

Impact of improved technology in castor (*Ricinus communis* L.) on farmer's fields

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ABSTRACT

To ascertain the yield gaps between frontline demonstrations (FLD) and farmer's field, extent of technology adoption and extension gap, field studies were carried out in castor crop at 43 farmer's field in Saurashtra region of Gujarat state during the last five consecutive years i.e. 2001-02 to 2005-06. Results of demonstration revealed that on an average seed yield of castor in FLD was 17 % more than farmer's practice. Highest technological gap (3264 kg/ha) was found in variety GCH-6. In each year extension gap was lower than technology gap, so still there is a need to educate farmers in the adoption of improved technology.

Key words : Frontline demonstration, Technology gap, Extension gap and Castor.

INTRODUCTION

Castor is one of the important cash crop in the world and is cultivated on a commercial scale in about 30 different countries. India, China and Brazil account for 94% of the world's production. India is the largest producer of castor seed and oil in the world. India accounts 57% area and 64% production in the world (Damodaram and Hegde, 2002). The area, production and productivity of castor in the country have increased consistently from 1965-66 to 2002-03 which were 3.57 lakh hectares, 0.71 lakh tonnes and 200 kg/ha in 1965-66 and 5.00 lakh hectares, 5.41 lakh tonnes and 1080 kg ha⁻¹ in 2002-03, respectively (Singhal, 2003).

In India, it is mainly grown in Gujarat, Andhra Pradesh, Tamil Nadu, Karnataka and Orissa, accounting for about 90% of the area and production. Gujarat ranks the first in area and production with 2.42 lakh hectares producing about 2.83 lakh tonnes of seed annually along with an average productivity of 1168 kg/ha (Anon., 2003).

Despite the impressive strides the country has so far made on the varietal and production front, there are wide regional disparities in the productivity of castor. With the exception of Gujarat and Rajasthan, where the productivity (1972 kg/ha) has registered a four-fold increase since 1970, the general productivity level of rainfed castor in all other parts of the country is very low. A multitude of factors such as its cultivation in submarginal and marginal lands, uncertainty of rainfall and its erratic distribution, delayed sowings, poor management of the crop with little or no inputs and use

of poor quality seed are responsible for low yields under rainfed situations (DOR, 2002).

The major objective of the frontline demonstration project is to demonstrate, under real farm situation, the productivity potentials and profitability of the latest improved oilseed crop production technologies including cropping systems involving oilseeds as well as component technologies viz., improved varieties/hybrids, fertilizer, plant protection measures and spacing etc. recommended for various agro-ecological and crop growing situations vis-a-vis prevailing farmers' practices. Keeping in view the significance of transfer of technology, the present investigation attempts to know the yield gaps between on FLD trial and farmers' field, extent of technology adoption and additional benefit and cost ratios.

MATERIALS AND METHODS

This study was conducted in the Saurashtra region of Gujarat state during the years 2001-02 to 2005-06. Soils of the region are medium black with pH ranging from 7.5 to 8.9. The farmers selected were mainly of irrigated farm situation. The cross-sectional data on output of castor input used per hectare have been collected from the frontline demonstration trails. In addition to this, data on traditional practices followed by farmers have also been collected. To estimate the technology and extension gap and technology index, the following formulae were used:

$$(i) \text{ Technology gap} = (\text{Potential yield}) - (\text{Demonstration yield})$$