



# Survey on awareness and knowledge of farmers about plaguesome alien weed *Parthenium hysterophorus* in Sagar district of Madhya Pradesh

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## ARTICLE INFO

Received : 26.07.2017  
Revised : 02.09.2017  
Accepted : 14.09.2017

## KEY WORDS :

Parthenium, Awareness, Knowledge, Ill effects, Dissemination

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## ABSTRACT :

A survey on awareness and knowledge of *Parthenium* infestation was conducted in Jaisi nagar block of Sagar district of Madhya Pradesh. The survey indicated that 54 per cent respondents were getting information about *Parthenium* from relatives and neighbors, 40.86 per cent respondents reported ill effects of *Parthenium* on human beings. About the method of *Parthenium* control, 60.86 per cent and 16.57 per cent of the respondents adopted manual and chemical method, respectively.

**How to view point the article :** Mishra, P.K., Parte, Vinita and Jamliya, Ghanshyam (2017). Survey on awareness and knowledge of farmers about plaguesome alien weed *Parthenium hysterophorus* in Sagar district of Madhya Pradesh. *Internat. J. Plant Protec.*, **10(2)** : 389-392, DOI : 10.15740/HAS/IJPP/10.2/389-392.

## INTRODUCTION

The genus name *Parthenium* is derived from the Latin word parthenice- a reference to the plant known as *Tanacetum parthenium* (L.) Bernn or “fever few” *hysterophorus* was derived from the Greek hystera (womb) and phoros (bearing) referring to the prolific seeding habit of the plant (Parson and Cuthbetson, 1992). It is commonly called as bitter weed, carrot weed, broom blush and congress grass in India, white top, Escobar amarga and fever few in Carribean and false ragweed and rag weed parthenium in USA.

*Parthenium* is highly problematic, poisonous and aggressive weed posing serious threats to crops, human beings and livestock. It has become one of the seven

most dreaded weeds of the world within the last decade (Singla, 1992). *Parthenium* is a native weed of tropical North and South America and West Indies. Cock and Seier (1999) reported that the form of *Parthenium* exotic to the old World originated from North America with its evolutionary centre most probably being Northern Mexico and Southern USA. *Parthenium* was introduced first with milograin seed in India and was first noticed in Pune in 1955 (Rao, 1956). Thereafter further quantities of its seed have come to India through PL 480 wheat imported from USA (Mukhopadhyay, 1987). From the initial infestation in Maharashtra, it has spread like a wild fire in almost all parts of the country with the exception of some arid zones of Rajasthan and adjoining South-west

areas of Haryana.

*Parthenium* invasion is attributed to its wider adaptation across climates, photo-insensitivity, thermo-insensitivity (Mahadevappa, 1997), drought tolerance (Kohli and Rani, 1994) and no seed dormancy (Haseler, 1976). It has become a major weed of regional, national or international concern with in short period because of its huge seed production ability (10,000-15,000 seeds/plant) and small and light weight seeds capable of long distance travel through wind, water, birds, other animals, traffic and transported goods. The sesquiterpene lactones namely parthenin and cornopilin present in the trichomes of leaves and stems of *Parthenium* are responsible for causing various allergies like contact dermatitis, hay fever, asthma and bronchitis in human beings (Wiesner *et al.*, 2007). The present study was carried out to study the awareness and knowledge of the farmers in identification of *Parthenium* weed, its ill effects on the environment and preventive measures taken so far in the area.

## MATERIAL AND METHODS

The survey study was conducted in the year of 2016 in Jaisi nagar block of Sagar district. The survey study was based on the interview with the farmers about their knowledge of *Parthenium* available in the area and

surroundings. 350 respondents were selected from two villages *i.e.* Baddaua and Kanheragond of Jaisi nagar block of Sagar district of Madhya Pradesh. Out of these 350 respondents, 175 respondents were selected purposively from each village. Survey was carried out by the students of College of Agriculture, Ganjbasoda under RAW (Rural Agricultural Work Experience) programme of ICAR, to get the knowledge of farmers regarding *Parthenium*. During the survey study period fourteen students were placed to contact 25 farmers per student. The data taken from students were compiled and the result of the awareness and knowledge of farmers has been reported on percentile basis.

## RESULTS AND DISCUSSION

The survey was conducted to assess the awareness and knowledge of the respondents of Jaisi nagar block of Sagar district about *Parthenium*. The data of Table 1 showed that 30.29 per cent of the respondents were age group of 41-50 years, 24.85 per cent were more than 50 years closely followed by 24.00 per cent were between the age group of 31-40 years and 20.86 per cent respondents between 20-30 years age group. The survey study indicated that there were 7.43, 12.29, 29.71 and 5.14 per cent of the respondents studied graduation,

**Table 1 : Age group of respondents**

Age group	No. of respondents	%
20-30 years	73	20.86
31- 40 years	84	24.00
years	106	30.29
>50 years	87	24.85

**Table 2 : Educational level of respondents**

Education level	No. of respondents	%
Illiterate	159	45.43
1-5 <sup>th</sup> class	18	5.14
6-10 <sup>th</sup> class	104	29.71
11-12 <sup>th</sup> class	43	12.29
Graduation	26	7.43

**Table 3 : Land holding of the respondents**

Land holding (acre)	No. of respondents	%
1-5	147	42.00
6-10	109	31.14
10-15	60	17.14
>15	34	9.71

**Table 4 : Source of information about *Parthenium***

Source of information	No. of respondents	%
Media (Newspaper, TV, magazines)	117	33.43
Relatives and neighbors	189	54.00
Extension workers	44	12.57

**Table 5 : Mostly seen of *Parthenium***

Soil	No. of respondents	%
Light	75	21.42
Heavy	221	63.19
All	54	15.39

**Table 6 : Knowledge of the respondents about invasion period of *Parthenium***

Period (years)	No. of respondents	%
1-10	157	44.86
10-20	70	20.00
>20	123	35.14

**Table 7 : Knowledge of the respondents about area of *Parthenium* infestation**

Area of infestation	No. of respondents	%
Wasteland	119	34.00
Along roadside	90	25.71
Railway track	79	22.57
Crop field	62	17.71

**Table 8 : Knowledge of the respondents about dissemination method of *Parthenium***

Method of dissemination	No. of respondents	%
FYM/ compost	29	8.29
Water	61	17.43
Wind	47	13.43
Seed	12	3.43
Animals	23	6.57

**Table 9 : Knowledge of the respondents about ill effects of *Parthenium***

Ill effect	No. of respondents	%
Poisonous to animal	39	11.14
Human diseases	143	40.86
Harmful for both human and animals	117	33.43
Affect the crop growth	109	31.14

**Table 10 : Knowledge of the respondents about the methods of *Parthenium* control**

Method of control	No. of respondents	%
Manual	213	60.86
Chemical	58	16.57
Biological	3	0.86

between 11-12<sup>th</sup> class, 6-10<sup>th</sup> class and upto 5<sup>th</sup> class, respectively. On the other hand, 45.43 per cent of the respondents were illiterate (Table 2).

Most of the respondents *i.e.* 42 per cent were having 1-5 acres, 31.14 per cent having 6-10 acres, 17.14 per cent having 10-15 acres and 9.71 per cent were having more than 15 acres of land (Table 3). The data of Table 4 reveals that 54 per cent respondents were getting information from relatives and neighbors, 33.43 per cent were from media and remaining 12.57 per cent respondents were getting information from extension workers. Respondents accepted that *Parthenium* growth was more profuse in heavy soil (63.19%) followed by light soils (21.42 %). On the other hand, 15.39 per cent respondents replied that *Parthenium* weed can grow in all the soil types (Table 5). The data of Table 6 showed that majority of the respondents *i.e.* 44.86 per cent informed that *Parthenium* has been invading the area for last 1-10 years whereas, 20.00 per cent and 35.14 per cent respondents reported that it has been invading the area for the last 10-20 years and more than 20 years, respectively. About the area of *Parthenium* infestation, 34 per cent respondents noticed maximum infestation of this weed in wasteland while, 25.71, 22.57 and 17.71 per cent respondents noticed its infestation along roadside, railway track and crop field, respectively (Table 7).

Weed dissemination is a silent, unseen, unidirectional or multidirectional travelling of the weed seeds from one place to another and therefore, weeds are described as the silent traveler. *Parthenium* seeds are light, small and black in colour and they can spread with air, water and animals from one place to another. Majority of the respondents (50.86 %) did not have any idea about the dissemination method of *Parthenium*. Only 17.43, 13.43, 8.29, 6.57 per cent and 3.43 per cent of the respondents reported that it has been introduced through water, wind, FYM/compost, animals and seeds, respectively (Table 8).

*Parthenium* is hazardous weed and it causes different diseases in human beings and animals. The data of Table 9 reveal that 11.14 per cent respondents were aware about the ill effects of *Parthenium* on animal, 40.86 per cent and 33.43 per cent were about the harmful effect of *Parthenium* on human beings or both on human beings and animals. Only 31.14 per cent respondents

said that *Parthenium* affects the growth of crop. About the method of *Parthenium* control, 60.86 per cent and 16.57 per cent of the respondents adopted manual and chemical method, respectively. Chemical methods involved spraying of salt and glyphosate. Only 3 (0.86 %) respondents knew about the biological control but these respondents did not adopt this method due to unavailability of mexican beetle *i.e.* *Zygogramma bicolorata*, while 21.71 per cent respondents did not adopt any specific method (Table 10).

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