KATOEN SUID-AFRIKA COTTON SOUTH AFRICA

BIOTECH COTTON IN SOUTH AFRICA

INTRODUCTION

South Africa was one of first developing countries, and up to recently the only one in Africa to adopt genetically modified cotton for commercial production. Insect-resistant cotton has been produced since the 1997/98 production season, followed by herbicide-tolerant cotton in the 2001/02 season and stacked-gene cotton in the 2005/06 season. For the 1998/99 production season biotech cotton made up 10% of all cotton planted, this increased to 84% in 2002/03 and it is estimated that 90% of all cotton currently planted in South Africa are biotech varieties.

COMMERCIAL COTTON GROWERS

According to research undertaken by the University of Pretoria in 2002, when large-scale cotton farmers were interviewed, 39% indicated that the most important benefit of Bt cotton is the saving on pesticides and application cost, with peace of mind about bollworms coming in as the second biggest reason for adoption. When asked to indicate all the benefits of insect-resistant cotton, 77% of farmers indicated peace of mind and the managerial freedom to go on with other farming activities as the most important. Most commercial cotton farmers are also involved with other farming activities during the cotton season. Using hired labour, scouting and spraying is especially difficult over the Christmas - New Year period, as this is the crucial time in the production cycle of cotton in South Africa. The interviewed cotton farmers have also indicated other indirect benefits of biotech cotton, for example spraying less pesticides or none at all has caused predator insects to flourish. The major disadvantage of biotech cotton, according to most farmers is the relative high cost of the seed and technology fee. Also both large and small-scale farmers, still have to spray for other problem insects like jassids and aphids, as these pests are not controlled by biotech cotton. These pests are now increasingly becoming the main cotton pests and a major concern. Not only are costs to control them escalating and resulting in rising production costs, predator populations are also under threat due to the increase in spraying.

The personal experience with biotech cotton of a commercial cotton farmer farming with wheat and cotton on 1600 ha under irrigation in the Limpopo Valley area of Weipe, on SA's Northern border, can be summarised as follows:

In 1993 bollworms, aphids and red spidermite affected cotton profits to such an extent that the farmer was considering to altogether discontinue cotton production. During this period, before the introduction of biotech cotton, were cotton yields not only declining but up to 15 sprays were required during a normal growing season, Since adopting biotech cotton production, insecticide sprays are now down to about 3 sprays per season, mainly for secondary insects such as jassids. The farmer also reports that for the past 8 years it was not necessary to spray even once for aphids and red spidermite as these insects are controlled by beneficial natural predators which have increased in numbers due to the limited spraying of insecticides. According to him, farming with biotech cotton has also had a very positive effect on the environment, for example he is now seeing predator birds such as falcons and owls on the farm that were not present in this area for some time.

This farmer is of the opinion that cotton farming would not have been sustainable if normal conventional cotton farming practices were followed. In his experience, farming with biotech varieties is the most profitable and sustainable way of cotton farming.

SMALL-SCALE COTTON FARMERS

The major small-scale cotton production areas presently are at Tonga in Mpumalanga and Makhathini in northern KwaZulu-Natal. The area under cotton production and the number of cotton producers vary from year to year and depend on the availability of production credit and the price of cotton.

Small-scale cotton farmers have reacted positively to the introduction of genetically modified cotton seed with Makhathini showing an increase in the adoption of biotech cotton from 7% in 1997/98 to 75% in 1999/00 to over 90% currently.

This impressive increase in adoption of biotech cotton by small-scale farmers can mainly be attributed to the success of the farmers who first adopted the new technology in relation to those farmers who did not. For small-scale farmers adopting the new technology, the most important benefit of biotech cotton was the pesticide saving. In rural areas where infrastructure, transport and services are almost non-existent, managing pest infestation in crops is a major problem. Pesticide application implies huge difficulties for small-scale cotton farmers: with a low level of education amongst small-scale farmers, the mixing of pesticides and calibration of knapsack sprayers are problematic. Applying pesticides is also very much a labour intensive action for small-scale farmers. Walking with a knapsack sprayer on his back a farmer has to cover a distance of between 10 and 20 kilometres per hectare, taking almost a day to complete the task. Water is often a scarce commodity and has to be fetched from communal water points. By the time a farmer has noticed bollworms, bought his pesticides and started to spray, severe damage has already been done.

According to the results of a survey of 100 smallholders in Makhathini conducted by the University of Reading in 2001, all farmers who adopted biotech cotton benefited from the new technology, according to all the measures used. Average yield per hectare and per kilogram of seed was higher for adopters than for the non-adopters and the increase in yields and reduction in chemical application cost outweighed the higher seed cost, so that gross margins were also higher for adopters.

SOURCES:

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