but according to the current situation many farmers may opt to grow Roundup Ready herbicide tolerant varieties.

During 1997/98, Roundup Ready varieties were grown on about 325,000 hectares and farmers paid US$12-20/ha as a fee for the technology. Last year, some farmers observed early boll shedding and deformed boll shape in the Roundup Ready varieties and complained to Monsanto and Delta and Pine Land Co. The problem was spread over 4,000 hectares and some farmers suffered losses in yield and demanded compensation.

Early season boll shedding and deformed boll shape problem has been analyzed and is correlated with abnormal weather conditions and agriculture practices followed in the affected area. According to Monsanto, early season cold temperatures and multiple applications of Roundup Ultra at a slow growth period may have caused excessive shedding and change in the boll shape.

Monsanto has increased the technology fee for Roundup Ready varieties to US$17-22 for 1998/99. It is expected that Roundup Ready varieties may be planted on over 1.8 million hectares during 1998. There are no doubts about the technology and effectiveness of both herbicide tolerant genes in cotton; however, excessive shedding or any other abnormal behavior needs to be monitored and analyzed carefully.

- **Cultivation of BXN Varieties Prohibited in the USA**

  It would have been the third year of commercial cultivation of BXN cotton but the US Environmental Protection Agency (EPA) has prohibited the application of the herbicide bromoxynil on the BXN varieties. In May of 1997, EPA allowed a time-limited tolerance for residues of bromoxynil in undelinted cotton seed, cotton gin by-products, cotton hull, chicken eggs, poultry meat, meat by-products and fat. The time-limited tolerance expired on January 1, 1998, and the EPA has refused to award extension in the tolerance. Thus the genetically engineered BXN varieties cannot be sprayed with bromoxynil and will be treated as normal non-transgenic varieties. Other herbicides can be sprayed, but BXN varieties are not resistant to any other herbicide.

  According to the letter issued by the EPA, if bromoxynil is sprayed on the genetically engineered BXN varieties, it leaves sufficient residue for causing developmental risks to infants and children. The EPA decision may be revised if data on non-lethal effects of bromoxynil becomes available