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Impact assessment of Godavari pigeon pea variety among farmers in the Marathwada region of Maharashtra

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Abstract

The present study was carried out in the Chatrapati Sambhajnagar district of Marathwada region of Maharashtra state. From Chatrapati Sambhajnagar district, three tehsils namely Paithan, Phulambri, Vijapur were selected purposively. From each selected tehsil four villages were selected randomly. From each selected villages ten farmers were selected randomly. Thus, 120 farmers were selected for the study. The study was based on an ex-post facto research design. The study indicated that the majority (70.00%) of the respondents had a medium level of impact of the Godavari variety on pigeon pea growers. 15.84 per cent of the respondents had a low level of impact, while 14.16 per cent had a high level of impact. Thus, it can be concluded that the overall impact of the Godavari variety was medium among the majority of pigeon pea growers.

Keywords: Godavari variety, pigeon pea growers, pigeon pea, variety impact, varietal adoption

Introduction

Pigeon pea (*Cajanus cajan* (L.) Millsp.) is an important pulse crop of India and is a major source of dietary protein. It also contributes to soil fertility through biological nitrogen fixation and has an important role in the agricultural economy of rainfed regions.

Maharashtra is one of the major pigeon pea-growing states in India, with the crop being widely cultivated in the Marathwada region. Pigeon pea is an important component of the cropping system of this region and contributes to farm production and income.

Improved varieties play an important role in increasing crop productivity and improving the economic returns of farmers. The Godavari variety of pigeon pea is an improved variety cultivated by farmers in Maharashtra and has gained importance because of its suitability to the prevailing agro-climatic conditions.

Impact assessment helps to measure the changes resulting from the adoption of an improved agricultural technology. It provides information on changes in production, productivity, income and socio-economic aspects of farmers. Therefore, the present study entitled "Impact assessment of Godavari pigeon pea variety among farmers in the marathwada region

of Maharashtra".

Objective

Impact of Godavari variety by pigeon pea growers.

Materials and Methods

The present study was carried out in the Chatrapati Sambhajnagar district of Marathwada region of Maharashtra state. From Chatrapati Sambhajnagar district, three tehsils namely Paithan, Phulambri, Vijapur were selected purposively. From each selected tehsil four villages were selected randomly. From each selected villages ten farmers were selected randomly. Thus, 120 farmers were selected for the study. The research design followed for the study was Ex-post-facto. The collected data was measured by using frequency, percentage, arithmetic mean, 'z' test.

Results and Discussion

1. Economic change

1.1 Change in income

The change in farmers income before and after adopting the Godavari variety indicating the economic benefit gained through its cultivation

Table 1: Distribution of the respondents according to their change in income before and after cultivation of Godavari variety

A.	Economic change								N=120
1.	Change in income								
	Before Cultivation				After Cultivation				'Z' value
Sr.no	Category	Score	F	%	Category	Score	F	%	
1.	Low	Up to 9	17	14.16	Low	Up to 13	14	11.66	15.99**
2.	Medium	10 to 13	77	64.16	Medium	14 to 17	80	66.66	
3.	High	Above 13	26	21.67	High	Above 14	26	21.67	
			120	100.00			120	100.00	

**Significant at 0.01% level of probability

The data presented in the table 1 revealed that, before cultivation, nearly two-third (64.16%) of the pigeon pea growers belonged to the medium category of change in income, followed by 21.67 per cent in the high category and 14.16 per cent in the low category. After cultivation, exactly (66.66%) of the pigeon pea growers belonged to the medium category of change in income, followed by 21.67 per cent in the high category and 11.66 per cent in the low category. The Z value change in income (15.99**) of before cultivation

and after cultivation of Godavari variety was found significant at 0.01% level of probability, which indicate that there was highly significant difference among them.

1.2 Expenditure change

The Change in the cost of cultivation before and after adopting the Godavari variety, indicating its effect on farmers' production expenses.

Table 2: Distribution of the respondents according to their change in expenditure before and after cultivation of Godavari variety

A.	Economic change								N=120
2.	Expenditure change								
	Before Cultivation				After Cultivation				'Z' value
Sr.no	Category	Score	F	%	Category	Score	F	%	
1.	Low	Up to 8	33	27.50	Low	Up to 13	14	11.67	18.87**
2.	Medium	9 to 12	53	44.17	Medium	14 to 17	90	75.00	
3.	High	Above 12	34	28.33	High	Above 17	16	13.33	
			120	100.0			120	100.00	

**Significant at 0.01% level of probability

The data presented in the table 2 reveal that, before cultivation, nearly half (44.17%) of the pigeon pea growers belonged to the medium category of expenditure change, followed by 28.33 per cent in the high category and 27.50 per cent in the low category. After cultivation, majority (75.00%) of the pigeon pea growers belonged to the medium category of expenditure change, followed by 13.33 per cent in the high category and 11.67 per cent in the low category. The Z value expenditure change (18.87**) of before cultivation and after cultivation of Godavari variety was

found significant at 0.01% level of probability, which indicate that there was highly significant difference among them.

2. Social change

2.1 Material possession

Ownership of agricultural implements and household materials by farmers, reflecting their socio-economic status and changes in their standard of living.

Table 3: Distribution of the respondents according to their change in material possession before and after cultivation of Godavari variety

B.	Social change								N=120
1.	Material Possession								
	Before Cultivation				After Cultivation				'Z' value
Sr.no	Category	Score	F	%	Category	Score	F	%	
1.	Low	Up to 9	28	23.33	Low	Up to 12	21	17.50	19.39**
2.	Medium	10 to 11	58	48.33	Medium	13 to 14	99	82.50	
3.	High	Above 11	34	28.34	High	Above 14	0.00	0.00	
			120	100.0			120	100.00	

**Significant at 0.01% level of probability

The data presented in the table 3 reveal that, before cultivation, nearly half (48.33%) of the pigeon pea growers belonged to the medium category of material possession, followed by 28.34 per cent in the high category and 23.33 per cent in the low category. After cultivation, majority (82.50%) of the pigeon pea growers belonged to the medium category of material possession, followed by 17.50 per cent in the low

category. None of the pigeon pea growers belonged to the high category.

The Z value expenditure change (19.39**) of before cultivation and after cultivation of Godavari variety was found significant at 0.01% level of probability, which indicate that there was highly significant difference among them.

3. Technological change

3.1 Source of seed availability (Godavari)

Availability of Godavari pigeon Spea seed from agricultural

universities, KVKs, government agencies, FPOs, seed producers, and private seed suppliers.

Table 4: Distribution of the respondents according to their source of seed availability before and after cultivation of Godavari variety

C.	Technological change								N=120
1.	Source of seed availability								
	Before Cultivation				After Cultivation				'Z' value
Sr.no	Category	Score	F	%	Category	Score	F	%	21.55**
1.	Low	Up to 9	24	20.00	Low	Up to 14	14	11.66	
2.	Medium	10 to 13	77	64.16	Medium	15 to 18	81	67.50	
3.	High	Above 13	19	15.84	High	Above 18	25	20.84	
			120	100.0			120	100.00	

**Significant at 0.01% level of probability

The data presented in the table 4 indicate that before cultivation, nearly two-third (64.16%) of the pigeon pea growers belonged to the medium category of source of seed availability, followed by 20.00 per cent in the low category and 15.84 per cent in the high category. After cultivation, majority (67.50%) of the pigeon pea growers were observed in the medium category of source of seed availability, followed by 20.84 per cent in the high category and 11.66 per cent in the low category.

The Z value sources of seed availability (21.55**) of before cultivation and after cultivation of Godavari was found significant at 0.01% level of probability, which indicate that there was highly significant difference among them.

3.2 Involvement in seed production

Participation of farmers in seed production activities of the Godavari pigeon pea variety.

Table 5: Distribution of the respondents according to their source of seed availability before and after cultivation of Godavari variety

C.	Technological change								N=120
2.	Involvement in seed production								
	Before Cultivation				After Cultivation				'Z' value
Sr.no	Category	Score	F	%	Category	Score	F	%	19.62**
1.	Low	up to 9	20	16.66	Low	up to 14	17	14.16	
2.	Medium	10 to 13	78	65.00	Medium	15 to 18	80	66.66	
3.	High	above 13	22	18.33	High	above 18	23	19.17	
			120	100.0			120	100.00	

**Significant at 0.01% level of probability

The data presented in the table 5. reveal that, before cultivation, nearly two third (65.00%) of the pigeon pea growers belonged to the medium category of involvement in seed production, followed by 18.33 per cent in the high category and 16.66 per cent in the low category. After cultivation majority (66.66%) of the pigeon pea growers belonged to the medium category of involvement in seed production, followed by 19.17 per cent in the high category and 14.16 per cent in the low category.

The Z value sources of seed availability (19.62**) of before cultivation and after cultivation of Godavari variety was found significant at 0.01% level of probability, which indicate that there was highly significant difference among them.

Overall distribution of Impact of Godavari Variety on pigeon pea growers

Indicates that, overall level of impact experienced by the respondents after adopting the Godavari variety. It summarizes the economic, social, and technological changes observed among the growers.

Table 6: Distribution of the respondents according to their Impact of Godavari variety on pigeon pea growers

Sl. No.	Category	N=120	
		Frequency	Percentage
1.	Low (up to 17)	19	15.84
2.	Medium (18 to 29)	84	70.00
3.	High (above 29)	17	14.16
	Total	120	100.00

Conclusion

The study concluded that the adoption of the Godavari variety of pigeon pea had a positive impact on the farmers in the study area. The variety contributed to improvement in production, productivity and annual income of pigeon pea growers. Farmers also experienced changes in their cost of cultivation, material possessions and socio-economic status after adopting the variety. Availability of quality seed and farmers' involvement in seed production played an important role in its adoption and spread.

References

1. Holmukhe S. Socio-economic impact of red gram BDN 711 on farmers in Marathwada region [doctoral thesis]. Parbhani: Vasantao Naik Marathwada Krishi Vidyapeeth; 2023. Krishikosh record
2. Mankar DM, Wankhade PP, Kale NM. Socio-economic impact of improved soybean technology on farmers. *International Journal of Extension Education*. 2014;10:146-152.
3. Holmukhe SS, Kadam RP. Improved variety of pigeon pea BDN 711 confronted constraints and suggestions assimilated by growers in Marathwada region; 2023.
4. Reddy GR, Dattatri K, Sudhakar N, Himabindu T, Osman M, Sharma KL. Assessment of improved varieties under different climate vulnerabilities. *Indian Journal of Dryland Agricultural Research and Development*. 2014;29(1):11-22.