

**RESEARCH ARTICLE :**

# Relationship between perceived feasibility and extent of adoption of best management practices of cotton

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**ARTICLE CHRONICLE :**

**Received :**  
10.07.2017;

**Accepted :**  
25.07.2017

**KEY WORDS :**

Feasibility,  
Correlation, Best  
management  
practices, Cotton,  
Adoption

**SUMMARY :** The study was carried out in Nalgonda district of Telangana with 120 cotton farmers as respondents. Ex-post facto research design was followed in the investigation. The respondents were selected at random from four villages of two mandals of the district. Feasibility of selected best management practices was obtained using perceived feasibility index (PFI) taking into consideration seven attributes such as suitability, profitability, complexity, observability, compatibility, cost and trialability. Extent of adoption of each practice was made according to the three-point continuum. Correlation analysis between the overall level of perceived feasibility and overall extent of adoption of best management practices revealed that correlation is significant at the 0.01 level (2-tailed). Among the nine selected best management practices, irrigation, nutrient management, weed management, insect pest management, harvest and post-harvest management have shown positive significant relationship with extent of adoption.

**How to cite this article :** Parveen, Shaik Neema, Sudharani, V., Darshan, N.P. and Rajashekar, B. (2017). Relationship between perceived feasibility and extent of adoption of best management practices of cotton. *Agric. Update*, 12(TECHSEAR-3) : 664-666; DOI: 10.15740/HAS/AU/12.TECHSEAR(3)2017/664-666.

## **BACKGROUND AND OBJECTIVES**

Agriculture is one sector that impacts and in turn is impacted the most by environment. Hence sustainability of the human race and world depends a lot on environment friendly agriculture. During the past fifty years, agricultural development policies have been remarkably successful at emphasizing external inputs as the means to increase food production. These external inputs have substituted for natural processes and

resources, rendering them less powerful and dangerous to the environment. The basic challenge for sustainable agriculture is to make better use of these natural resources. This can be done by minimizing the external inputs use and by regenerating internal resources more effectively, or by combinations of both.

Cotton is one of the most important commercial crops playing a key role in the world economy. Being a cash crop, cotton is known for its intensive cultivation. The focus on high yield production, without taking

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agriculture and environmental sustainability into account, has become standard practice. After few years of introduction of Bt cotton the pesticide use has again increased due to increased incidence of sucking pests. Best management practices (BMPs) are one among the recent concepts under sustainable cotton cultivation. These are agricultural practices which optimize the three pillars of sustainability. The three pillars include social responsibility, environmental integrity and economic viability.

There is hardly any study aimed understanding level of perceived feasibility of best management practices and extent of adoption of the same. Keeping this in view, the present study was carried out with one of the objective as determining correlation between level of perceived feasibility and extent of adoption of best management practices in cotton.

## RESOURCES AND METHODS

The study was conducted in Nalgonda district with a sample of 120 cotton farmers. Ex-post facto research design was followed. The respondents were selected from four villages of two mandals of the district at random. List of best management practices in cotton from the book "Best Management Practices in Agricultural Crops" published and released by Professor Jayashankar Telangana State Agricultural University (formerly ANGRAU) were prepared initially. After consultation with subject matter specialists, 9 important best management practices were identified pertaining to the study area. Feasibility was operationalised as the degree to which a recommended best management practice can be adopted or practiced by an individual farmer in a given farming system. It was measured in terms of seven perceived attributes such as suitability, profitability, complexity, observability, compatibility, cost and trialability. It was arrived at by using the perceived feasibility index developed by Sihag and Malaviya (1990) with slight modifications. Responses were measured by using three-point continuum for each of the perceived attribute against each practice as high, medium and low and the scores were given as 3, 2, 1 for the positive attribute and 1, 2, 3 for the negative attribute, respectively. The extent of adoption of selected best management practices was assessed with the help of three-point continuum that is fully adopted, partially adopted and not adopted and the scoring was given as 2, 1 and 0, respectively. In order to study the relationship between

level of feasibility and extent of adoption of selected best management practices, correlation co-efficient ( $r$ ) was computed. The relationship was tested by relevant empirical and null hypothesis.

## OBSERVATIONS AND ANALYSIS

From the Table 1, it could be observed that there is significant relationship between level of feasibility and extent of adoption of selected best management practices.

**Table 1 : Relationship between overall perceived feasibility index (PFI) and overall adoption quotient (AQ) of selected best management practices**

		Overall AQ
Overall PFI	Pearson correlation	.676**
	Sig. (2-tailed)	.000
	N	120

\*\* Correlation is significant at the 0.01 level (2-tailed)

Practice-wise analysis was also carried out in the present study and presented in Table 2. It could be seen from Table 2 that calculated 'r' value of perceived feasibility of spacing and adoption of spacing was less than table 'r' value. Hence null hypothesis is accepted. This indicates that there is no significant relationship between perceived feasibility of spacing and its adoption.

With respect to intercropping, the calculated 'r' value of perceived feasibility and adoption was less than table 'r' value (Table 2). Hence null hypothesis was accepted and concluded that there is no significant relationship between perceived feasibility of intercropping and its adoption. But the 'r' value indicated a negative sign which states a negative non-significant relationship. Analysis from the attributes inferred that perceived complexity and perceived cost showed negative non-significant relationship with extent of adoption.

Results on relationship between perceived feasibility of irrigation and its adoption showed that the calculated 'r' value is greater than table 'r' value (Table 2). Hence null hypothesis is rejected and empirical hypothesis is accepted concluding that there is significant relationship between perceived feasibility of irrigation and its adoption. Attributes such as perceived profitability and perceived observability showed positive significant relationship with extent of adoption.

With respect to nutrient management it could be observed that the calculated 'r' value is greater than table 'r' value (Table 2). Hence null hypothesis is rejected and empirical hypothesis is accepted. Thus it is concluded that there is significant relationship between perceived

feasibility of nutrient management practices and its adoption. Analysis of attributes stated that perceived observability, perceived profitability and perceived compatibility were found to be showing positive and significant relationship with extent of adoption of nutrient management practices.

Results on relationship between perceived feasibility of weed management practices and their adoption from Table 2 indicate that calculated 'r' value is greater than table 'r' value. Hence null hypothesis is rejected and empirical hypothesis is accepted. Thus it can be concluded that there is significant relationship between perceived feasibility of weed management practices with its adoption. Analysis of attributes stated that perceived observability, perceived profitability and perceived compatibility has shown positive significant relationship with extent of adoption. However, with respect to manual weeding, perceived complexity and perceived cost have shown negative relationship.

With respect to insect pest management practices, it could be seen from the Table 2 that the calculated 'r' value is greater than table 'r' value. Hence null hypothesis is rejected and empirical hypothesis is accepted and concluded that there is significant relationship between perceived feasibility of pest management practices with its adoption. Among the seven attributes taken to determine perceived feasibility index (PFI), perceived trialability, perceived compatibility and perceived profitability were found to be showing positive significant relationship with extent of adoption.

From Table 2 it can be seen that calculated 'r' value of perceived disease management practices and extent of adoption is less than table 'r' value. Hence Null

hypothesis is accepted and concluded that there is no significant relation between perceived feasibility of disease management practices with extent of adoption of the same.

The calculated 'r' value of perceived feasibility of harvest and post-harvest management practices and extent of adoption is greater than table 'r' value. Hence Null hypothesis is rejected and empirical hypothesis accepted. Thus it is concluded that there is significant relationship between perceived feasibility of harvest and post-harvest management practices and extent of adoption of the same (Table 2). Among the attributes perceived profitability and perceived observability were found to be showing positive significant correlation with extent of adoption.

### Conclusion :

The adoption of a technology by a farmer depends largely on its perceived feasibility. In the present study, feasibility was determined using seven perceived attributes and correlated with extent of adoption. It was observed that among the nine selected best management practices, irrigation, nutrient management, weed management, insect pest management, harvest and post-harvest management have shown positive significant relationship with extent of adoption. This may indicate that a greater extent of adoption of a practice or a technology can be attained if the farmer feels it is feasible. Hence extension personnel can aid the farmers in a decision making process, help them realize the positive attributes of a technology and also reduce influence of negative attributes (complexity) for a greater adoption of best management practices.

**Table 2 : Relationship between component wise perceived feasibility and extent of adoption of selected best management practices**

Perceived feasibility indices	Correlation values	Adoption quotients
Spacing	0.069 <sup>NS</sup>	Spacing
Intercropping	-0.103 <sup>NS</sup>	Intercropping
Irrigation	0.516 <sup>**</sup>	Irrigation
Nutrient management	0.511 <sup>**</sup>	Nutrient management
Weed management	0.484 <sup>**</sup>	Weed management
Pest management	0.302 <sup>**</sup>	Pest management
Disease management	0.120 <sup>NS</sup>	Disease management
Harvest and post-harvest management	0.356 <sup>**</sup>	Harvest and post-harvest management

\*\*Correlation is significant at the 0.01 level NS=Non-significant

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