



- **Commercial Scale Bt Cotton**

Finally, the transgenic cotton resistant to lepidopteran insects is available to US cotton growers for planting in 1996. The genetically engineered cotton trademarked as “Bollgard” in the USA has a gene which was isolated from the soil bacteria *Bacillus thuringiensis* and transformed into cotton. The bacterial gene is capable of producing within the plant a protein toxic to many lepidopterans. The Delta and Pine Land Company, in collaboration with Monsanto, has transferred the Bt gene into Delta and Pine Land varieties using DP 5415 and DP 5690 as recurrent parents. The D&PL brand Bt varieties, available for planting in 1996, are designated as NuCOTN 33^B and NuCOTN 35^B, respectively. It is said that enough seed is available to plant over 800,000 hectares in 1996, two thirds being under NuCOTN 33^B. Because the Bt protein is more effective against the tobacco budworm *Heliothis virescens* than against the pink bollworm *Pectinophora gossypiella*, it is estimated that Bt varieties will cover a significant area in the Mid-South region of the US. A planting seed bag of NuCOTN varieties is sold at US\$6.00 more than normal varieties. Farmers intending to grow Bt cotton will have to sign an agreement with D&PL stating that they will not keep seed for planting the next year. Although isogenic non-Bt varieties are similar in morphology, tests are available to check illegal spreading of Bt cotton in following years. Any part of the plant can be easily and quickly tested to find out if it has the toxin produced by the Bt gene. The Delta and Pine Land Company has six additional D&PL NuCOTN varieties which are almost ready for planting distribution during 1997.

Two more transgenic varieties, tolerant to the broad-leaf herbicide Buctril 4EC, are also available for planting during 1996. The varieties, trademarked as BXN cotton, have been developed by the Stoneville Pedigree Seed Company in collaboration with Calgene Inc. It is estimated that BXN 57 and BXN 58, developed from the recurrent parent Coker 315, will be grown on about 81,000 hectares during 1996. Planting

seed, under an agreement with the company, is available to US growers at US\$3/kg as against US\$1.76 in the case of straight varieties.

Large scale trials over locations and years have proved the worth of Bt cottons. But, it will take sometime for growers to become used to the new cotton types. Growing such cottons on marginal land is not recommended and growers are advised to adhere to other instructions of the respective companies. NuCOTN and BXN cottons will not show any impact in the absence of strong insect pressure and broad leaf weeds, respectively. In the case of NuCOTN, the insect pattern may change if such a cotton is grown continuously for years. Similarly, the weed pattern may also change if broad leaf weeds are suppressed for years.
