

SUGGESTIONS OF THE CAULIFLOWER GROWERS TO PROMOTE IPM IN CAULIFLOWER CULTIVATION

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ABSTRACT

The present study was conducted in Badgaon and Girwa tehsils of Udaipur district of Rajasthan. Four villages from each selected tehsil were taken and 12 respondents were selected randomly from each selected village for the study. Data were collected through prestructured interview schedule. It was found that technical guidance should be provided regarding assessment of ETL, training on IPM technologies should be imparted, more number of demonstrations on IPM should be organized on farmers' field & trichoderma *etc.* should be made available at local market were important suggestions were given by the farmers in the study area.

KEYWORDS: IPM, Trichoderma, ETL, Technology

INTRODUCTION

Cauliflower (*Brassica oleracea* var. *botrytis*) is one of the most important as well as popular winter vegetable crop, which is grown throughout the country. It is one of the oldest vegetable cultivated in the world believed to be since 2500 BC by Greeks and Romans. It is cultivated in India from Mughal period but there are several insect-pests which attacks on cauliflower and reduces its nutritional value. In which some are common like diamond back moth, cabbage butter fly, tobacco caterpillar, cabbage semilooper etc. Generally farmers are using pesticides for controlling insect-pests in cauliflower, which are harmful for human health. So, there is essential to give a focus on IPM to maintain the nutritional level and sustainability in production of vegetables.

One of the greatest success stories of India is green revolution with its dramatic impact on food security. But spread of intensive agriculture by the green revolution actually led to newer problems such as:

- Excess use of irrigation water.
- Replacement of traditional varieties by high yielding varieties, and
- Inappropriate and excess use of fertilizers and pesticides.

However, inappropriate use of chemical pesticide create problem of ecological imbalance, environmental pollution, health hazards. The development of pesticide resistance also contributed to the loss of beneficial insects and micro-organisms. Even the fertility of the soil is adversely affected due to repeated applications of soil pesticides. Thus, excess use of pesticides and its residues has created numerous side effects.

Therefore, the pests have to be managed through ecologically safe, environmentally sound and economically

viable technologies. Thus, the issues of sustainability, productivity and stability have to be addressed through a system approach taking a holistic view.

The pest control started since long back, out of which some significant developments as the corner stone's of Integrated Pest Management (IPM) that is as:

Table 1

Year	Event
1959	Concept of ET, ETL and IPM
1968	Insecticide Act
1981	IPM in India
1985	National Policy on IPM
1988	Establishment of NCIPM by ICAR
1992	Agenda 21 of UNCED at Rio de Janeiro on IPM

Use of the pesticide has increased over the years. India used 54,133 tonnes of pesticides in 1999-2000 of all the pesticides, out of which, insecticides have dominating share of 65 per cent (herbicides 3%, fungicides 20% and others 12%).

It was realized that continuous uses of pesticide have created several unwanted effects:

- Pesticide residues in agricultural products leading toxicity in animals, including human beings.
- Direct hazard to human beings due to acute or chronic poisoning and death.
- Destruction of the natural control agents (predators, parasitoids) of the pests and other beneficial creatures (bee pollinators, eels, frogs, snakes, worms, birds etc.)
- Pest resurgence and development of resistance in pests to pesticides.
- Pollution of the soil, water and air and use of excess pesticide affects human health and also cause several diseases.

In view of the above side effects plant protection scientists and all concerned to pest management have decided to face the challenges ahead. Several insecticide chemicals have been banned and restricted to use in agriculture these are the big achievements on IPM in the country.

Towards this goal, the plant protection technology through IPM, evolved by the National Agriculture Research System, has to be validated, promoted and applied on a large scale in partnership with farmers, researchers, extension specialists, industries and non-governmental organizations.

RESEARCH METHODOLOGY

The present study was conducted in the purposively selected Udaipur district of Rajasthan. There are total eleven tehsils in Udaipur district of Rajasthan, out of which, two tehsils namely Badgaon and Girwa were selected on the basis of maximum area under cultivation of cauliflower. Further, a comprehensive list of all the major cauliflower growing villages was prepared in consultation with the personnel of Revenue and Agriculture Department from the identified tehsils. Four villages from each selected tehsil were taken on the basis of maximum area under cauliflower cultivation. For selection of respondents, comprehensive list of cauliflower growers was prepared with the help of village patwari and Agriculture

Supervisor of respective villages. From the list so prepared, 12 respondents were selected randomly from each selected village. Thus, in all 96 farmers were included in the sample of the study. Data were collected through prestructured interview schedule.

RESULTS AND DISCUSSIONS

The suggestions given by the cauliflower growers for promoting the IPM technology in cauliflower cultivation are presented in Table 2.

Table 2 indicates that technical guidance should be provided regarding assessment of ETL was suggested by the cauliflower growers and accorded first rank. A fair majority of cauliflower growers with the extent of 95.49 per cent suggested that training on IPM technologies should be imparted with extent of 87.15 MPS and got second rank in order followed by more number of demonstrations on IPM should be organized on farmer's field with 86.46 MPS and was ranked third by the cauliflower growers. Whereas, next important suggestion in the descending order was trichoderma should be made available at local market with 85.42 MPS. Further, analysis of data indicate that incentives in the form of subsidy should be provided by the government for adoption of IPM technologies and seed of improved varieties should be made available to the farmers at local level were suggested with 79.17 per cent and was ranked 5.5th by the cauliflower growers.

Table 2: Suggestions of the Cauliflower Growers to Promote IPM in Cauliflower Cultivation

S. No.	Suggestions	MPS	Rank
1.	Technical guidance should be provided regarding assessment of ETL	95.49	1
2.	Training on IPM technologies should be imparted	87.15	2
3.	Timely supply of essential inputs should be provided	76.74	7
4.	Trichoderma should be made available at local market	85.42	4
5.	Regular and timely visit of VLW for proper guidance about IPM technologies	72.92	11
6.	Incentives in the form of subsidy should be provided by government for adoption of IPM technologies	79.17	5.5
7.	More number of demonstrations on IPM should be organized on farmers' field	86.46	3
8.	Seeds of improved varieties should be available to the farmers at local market	79.17	5.5
9.	Regular availability of neem cake at village level	73.96	10
10.	Sufficient credit at reasonable rates of interest should be disbursed timely for adoption of IPM technologies	75.00	9
11.	Pesticides and biofertilizers be made available for seed treatment at village level	71.88	12
12.	Suitable implements should be made available for field sanitation and deep ploughing	76.39	8
13.	Appropriate insecticides should be given on right time	70.49	13
14.	Bt. biopesticide should be made available to the farmers	60.76	14

MPS = Mean per cent Score

Table further shows that timely supply of essential inputs for IPM should be provided was suggested by the respondents with 76.74 MPS and was ranked seventh by the cauliflower growers followed by suitable implements should be made available for field sanitation with 76.39 per cent and was ranked eighth by cauliflower growers.

Table 2 also shows that sufficient credit at reasonable rate of interest should be disbursed timely for adoption of

IPM technologies with 75 mean per cent score and ranked ninth by the cauliflower growers followed by regular availability of neem cake at village level with 73.96 MPS. Observation of data also indicates that regular and timely visit of VLW for proper guidance about IPM technologies was needed by the farmers with the extent of 72.92 per cent and ranked eleventh by the cauliflower growers, followed by pesticide and biofertilizers be made available for seed treatment at village level with 71.88 MPS and ranked twelfth by the cauliflower growers.

The suggestion which was offered by cauliflower growers was appropriate insecticides should be given on right time with 70.49 mean per cent score and ranked thirteen. Whereas, Bt. biopesticide should be made available to the farmers was suggested by the respondents with the extent of 60.76 per cent and ranked last by the cauliflower growers.

Findings are the similar with the findings of Anony (2011) who had reported that insecticides and pesticides be made available at subsidized rate by government (63.33%), low cost technology should be developed (60.83%), frequent training should be organized in the villages at proper time (57.50%) and demonstrations should be organized on the farmers' field (46.67%).

CONCLUSIONS

Findings indicated that technical guidance should be provided regarding assessment of ETL, training on IPM technologies should be imparted, more number of demonstrations on IPM should be organized on farmers' field, trichoderma should be made available at local market were important suggestions offered by the respondents.

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