High Nitrate Found In Soil Samples

A survey of soil samples finds residual soil nitrate levels that are unusually high. Reduced yields, less leaching and denitrification, and a warm, open fall all contributed to the increased levels. Knowing how much N is already in fields and adjusting fertilizer application accordingly will be important.

Wet, Cool Weather Favoring Early Season Soybean Diseases

Over the last couple weeks many parts of the state have received consistent and/or heavy rainfall which favors seedling diseases in soybean. This, coupled with cool temperatures, has resulted in several cases of Pythium causing poor stands and damping off of plants (Figure 1). Warmer conditions are more conducive for Phytophthora, which to date has not been identified in any samples submitted to the UNL Plant and Pest Diagnostic Lab. If moisture continues with warmer temperatures, we expect to see more Phytophthora.

Figure 1. Damping off in soybean due to disease.

Both of these fungal pathogens are favored by wet conditions, which is why we refer to them as water molds. At this point in the season there are no treatments. The only action is to ensure the crop does not undergo any moisture stress if things do dry out more. Phytophthora can kill plants at any stage of development, but Pythium typically does not kill plants much past the V5 growth stage.

I encourage you to get a diagnosis of what the problem is in your fields so proper management actions can be taken in the future. When selecting seed for next year consider seed treatments and the use of resistant varieties (for Phytophthora), based on field history.

Figure 2. Phytophthora root and stem rot on soybean.

In fields where a seed treatment fungicide was used and seedling disease is still developing, product failure under extreme conditions may be due to excessive moisture or use of the wrong treatment for the disease present. The most common example of a product rate issue is when mefenoxam or metalaxyl is put on at a rate too low for good Phytophthora control.

More information on product rates and management for Phytophthora can be found in Management of Phytophthora Root and Stem Rot of Soybeans (NebGuide G1785).

Written by: Loren Giesler, Extension Plant Pathologist

Watch for Alfalfa Weevil Adults on Regrowth

First cuttings of alfalfa are later than normal in many areas. When this happens, alfalfa weevil activity often increases.

Weevil larvae generally eat small holes in leaves at the growing tip of alfalfa plants. As larvae grow, damage increases as the holes become larger. Severely damaged fields have a grayish appearance because of the drying of skeletonized upper leaves and buds.

Alfalfa weevil adult

Most fields did not have enough damage to need spraying before first cutting. After harvest, many larvae die when exposed to direct sunlight and high temperatures at the soil surface. But will enough larvae survive to be a problem for regrowth?

A greater concern may be the survival of weevil adults. These critters can be really hard on alfalfa regrowth by feeding on the developing crown buds, retarding growth and preventing fields from greening up after harvest.

The first step in controlling weevil adults is the removal of windrows and bales as soon as possible to expose these insects. Examine stubble frequently to see if adults are delaying green-up by feeding on new buds, especially where the windrow laid.

If there is damage, use Table 1 to help determine when spraying may be desirable. This guide considers insecticide cost, hay value, and harvest management.

Don't let alfalfa weevil adults delay second growth of your alfalfa. Keep a watchful eye on the stubble and spray, but only if necessary.

Table I. **Alfalfa stubble threshold calculation chart**

Factors	Example	Your field
A. Insecticide plus application cost ($/acre)	$7	
B. Value of hay ($/ton)	$100	
C. Loss factor (1st bloom harvest = 0.0198; 28-day harvest = 0.0345)	0.0198	
D. Days of complete defoliation that can be tolerated*	3.5	

*To estimate D, multiply B times C and divide into A. Using the numbers in the example column, the calculation for the number of days that complete defoliation that can be tolerated is:

$$D = A/(BxC) = 7/(100 \times 0.0198) = 7/1.98 = 3.5 \text{ days}$$

For more information see Managing the Alfalfa Weevil (G1208).

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