

Assessment of Training on Plant Protection in Opium in Chittorgarh District of Rajasthan

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ABSTRACT

The opium poppy is most important medicinal plant and is chief source of commercial opium. In chittorgarh district downey mildew powdery mildew stem rot leaf curl diseases cause the significant losses in opium production. For assessment of training the Pre and Post test experimental design was used to study the gain in knowledge by the trainees in plant protection in opium. The training was successful in raising the knowledge of the trainees on different aspects of plant protection to enhancement in knowledge by the trainees with gain in knowledge of 31.31. The maximum gain in knowledge on use of streptomycin (46.51 MPS) followed by Control of boll worm (44.19 MPS), Bacterial disease (41.86 MPS) and minimum gain in knowledge on the Type of crop (6.68 MPS). The Knowledge gain was in powdery mildew (34.88 MPS) and regarding downey mildew (27.91 MPS).

Key words: *Opium poppy; Medicinal plant; Commercial opium; Downey mildew; Powdery mildew;*

The opium poppy (*Papaver somniferum* L.) is historically most important medicinal plant and is chief source of commercial opium. The importance of opium plant is due to opium latex which contains several alkaloids. The capsule is a major organ for morphine storage but it is also present in other parts of like root, stem and leaves. Seeds do not contain any alkaloid, though it is rich source of high quality oil. The other economic parts of opium, which are directly or indirectly use full to human beings are capsules, opium plant straw, seed and seed oil. Capsules, being main locate for the decomposition, is most important organs of the opium poppy. Opium poppy contains about 70% of total morphine synthesized by plants and the content of morphine varies with number and position of capsule on the plant. Morphine is high in 1st lancing and then rapidly decreases in successive lancing. The terminal capsules yield higher morphine content than the lateral ones on the same plant.

The percentage of codeine generally does not vary in opium from successive lancing but narcotine content decreases in a manner similar to that of morphine. About 40 alkaloids have been isolated from opium out of which morphine, codeine, thebaine, narcotine and papaverine

are the chief opium alkaloids for commercially important.

The range of major alkaloids in Indian opium are morphine (7-17 %), codeine (2.1- 4.4 %), Thebaine (1.0 – 3.0 %), narcotine (3.0- 10 %) and papaverine (0.5-3%). Opium is very important crop but its production and productivity is affected by diseases and insects like Downey mildew, powdery mildew, root rot, stem rot, bacterial blight, leaf spot and leaf curl and insects like termite and aphid etc.

In chittorgarh district downey mildew powdery mildew stem rot leaf curl diseases cause the significant losses in opium production so it is necessary to provide technologies for the management of opium diseases and insects. Forty three farmers were trained regarding to plant protection in opium and their assessment was carried out to find out their knowledge gain about plant protection technologies. This study will be help full in transfer of technology regarding plant protection of opium poppy.

METHODOLOGY

The study was carried out at Krishi Vigyan Kendra, Chittorgarh. The sample for the study consisted of 43 farmers of opium growers on need based from

Chittorgarh district of Rajasthan. Pre and Post test experimental design was used to study the gain in knowledge by the trainees in plant protection in opium in Chittorgarh district of Rajasthan. For the purpose of data collection a knowledge test was developed with the help of experts, it was standardized and its reliability and validity was tested. The test-retest method was used for reliability and content validity. Reliability coefficient of the knowledge test was 0.82.

The maximum possible score for the knowledge test was of 28 marks. The response of the training was checked with the recommendation of the scientist. The responses were converted into Mean Per cent Score (MPS) for this purpose.

RESULTS AND DISCUSSION

Knowledge input forms the foundation of any training programme, which needs to be measured in terms of overall change in knowledge level. In the present study knowledge of the participants was judged before and after exposure in the training programme in order to know the enhancement in knowledge due to the training course. Table-1 clearly show that enhancement in knowledge by the trainees as their Mean Per cent Score (MPS) before exposure to training was 38.62, which was increased to 69.93 with gain in knowledge of 31.31. From Table-1 it is clear that participation in plant protection in opium training raised the knowledge level of

Table 1: Overall gain in Knowledge of trainees of trainees by plant protection in opium training.

Particulars	MPS
Before Exposure knowledge	38.62
After Exposure knowledge	69.93
Gain in knowledge	31.31

participants. The Mean Per cent Score (MPS) before the participation in training was 38.62 which after completion of training reached to 69.93.

It is evident from Table 2 that their was a marked difference in the before and after exposure MPS of farmers in all aspects of plant protection in opium training. The gain in knowledge on different major aspects by the trainees indicates that maximum gain in knowledge was in Bacterial disease (42.63). This might be due to the reason of the farmers participation and exposure in the training course.

Respondents also gained good knowledge on the issues like regarding Solution of plant protection chemicals and use, Viral disease, Insect pest of opium and Fungal diseases of opium by their respective gain in knowledge score (MPS) by 37.21, 34.88, 33.14 and 31.69, respectively. Least gain in knowledge was observed in the type of crop 6.98 (MPS) because the maximum farmers know about opium is most important medicinal and chief source of commercial opium.

The gain in the score obtained by trainees clearly depict that the training was successful in raising the knowledge level. The results are in line with the study conducted by *P. K. Dashora and Meena Sanadhya (2004-05)*, They also concluded that there was significant gain in knowledge among the field functionaries of ICDS in southern Rajasthan in different nutritional education aspects on their participation in the training programme.

It is evident from the Table-3 that the scores obtained by trainees clearly indicate that the training was successful in raising the knowledge of the trainees on different aspects. Indicates that as Use of streptocyclin (46.51 MPS) followed by Control of boll worm (44.19

Table 2. Major aspect wise gain in knowledge of trainees by plant protection in opium.

Particulars	Frequency	MPS	Frequency	MPS	Gain in knowledge MPS
Type of crop	40.00	93.02	43.00	100.00	6.98
Know about insect and diseases	38.00	88.37	43.00	100.00	11.63
Seed treatment	12.67	29.47	24.50	56.98	27.51
Insect pest of opium	16.00	37.21	30.25	70.35	33.14
Fungal diseases of opium	21.00	48.84	34.63	80.53	31.69
Bacterial disease	8.00	18.60	26.33	61.23	42.63
Viral disease	5.00	11.63	20.00	46.51	34.88
Regarding solution of plant protection chemicals and use	20.00	46.51	36.00	83.72	37.21

Table 3. Aspect wise gain in knowledge of trainees by plant protection in opium (N- 43)

Particulars	Frequency	MPS	Frequency	MPS	Gain in knowledge MPS
Type of crop	40	93.02	43	100.00	6.98
Know about insect and diseases	38	88.37	43	100.00	11.63
Seed treatment	20	46.51	29	67.44	20.93
Seed treatment for termite	28	65.12	35	81.40	16.28
Seed treatment through chemical for fungal diseases	8	18.60	19	44.19	25.58
Know about <i>Trichoderma</i>	7	16.28	22	51.16	34.88
Quantity of <i>Trichoderma</i>	7	16.28	22	51.16	34.88
Media for <i>Trichoderma</i> multiplication	6	13.95	20	46.51	32.56
Insect pest of opium	22	51.16	32	74.42	23.26
Control of termite	16	37.21	30	69.77	32.56
Control of aphids by chemical	17	39.53	31	72.09	32.56
Control of boll worm	9	20.93	28	65.12	44.19
Fungal diseases of opium	21	48.84	36	83.72	34.88
Root and stem rot	20	46.51	35	81.40	34.88
Use of carbendazim	15	34.88	29	67.44	32.56
Downey mildew of opium	26	60.47	38	88.37	27.91
Control of Downey mildew	24	55.81	35	81.40	25.58
Quantity of Metalaxil /metalaxil + M-45	22	51.16	34	79.07	27.91
Powdery mildew of opium	21	48.84	36	83.72	34.88
Control of Powdery mildew of opium	19	44.19	34	79.07	34.88
Bacterial disease	8	18.60	26	60.47	41.86
Stem rot	7	16.28	24	55.81	39.53
Use of streptocyclin	9	20.93	29	67.44	46.51
Viral disease	5	11.63	21	48.84	37.21
Leaf curl of opium	5	11.63	20	46.51	34.88
Management of leaf curl disease	5	11.63	19	44.19	32.56
Prepare solution of plant protection chemicals for spray	13	30.23	30	69.77	39.53
Preventions during plant protection chemicals spray	27	62.79	42	97.67	34.88
Total	465	1081.40	842	1958.14	876.74
Average	16.61	38.62	30.07	69.93	31.31

MPS), Bacterial disease (41.86 MPS) and minimum gain in knowledge on the Type of crop (6.68 MPS).

CONCLUSION

Based on the findings it can be concluded that the training was useful for trainees in acquisition of new

knowledge and enhancement in the existing knowledge related to plant protection in opium in Chittorgarh district of Rajasthan. Hence, more frequently such type of training programme should be organized were a large number of opium growers can be imparted on improved cultivation for the benefit of rural farmers.

REFERENCES

- Dashora P. K. and Meena Sanadhya (2004-05). Assessment of training on nutrition aducation to field functionaries of ICDS in southern Rajasthan. Raj. J. Extn. Edu.12-13, 2004-05.
- Jat S. R. (2003). Problems and prospectus of opium cultivation. Ph.D Thesis (Unpublished), MPUAT, Udaipur

