

## IMPROVED PRODUCTION TECHNIQUE IN CASTOR

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Oilseeds contributed to yellow revolution, significant role has been played by introduction of castor hybrid (*Ricinus communis* L). Frontline demonstrations were conducted through technological interventions on castor during the period from 2006-2008 in kharif crop season under rainfed conditions. The results had shown that per cent increase in yield ranged from 50 – 70% with a B:C ratio of 3:0. This study *i.e.*, whole package, component technology and hybrid castor indicated that, cultivation of hybrid castor in the place of varieties and traditional land races, improved the yield upto 70 per cent. Adoption of whole package of practices improved the yield upto 45% and adoption of plant production technology improved the yield upto 50 per cent.

**Keywords:** Castor; Frontline demonstrations.

Castor hybrid is a newly introduced and commercially exploited crop in India. The crop has been playing an important role in national economy by earning foreign exchange of Rs.1000 crores per annum through export of castor oil. At present, castor covers an area of nearly 8.6 lakh ha with a production of 9.9 lakh tones in the country. Gujarat, Rajasthan, Karnataka, and Tamil Nadu are the main production states in India. In Tamil Nadu, Salem and Namakkal are leading districts in cultivation of castor followed by Erode. Castor has brought the revolutionary changes in the rural economy management by way of increasing the social and economic status of the farmers through castor farming.

Many technologies for castor cultivation have been evolved for increasing productivity but farmers have not adopted many of them. Keeping in view, Tapioca and Castor Research Station, Yethapur has made an attempt to identify the production constraints/gaps in cultivation of castor through various extension methods including the participatory Rural Appraisal technologies in its adopted villages in particular and District in general.

The speedy adoption of improved agricultural technologies and innovations are the most important tools for enhancing the agricultural production at faster rate and hence it is a crucial aspect under innovation diffusion process. The main objective was to demonstrate the productivity potential and profitability of the latest improved production technology as well as single component technologies under real farm situations.

The Tapioca and Castor Research Station, Yethapur discriminated the improved technologies of

castor to the farmers in Namakkal district in order to implement the mandatory functions. Scientists adopted the villages viz., Elachipalayam Namagiripettai. Different extension activities were taken up for technology assessment and method demonstrations and raising the socio-economic status considerable. The beneficiary farmers were identified based on the proportionate random sampling method, the cause for low yields of castor were identified and then prioritized. Based on the major causes and constraints for low yields, *i.e.*, poor package of practices, non-adoption of hybrid seeds and plant protection measures, non-availability of labourer during the critical crop growth period, the technological intervention were initiated during the year 2005-2006 and continued upto 2008-2009 crop season. Whole package oriented demonstration to and single component oriented demonstrations from 2005-2006 to 2008-2009.

*Strategies followed in transfer of improved technology in castor* : One pre-season orientation training was conducted to the selected farmers and regular field visits were made to explain the production technology of castor particularly on hybrids and plant protection measures.

The productivity potentials and profitability of the latest castor improved technologies were demonstrated under farmers' field condition at 100 locations in adopted villages of Tapioca and Castor Research Station, Yethapur during rainfed conditions. Sowings were done in red soils at spacing of 90x60 cm in 2<sup>nd</sup> fortnight of June in all the years of demonstrations. Each demonstration plot both with Improved Technology (IT) and Farmers' Practice (FP) had an area of 0.4 ha. The components of improved

**Table 1.** Productivity improvement in castor through technological interventions.

Intervention	Demonstrations (ha)	Year	Mean yield (kg/ha)	Increase in yield (%)	B:C ratio
Whole package	15	2006	970	72	3.8
Hybrid castor	15	2006	860	48	3.1
Whole package	15	2007	1020	68	3.5
Hybrid castor	15	2007	936	49	3.0
Whole package	30	2008	1013	77	3.7
Hybrid castor	10	2008	925	58	3.2

technology involved, were whole package of practices and single component demonstrations viz., hybrid seed and plant protection measures.

The production potential of improved technologies were worked out taking the mean yields attained through demonstrations. The economics of improved technology in relation to prevailing farmers' practices was studied to know the superiority of the technology. The superiority of IT over FP was assessed mainly in terms of per cent yield increase, additional net returns and benefit cost ratio.

The data generated through the frontline demonstrations conducted during the period from 2006-2007 to 2008-2009 had shown the potential of various improved technologies in castor and results are presented in Table 1.

Net returns and benefit cost ratio was more when whole package was demonstrated. The increase in yield on whole package.

The technology was demonstrated during the period from 2006-2007 to 2008-2009 under rainfed condition using the TMVCH-1 as a hybrid.

*Whole package:* The increase in yield in whole package is due to introduction of hylands, controlling of weeds

at early stages by herbicide application combined with one hand weeding on 20 DAS and controlling of pest and disease by taking need based plant protection measures. The increased yield over the FP was on an average for the three years was 72.3 per cent with a B:C ratio of 3.66.

*Improved variety :* The improved hybrid demonstrated under the present study was TMVCH-1 and local variety used by the farmers was TMV2. Increase in yield in improved variety over the local variety was 51.6 per cent. The additional return in terms to B:C ratio on an average in three year was three per cent.

Frontline demonstrations conducted on castor indicated that the per cent increase in yield ranged from 50 to 70 over the farmers' practice. Castor cultivation was more in improved technologies is due to supply of certified foundation seed from the Tapioca and Castor Research Station, Yethapur.

From the findings it could be concluded that, instead of using the variety farmers are advised to cultivate the hybrid recommended for their region along with controlling of weeds at early stages and weed based plant protection measures will above double the yield in rainfed castor.