



RESEARCH ARTICLE

***Bt* Cotton–Groundnut Intercropping System: A Pragmatic Approach for Increasing Edible Oilseeds Production in India**

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Abstract There are little possibilities of horizontal expansion of area under oilseeds at country level. This necessitates taking up some alternate measures of expanding the area under oilseeds and simultaneously taking the advantages of crop diversification in major cash crop of *Bt*-cotton in India through legume oilseeds like groundnut intercropping. For this purpose, the authors used change-point analysis to examine the changes in the groundnut area in major groundnut producing states of India after adoption of *Bt*-cotton during last decade. Trend of significantly increasing area under cotton and decreasing area under groundnut has been observed in the states of Gujarat, Maharashtra, Andhra Pradesh, Madhya Pradesh and at the national level in the last decade. Several studies in India concluded that *Bt*-cotton hybrids are sown at wider row spacing (90–120 cm) hence provide sufficient space for cultivation of short duration oilseed intercrop like groundnut. Farmers have an alternative option as *Bt*-cotton + groundnut system which can yield more diversified income than the realized one from sole crop of *Bt*-cotton on one hand and to obtain the oilseed ingredients without extra allocation of land, on the other. If this technology can be adopted farmers may get at least half of the cotton producing area of India i.e. 5 million hectares and minimum

extra groundnut pod yield of 0.5 t ha⁻¹. India can thus produce 2.5 million tonnes more groundnut pod yield that can contribute to around 0.8 million tonnes of edible oil which can reduce the import load of edible oil.

Keywords *Bt* cotton · Change-point analysis · Groundnut · Intercropping · Oilseed import

Introduction

Indian vegetable oil economy is the world’s fourth largest after the US, China and Brazil, harvesting about 25 million tonnes of oilseeds annually. Although, India is a major producer of oilseeds, per capita oil consumption in India is only 10.6 kg/annum which is low as compared to 12.5 kg/annum in China, 20.8 kg/annum in Japan, 21.3 kg/annum in Brazil and 48.0 kg/annum in USA [1]. A growing population, increasing rate of consumption and increasing per capita income are accelerating the demand for edible oil in India. India is a leading player in edible oils, being the world’s largest importer (ahead of the EU and China) and the world’s third-largest consumer (after China and the EU). Each year, India consumes over 10 million tonnes of edible oils. India being deficient in oils has to import 40 %