Northern Ohio Field Notes

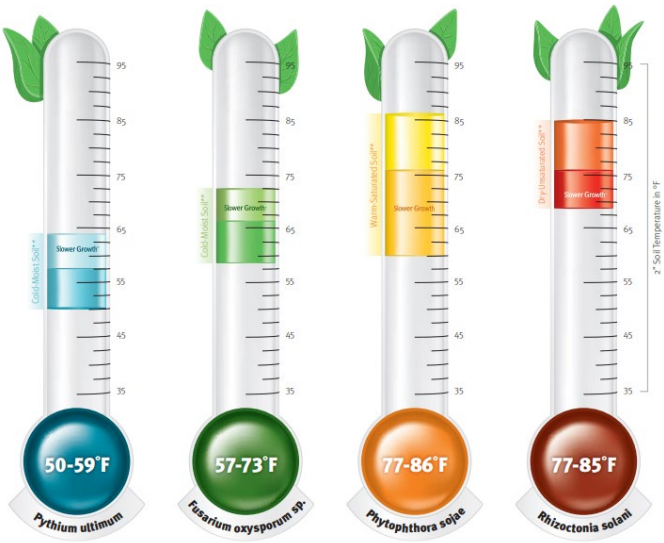
April 4, 2023 John Schoenhals, Pioneer Field Agronomist

This week's Agronomy Update includes:

- **Value of LumiGEN Seed Treatment on Soybeans**
- **Alfalfa Stand Evaluation**
- **Spring Alfalfa Seeding and Stand Establishment**

Value of LumiGEN Soybean Seed Treatment

Seed treatment protects the seed and seedling during early growth, can help improve plant vigor, and in some cases can actually improve germination scores by disinfecting the seed coat. Seed treatments are always recommended in northern Ohio, regardless of planting date. The primary seedling diseases in Ohio have a range of preferred environments that range from **cold and wet** to **warm and dry** conditions.



LumiGEN fungicide (FST) --- includes 4 chemical modes of action, plus 2 biofungicides

- Protection against the most common fungi in the soil including Pythium, Fusarium, Rhizoctonia, and Phytophthora
- Lumisena is Industry's Best Protection Against Phytophthora
  - More Yield - 1.7 bu/acre yield advantage vs the ***industry standard seed treatment*** (**not** vs untreated) under average Phytophthora pressure.
  - Stronger Start - Enhanced emergence and vigor for a strong start above and below ground.
  - More Plants/Acre - Improves plant stands 2,500 PPA under heavy Phytophthora pressure.

Gaucho insecticide (IST)

- Protects from damage due to seed corn maggot and reduces feeding damage from overwintering Bean Leaf Beetles and early season soybean aphids

Lumiderm insecticide (NEW)

- Non-neonicotinoid insecticide provides additional improvements to protection for seed corn maggots and bean leaf beetles when compared to Gaucho, as well as protection from various other pests.
- Promotes early growth and vigor
- +1.5-2.5bu/A vs Fungicide treatment only
- Lumiderm + Gaucho is +1-3bu/A vs Gaucho only (larger yield gains possible under high insect pressure)
- More details: https://corteva.showpad.com/share/04DQypQwDUVfqsSRqBnX5

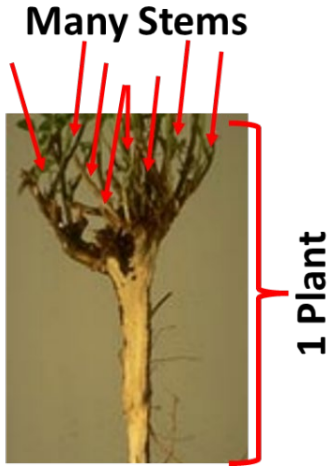
ILEVO® fungicide/nematicide

- Provides extra protection for acres at risk of sudden death syndrome and soybean cyst nematode injury
- Under high Soybean Cyst Nematode pressure, OSU research in 2022 showed that ILEVO provided a +3bu/A yield advantage to both Peking and PI88788 varieties
- More details: https://corteva.showpad.com/share/lGspgw64MeKrBGPsxZRWQ

Alfalfa Stand Evaluation

- Ideally, new alfalfa stands will have 22-30 plants per square foot. Stands will thin through the first year of production resulting in 8 to 15 plants per square foot.
- Stand counts are somewhat unreliable indicators of stand health because plants will branch as they age.
- Stem counts are best for evaluating stands. A good stand will have at least 55 stems per square foot.
- For alfalfa stands >3 years old --- Generally, a minimum of 3-4 healthy plants/ ft^2 is necessary to achieve a plant density of 40+ stems/ ft^2.

Using stem density to evaluate alfalfa stands	
Density (Stems/ft^2)	**Action**
Over 55	Stem density not limiting yield
40 to 55	Stem density limiting yield potential
Under 40	Stem density severely limiting yield. Consider replacing.



If the number of plants present indicates optimum yield potential, next evaluate plant/root health:

- **Heaving- Is the crown of the alfalfa plant ≤1" above ground? OR Is it ≥1.5" above ground?**
  - 1" or less heaving means the root system is likely intact and recovery is likely
- **Did fall formed buds overwinter well?**
  - Buds not surviving will need to reform. These plants will be slower to green up/produce yield.
- **How healthy is the root system?**
  - Milky white color = Healthy **-vs-** Brown color/Stringy = Unhealthy

Spring Alfalfa Seeding and Stand Establishment

Ideal Spring Planting Window

- April 1 to May 15 for spring seeding
- Alfalfa seed will begin to germinate when soil temperatures are above 37 degrees

Field Rotation, Preparation, & Fertility

- For maximum yield potential and reduced risk of autotoxicity limiting new growth, rotate existing alfalfa fields to another crop for at least 12 months (preferably 18 months) before going back to alfalfa
- Soil test for fertility needs --- Phosphorus for healthy root development, Potassium for high tonnage, and ideal pH (6.5-7) for N-producing bacteria
- A firm seedbed is critical for seed-to-soil contact AND consistent seeding depth

Seeding Depth

- ¼" to ½" deep on clay or loam soils
- ½" to ¾" deep on sandy soils

Seeding Rate

- 15 to 20 pounds/acre is a good starting point for pure alfalfa stands. Rates up to 25lbs/A may be helpful under less-than-ideal conditions in the spring.

What about the risk of freezing? Very young alfalfa seedlings can tolerate temperatures as low as 20 degrees. Thus, freezing usually isn't a problem early on. The danger of freezing actually is greater after alfalfa reaches the third or fourth trifoliate leaf stage, or about 4 inches tall. At this stage, alfalfa loses its cold tolerance and becomes more susceptible to freezing. Waiting to plant until April minimizes this risk.
Crop Focus: https://corteva.showpad.com/share/0E2EcMgXe4rHFz5IZk96o