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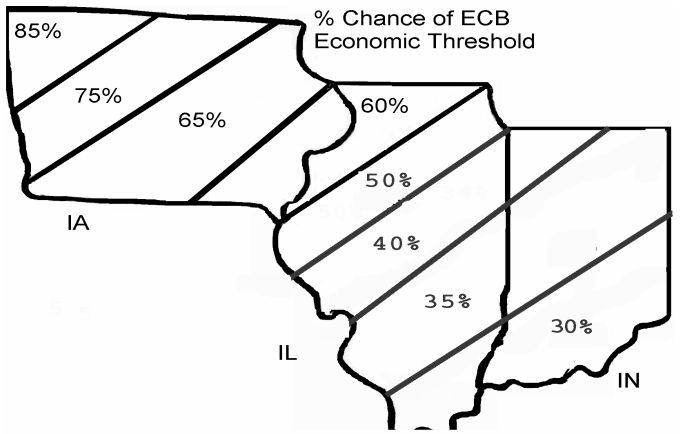
CPT Newsletter

European Corn Borer

In the early spring, when temperatures reach about 50 degrees, the corn borer larvae that have overwintered in corn stalks, plant debris, or soil will pupate. These first generation females will lay their eggs on corn or other grass hosts. The eggs will hatch in 5 to 7 days and the larvae will feed on the leaves of corn and chew small holes in the leaf forming a "buckshot" pattern when the leaf is unrolled. As the larvae mature, they will begin to tunnel into the leaf midribs and sheaths. As they grow larger, the larvae will tunnel into the stalk and feed until they are full grown. The tunneling in the stalk stops the transfer of water and nutrients thus causing a yield reduction and lodging. These wounds can also act as entry points for diseases. In 8 to 10 days after pupation, the corn borer larvae will develop into moths. The moths will gather in humid, grassy (about 18 inches tall) areas to mate, rest, and drink. Later, the second generation of moths will lay their eggs when corn is near tasseling. Most of the second generation ECB eggs can be found two leaves above and below the ear on the underside of the leaf near the midrib.

Early planted or taller corn will be the most susceptible to first generation corn borer. Corn planted later or smaller corn (about seventeen or eighteen inches tall) produces a compound known as DIMBOA. This compound tastes bad to a corn borer, and therefore prevents the establishment of the corn borer. As the corn plant matures, the concentration of DIMBOA within the plant will decrease, therefore, the plant will become more susceptible to the corn borer.

It is difficult to predict if the corn borer will have a severe infestation from year to year. It seems that in the past several years, populations have decreased in most areas, however there are still "pockets" of increased infestations in the Midwest. Scouting is key when determining management of the European Corn Borer.



In 1996, BT hybrids were introduced for protection against the corn borer. Since then, the use of the corn borer BT protected hybrids has steadily increased in the United States. Surveys from the last seven years have indicated a definite reduction of ECB densities. Experts are now saying that they may have "underestimated the impact of BT hybrids on populations of the ECB across the Midwest."

With the 2003 introduction of Bt rootworm protected corn and the possibility of European import restrictions of BT corn being eliminated, the use of Bt hybrids is expected to sky rocket over the next several years in the United States and around the world. Experts warn that relying too heavily on this pest management strategy may lead to insect resistance to Bt hybrids.

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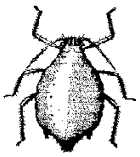
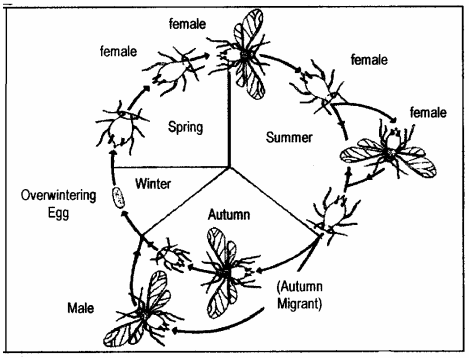
Soybean Aphid


APHID

Soybean aphid populations will depend on availability of buckthorn, predator populations (Asian Ladybird beetles) in the fall and in the spring, as well as weather conditions. The soybean aphid feeds on soybeans by sucking fluid from young stems or leaves and the underside of older leaves, stems, or pods. Not only can soybean aphids reduce yield, they also can cause a reduction in soybean quality. Soybean aphids may cause beans to be smaller and to contain less oil.

In the fall, soybean aphids reproduce sexually and deposit eggs on buckthorn, where they overwinter. In the spring, winged soybean aphids fly or are blown by weather patterns from the buckthorn to soybean fields. The soybean aphid will continue to produce more wingless and winged adults on soybeans. Thousands of them can seem to appear "out of the blue" or overnight. Soybean aphids have been known to go from 250 to 800 per plant in just a few days. This is because the soybean aphid reproduces asexually in the spring and summer. In other words, a mother clones herself to produce many pregnant female offspring. Soybean aphid reproduction mainly occurs during the soybean's vegetative state.



The soybean aphid can cause economic loss from the late vegetative stages through the reproductive stages. Pesticide treatment is justified if aphids exceed thresholds near or during the reproductive stages or during pod-fill. Treatment is not necessary after the R6 growth stage. The broad spectrum insecticides such as organophosphates or pyrethoids provide good results against the soybean aphid. However, the downfall is that these insecticides also kill the beneficial insects or predators of the soybean aphid. Therefore, there may be an increased risk of a soybean aphid outbreak after a broad spectrum insecticide application so timing and correct monitoring are important.

Bean Leaf Beetle

This small beetle can be easily recognized by the black triangle found behind the head on the top of the its wings. However, other characteristics of this insect may vary considerably. The beetle can be green, yellow, tan or red. Also, a beetle may or may not have black spots and border on its wings.

Bean leaf beetles overwinter as adults throughout the Midwest, mainly on leaf litter near soybean fields, however, a few may overwinter on soybean residue, alfalfa, corn, and grassy areas. Bean leaf beetles will emerge in early spring and may be seen first in alfalfa. Because they have a strong preference for soybeans, they rapidly move to the emerging soybeans to feed and lay eggs (130-200) on the upper surface of the soil near soybean plants. The eggs hatch within a week and the larvae feed on roots. They emerge as second generation in late summer. When fall temperatures cool down, the second generation will find overwintering sites.

The bean leaf beetle is most commonly known for transmitting the Bean Pod Mottle Virus (BPMV). It has been reported that the soybean plant is most at risk for this virus when infected as a seedling. Symptoms such as: yellow-green mottling and distortion of upper leaves are most visible during cool temperature and rapid growth. BPMV is reported to cause a reduction in size and number of seed, susceptibility to Phomopsis seed infection, and be associated with green stem syndrome.

The first generation of bean leaf beetles will flock to the earliest planted soybean fields. Early feeding of the cotyledons may prevent the establishment of the unifoliate leaves and the plant can die. The second generation may cause the most damage by eating soybean pods during the podfill

Conservation Security Program

The Conservation Security Program (CSP) is an annually funded program designed to reward producers for conservation practices they have already implemented into their farming operations. The money is currently available in a few specific watersheds; however, in the future most producers will be included. Growers must sign up during a designated time period or wait until their water shed is eligible for enrollment, approximately every 8 years.

Applicants must own or have control of rented lands for the duration of the contract period (5-10 years). No publicly owned lands are applicable. Applicants must have a direct involvement in the crop production and share a risk in the operation. Crops can range from corn and beans, to orchards, nurseries, specialty crops or pasture. The land cannot be in the conservation reserve program to receive payment.

County NRCS offices are hosting workshops for growers in the applicable areas. At the workshops the grower will receive a 6-part folder, which needs to be completed to receive an interview. A producer needs to have at least 2 years of records of their farm management practices. This includes nutrient management, soil sampling (1 sample/5 years), tillage practices, erosion control, residue management, pesticide management, scouting records, and the use of buffers. Applicants must have a positive soil conditioning index (SCI) which is based on erosion, organic content, and tillage system.

The program is broken into 3 tiers. Payment for each tier is broken into stewardship practices, existing practices, new practices, and also enhancement practices. Enhancement practices can include systems that include the following:

- 100% no-till
- Oil recycling
- Use of light bars for pesticide or nutrient application
- Using soil tests to apply fertilizer
- Using bio-diesel
- Limiting fertilizer applications
- Shelter belts
- Forest buffers
- Generating energy
- Limiting pesticide applications based on scouting

Producers are paid based on each enhancement they include. Enhancements can greatly increase a producer's payments.

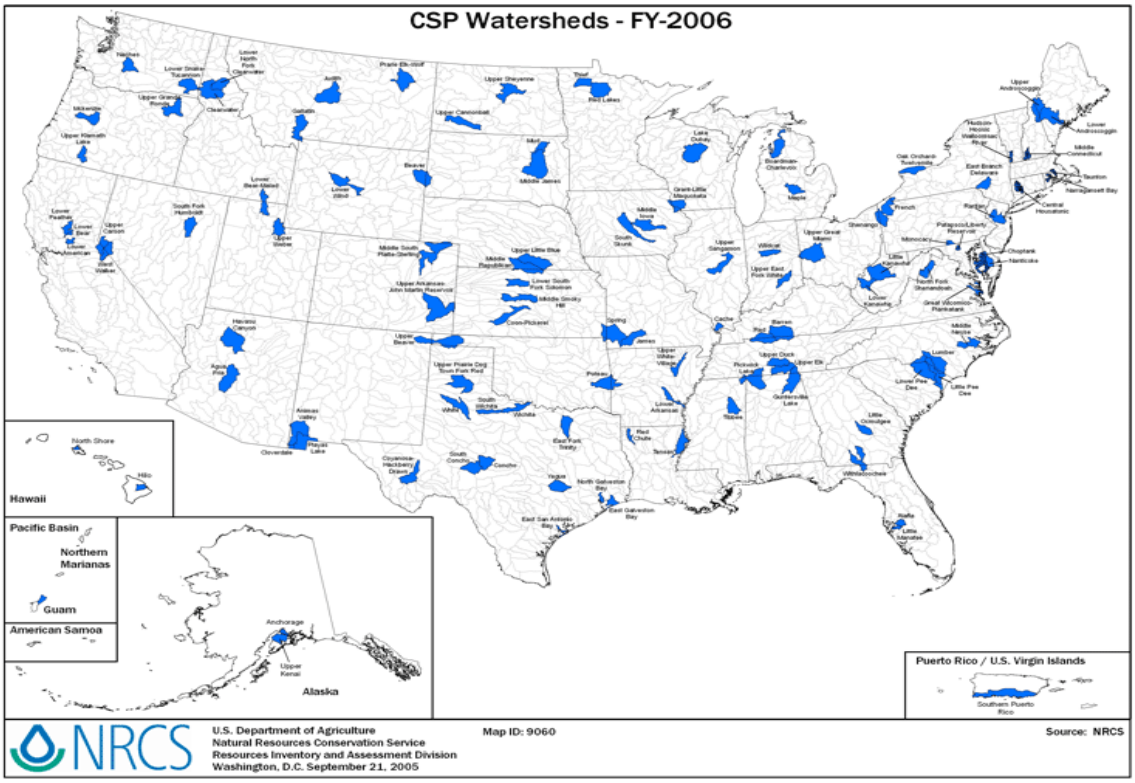
Tier I producers are limited to a 5 year contract. Producers in this tier should expect a yearly payment of $7-10/acre. These growers need to demonstrate their efforts to protect soil and water quality on part of their Agriculture Operation. A producer's agriculture operation is all owned and rented acres that a grower has control of for the length of the CSP contract. Only acreage that shows effort to be protected qualifies for payments.

Tier II producers may have a 5-10 year contract and must show efforts to protect soil

and water quality on all of their agriculture operation. They must also have all streams and ditches buffered at least 20' or agree to do so within 2 years. Depending on the enhancements a producer has implemented a tier II producers will likely receive between $15-20/acre.

Tier III producers must meet all of the requirements for the above tiers plus agree to additional activities. This could include preventing run off from feed lots, including wildlife cover in their operation, and proper management of resources near farm buildings. Producers who qualify for tier III will receive $27-35/ acre and will have a 5-10 year contract.

Where does scouting fall into the CSP? Growers who have participated in a scouting program will have ready records of their scouting practices as well as be eligible for enhancement payments when scouting has prevented pesticide applications. All producers need to be ready with good records so that when their watershed becomes eligible for enrollment they can take advantage of the payments available. For more information you can contact your NRCS office, or look on the NRCS website for the CSP: http://www.nrcs.usda.gov/programs/csp/



2006 CSP Watersheds		
Illinois	**Indiana**	**Iowa**
Upper Sangamon River	Wildcat	South Skunk
Lower Cache River	Upper East Fork White	Middle Iowa
	Upper Great Miami (mostly in OH)	Grant-Little Maquoketa (mostly in WI)

Refuge for BT Corn Rootworm Protected Hybrids

While visiting with producers this fall we have noticed that there has been some confusion as to the new RW traits and refuge acres. It is very important that producers follow the refuge guidelines to prevent insect resistance to the traits. Planting a refuge is mandated by the EPA, is a contractual and regulatory obligation, works to preserve corn hybrids with the traits, and can be adapted to fit the way you farm. Hopefully this information taken from Pioneer will clear things up for you:

REFUGE PERCENTAGE

On each farm, plant up to 80 percent of corn acres with hybrids containing the YGRW gene. Plant at least 20 percent of the corn acres to a corn refuge that does not contain a Bt gene for control of western, northern, and Mexican corn rootworm.

DISTANCE REQUIREMENT

Plant the refuge within or adjacent to fields containing Bt corn rootworm protected hybrids. The corn refuge can be separated by a ditch or road but not by another field. Adjacent refuge fields must be owned or managed by the same grower. A neighbor's field cannot be used as the refuge

REFUGE DESIGN

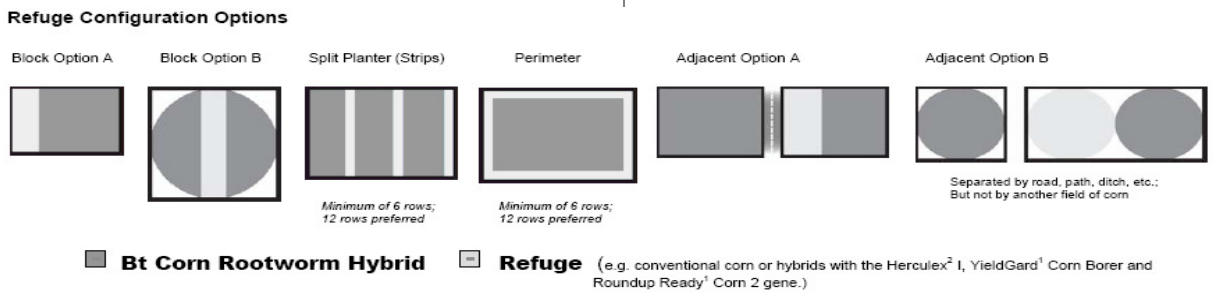
The refuge on each farm may be arranged in a number of configurations that allow the grower to easily incorporate an effective corn refuge into farm operations. Options include:

- Plant the refuge adjacent to each cornfield containing hybrids with Bt corn rootworm protection.
- Plant the refuge as large strips or blocks within the field containing hybrids with Bt corn rootworm protection.
- Split the planter to alternate at least 6 consecutive rows (and preferably 12 rows) of refuge hybrids with hybrids containing Bt corn rootworm protection.
- Plant field perimeters or end rows to a corn refuge.

REFUGE MANAGEMENT

Any corn hybrid that does not contain a Bt gene for control of western, northern and Mexican corn rootworm and is planted within or adjacent to the field containing Bt corn rootworm hybrids can serve as a refuge.

⇒ Plant a refuge on every farm where corn hybrids containing Bt corn rootworm protection are planted.



INSECTICIDE USE

The corn refuge can be treated for corn rootworm larvae and other soil pests with soil-applied, seed-applied or foliar-applied insecticides. The refuge can also be treated with a non-Bt insecticide to control pests such as corn borer. However the part of the field containing hybrids with Bt corn rootworm protection must also be treated with insecticides for these pests.

⇒ Plant the refuge hybrid(s) at the same time as the hybrids containing Bt corn rootworm protection.

⇒ Manage refuge hybrid(s) and hybrid(s) containing Bt corn rootworm protection in a similar fashion.

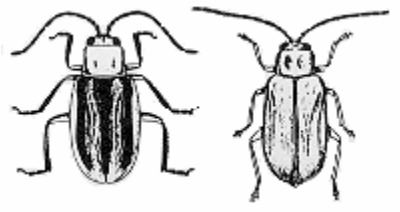
⇒ Plant the refuge hybrid(s) and the hybrid(s) containing Bt corn rootworm protection to fields with similar crop

history. For example, if the field planted to corn with Bt corn rootworm protection was in corn the previous year, then the refuge must also be planted in a field that was planted to corn the previous year.

⇒ Mixing non-rootworm resistant seed with seed containing Bt corn rootworm protection for use in the refuge is not permitted.

⇒ Practice Integrated Pest Management (IPM) to preserve the natural enemies of corn rootworm and other insect pests. Natural predators such as ground beetles and ants can help reduce corn rootworm larval populations. Bt corn rootworm insect protection aids IPM because it affects only target insects and allows beneficial insects to thrive.

⇒ Growers should monitor their fields planted to hybrids with Bt corn rootworm protection and contact their Pioneer sales professional if performance problems are observed.



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