

WEST PLAINS IPM UPDATE

News about Integrated Pest Management in Hockley and Cochran Counties

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Current Crop and Pest Situation

Cotton insect pests are few and far between again this week. Cotton aphids are about the only consistent insect pest we are finding in area fields. This has allowed beneficial insect numbers to increase to more desirable levels. Keep a close watch on the aphids though.

Aphids

Three species of aphids, or plant lice, feed on cotton plants: the cotton aphid, the cowpea aphid and the green peach aphid. Cowpea aphids are shiny black with white patches on the legs and can be common on seedling plants.



Cotton aphid on underside of leaf showing dark green and pale yellow coloration

Aphid infestations can occur from plant emergence to open bolls. Cotton aphids range in color from light yellow to dark green to almost black. The immature or nymphal stage

looks like the adult stage, only smaller. Most adults do not have wings. Aphids usually are found on the undersides of leaves, on stems, in terminals and sometimes on fruit. Heavy and prolonged infestations can cause leaves to curl downward, older leaves to turn yellow and shed, squares and small bolls to shed and bolls to be reduced in size, resulting in incomplete fiber development.

Honeydew excreted by aphids can drop on fibers of open bolls. A black, sooty fungus sometimes develops on the honeydew deposits during wet periods. Fiber from such bolls is stained, sticky and of lower quality, resulting in difficult harvest, ginning and yarn spinning. Natural control by unfavorable weather, predators, parasites and pathogens can be effective in holding populations below damaging levels. Sometimes aphid numbers increase to moderate or heavy levels and then decline for no apparent reason.

Management and decision making.

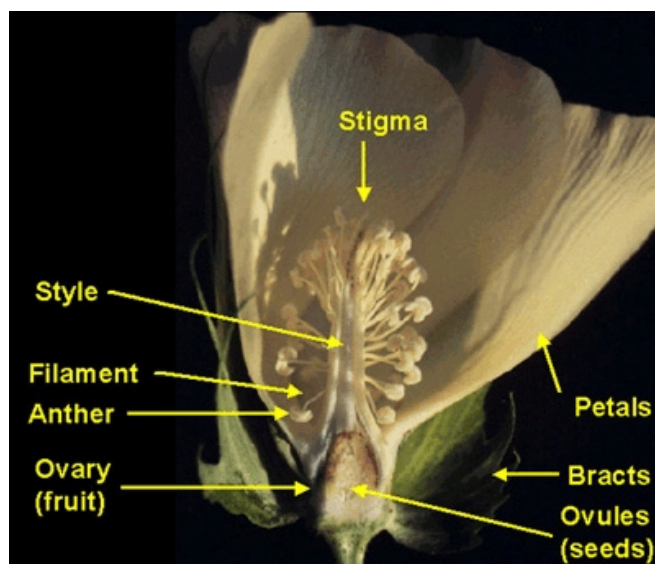
Although high populations can develop prior to bloom, most economically damaging infestations generally develop later in the season during the month of August. Fields should be scouted twice per week since rapid increases in aphid numbers can occur in a short time. A total of 60 leaves divided between the top, middle and lower portion of the plant should be sampled from plants across the field to determine actual infestation levels. Insecticidal control of cotton aphids should be delayed until infestations exceed 50 aphids per leaf.

Suggested Insecticides for control of aphids in cotton.

Insecticide	Formulated Amount per acre
Intruder® 70 WP	0.6-1.1 oz
Lorsban® 4E	8-32 oz
Bidrin® 8E	4-8 oz
Bidrin® 8E + Ovasyn® 1.5E	4-8 oz + 0.67-1.33 pt
Bidrin® 8E + Curacron® 8E	4-8 oz + 2-4 oz
Provado® 1.6F	3.75 oz
Trimax® 4F	1.5 oz
Lannate® 2.4 LV	12 oz
Parathion 8E	4-6 oz
Curacron® 8E	8 oz
Centric® 40 WG	2 oz

Cotton 101 - The Blooms

The cotton plant develops in an orderly, predictable pattern. If you are familiar with the fruiting stages, their sequence, and the time required for each stage, you can tell if your crop is on schedule. For example, you should spot the first white bloom 60-80 days from planting. That will be from 20 to 27 days (23 days average) after the square or bud develops. It will take about 3 days between the opening of a flower on one fruiting branch and the opening of the bloom in the same position of the bloom in the same position on the next higher fruiting branch. That's known as vertical flowering. About 6 days pass between the appearance of two consecutive blooms on the same branch (horizontal flowering). The cotton bloom is a perfect flower. It has both male parts (pollen-producing stamens, each with a double-lobed anther) and female parts (stigma, style, and ovary) in the same flower. The ovary has 4 to 5 carpels or locks. Each lock contains 8 to 12 ovules that may develop into seed. Flowers open during the morning, and pollination usually occurs within a few hours. Pollen grains from the anther drop to the sticky surface of the stigma. Fertilization - the union of a male reproductive cell from a single pollen grain and a female cell in the ovule - normally takes place within 24 to 30 hours after pollination. The



fertilized ovule develops into a seed. Some of the ovules may not develop fully or are aborted. If a majority of the seed abort, the boll will fall off the plant within 7 to 10 days after flowering. Cotton flowers usually are self-pollinated. However, bees or other insects may increase the frequency of cross-pollination. Temperatures above 100°F and moisture - rain or high humidity - reduce pollination. A bloom will not pollinate after the first day. The white petals of the flower turn pink after 24 hours and shed within a week as the fertilized ovules of the ovary grow into a boll. The effective bloom period occurs from early July to mid-August. Stress during this period will cause the largest loss of yields.

Research shows that in the High Plains, about 85% of the total bolls are set during the first three weeks of blooming, 10% during the fourth week, and less than 5% from the fifth through the seventh weeks.

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