Knowledge and Adoption Level of Improved Production Technology among Opium Poppy growers in Mandsaur District (M.P.)

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Abstract

The opium poppy is an outstanding medicinal plant, the products of which viz. opium and codeine are important medicines used for their analgesic and hypnotic effects. Its cultivation in India is confined to states of Madhya Pradesh, Rajasthan and Uttar Pradesh. It is a crop of temperate climate but can be grown successfully during winter in, sub-tropical regions. Cool climate favors higher yield, while, higher day / night temperature generally affects the yield. the study was conducted in Mandsaur district, (M.P.) during 2014-15, 5 villages and 120 opium poppy growers were selected. Independent variables i.e. annual income, farm size, source of irrigation, farm mechanization, risk taking ability, occupation aspiration were found to be significant with adoption level of opium poppy production technology of opium growers, whereas caste of opium growers was found to be non-significantly associated with their adoption behaviour.

INTRODUCTION

Opium poppy is botanically classified as Papaver somniferum. It grows in abundance in sub-tropical regions of the M.P. The plant is very hardy, not easy to grow and need expensive fertilizers, insecticides or fungicides. Papaver somniferum produces mainly
two products: opium and the seeds. The seeds are quite harmless; the opium gum on
the other hand yields wide range of (dependence producing) alkaloids. The seeds are
used as condiments for cooking. Harvesting opium is an exhaustive and labour
intensive process. Traditionally the unripened pod is slit open and the sap seeps out
and dries on the outer surface of the pod. The resulting yellow-brown latex, which is
scraped off of the pod, is bitter in taste and contains varying amounts of alkaloids.
Total alkaloids contain 9-14 % morphine. This raw opium is processed to obtain
various alkaloids namely morphine, codeine and papaverine which have clinical
usefulness. Opium is used Medicines as painkiller, analgesics (Reduce of pain) has
hypotonic effect and used is to cure leukemia. Heroine is a semi - synthetic derivative
of morphine. Today, in most areas where the plant is legally grown, the above opium
collection stage is bypassed and the dried capsule known as poppy straw are
processed to extract the alkaloids (Booth, 1998).

Medicinal plants play a central role not only as traditional medicines but also as trade
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**OBJECTIVE**

To study the impact of economic attributes on adoption of opium production
technology.
REVIEW OF LITERATURE

Chandrashekhar (2007) reported that half (50.00%) of the respondents had annual income ranging from Rs.25,000-Rs.50,000 from all the sources. About one fourth of the respondents had income ranging from Rs.75,000-Rs.1,00,000 respectively.

Patel and Patel (2000) conducted study on aspiration source for introducing drip system in crop and that dealer/agent of irrigation system were indicated as a source for inspiration by majority of drip owners.

Parmar (2014) revealed that in case of (participant) soybean growers, the higher number of soybean growers (38.10%) possess medium number of farm mechanization followed by high number of farm mechanization (25.00%) respectively and low number of farm mechanization (25.00%) respectively.

Verma (2013) reveals that the total 56 per cent were having medium size of land holding and 20 per cent large size of land holding and 24 per cent small size of land holding.

Patel (2015) reported that the average size of holding represents 4.60 hectare per farm in the area which is ranged from minimum area 1.10 hectare to maximum 12.80 hectare. The area of holding differentiates with the size group i.e. 1.50 hectare with small size group followed by 3.28 and 9.02 hectare with medium and large size group respectively.

MATERIAL AND METHODS

For fulfilment of these objective, the study was conducted in Mandsaur district (M.P.) during 2014-15. 5 villages and 120 opium poppy growers were selected. All the opium growers were selected purposively for the study. The list of selected growers were selected randomly. The data were collected using survey method through a pre-tested interview schedule. Collected data were then tabulated and analyzed using appropriate statistical techniques.

1- Annual income:

In measuring this variable the total yearly earning of an individual respondent was measured in rupees from all the sources.
2-Farm size:
The farm size is represented as land holding, the area of land possessed by opium poppy growers which are used for cultivation. The land holding was measured with the help of structural schedule.

3-Source of irrigation:
Source of irrigation refers to the availability of irrigation through various sources. This was calculated on the basis of score allotted, 1 score for one source of irrigation. This scoring sequence maintained continues for simultaneous sources.

4-Farm mechanization:
Farm mechanization may be determined by the power utilization pattern in flower cultivation through use of machine and implements. It consists of number of machines and modern implements possessed by farmer. In study for level of firm mechanization measurement self-scoring was used in which the respondents were asked if they possessed those machines and implements or not. In case they did, how many did they possess and if the number of that item was more than one, the score of that item increased accordingly. The score were added up to get the total score of firm machine utilization.

5-Risk taking ability:
Risk taking ability is a degree to which an individual takes risk and shows courage in facing the problems that arise in opium poppy cultivation. The opium poppy growers are taking challenges for uncertainty in opium poppy cultivation which they have to bear. This scale consists of 5 statements.

6-Occupation aspiration:
The main aim of opium poppy growers is to realize maximum profit with low cost of inputs. To achieve the goal, production should also increase with optimum use of technology. This aspiration sources for introducing improved technology with respect to occupation aspects in opium poppy.

Extent Adoption level of opium poppy growers:
Adoption behavior of opium poppy growers, in present study, refers the extent of improved opium production technology and practices adopted by the opium growers
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on their farm as per the recommendation. To measure the level of adoption behavior, adoption index was developed which consisted of 14 practices.

RESULT AND DISCUSSION

Considering adoption level of opium poppy growers in respect of opium production technology which may be influenced by different socio economic and psychological attributes of opium producers may be needs to assess for further improvement in adoption level.

In order to study the association as influencing factors like socio-personal, economic, communication and psychological attributes of opium growers on their knowledge level and adoption level in opium poppy cultivation, the values of $\chi^2$ were calculated for individual independent variable in relation to dependent variable as follows.

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Variable</th>
<th>$\chi^2$ value</th>
<th>Association with adoption</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Annual income</td>
<td>15.47</td>
<td>S.</td>
</tr>
<tr>
<td>2</td>
<td>Farm size</td>
<td>11.32</td>
<td>S.</td>
</tr>
<tr>
<td>3</td>
<td>Source of irrigation</td>
<td>16.27</td>
<td>S.</td>
</tr>
<tr>
<td>4</td>
<td>Farm mechanization</td>
<td>12.71</td>
<td>S.</td>
</tr>
<tr>
<td>5</td>
<td>Risk taking ability</td>
<td>13.75</td>
<td>S.</td>
</tr>
<tr>
<td>6</td>
<td>Occupation aspiration</td>
<td>13.50</td>
<td>S.</td>
</tr>
</tbody>
</table>

$4d.f. = \text{Degree of freedom, N.S. = Non-significant, S. = Significant, Level of Probability- 0.05}$

1-Annual Income:

The income from opium poppy was found significant associated with knowledge level of opium growers. Hence, it can be concluded that income from opium poppy had influence on level of knowledge of opium poppy production technology. This finding is in conformity with the findings as reported by Chandrashkhar (2007). Hence, it can be concluded that income of opium growers had influence on level of knowledge of opium poppy production technology.

2-Farm size:

The farm size was found significant associated with knowledge level of opium growers. Hence, Land holding is a criterion to know about improved practices.
Profitability of raising a crop makes farmers know about improved technology respective of the size of farm. Hence, it can be concluded that farm size of opium growers had influence on level of knowledge of opium poppy production technology.

3-Source of irrigation:
The Source of irrigation was found significant associated with knowledge level of opium growers. Hence, it can be concluded that behaviour of opium growers had influence on level of knowledge of opium poppy production technology.

4- Farm mechanization:
The farm mechanization was found significant associated with knowledge level of opium growers. Hence, it can be concluded that farm mechanization of opium growers had influence on level of knowledge of opium poppy production technology.

5-Risk taking ability:
The risk taking ability from opium poppy was found significant associated with knowledge level of opium growers. Hence, it can be concluded that risk taking ability from opium poppy had influence on level of knowledge of opium poppy production technology. This finding is in conformity with the findings as reported by Agarwal (2013). Hence, it can be concluded that risk taking ability of opium growers had influence on level of knowledge.

6-Occupation aspiration:
The occupation aspiration was found significantly associated with knowledge level of opium growers. Hence, it can be concluded that occupation aspiration of opium growers had influence on level of knowledge of opium poppy production technology.

Adoption of proper Realization of optimum yield:
Adoption of proper Realization of optimum yield (30-40kg) showed that higher number of “opium poppy” growers 43.33 per cent partial adopted followed by 35.00 per cent opium poppy growers adopted full level and 21.66 per cent opium poppy growers least adopted proper Realization of optimum yield.
Table: Distribution of opium poppy growers according to overall adoption level.  

(n=120)

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Adoption level</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Low</td>
<td>25</td>
<td>20.84</td>
</tr>
<tr>
<td>2.</td>
<td>Medium</td>
<td>55</td>
<td>45.83</td>
</tr>
<tr>
<td>3.</td>
<td>High</td>
<td>40</td>
<td>33.33</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>120</td>
<td>100</td>
</tr>
</tbody>
</table>

The data presented in table 4.14 showed that majority of the opium poppy growers 45.83 per cent found to high adoption level of overall technology followed by medium adoption level 33.33 per cent and low adoption level 20.84 per cent in respect of overall opium poppy production technology respectively.

Thus, it can be concluded that in study area, most of the opium growers were found to high adoption level of overall technology of opium production followed by medium and low adoption.

Adoption level about the opium poppy production technology:

It can be clear from the result of the study that the most of the opium growers were found to medium adoption level of overall technology of opium production followed by high and low adoption. The situation reveals that the respondents were average in adoption of improved opium production technology. This might be due to the fact that, opium growers had the tendency towards indiscriminate use of inputs in efficiently, lack of technical skill and lack of faith in result of these improved practices and technology. The prime reason for medium adoption of opium production technology is also high cost of inputs and uncertainty in market return.

CONCLUSION

In the case of socio-personal economic attributes, most maximum opium growers having high level of annual income, maximum opium growers having medium farm size, maximum opium growers having low level of source of irrigation, maximum opium growers having medium level of farm mechanization and maximum opium growers having high risk taking ability. Psychological attribute indicated that maximum opium growers having high level of occupation aspiration.