



A Study on Knowledge Level of Recommended Cultivation Practices of Hybrid Castor in North Western Zone of Tamil Nadu

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Abstract: *The study was under taken on hybrid castor cultivation in Tamil Nadu predominantly concentrated in North western region. To assess the farmers' knowledge on hybrid castor production technology, the present study was undertaken in two districts of Tamil Nadu state. From each districts, two blocks were selected. From each blocks, four villages were selected. Exactly 120 castor growers were selected proportionately from eight selected villages. It was found that in the sampled population, majority of hybrid castor growers (79.20 per cent) had medium level of knowledge, followed by high (11.60 per cent) and low (9.20 per cent) level of knowledge about hybrid castor cultivation practices. The finding also revealed that out of 14 variables, six viz., annual income, extension agency contact, mass media exposure, scientific orientation, risk orientation and economic motivation had shown a positive and significant relationship with knowledge at one per cent level of significance. The variable experience in castor cultivation alone showed a positive and significant relationship with knowledge at five per cent level of significance. The values of regression co-efficient of the variables, experience in castor cultivation and risk orientation were found to be positive and significant at one per cent level of probability. The variables namely mass media exposure, innovativeness and risk orientation were found to be positive and significant at five per cent level of probability.*

Keywords- *Hybrid castor cultivation, Knowledge, Correlation, Multiple regression analysis*



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 rain fed areas (72.00%) with high risk of investment. India accounts for 12-15 per cent of world's oilseed area, 7-8 per cent of world' oilseed output, 6-7 per cent of world's vegetable oil production, 9-12 per cent of world's vegetable oil import and 9-10 per cent of world's vegetable oil consumption. 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. Tamil Nadu is one of the largest producers of castor with an area of 5,132 ha, production of 1695 (in tons) and productivity of 312 (kg/ha). In Tamil Nadu state, Namakkal (1,479 ha) leads in area followed by Salem (1,001 ha), Krishnagiri (627 ha) and the remaining districts have a total area of 2,025 ha only. 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 rain fed farming system. Many recommendations are evolved by Tapioca and castor Research Station, Yethapur and Tamil Nadu Agricultural University, Coimbatore. But still these recommended technologies are not known by castor growers and there is a gap between potential yield and farmers yield. Considering these fact, present study entitled "A study on knowledge level of recommended cultivation practices of hybrid castor in north western zone of Tamil Nadu" with the following objectives.

Objectives:

- i. To assess the knowledge level among the castor growers on recommended hybrid castor production technology
- ii. To ascertain the relationship between profile of castor growers and their knowledge level on hybrid castor production technologies.

Materials and Methods

The study was carried out in Namakkal district and Salem district in Tamil Nadu because this district is one of the largest castor producing districts in the state. Tiruchengode block from



Namakkal district and Edappadi block from Salem district were selected based on the maximum area under castor. Four villages from each block (Totally eight villages) were selected on the basis of maximum number of castor growers. A sample of 120 respondents growing castor crop were selected from the eight villages following the proportionate random sampling technique. Data were collected with the help of a well-structured and pre-tested interview schedule and analyzed with statistical measures such as percentage, mean, standard deviation and co-efficient of correlation. The ex-post-facto research design was used for the study.

To measure the knowledge level of castor growers in respect of improved practices, the teacher made test was followed and they were asked straight questions regarding recommended technologies followed in castor cultivation. The responses were dichotomous in nature as “Correct and “Incorrect”. Two score were given for each correct response and one for incorrect response. Based on the total score, the respondents were classified into low, medium and high knowledge categories using cumulative frequency method. By using percentage analysis, technology-wise knowledge was studied. The formula for knowledge level of i^{th} practice used were as follows

$$\text{Knowledge level of } i^{th} \text{ practice} = \frac{\text{Number of respondents answered correctly}}{\text{Total number of respondents}} \times 100$$

Results and Discussion

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

(n=120)

S. No	Category	Numbers	Percent
1	Low	11	9.20
2	Medium	95	79.20
3	High	14	11.60
	Total	120	100.00



The Table 1 revealed that majority (79.20%) of the farmers were found to be in medium level of knowledge followed by high (11.60%) and low (9.20%) levels.

The appropriate reason for medium to higher level of knowledge among castor growers on the recommended castor cultivation practices might be due to their higher literacy, medium to high level of scientific orientation, and medium to high level of extension agency contact. In order to increase the production, growers would have aroused their interests to gain more knowledge on castor cultivation practices. This would have contributed for the medium to high level of knowledge among majority of the respondents.

Table 2. Correlation and multiple regression co-efficients of profile of respondents with their knowledge

(n=120)

Variable number	Name of the independent variable	'r' value	Regression co-efficient	Standard error	't' value
X ₁	Age	-0.096	-0.762	0.429	-1.775
X ₂	Educational status	0.172	-0.096	0.190	-0.503
X ₃	Occupational status	0.042	0.365	0.260	1.400
X ₄	Farm size	0.149	0.549	0.529	1.039
X ₅	Area under castor cultivation	0.049	0.020	0.019	1.046
X ₆	Experience in castor cultivation	0.213*	0.748	0.392	1.909*
X ₇	Annual income	0.530**	0.893	0.568	1.572
X ₈	Extension agency contact	0.457**	0.106	0.073	1.462
X ₉	Mass media exposure	0.640**	0.211	0.048	4.402**
X ₁₀	Social participation	0.126	0.003	0.062	0.045
X ₁₁	Innovativeness	-0.150	1.049	0.362	2.894**
X ₁₂	Scientific orientation	0.339**	0.047	0.063	0.753



X_{13}	Risk orientation	0.343**	1.040	0.069	2.023*
X_{14}	Economic motivation	0.768**	0.234	0.048	4.893**

* - Significant at 5% level

$R^2 = 0.720$

** - Significant at 1% level

F= 19.109**

NS - Non-significant

a = 14.314

From Table 2 it could be inferred that out of 14 variables, six viz., annual income (X_7), extension agency contact(X_8), mass media exposure(X_9), scientific orientation(X_{12}), risk orientation(X_{13}) and economic motivation(X_{14}) had shown a positive and significant relationship with knowledge at one per cent level of significance. The variable experience in castor cultivation (X_6) alone showed a positive and significant relationship with knowledge at five per cent level of significance.

The R^2 value was 0.720 and it indicated that the fourteen variables taken together explained for 72.00 per cent of variation in the dependent variable viz., knowledge level of castor farmers on recommended hybrid castor production technologies. The “F” value of 19.109 was found to be highly significant at 1% level.

As evident from results that the experience in castor cultivation (X_6) and risk orientation (X_{13}) were found to be positive and significant at five per cent level of probability. This suggested a unit increase in experience in castor cultivation (X_6) and risk orientation (X_{13}) by an unit *Ceteris paribus* would increase the knowledge level of castor farmers on recommended castor hybrid production technology by 0.748 and 1.040 units respectively.

The variables namely mass media exposure (X_9), innovativeness (X_{11}) and economic motivation(X_{14}) were found to be positive and significant at one per cent level of probability. This indicates that a unit increase in mass media exposure (X_9), innovativeness (X_{11}) and economic motivation (X_{14}) by an unit *Ceteris paribus* would increase the knowledge level of castor farmers on recommended castor hybrid production technology by 0.211, 1.049 and 0.234 units respectively.



Conclusion

It can be concluded that majority of hybrid castor growers (79.20 per cent) had medium level of knowledge on recommended castor hybrid production technology. The profile of the respondents like annual income, extension agency contact, mass media exposure, scientific orientation, risk orientation and economic motivation had shown a positive and significant relationship with knowledge at one per cent level of significance. The variable experience in castor cultivation alone showed a positive and significant relationship with knowledge at five per cent level of significance. The values of regression co-efficient of the variables, experience in castor cultivation and risk orientation were found to be positive and significant at one per cent level of probability. The variables namely mass media exposure, innovativeness and risk orientation were found to be positive and significant at five per cent level of probability.

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