



PLANT HEALTH CHALLENGE NEWSLETTER

On Twitter @Air_Tractor, #PlantHealthChallenge

BASF PRODUCT UPDATE

Protecting Ear Leaf Increases Corn Yields

Maximizing yield is the goal all corn producers strive to achieve every growing season. Several factors are key in accomplishing this goal, with plant health being a major contributor.

Plant health is important for achieving high yields. One of the more critical components on the corn plant for maximizing yield is the ear leaf. The ear leaf, which is attached to the topmost ear, is the largest and most important leaf on the plant, and it's a driver in collecting sunlight for photosynthesis for the plant late into the season.

Photosynthesis is the process by which plants produce sugars and starch, which feed the plant and fill kernels on the ear. Ear leaves are important because they have more leaf area to collect sunlight than any other leaves. Sunlight is a key driver in photosynthesis. Capturing more sunlight typically results in higher yields.



This week's GDU indicator

During the critical time of plant development, the plant is producing and translocating sugars into the developing ear. Any kind of stress (hail injury, disease, heat, drought, cloudy days, etc.) that interrupts or slows this process can reduce grain yields significantly by aborting kernels at the ear tip and reducing kernel seed depth. Protecting the ear leaf, and the leaves above it, adds yield through increased kernel depth and reduced kernel abortion, which is a critical component to high-

yielding corn.

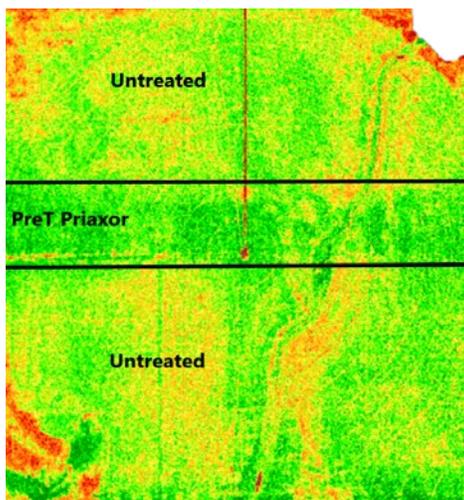
The goal is to protect the ear leaf from disease lesions. Once lesions reach the ear leaf or the leaves above the ear leaf, the situation becomes more critical. If disease gets established on these leaves and conditions are favorable, the disease can explode quickly. If a significant amount of key leaf tissue is destroyed before grain fill is completed, yield losses can result.

Remember, the ear leaf and the leaves above that on the corn plant contribute 75-90% of the carbohydrates during grain fill. Thus, these are the leaves that need to be protected. Foliar fungicides play an important role in preserving ear leaf integrity during the grain fill period, which could contribute to increased yield potential.

— Jeff Mueller,
BASF CredeNZ Seeds Agronomist
Agronomic Services Midwest

2018 CORN PHC SHOWCASE

Phelps County Field Sees Yield Bump with Priaxor[®]



Field Location: Phelps County

Plant Date: 05/04/2018

Seed: Pioneer 1379 AM

Treatment & Timing: Priaxor[®] - 4 oz. at 951 GDU (pre-tassel)

Originally, this field was scheduled to receive a 20-acre pre-tassel PHC strip of Priaxor[®], followed by a tassel-time treatment of fungicide across the whole pivot. However, due to lack of disease pressure, a tassel fungicide treatment was never recommended. That means that the only fungicide this field received in 2018 was on our 20-acre Plant Health Challenge strip.

One important thing to note is that seven days after the Priaxor[®] treatment, this field received 5% hail damage. As the season progressed, our PHC strip really began to pop out on the TerrAvion imagery. At harvest time, the 20-acre treated strip yielded 9.52 bushels better than the untreated portion of the field.

Using a current December elevator price of \$4.04, a 9.52-bushel increase is equivalent to a 61.9% ROI and \$14.71/acre in total dollars returned (TDR) after recovering the cost of treatment.

— Tony Marquardt

NEBRASKALAND AVIATION

A SUCCESSFUL 2019 CROP

2019 WHEAT/SOYBEAN UPDATE

Wheat Starts Ripening; Later Harvest Predicted

WHEAT: The increase of seasonal temperature and sunshine has helped wheat transition from the heading stages into ripening (Feekes 11.0).

The grain fill period on wheat can vary from 30-50 days depending on environment. This would currently put local wheat a little behind the average harvest date.

Area wheat continues to look good, with very minor leaf disease present on acres treated with fungicide such as Nexicor™. The rally of \$.80/bushel on wheat over the last 30 days has helped our ROI (return on investment) of a fungicide treatment.

With the 80-cent increase, it takes one less bushel to recover the cost of fungicide treatment.

SOYBEANS: The wet spring has made for a wide range of planting

dates for soybeans. Currently, soybeans range from V3 (3rd trifoliolate) to just planted. It has become more popular to plant soybeans before corn or at the same time to take advantage of as much solar radiation as possible.

Because of the wide range in planting dates, we need to be aware of the 45 days or R1 restrictions for dicamba soybeans.

Soybeans planted on May 1 indicate the last day to apply dicamba is June 14. We still have a long way to go to canopy, so this means another application of a residual herbicide in 2-3 weeks or as the plant approaches the R1 growth stage.

Contact us to secure the best product for your unique situation.

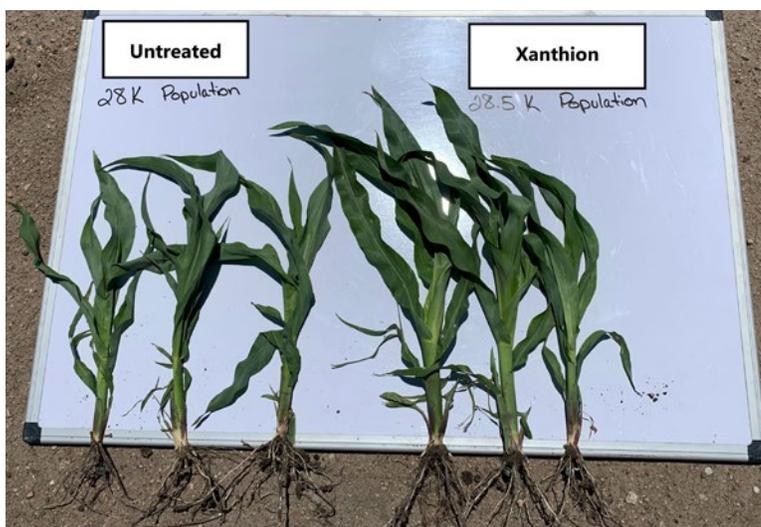
— Darrin Swanson



Area soybeans range from stage V3 to just planted.

2018 CORN PHC SHOWCASE

Xanthion® Trial Already Shows Healthier Corn Plants



Corn plants treated with Xanthion® appear bigger and healthier than untreated plants.

This week, we re-visited a few of our in-furrow Xanthion® trials. Xanthion® is a combination of a chemical fungicide, the same active ingredient that is in Headline™, and a biofungicide. This combination provides more uniform plant emergence, as well as protection from many soil-borne diseases.

Xanthion® also improves the seedling's ability to withstand cold, wet conditions (much like what we experienced this spring). In each one of our trials that we scouted this week, we witnessed higher stand counts in the treated versus the untreated areas. These differences ranged anywhere from 500-1,000 plants per acre. Treated plants also appeared to be bigger and healthier (see image at left). We will continue to keep you updated on these trials as we monitor them throughout the season.

— Tony Marquardt

WHAT TO EXPECT THIS WEEK

Pre-T Treatments Vital To Protect Leaves

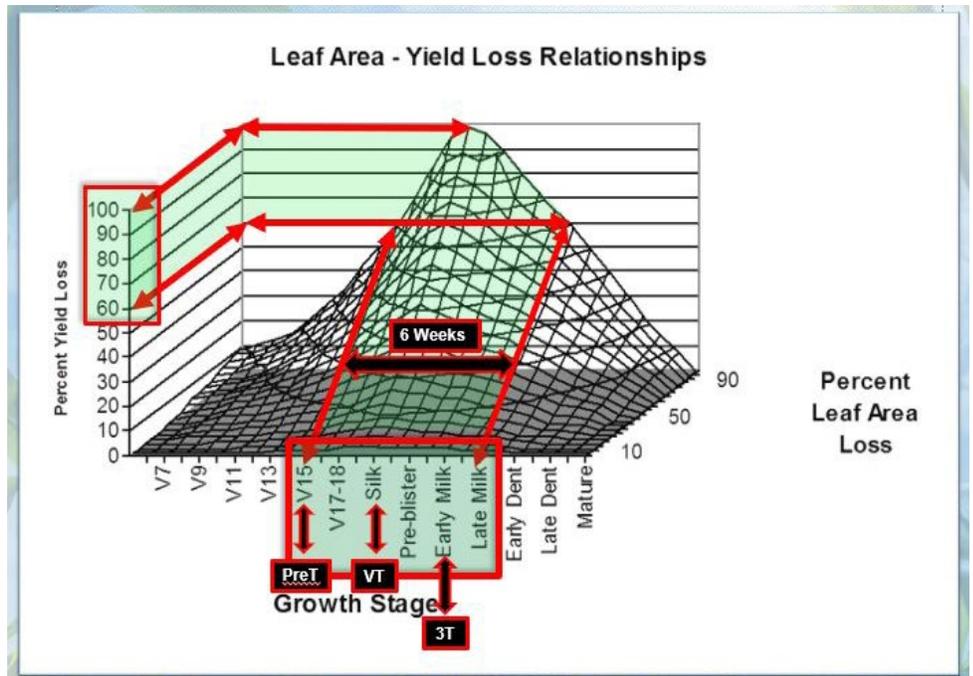
On Tuesday, corn planted on April 19 had reached 571 GDU and had reached the V6 growth stage. Corn planted May 4 had reached 445 GDU and had reached the V4 growth stage.

At this point, the primary ear on the earlier planted corn has initiated, and very soon the number of rows around the ear will be set. We all understand that row number is primarily determined by the genetics planted. At the V6 growth stage, water and nutrient demand will increase significantly as we enter into very rapid growth.

Soon, around the V7 or V8 growth stage and over a longer period of time (up to V15), the corn plant will begin to evaluate its environment as it determines the number of kernels per row. Environmental stress or lack of nutrients can have some impact on this determination so it is becoming more important than ever to complete herbicide applications and get fertilizer programs in place.

We have progressed another week closer to our PreT corn applications. In this week's newsletter, Jeff Mueller with BASF explains why the ear leaf is the most important leaf on the corn plant (page 1). Maximizing the ear leaf efficiency and protecting it from disease is an important piece to the timing of our PreT application.

It is interesting to watch our corn plants build larger and larger solar panels with each new leaf as we get closer to the most critical leaf on the plant emerging – the ear leaf. (See leaf photo at right.)



Although this leaf area loss chart (pictured above) is used to quantify hail damage, it is interesting to see how critical the six-week period from PreT to 3T treatments can be to yield.

This six-week period of time is the only time of the growing season when you can lose up to 100% of yield due to leaf area loss. Protecting the ear leaf and those above it is very important. The most successful PreT treatments in the 2018 PHC were made between growth stage V12 and V15.

PreT applications are projected to occur between June 28 and July 4. During this period of time, we will primarily be looking for good weather to make this application.



— Tye Marquardt

Leaf sizes ranging from 5-20 inches.