

# AGRONOMY UPDATE



Seeds for Success

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## Agronomy Update

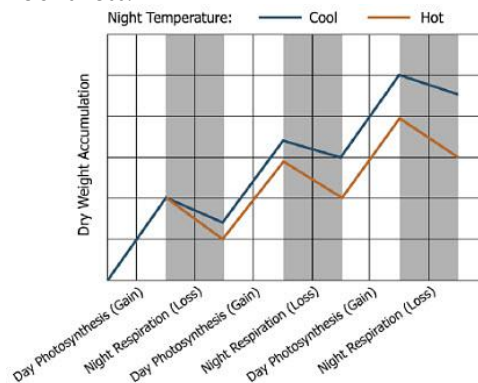
is a monthly publication provided to producers free of charge. AgVenture, Inc. and its nationwide network of Regional Seed Companies are dedicated to providing producers exceptional seed products – genetics and technologies, professional service, and local knowledge of agronomic conditions impacting producer profitability.

**BEFORE HARVEST** Maximum yields take planning and the best plans are based on solid information. Before harvest, AgVenture encourages growers to take some time to evaluate your fields, your stands, your crop health, your nutrient management and weed control programs. Selecting the ideally adapted hybrids and varieties with the specific traits and technologies goes a long way to making the crop perform at its maximum potential. Taking the time to record details in each of these areas can help make a difference in next year's crop and your long-term profitability. Your AgVenture Yield Specialist will provide you with specific support in developing a cropping plan specific to your ground and your operation.

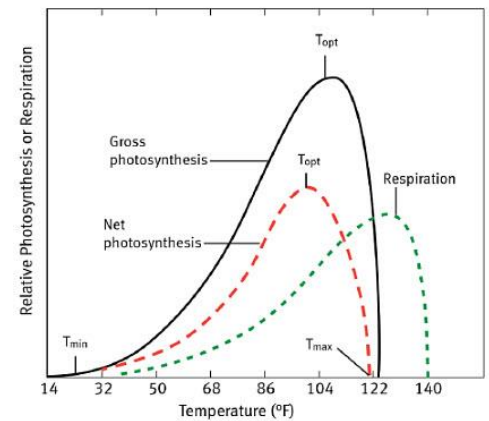
## HOT NIGHTS IMPEDE OPTIMAL CORN YIELDS

Hot nighttime temperatures during the grain fill period can reduce corn grain yield. One school of thought is that the rate of respiration in the corn plant increases as the temperature increases. That boost in respiration requires more sugar for energy which makes less sugar available for deposition as starch in the kernel. Another hypothesis is that higher temperatures accelerate corn plants' phenological development, causing it to mature sooner. That faster growth rate forces the physiological process to run more quickly and less efficiently, resulting in reduced grain yield.

In addition, there is a decrease in photosynthesis per unit of thermal time during the critical period following silking. Thus, high night temperatures can affect both kernel number and kernel weight depending on timing and duration of heat stress.



The figure above shows dry weight accumulation related to night temperature. Growth involves the accumulation of dry weight from photosynthesis during the day and loss from respiration at night (adapted from Hoefft, et al., 2000).



The figure above illustrates temperature effects on rates of gross photosynthesis, respiration, and net photosynthesis (Adapted from Hopkins, 1999).

## MANAGING SOUTHERN RUST

Widespread occurrence of Southern rust has been reported extending broadly across the corn growing region. Leaf lesions reduce functional area impeding photosynthesis and thus sugar production. Plants will utilize stalk carbohydrates to compensate for kernel fill. That results in weakened stalks and increases the potential for stalk rots. In severe cases (see photo below), premature plant death may occur. Ultimate yield losses come from poorly filled kernels and stalk-lodging harvest losses. A foliar fungicide may be advised if the Southern rust is spreading rapidly or disease exceeds your state's threshold. For future crops, consider planting AgVenture resistant hybrids.



**ANXIOUS TO START CORN HARVEST?** Ear maturity is not the only mark of a corn crop's readiness for harvest. Consider these facts:

- All hybrids do not dry down at the same rate.
- Upright ears dry more slowly than ears at a more horizontal angle.
- Hybrids with more leaves and tighter husks tend to dry down more slowly.
- Ears that show tips beyond the husks tend to dry more quickly.

When leaving corn in the field to dry down, consider your hybrids stalk quality characteristics. Monitor the long-range weather forecast for storms or rain. It may benefit you to harvest wetter corn rather than risk losses.



### SEPTORIA BROWN SPOT AND TARGET SPOT DISTINCTIONS

Septoria brown spot (left) can be found in the low- to mid-canopy during the mid-R stages of soybean growth and development. Leaves will exhibit brown lesions with bright yellow halos. These spotted infected leaves seldom move to the upper canopy until the plants reach the R6 level. At that point, the plant has

shifted all nutrients to pod production, and the brown spot will advance throughout the canopy.



Target spot (left) is also found in the low- to mid-canopy. Lesions look like a target with rings while in the lower canopy but as the disease moves up the canopy, and disease development progresses, the lesions occasionally do not develop the common concentric rings. While fungicide treatments can slow target spot's progression and reduce the defoliation the disease causes, it often continues to

advance up into the canopy.



**SORGHUM PEST UPDATE** Chinch bugs and corn leaf aphids are plentiful in some sorghum fields. While they each cause some injury to sorghum plants, treatments are not typically applied. Chinch bugs live at the plant's base laying eggs tucked into the lower leaf sheaths. Nymphs live between the stalk and leaf collar. Heavy feeding can weaken stalks causing lodging before harvest. Typical

treatment thresholds are when 50 chinch bugs per plant are present. Always read and follow label recommendations applying registered insecticides at the right rate, timing, and place.

Meanwhile, in the whorl, growers are finding significant populations of corn leaf aphids. They may rapidly build in population and their feeding produces honeydew. Treatments are seldom pursued as some research suggests their feeding causes little yield loss, and their presence attracts natural enemies including lacewings, lady beetles (source/photo University of Oklahoma and AgVenture).

**BEGIN WITH THE END IN MIND** Applying pesticides? Be sure to read the entire pesticide label to ensure the accuracy and efficacy, and that all mandatory label requirements are met. With crops in some areas maturing rapidly, or more rapidly than typical for the calendar, growers are advised to carefully consider the pre-harvest interval on pesticides.

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