

Vegetable Resources

Cotton in Texas



Crop Brief on Production, Pests, & Pesticides

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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 18% 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.

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