



Cotton in Texas

Crop Brief on Production, Pests, & Pesticides

Cotton Production

- Cotton is the leading cash crop in Texas. Texas ranks first in U.S. cotton production.
- Cotton generates \$1.6 billion for farmers, with a state-wide economic impact of \$5.2 billion.
- Cotton is grown on five million acres in six different regions, each with different production systems and variations in climate, soil type, rainfall and irrigation, and harvesting techniques.

Insect Pests

- Key insects include boll weevil, bollworm, fleahoppers, aphids, and thrips. Other pests include budworm, cutworms, beet armyworm, spider mites, whiteflies, and other foliage feeders.
- 12% of Texas cotton acreage is planted with Bt cotton. Bt cotton is genetically altered to naturally control the bollworm as the insect feeds on the plant.
- The boll weevil is the most damaging insect and involves 37% of all insecticide use. The Boll Weevil Eradication Program is a complex area-wide self-tax/cost-sharing program by farmers to eliminate this pest.
- Five organophosphates (OP) make up 66% of all insecticide use and carbamates consist of 11% of the insecticides in Texas cotton.
- Major insecticides include **methyl parathion** (OP), **malathion** (OP), **azinphos-methyl** (**Guthion**-OP), **profenofos** (**Curacron**-OP), **aldicarb** (**Temik**-carbamate), **dicrotophos** (**Bidrin**-OP), **oxamyl** (**Vydate**-carbamate). Other insecticides include **acephate** (**Orthene**-OP), **phorate** (**Thimet**-OP), and **carbofuran** (**Furadan**-carbamate).

Diseases

- All planting seeds treated with a fungicide to reduce seedling diseases. Cotton diseases include bacterial blight, cotton root rot, and fusarium wilt but are not treated.
- Nematodes are a major problem but chemicals are not economical in most situations. Crop rotation helps alleviate disease and nematode problems.

Weeds

- Weeds reduce yields and quality, and hamper mechanical harvesting. Weeds delay fruiting and prolong crop exposure to insect and disease pests.
- Cultivation is practiced by 98% of cotton growers. Hand hoeing works but is costly. Cultivation and rotations supplement chemical weed control but are not an alternative for herbicides.
- The most troublesome weeds in Texas cotton include annual weeds (pigweed, cocklebur, morningglory, sunflower, devil's claw) and perennial weeds (johnsongrass, silverleaf nightshade, woollyleaf bursage, Texas blueweed, nutsedge).
- **Trifluralin (Treflan)** is applied to 48% or more of the crop.

Other Chemicals

- Plant Growth Regulators (PGR) modify plant growth to improve production efficiency. **Ethephon (Prep)** and others) and **mepiquat chloride (Pix)** are applied on — % of the total acreage.
- 57% of the crop is treated with a harvest-aid chemical for earlier harvest and to reduce late-season insects..
- Defoliant **tribufos (DEF/Folex - an OP)** and **thidiazuron (Dropp or Ginstar)** are applied on 51% of the acreage in 24% of applications.

Outlook

- For latest information regarding these issues and status of risk assessments contact j-anciso@tamu.edu or visit ipmwww.ncsu.edu/opmppiap and www.epa.gov/pesticides.
- Genetically-enhanced seed, such as Roundup Ready and Bt traits help reduce the number and volume of pesticides in cotton.
- The Boll Weevil Eradication Program shows promise to reduce insecticide use.

Crop Briefs is an information series developed by The Agriculture Program of the Texas A&M University System on critical pest problems and pesticide needs for Texas agriculture. This effort is supported by several cotton organizations and other commodity groups. Dr. Dudley Smith, Texas Agricultural Experiment Station and Dr. Juan Anciso, Texas Agricultural Extension Service prepared these reports August 2000 using information from numerous sources. Departmental Report SCS-2000-06.

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