



Farmers Perception, Economic Viability and Constraints in *Desi* Cotton Cultivation in Dryland Salinity of Gujarat

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Abstract

In Gujarat, the areas where salinity is high and canal irrigation is not available, farmers are left with no choice but to go for cultivation of *desi* cotton. Study was conducted with 70 farmers growing *desi* cotton in *Bara tract* area of Gujarat covering three blocks of Bharuch district. Data collected from personal interview of the farmers revealed that all farmers perceived that cost of cultivation for *desi* cotton is less and input cost for *desi* cotton is less (92%). In environmental benefits, all farmers perceived that *desi* cotton is more suitable to rainfed conditions, it is more tolerant to moderate saline ground water (90%) and water logging conditions (92%). In agronomic benefits, all farmers agreed that *desi* cotton requires less irrigation. In marketing benefits, farmers agreed that fibre quality of *desi* cotton as excellent (76%). Some aspects of *desi* cotton were also negatively perceived by the farmers, like its long duration (82%), availability of quality seeds (80%) and about boll size and number. Economic analysis revealed that gross profit of *desi* cotton under rainfed conditions was Rs. 34,947 per ha with B:C ratio 1.9 while it was Rs. 75250 per ha with B:C ratio of 1.7 in irrigated condition. Irrigation problem (54%), late sowing because of monsoon (36%) and damage because of high rainfall and flooding (36%) were the constraints reported as very severe by the farmers. In conclusion study recommends that, improved varieties of *desi* cotton with short life span need to be developed and made available to the farmers for better livelihood and sustainability of the cotton agro-ecosystem.

Key words: *Desi* cotton, Salinity, Farmers' perception, Constraints, Economic analysis

Introduction

Globally there are more than 50 species of cotton, only four of them are cultivable and India has the unique distinction of being the only country in the world to cultivate all four species viz. *Gossypium arboreum*, *G. herbaceum*, *G. barbadense* and *G. hirsutum*. First two are diploid and are called old world cultivated cotton or *desi* cotton while next two are new world cotton (American). In India area under cotton is 12.8 million hectares (25% of global area) and production realized is 6.46 million Mg which is 18 per cent of global production during the year 2014-15 (CCI, 2016). Traditionally, India cultivated *desi* cotton varieties which remained popular with the Europeans and other countries for hand woven and extremely fine muslin. For meeting the need of medium staple

length, Britishers introduced the American type of cotton. The area under *desi* cotton in 1947 was 97 per cent of total cotton area, which reduced to 42 per cent in 1990 (Fig. 1) mainly because of introduction and promotion of American cotton and hybrid varieties; and again reduced to three per cent in 2013 with Bt cotton wave that had started in the year 2002 (Pyati, 2013; Kranthi, 2015). Cultivation trend shown under different species is depicted in Fig. 2.

However, this pattern of change could not observe in rain-fed areas of Rajasthan, Gujarat, Karnataka and some areas of Maharashtra state. This may be attributed to the less water requirement of *desi* cotton and its deep tap root system that can absorb deep residual soil moisture. Tolerance of *desi* cotton to biotic and abiotic stresses has been its great strength and factor behind its survival against the wave of Bt cotton

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