Hello,

Listed below is a link to the University of Missouri Integrated Pest and Crop Management newsletter. This site contains some very timely pest management information and I encourage each of you to bookmark this site and monitor it for future pest management control options.
http://ipm.missouri.edu/ipcm/

A TIP ABOUT SOIL TESTING

To obtain an accurate reading of the average soil conditions in a no-till field, take a soil sample at a 6-inch depth and a second sample at a 2-inch depth. Similar two-depth samples should be collected from 20 to 30 spots in fields no larger than 10 acres, according to Scott Stein, an Agronomist for DeKalb. The cores should be mixed in a plastic bucket, with the aggregates being no larger than 1/4 inch, he says. A sample from the bucket can then be sent to a soil testing lab.

SOYBEAN APHIDS

Talk of Winter Circuit - soybean aphids are a hot topic heading into 2004.
Here are a few things we observed last year:

- Natural enemies like lady beetles, minute pirate bugs and parasitic wasps offer significant control when aphid infestations are lighter. But beneficials exhibit a "lag" behind aphid development and can't stop a rapidly developing aphid infestation.
- Heavy rainfall appears to reduce numbers; however, this information is largely anecdotal to date. Ground application of insecticides may provide slightly better effectiveness than air application, but the difference is not significant.
- What we've learned from three years of aphid activity is that scouting is your first line of defense for a couple of reasons. First, whether aphids will approach thresholds for treatment is not a predictable event. Remember, few aphids were sprayed for in 2002, after substantial numbers were seen in 2001. Then, numbers exploded in 2003. Second, although there has been some discussion about the use of seed treatments, they do not extend far enough into the season for the later-occurring soybean aphid.
- Our best option is to scout from July to mid-August during late vegetative stage through beginning seed stage (R1-R5). The threshold is set to begin insecticide treatments at R1 when aphids are averaging 25 aphids per leaflet or 250 aphids per plant. Universities report that the treatment threshold becomes 1,000 per plant at R3, and 1,500 per plant at R4-R5.

by Mycogen Seeds and Dow AgroSciences LLC

MOVE SOME RESIDUE TO WARM THE SOIL

Some Virginia no-tillers have successfully cleared residue away from the row area with flat discs, sweeps and fluted coulters to overcome low soil temperatures. Brian Noyes of the Colonial Soil and Water Conservation District in Quinton, Va., says "The use of raised beds also tends to positively affect soil warming in no-till systems." Also, an Iowa State University study found that removing 4 inches of residue from the corn row brought increased corn height, a 50 percent reduction in the days needed for reaching emergence and tasseling, and yields of 5 more bushels per acre.

UNEVEN EMERGENCE IN CORN

Uneven emergence affects crop performance because competition from larger, early emerging plants decreases the yield from smaller, later-emerging plants. The primary causes of delayed seedling emergence in corn include:

1. Soil moisture variability within the seed depth zone
2. Poor seed-to-soil contact due to cloddy soils
3. Inability of no-till coulters to slice cleanly through surface residues
4. Worn disc openers
5. Misadjusted closing wheels

Other causes include soil temperature variability within the seed zone, soil crusting prior to emergence, occurrence of certain types of herbicide injury, and variable insect or soil-borne disease pressure. Mycogen researchers agree on the following guidelines concerning yield reduction from late-emerging seedlings:

- If seedlings emerged 10 days late, yield will be decreased by less than five percent, regardless of the pattern of unevenness.
- If the unevenness is across rows, the effect on yield will be very similar to tearing up the stand and replanting.
- When half or more of the plants emerge three weeks late or later, yield loss could range from 20 percent to 22 percent. At this point, no benefit from replanting would be gained unless the stand contains several gaps.

Dave Welch, District Agronomis, Mycogen Seeds

Weed Resistance

The signs are all around us that glyphosate needs help. Marestail, giant ragweed, lambsquarters and waterhemp are just a few of the weeds showing resistance or tolerance to glyphosate. Part of the solution includes soil-applied herbicides.

Germination Considerations

The theoretical upper yield potential of corn planted and grown under perfect conditions may be as high as 1,312 bushels per acre (Tollenaar, 1985). This number remains theoretical because as soon as seed is placed in the ground, many factors begin to adversely affect yield potential. To maintain high yield potential, a good start is essential. Basically, three conditions need to be present for germination: adequate moisture, temperature and oxygen.

A kernel of corn needs to imbibe about 30% of its weight in water before chemical changes will be activated in the embryo. To achieve uniform emergence, corn should be planted at least 1.5" deep, so that each kernel has access to moisture.

Temperature is critical for seed to continue metabolic activities. 50° F is generally accepted as the minimum temperature at which many metabolic processes can occur. However, soil temperature at the 2" depth can vary by more than 20° F within a day during the spring. If the average soil temperature remains below 50° F for a period of time, the seed is more prone to attack from fungi and insects. Using a seed-applied soil insecticide such as Cruiser® Extreme Pak can help to protect the seed during that time.

Adequate oxygen is often overlooked as a required germination condition. Seeds need to respire. Once the seed begins metabolic activities, the oxygen requirement is greater. Planting in wet conditions often compacts the soil, resulting in less air space in the soil profile. Poorly drained soils often lack oxygen and can cause uneven emergence. A hard rain soon after planting can often compress conventionally tilled fields, also causing poor and uneven emergence.

To give your corn the best yield potential, start the growing season right. Plant corn deep enough to give it uniform moisture, use Cruiser Extreme Pak to protect seed from insects and diseases, and do not plant on wet ground.

Mycogen Seeds wishes all growers a safe and prosperous year.
Mark Apelt, District Agronomist, Mycogen Seeds

Hay baler

It's a well-known fact that the man who invented the hay baler was one of the most successful inventors of all time. It goes without saying that he made a bundle.