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## A study on adoption of control measure practices of parthenium (*Parthenium Hysterophorus* L.) Weed among the farmers of Surguja district of Chhattisgarh

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**Abstract**

A study on adoption of control measure practices of parthenium (*Parthenium Hysterophorus* L.) weed among the farmers of surguja district of chhattisgarh. The problems faced by the farmer during adoption of control measure practices of Parthenium weed are concerned it was found that majority of the respondents reported high cost of herbicides, lack of information regarding harmful effects, control methods and knowledge of Parthenium weed about appropriate doses of herbicides *etc.* that 64.06 per cent of the respondents had medium level of adoption regarding identification of Parthenium weed, and 100 per cent, 98.44 per cent, 98.44 per cent, 95.32 per cent, 92.97 per cent, 96.88 per cent and 60.93 per cent and 56.25 per cent of the respondents had low level of adoption regarding of the control measure practices of Parthenium weed, respectively, whereas the respondents 39.06 per cent mechanical, 35.94 per cent uprooting, 6.25 per cent cultural, 1.56 per cent in utilization and other and 0.78 per cent chemical methods of the respondents had medium level of adoption regarding of the control measure practices of Parthenium weed, and 4.69 per cent mechanical, 3.12 per cent uprooting, 0.78 per cent cultural, and 1.56 per cent chemical methods of the respondents had low level of adoption regarding of the control measure practices of Parthenium weed.

**Keywords:** Adoption of control measure practices of parthenium (*Parthenium Hysterophorus* L.) weed.

**Introduction**

*Parthenium hysterophorus* has been reported to cause skin rashes (dermatitis), on those parts of the body that come in contact with the weed on a regular basis, watery eyes, swelling and itching of the membranes of the mouth and nose, constant coughing especially at night, continually running nose and sneezing, itching of the roof of the mouth and fatigue. Allergy-prone people are particularly susceptible to both the dermatitis and respiratory problems. The weed is unpalatable to livestock so its invasion results in grazing shortages. If it is mixed with fodder, it taints meat and milk. Taking into consideration the magnitude of losses at farm level, it is evident that there is a need to adopt the control measure practices of Parthenium weed, so that we can mitigate the losses. There is thus a need to collect the information about the existing knowledge about control measure practices of Parthenium weed used by the farmers and identify the various problems faced by them during adoption of control measure practices of Parthenium weed. The study will reveal the "Knowledge and adoption of control measure practices of *parthenium hysterophorus* weed among the farmers of Surguja district of Chhattisgarh state" the association of various factors with adoption and problems expressed by the farmers regarding adoption of control measure.

**Research Methodology**

The study was conducted in Surguja district of Chhattisgarh state during the year 2012-2013. Out of total seven blocks in Surguja district namely, Ambikapur, Batouli, Sitapur, Mainpat, Udaipur, Lakhanpur and Lundra. Only two blocks namely Udaipur and Sitapur were selected purposively for this study. Out of the total villages of Sitapur and Udaipur blocks, eight villages from each block were selected randomly. The details about list of villages for the study are as follows: From Sitapur block, Sontarai, Sur, Devgarh, Aamatoli, Kenapara, Bhusu, Jobatikra, and Adersh Nagar, and from Udaipur block, Jhirmiti, Bisunpur, Pandripani, Dadgaw, Dava, Namna, Pandridad, and Bhandarpara. For this study 8 farmers from each village were selected randomly, the total 64 farmers from each block were selected. Thus the total 128 farmers from two blocks were selected randomly for the study. The data were collected by personal interview method by contacting the respondents (farmers) at their home.

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## Results and Discussion

**Table 1:** Distribution of respondents according to their level of adoption regarding control measure practices of Parthenium weed. (n=128)

S.N.	Practices	Level of Adoption		
		Low f/percent	Medium f/percent	High f/percent
1	Identification of Parthenium weed	34 (26.57)	82 (64.06)	12 (9.37)
2	Harmful effects	61 (47.67)	58 (45.31)	9 (7.03)
3	Harmful effects in field	71 (55.47)	50 (39.06)	7 (5.47)
4	Harmful effects in human	117 (91.41)	9 (7.03)	2 (1.56)
5	Identification of skin infection through pach test	128 (100)	0 (0.00)	0 (0.00)
6	Harmful effects in animal	128 (100)	0 (0.00)	0 (0.00)
7	Scientific methods	117 (91.41)	9 (7.03)	2 (1.56)
8	Control methods	100 (78.13)	24 (18.75)	4 (3.12)
9	Mechanical method	72 (56.25)	50 (39.06)	6 (4.69)
10	Uprooting method	78 (60.94)	46 (35.94)	4 (3.12)
11	Uprooting method at right time	108 (84.38)	18 (14.06)	2 (1.56)
12	Precaution on uprooting method	104 (81.25)	14 (10.94)	10 (7.81)
13	Cultural method	119 (92.97)	8 (6.25)	1 (0.78)
14	Legal method	128 (100)	0 (0.00)	0 (0.00)
15	Utilization method	126 (98.44)	2 (1.56)	0 (0.00)
16	Parthenium weed in use of herbicides form	128 (100)	0 (0.00)	0 (0.00)
17	Insecticidal and nematicidal form	126 (98.44)	2 (1.56)	0 (0.00)
18	For making acid and biogas	126 (98.44)	2 (1.56)	0 (0.00)
19	Use of Parthenium weed on firewood	128 (100)	0 (0.00)	0 (0.00)
20	For making card board	128 (100)	0 (0.00)	0 (0.00)
21	Use of Parthenium weed on sericulture	128 (100)	0 (0.00)	0 (0.00)
22	For making compost	126 (98.44)	2 (1.56)	0 (0.00)
23	Use of Parthenium weed which stage on composting	128 (100)	0 (0.00)	0 (0.00)
24	Compost in field	128 (100)	0 (0.00)	0 (0.00)
25	Chemical method	125 (97.66)	1 (0.78)	2 (1.56)
26	Right chemical quantity	122 (95.32)	4 (3.12)	2 (1.56)
27	When chemical method is applied according to day and time- interval	124 (96.88)	2 (1.56)	2 (1.56)
28	Precaution during chemical method	126 (98.44)	2 (1.56)	0 (0.00)
29	Salt solution method	124 (96.88)	2 (1.56)	2 (1.56)
30	Biological method	128 (100)	0 (0.00)	0 (0.00)
31	Fungal method	128 (100)	0 (0.00)	0 (0.00)
32	Bacterial method	128 (100)	0 (0.00)	0 (0.00)
33	Insect method	128 (100)	0 (0.00)	0 (0.00)
34	Competitive plants method	128 (100)	0 (0.00)	0 (0.00)
35	Flowers method	128 (100)	0 (0.00)	0 (0.00)
36	Other methods	128 (97.66)	0 (0.00)	0 (0.00)
37	Surrounding area covered under Parthenium weed	67 (52.35)	49 (38.28)	12 (9.37)
38	Field area which is effected by Parthenium weed	85 (66.40)	34 (26.57)	9 (7.03)
39	Yield loss due to Parthenium weed	106 (82.82)	18 (14.06)	4 (3.12)

It was found that majority of the respondents (47.67%) had low level of adoption regarding identification of harmful effects, whereas, 45.31 and 7.03 per cent of the respondents were having medium and high level of adoption, respectively regarding identification of harmful effects.

It was observed that maximum number of the respondents (55.47) had low level of adoption regarding identification of harmful effects in field, 39.06 and 5.47 per cent of the respondents were having medium and high level of adoption, respectively regarding identification of harmful effects in field.

It was found that majority of the respondents (91.41%) had low level of adoption regarding identification of harmful effects in human, 7.03 and 1.56 per cent of the respondents were having medium and high level of adoption respectively regarding identification of harmful effects in human on Parthenium weed.

It was found that majority of the respondents (100%) had low level of adoption regarding identification of skin infection through pach test, whereas, 0.00 and 0.00 per cent of the respondents were having medium and high level of adoption,

respectively regarding identification of skin infection through pach test.

It was observed that maximum number of the respondents (100%) had low level of adoption regarding identification of harmful effects in animal, 0.00 and 0.00 per cent of the respondents were having medium and high level of adoption, respectively regarding identification of harmful effects in animal.

It was observed that majority of the respondents (91.41%) had low level of adoption regarding scientific methods, 7.03 and 1.56 per cent of the respondents were having medium and high level of adoption, respectively regarding scientific methods.

It was found that maximum number of the respondents (56.25%) had low level of adoption regarding of mechanical method, whereas, 39.06 and 4.69 per cent of the respondents were having medium and high level of adoption, respectively regarding of mechanical method.

It was found that majority of the respondents (60.94%) had low level of adoption regarding uprooting method, whereas, 35.94 and 3.12 per cent of the respondents were having

medium and high level of adoption, respectively regarding uprooting method.

It was found that maximum number respondents (84.38%) had low level of adoption regarding of uprooting methods at right time, whereas, 14.06 and 1.56 per cent of the respondents were having medium and high level of adoption, respectively regarding of uprooting methods at right time.

It was found that majority of the respondents (81.25%) had low level of adoption regarding of precaution on uprooting method, whereas, 10.94 and 7.81 per cent of the respondents were having medium and high level of adoption, respectively regarding of precaution on uprooting method.

It was observed that majority of the respondents (92.97%) had low level of adoption regarding cultural methods, 6.25 and 0.78 per cent of the respondents were having medium and high level of adoption, respectively regarding cultural methods.

It was found that maximum number of the respondents (100%) had low level of adoption regarding legal methods, whereas, 0.00 and 0.00 per cent of the respondents were having medium and high level of adoption, respectively regarding legal methods.

It was found that majority of the respondents (98.44%) had low level of adoption regarding utilization method, whereas, 1.56 and 0.00 per cent of the respondents were having medium and high level of adoption, respectively regarding utilization method.

It was found that maximum number of the respondents (100%) had low level of adoption regarding Parthenium weed in use of herbicides form, whereas, 0.00 and 0.00 per cent of the respondents were having medium and high level of adoption, respectively regarding Parthenium weed in use of herbicides form.

It was found that majority of the respondents (98.44%) had low level of adoption regarding insecticidal and nematicidal form, whereas, 1.56 and 0.00 per cent of the respondents were having medium and high level of adoption, respectively regarding insecticidal and nematicidal form.

It was observed that majority of the respondents (98.44%) had low level of adoption regarding for making acid and biogas, 1.56 and 0.00 per cent of the respondents were having medium and high level of adoption, respectively regarding for making acid and biogas.

It was found that maximum number of the respondents (100%) had low level of adoption regarding use of Parthenium weed on firewood, whereas, 0.00 and 0.00 per cent of the respondents were having medium and high level of adoption, respectively regarding use of Parthenium weed on firewood.

It was found that majority of the respondents (100%) had low level of adoption regarding for making card board, whereas, 0.00 and 0.00 per cent of the respondents were having medium and high level of adoption, respectively regarding for making card board.

It was found that maximum number respondents (100%) had low level of adoption regarding use of Parthenium weed on sericulture, whereas, 0.00 and 0.00 per cent of the respondents were having medium and high level of adoption, respectively regarding use of Parthenium weed on sericulture.

It was found that majority of the respondents (98.44%) had low level of adoption regarding for making compost, whereas, 1.56 and 0.00 per cent of the respondents were having medium and high level of adoption, respectively regarding for making compost.

It was observed that majority of the respondents (100%) had low level of adoption regarding use of Parthenium weed which stage on composting, 0.00 and 0.00 per cent of the respondents were having medium and high level of adoption, respectively regarding use of Parthenium weed which stage on composting.

It was found that maximum number of the respondents (100%) had low level of adoption regarding compost in field, whereas, 0.00 and 0.00 per cent of the respondents were having medium and high level of adoption, respectively regarding compost in field.

It was found that maximum number respondents (97.66%) had low level of adoption regarding chemical method, whereas, 0.78 and 0.15 per cent of the respondents were having medium and high level of adoption, respectively regarding of chemical method.

It was found that majority of the respondents (95.32%) had low level of adoption regarding right chemical quantity, whereas, 4.12 and 1.56 per cent of the respondents were having medium and high level of adoption, respectively regarding right chemical quantity.

It was observed that majority of the respondents (96.88%) had low level of adoption regarding when chemical method is applied according to day and time- interval, whereas, 1.56 and 1.56 per cent of the respondents were having medium and high level of adoption, respectively regarding when chemical method is applied according to day and time- interval.

It was found that maximum number of the respondents (98.44%) had low level of adoption regarding precaution during chemical method, whereas, 1.56 and 0.00 per cent of the respondents were having medium and high level of adoption, respectively regarding precaution during chemical method.

It was found that majority of the respondents (96.88%) had low level of adoption regarding salt solution method, whereas, 1.56 and 1.56 per cent of the respondents were having medium and high level of adoption, respectively regarding salt solution method.

It was found that maximum number of the respondents (100%) had low level of adoption regarding biological method, whereas, 0.00 and 0.00 per cent of the respondents were having medium and high level of adoption, respectively regarding biological method.

It was observed that majority of the respondents (100%) had low level of adoption regarding fungal method, whereas, 0.00 and 0.00 per cent of the respondents were having medium and high level of adoption, respectively regarding fungal method.

It was found that maximum number of the respondents (100%) had low level of adoption regarding of bacterial method, whereas, 0.00 and 0.00 per cent of the respondents were having medium and high level of adoption, respectively regarding of bacterial method.

It was found that maximum number of the respondents (100%) had low level of adoption regarding of insect method, whereas, 0.00 and 0.00 per cent of the respondents were having medium and high level of adoption, respectively regarding of insect method.

It was found that majority of the respondents (100%) had low level of adoption regarding competitive plants method, whereas, 0.00 and 0.00 per cent of the respondents were having medium and high level of adoption, respectively regarding competitive plants.

It was found that majority of the respondents (100%) had low level of adoption regarding flowers method, whereas, 0.00 and 0.00 per cent of the respondents were having medium and

high level of adoption, respectively regarding of flowers method.

It was found that majority of the respondents (100%) had low level of adoption regarding of other method, whereas, 0.00 and 0.00per cent of the respondents were having medium and high level of adoption, respectively regarding of other methods.

It was found that maximum number of the respondents (52.35%) had low level of adoption regarding surrounding area covered under Parthenium weed, whereas, 38.28 and 9.37per cent of the respondents were having medium and high level of adoption, respectively regarding surrounding area covered under Parthenium weed.

It was found that maximum number of the respondents (66.40%) had low level of adoption regarding field area which is effected by Parthenium weed, whereas, 26.57 and 7.03per cent of the respondents were having medium and high level of adoption, respectively regarding field area which is effected by Parthenium weed.

It was found that majority of the respondents (82.82%) had low level of adoption regarding yield loss due to Parthenium weed, whereas, 14.06 and 3.12per cent of the respondents were having medium and high level of adoption, respectively regarding yield loss due to Parthenium weed.

### Conclusions

It can be concluded that 64.06 per cent of the respondents had medium level of adoption regarding identification of Parthenium weed, and 100 per cent, 98.44 per cent, 98.44 per cent, 95.32 per cent, 92.97 per cent, 96.88 per cent and 60.93 per cent and 56.25 per cent of the respondents had low level of adoption regarding of the control measure practices of Parthenium weed, respectively, whereas the respondents 39.06 per cent mechanical, 35.94per cent uprooting, 6.25 per cent cultural, 1.56 per cent in utilization and other and 0.78 per cent chemical methods of the respondents had medium level of adoption regarding of the control measure practices of Parthenium weed, and 4.69 per cent mechanical, 3.12 per cent uprooting, 0.78 per cent cultural, and 1.56 per cent chemical methods of the respondents had low level of adoption regarding of the control measure practices of Parthenium weed.

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