



WALKING FIELDS

CROP PROGRESS UPDATE

The good weather continues for much of our market territory. As of July 27th, the Legacy Seeds Research and Learning Center in Waupaca, Wisconsin has accumulated 1550 GDU's. This is about 70 GDU's ahead of the 30-year average. We started the month of July close to the 30-year average but warm and favorable growing weather has pushed the crops along. Rainfall in Waupaca county has continued to follow the average. At the beginning of July, the total precipitation for the year was at 18.6 inches, about 2 inches above average. The end of July brought us to 21.6 inches; again, about 2 inches over the average. The rainfall in July came at a steady pace for some areas and in huge amounts for others. In Wisconsin, the crop condition report for the end of July showed that 80% of soils reported as adequate for topsoil and subsoil moisture.

Crop conditions were reported as 62% of corn silking as of July 27th which is 13 days ahead of 2019 and 3 days ahead of the 5-year average. Corn was rated at 82% good to excellent statewide. Soybeans were at 81% flowering, a whopping three weeks ahead of 2019 and 8 days ahead of the 5-year average. 84% of the soybean crop was rated as good to excellent in Wisconsin. All hay conditions were reported at 83% good to excellent. The 17% of third crop cut will climb with favorable weather in the weeks ahead.

CORN POLLINATION

FLOWERING PHYSIOLOGY AND MANAGEMENT

A vast majority of the corn crop throughout the trade area has been pollinating for some time now but what is really happening during this critical point in the season?

Silks from each potential kernel starting with the base of the ear begin to elongate and emerge after V12. Severe drought can slow or stop silk elongation because silks are mostly water. Under ideal conditions silks will elongate 1.5 inches per day until fertilized by a pollen grain. Silks will remain receptive to pollen for up to 10 days. Having the silks of a plant being receptive during pollen shed is the most critical part of the pollination process. Once the tassel is fully emerged it will shed pollen for 5-8 days. Every individual tassel has about 6,000 anthers that will product anywhere from 2 to 25 million grains of pollen to help saturate the field with viable pollen. Once they fall from a tassel, pollen grains only remain viable for a few minutes. Temperatures over 100° can kill pollen while cool and wet conditions will delay pollen shed. After a pollen grain lands on an individual silk it will successfully fertilize the ovule causing the silk to detach at the base.

After fertilization the ear will over double in length as the kernels are filled with carbohydrates from the plant.

At this VT/R1 stage the plant has taken up only 60% of the Nitrogen, about 75% of Potassium and around 40% of the Phosphorus that it needs through the season. If the root system cannot take up the needed nutrients because of compaction, rootworm damage, dry soil conditions or the lack of nutrients in the soil the plant will begin to mobilize necessary nutrients within the plant to fill the ear. These nutrients that are mobile (Nitrogen, Phosphorus, Potassium) in the plant will be deficient in the lower leaves. In severe cases this will cause the lower stalk to weaken leading to lodging.

Nutrient management and disease management at this time can greatly affect a crop. After the silks are fertilized and the plant has entered the "brown silk" stage, timing is optimal for fungicide applications to prevent diseases. Some products and specific targeted diseases may have different timing. The ear leaf and leaves above it are targeted with fungicide because they are contributing the most to photosynthesis.



ALFALFA FERTILITY

FERT MANAGEMENT AFTER 3RD CUTTING

Many areas will have favorable weather in early August to cut and harvest haylage for the 3rd time in 2020. After 3rd cutting is a great time to apply fertilizer to fields that are planned to continue to be alfalfa in 2021. Applications of fertilizer after 3rd cutting and into early September can help improve winter survival. Fertilizer soon after harvest as to not damage any regrowth. Focus on nutrients that are stable in the soil profile so they will not leach before the plants can fully utilize them. Potassium and Phosphorus should be utilized at this time. Most stands of alfalfa can benefit from Sulfur and Boron applications but with the leachability of those nutrients' chances are that they will not be in the top 6-8 inches of soil for the plant to utilize when vigorous growth resumes next Spring. Potash can leach on some extremely sandy soils but will slowly move into the root uptake zone over time. Phosphorus applications can cause a positive crop response between seasons but the most efficient application of phosphorus is made and incorporated before establishment. Utilize accurate soil tests and realistic yields harvested to calculate the rate of fertilizer needed. One ton of forage harvested removes just under 100 pounds of potash and about 25 pounds of DAP per acre.



PHYTOPHTHORA ROOT ROT

PRR IN SOYBEANS

PRR is a fungal disease that can cause huge losses in soybeans. There are many races of the waterborne fungus which makes this disease difficult to control. Typically, symptoms will show up first in fields with poor soil drainage but PRR can infect well drained soils if they have been saturated for 7-14 days due to excessive precipitation. Infections normally happen when soil temperatures are 60 degrees or higher. Phytophthora can kill plants of all stages. Seedlings will wilt and die as they emerge or shortly after. In older plants leaves will turn yellow and wilt followed by death. A key diagnostic characteristic is a brown discoloration on the stem about 6-12 inches above the soil level. Once the plant is infected there are no control or rescue methods available. There are multiple PRR resistance genes that a soybean variety can have. Here is a link to an article on PRR resistance genes from the University of Wisconsin. [Phytophthora Root Rot UW-Extension](#) Soybean varieties are also rated for a field tolerance to the disease. Early season Phytophthora can be controlled with Metalaxyl seed treatments. Areas with poor drainage can see a decrease in PRR pressure when subsoil drainage is added.

SUMMER SEEDED ALFALFA

ALFALFA FOLLOWING WHEAT

Summer seeding for alfalfa is right around the corner especially with small grain harvest beginning. Summer seeding can make for a more productive first year of a stand. Many of the basic principles are the same as spring seeding, such as soil pH and fertility, weed control and seed bed preparation, but there are some unique management considerations with summer seeding alfalfa. Soil moisture is critical late in the summer, this puts more pressure on proper seed bed preparation to guarantee good seed to soil contact. An ½ inch of rain can germinate alfalfa but seedlings are very sensitive to drought and can die in a few days without adequate moisture. For the majority of the upper Midwest, summer seeded alfalfa should be planted before August 15th. It is best to get at least 45 days of "good" growing conditions to build up carbohydrate reserves in the roots before a killing frost.

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