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ADOPTION OF RECOMMENDED CASTOR HYBRID PRODUCTION TECHNOLOGY AMONG THE CASTOR GROWERS OF TAMIL NADU

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ABSTRACT
Indian vegetable oil economy is world's fourth largest after USA, China and Brazil. India is largest producer of castor and contributes to around 65 per cent of total production and dominating the global trade with a share of more than eight per cent. Nowadays, castor cultivation is beset with lots of problems of varying rainfall pattern, biotic and abiotic stress etc., So, the productivity of castor can be increased with the use of latest castor hybrids and altering the planting pattern, implementing mechanization methods and adoption of production technologies. Keeping this in the view, the present study "Adoption of recommended castor hybrid production technology among the castor growers of Tamil Nadu" was undertaken in Tiruchengode block of Namakkal district and Edappadi block of Salem district in Tamil Nadu. Exactly 120 castor growers were selected proportionately from eight selected villages. Using a pre-tested and well structured interview schedule, the necessary data was collected and statistically analyzed. From the analysis, it is concluded that most of the cultivators possessed medium to high level of adoption in castor cultivation technologies. The major constraints faced by the castor farmers in adoption were inadequate finance, lack of technical guidance, high cost of fertilizer, unavailability of certified seed and lack of irrigation water.

KEY WORDS: *Castor, Adoption, Production Technology*

INTRODUCTION

Indian vegetable oil economy is world's fourth largest after USA, China and Brazil. Oilseed cultivation is undertaken across the country over an area of more than 26 million ha, largely under rainfed areas (72.00%) with high risk of investment. India is largest producer of castor and contributes to around 65 per cent of total production and dominating the global trade with a share of more than eight per cent. Castor oil is used in many veterinary medicines. It is used externally as an emollient. After extraction of oil, castor cake is valued as manure. It contains 6.40% N, 2.50% phosphoric acid and 1.00% K and some micronutrients. Castor is also valued for its anti-termite properties.

Castor crop is raised on light textures soils under dry land by small farmers with low inputs and poor management resulting in reduced yield and net

returns in irrigated and rainfed farming system. Due to that, castor cultivation is beset with lots of problems of varying rainfall pattern, biotic and abiotic stress etc., Castor farmers in the arid and semi-arid tracts of Tamil Nadu decides it was no longer remunerative crop which leads to decline in castor growing area. Having this issue, high yielding, drought resistant cultivar suited to rainfed as well as irrigated conditions have been developed. So, the productivity of castor can be increased with the use of latest castor hybrids and altering the planting pattern, implementing mechanization methods and adoption of production technologies. Keeping this in the view, the present study "Adoption of recommended castor hybrid production technology among the castor growers of Tamil Nadu" was undertaken.

METHODOLOGY

The study was conducted in *Tiruchengode block of Namakkal district and Edappadi block of Salem district* in Tamil Nadu. A sample size of 120 castor growers were selected from eight villages by using proportionate random sampling technique. Extent of adoption refer to measure how for a particular technology was adopted by an individual correctly without any distortion of message. Totally 25 major castor production technologies were selected to study the extent of adoption. In present study, the maximum possible score for the adoption of castor hybrid technologies was 44. Based on the adoption index, respondents were categorized into low, medium and high extent of adoption based on cumulative frequency method. The percentage analysis was also worked out to study the practice wise adoption.

FINDINGS AND DISCUSSION

Extent of adoption of recommended castor hybrid production technology

In order to assess the extent of adoption of recommended castor hybrid production technologies, necessary data were collected and the findings are presented in Table 1 and 2.

Overall adoption of recommended castor hybrid production technology

Results of distribution of castor growers according to their overall adoption of castor hybrid production technologies are presented in Table – 1.

Table 1. Distribution of respondents according to their overall adoption level

(n=120)

S. No	Category	Numbers	Percent
1	Low	14	11.70
2	Medium	72	60.00
3	High	34	28.30
	Total	**120**	**100.00**

It could be observed from Table 1 that exactly three-fifth (60.00%) of the respondents were medium level in the adoption of technologies followed by high (28.30%) and low (11.70%) levels.

The reason for medium to high level of adoption might be due to high level of knowledge about recommended practices, better contact with extension agencies, high level of scientific orientation, increased income and economic motivation among castor growers. The finding derives support from the findings of Mandavkar and Talthi (2013).

Technology-wise adoption level of the respondents

Adoption of recommended technologies varies from individual to individual. Hence, the data on technology-wise adoption of recommended technologies were collected and the findings are presented in Table 2

Table 2. Distribution of respondents according to their technology-wise adoption level on castor cultivation

(n=120)

S. No	Technologies	Number	Percent
A.	**Crop production technologies**		
1.	Season	120	100.00
2.	Hybrid	120	100.00
3.	Seed rate	99	82.50
4.	Spacing	94	78.34
5.	Fungicide	61	50.83
6.	Bio fertilizer	53	44.16
7.	Depth of sowing	120	100.00
8.	Number of seeds sown per hole	120	100.00
9.	Gap filling	120	100.00
10.	Irrigation	105	87.50
11.	Drip irrigation	21	17.50
12.	Quantity of FYM	62	51.67
13.	Fertilizer as Basal on 30^{th} and 60^{th} day	45	37.50
14.	Fertilizer as top dressing	48	40.00
15.	Inter cultivation	36	30.00
16.	Castor gold spray	11	9.16
17.	Weed management	82	68.34
B.	**Plant protection technologies**		
18.	Control measure for tobacco caterpillar	42	35.00
19.	Control measure for semi-looper	39	32.50
20.	Control measure for fruit borer	32	26.67
21.	Control measure for fruit rot	27	22.50
22.	Control measure for wilt	41	34.16
C.	**Technologies pertaining to harvest**		
23.	Physiological maturity	106	88.34
24.	Harvesting time	112	93.34
25.	Drying	120	100.00

(Multiple responses obtained)

It should be inferred from the table that cent per cent (100.00%) of the respondents adopted correct season for planting and hybrid. Nearly 82.50 per cent of the respondents adopted recommended seed rate in castor cultivation followed by 78.34 per cent of the respondents adopted recommended spacing. The reason for higher adoption might be due to simplicity in nature of technology and less cost involved in adopting those practices.

It is also seen that nearly half (50.83%) of the respondents adopted recommended fungicide treatment for castor cultivation, followed by 44.16 per cent of the respondents adopted bio-fertilizer treatment. It is also observed that cent per cent (100.00%) of the respondents adopted depth of sowing, number of seeds sown per hole and gap filling.

It is also seen that majority (87.50%) of the respondents adopted correct irrigation interval and only 17.50 per cent of the growers adopted drip irrigation for castor cultivation. Just above half (51.67%) of the respondents adopted recommended quantity of FYM/ Compost application and 37.50 per cent of the growers adopted correct dose of fertilizers as Basal followed by two-fifth(40.00%)of the respondents adopted correct dose of fertilizers as top dressing.

In case of inter crops, 30.00 per cent of respondents adopted inter crops in castor cultivation and only 9.16 per cent of respondents adopted castor gold spray in castor cultivation. More than two - third (68.34%) of the respondents adopted recommended weed management practices in castor cultivation.

Just above one-third (35.00%) of the respondents used the recommended insecticide for the control of tobacco caterpillar followed by nearly one-third (32.50%) of the respondents adopted recommended insecticide for the control of semi-looper.

It is also seen that just above one-fourth (26.67%) of the respondents adopted the recommended control measure for fruit borer and nearly one-fourth (22.50%) of the respondents used the recommended control measure for the control of fruit rot. A little

more than one-third (34.16%) of the respondents adopted the recommended control measure for wilt.

Majority (88.34%) of the respondents adopted recommended physiological maturity before harvesting followed by 93.34 per cent of respondents adopted correct time of harvest and cent per cent (100.00%) of the respondents adopted optimum drying before packaging.

CONCLUSION

From the findings, it was noticed that most of the castor hybrid production technologies were perceived as medium to high level of adoption by Castor growers. Hence, training need to be organized to improve the knowledge of farmers on hybrid castor cultivation and extension methods like training, demonstration and field trip may organized to increase awareness, knowledge and in turn to improve the adoption of production technologies in castor cultivation.

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