 %) of the respondents partially adopted the recommended plant protection chemicals such as Wettable sulphur (2g/L) or Hexaconazole (0.5ml/L) for powdery mildew disease control. On the other hand, more than three fourth (78.75 %) of the respondents partially adopted the recommended chemicals such as Mancozeb (2.5g/L) or Carbendazim (1g/L) for *Cercospora* leaf spot disease management. The lack of information and technical knowledge regarding the use of PPC besides higher cost of chemicals might be the probable reason for above findings.

The results of biological method of control as evident from Table 5, more than half (56.25 %) of the respondents partially adopted recommended Pongamia or Neem oil (7ml/L) for controlling the powdery mildew disease of capsicum. The lower education and higher cost is the probable reason for above findings.

The results observed from Table 5 that, more than half (56.25 %) of the respondents partially adopted the recommended days for harvesting of capsicum (70-75 DAP). In case of packing, nearly cent (97.50 %) per cent of the respondents fully adopted the recommended packing material (CFB cartons (5/ 7 ply thick)). The probable reason might be that, lack of information about recommended practices of capsicum under shade net.

CONCLUSION

The protected cultivation is one of the interventions to make agriculture as a profitable sector. Under this study reported that Majority of the respondents belonged to partial adoption category with respect to adoption behaviour of capsicum crop cultivation practices under shade net. This bring to focus that it is of utmost importance to design more number of extension activities like demonstrations, study tours, exposure visits by the development departments, convince the farmers about cultivation practices of capsicum for full adoption under shade net technology.

LITERATURE CITED

Chandan, S. A. and Singh, D. K. 2015. Protected cultivation of vegetables-sustainable vegetable production through of greenhouse cultivation. *International Journal of Current Research.* 7(6): 152-156.

Patil, N., Choudhary, S. and Swarnakar,V. K. 2013. Study on Adoption of Eco-Friendly Management Practices by Vegetable Growers in Indore Block of Indore District (M.P.). *IOSR Journal of Agricultural and Veterinary Sciences.* 4(2):22-25.

Roy D, Bandyopadhya A K and Marak B R 2015 Adoption behaviour of Anthurium flower cultivation in Darjeeling district of west Bengal. *Indian Journal of Applied. Research.* 5(8):355-357.

Sengupta T 1967 A study on adoption scale for selection of farmers for high yielding varieties programme on rice. *Indian Journal of Extension Education.* 3 (3): 107-115.

Singh B and Gupta R K 2011 Performance of sweet pepper (Capsicum annum) varieties and economics under protected and open field condition at Uttarakhand. *Indian Journal of Agricultural Sciences.* 81(10):973-975.

Singh B K, Rakesh E S, Yadav V P S and Singh D K 2010 Adoption of commercial cut flower production technology in Meerut. *Indian Research Journal of Extension Education*. 10(1):51-53.

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