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Knowledge level on integrated pest management of the leafy vegetables growers of Durg district of Chhattisgarh

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Abstract
The study to assess the knowledge level of Integrated Pest Management on the leafy vegetables growers with sample size of 144 leafy vegetable growers of Durg district of chhattisgarh, we divide the overall knowledge level regarding IPM practice in Cultural practices, Mechanical practices, Biological practices and Chemical practices. study showed that the respondents had complete level of knowledge regarding selected cultural practices of IPM in leafy vegetables cultivation included summer ploughing, field sanitation, intercropping, intercultural crop, rotation, irrigation, sowing time, and seed treatment and mechanical practices-hand picking, bird perches, biological practices-, parasites and chemical practices-insecticides etc.

Keywords: Integrated pest management, knowledge level, leafy vegetable, light trap, biological practices

Introduction
Green leafy vegetables are the rich sources of pro-vitamin A, vitamin C, folic acid and minerals like calcium, iron, phosphorus, sodium and potassium. It has been estimated that 100 g of tropical leafy vegetables can provide 60-140 mg of ascorbic acid, 100 µg of folic acid, 4-7 mg iron and 200 - 400 mg of calcium (Saxena, 1999). India is endowed with an array of leafy vegetables suited for tropical, sub-tropical and temperate climates to be grown all the year round. Consumption of herbs is as old as human race itself. Green leafy vegetables represent an excellent component of the habitual diet in the tropical and temperate countries. Green leafy vegetables in our country are known to be the most inexpensive source of several vital nutrients. India is the largest producer of leafy vegetables crops next to China. Leafy vegetables are cultivated in an area of 10383 thousand hectare with an annual production of 179692 thousand metric tons. (Department of Agriculture Cooperation and Farmers Welfare, 2017-18) In Chhattisgarh, vegetables occupied an area of 474701 hectare with an average production of 6754610 metric tons out of these; leafy vegetables are cultivated in an area of 8351 hectare with an average production of 91282 metric tons. (Directorate Horticulture and Farm Forestry, Chhattisgarh, 2017-18). Fifty one such leafy vegetables are available in this region that are eaten by the tribal and local people of Chhattisgarh. Wild plants such as, *Amaranthus species*, *Borhaaviadiffusa*, *Basellrubra*, *Cleome gynandra*, *Chenopodium species Corchorus*species, *Leucascephalotes*, *Hibiscus cannabinus*, and *Trianthemaportulacastrum*are very popular and still are widely available in the communities. Looking to the various types of leafy vegetables grown in Chhattisgarh *i.e.* Amari Bhaji, TinpaniaBhaji, BathuaBhaji, ChaulaiBhaji, ChechBhaji, ChunchuniaBhaji, KarmotaBhaji, Lal Bhaji, MethiBhaji, Palak, PatawaBhaji, PatharriBhaji, Poi Bhaji, SarsonBhaji, JadiBhaji, BoharBhaji. In Durg district leafy vegetables are cultivated in an area of 1221 hectare with an average production of 18864 metric tons. (Directorate Horticulture and Farm Forestry, Chhattisgarh, 2017-18). In our investigation we mainly focused on IPM practice on leafy vegetable IPM is the way, with the help of IPM we can get pure and healthy vegetable for our edible usage it also maintain the ecological cycle and sustain the health of soil.

IPM is a sustainable approach to managing pests by combining biological, cultural, physical and chemical tools in a way that minimizes economic, health, and environmental risks.

Growers have reported that adopting Integrated Pest Management strategies has helped them to regain control over chemical-resistant pests; minimize worker and environmental impacts; minimize synthetic pesticide use and residues; satisfy consumers and the marketplace; reduce costs; and meet quality assurance requirements.

IPM practice is the best strategy in leafy vegetables production programme, but this practice could not reach to the farmers' field. The extent of adoption of IPM practices among farmers is not very encouraging

Materials and Methods

The study was conducted in Durg district of Chhattisgarh state during the year 2018-19. Chhattisgarh state is divided into 27 districts. Durg district was selected purposively because this district having maximum area and production of leafy vegetables in the state. There are total three blocks in Durg district namely, Dhamdha, Durg and Patan. All three blocks were selected for the study. From each selected block, 2 villages were selected purposively on the basis of maximum coverage of area under leafy vegetables cultivation. The 24 leafy vegetables growers were selected randomly from each selected villages. Thus, the total 144 leafy vegetables growers were considered as respondents for the study. The data was collected through personal interview with the help of well-structured and pre-tested interview schedule. The knowledge test composed of items called questions covering various aspects of selected IPM practices. The set of questions developed were discussed with the subject matter specialists in different disciplines who were members of advisory committee. A total of 20 questions were finalized. A device based on teacher made scale was developed and used to measure the knowledge level of farmers regarding various aspect of selected IPM practices, with due modifications. The responses of respondents regarding knowledge were obtained into three point continuum scale.

Results and Discussion

Table 1: Distribution of the respondents according to their practice wise level of knowledge regarding integrated pest management of leafy vegetables. (n=144)

S. N.	IPM practices	Nil	Partial	Complete	Knowledge Index %
		F (%)	F (%)	F (%)	(KI %)
Cultural practices					
1	Summer ploughing	00 (0.0)	24 (16.66)	120 (83.33)	91.66
2	Field sanitation	00 (0.0)	26 (18.05)	118 (81.94)	90.97
3	Crop rotation	00 (0.0)	45 (31.25)	99 (68.75)	84.37
4	Intercropping	00 (0.0)	34 (23.61)	110 (76.38)	88.19
5	Seed treatment	60 (41.67)	53 (36.80)	31 (21.53)	39.93
6	Sowing time	00 (0.0)	40 (27.77)	104 (27.22)	86.11
7	Intercultural	00 (0.0)	41 (28.47)	103 (71.53)	85.76
8	Irrigation	00 (0.0)	92 (63.88)	52 (36.11)	68.05
Mechanical practices					
9	Bird perches	10 (6.95)	91 (63.19)	43 (29.86)	61.45
10	Light trap	39 (27.08)	44 (30.56)	61 (42.36)	57.63
11	Hand picking	00 (00)	59 (40.97)	85 (59.03)	79.51
Biological practices					
12	Parasites	100 (100)	0.0 (0.0)	0.0 (0.0)	0.0
Chemical practices					
13	ETL level	98 (68.05)	34 (23.61)	12 (8.34)	20.13
14	Insecticides	00 (0.0)	80 (55.55)	64 (44.44)	72.22
15	Fungicide	42 (29.16)	61 (42.36)	41 (28.48)	49.65
16	Side effects to Chemicals	30 (20.84)	91 (63.19)	23 (15.97)	47.56
Overall knowledge index = 63.95 %					

The presented data reveals that, the respondents had complete level of knowledge regarding selected cultural practices of IPM in leafy vegetables cultivation included summer ploughing (83.33%), field sanitation (81.94%), intercropping (76.38%), intercultural (71.53%) crop rotation (68.75%), irrigation (36.11%) sowing time (27.22%), and seed treatment (21.53%), mechanical practices- hand picking (59.03%), light trap (42.36%), bird perches (29.86%), biological practices, parasites (0.0%), chemical practices-insecticides (44.44%), fungicide (28.48%), and ETL(8.34%). The respondents, who had partial level of knowledge regarding selected cultural practices of IPM in leafy vegetables cultivation included irrigation (63.88%) seed treatment (36.80%) crop rotation (31.25%) intercultural (28.47%), sowing time(27.77%) and, intercropping (23.61%), field sanitation (18.05%), and summer ploughing(16.66%). In mechanical practices included bird perches (63.19%), hand picking (40.9%), light trap (30.56%) biological practices, parasites (0.0%) per cent Chemical practices, side effects of chemicals (63.19%), insecticide (55.55%), fungicide (42.36%), and ETL (23.61%).In case of incomplete level of knowledge regarding selected cultural practices of IPM in leafy vegetables cultivation i.e. seed treatment (41.67%) and mechanical practices light trap (27.08%), bird perches (6.95%). Biological practices parasites (100%), Chemical practices ETL (68.05%), fungicide (29.16%) and side effects of chemicals (20.84%).

The majority of the respondents (63.19%) had medium level of knowledge regardingIPM practices of leafy vegetables, whereas, (20.83%) and (15.98%) of respondents had low and high level of knowledge, respectively. Thus it can be concluded that, most of the respondents (63.19 %) had medium level of knowledge regarding IPM practices of leafy vegetables.

Conclusion

The knowledge level about IPM practices of leafy vegetables, majority of the respondents were medium knowledge level. In term of of knowledge of cultural practices in IPM growers have maximum knowledge rate in index, the data reveals that knowledge of biological practices of leafy vegetable grower minimum or it can better to say that they know nothing about biological practices. Bridging the knowledge gap in IPM

Practice in leafy vegetable might lead to further increase in the production and productivity of the crop in the study area.

Application of research

Findings of the study will be helpful in designing messages and developing extension strategy for promoting IPM practices on leafy vegetable in the study area.

Research Category: Agricultural extension, Horticulture.

References

1. Ajieh PC. Adoption of Improved Cassava Production and Processing Technologies in Oshimili North Local Government Area of Delta State, Nigeria. Indian Research Journal of Extension Education 2014a;14(1):21-25.
2. Lakra PK. A study on extent of adoption of hybrid rice production technology by the tribal farmers of Surguja district of Chhattisgarh. M.Sc. (Ag.) Thesis, IGKV, Raipur (C.G.), 2011.
3. Nambiar Vanisha S, Dhaduk JJ, Sareen Neha, Shahu Tosha, Desai Rajuta. Journal of Applied Pharmaceutical Science 2011;1(10):62-67.
4. Raghuwanshi HS. Adoption behaviour of rice growers regarding control measures of various insect pests of rice crop in Dhamtari district of Chhattisgarh state. M.Sc. (Ag.) Thesis, IGKV, Raipur, (C.G.), 2005.
5. Vathsala BC. Knowledge and adoption of Integrated Pest Management practices on cabbage by farmers in eastern dry zone of Karnataka. M.Sc. (Agri) Thesis (Unpub.)University of agriculture science Bangalore (Karnataka), 2005.
6. Shrivastava R. Attitude of farmers regarding adoption of control measure practices of various diseases of rice crop in Dhamtari district of Chhattisgarh state. Unpublished M.Sc. (Ag.) Thesis, IGKV, Raipur, (C.G.), 2005.