

# Seeds for Success

## Agronomy Update

VOLUME 11 • ISSUE 3 • MARCH 2016

### Agronomy Update

is a monthly publication provided to producers free of charge. AgVenture, Inc. and its independently owned and operated 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.

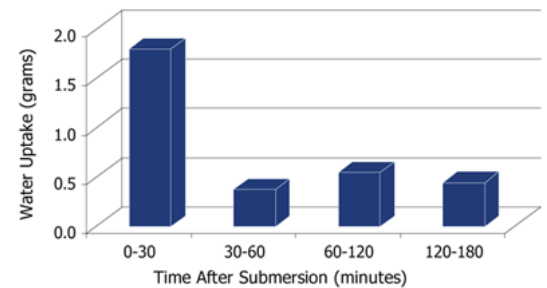
**Grow with Confidence!**



### Importance of Warm Soils at Planting

Less than ideal stands result from planting into cold, wet soils or directly before a cold or wet weather event, resulting in significant stand loss. But cold and wet snaps are often inevitable. The chances of establishing a good stand are greatly improved if hybrids are allowed to germinate at least 1-2 days in warmer, moist conditions before a cold-stress event. Hybrids with a higher stress emergence score can help moderate stand losses due to cold stress.

One reason why temperature during imbibition is critical to corn emergence is the fact that seed imbibes most of the water needed for germination very rapidly. To illustrate the rapid timing of water uptake, seed was submerged in 50 F water for 3 hours and weighed at intervals of 30, 60, 120 and 180 minutes to determine water uptake.



Amount of water uptake by corn seed during the first 3 hours after submersion in 50 F water.

Seed imbibes the most water within the first 30 minutes after exposure to saturated conditions. If this early imbibition occurs at cold temperatures, it could kill the seed or result in abnormal seedlings. Growers should not only consider soil temperature at planting, but also the expected temperature when seed begins rapidly soaking up water. Seed planted in warmer, dry soils can still be injured if the dry period is followed by a cold, wet event (sources: AgVenture and Pioneer).

### Enemies of Corn Seedlings

Even after you've planted into an ideal seedbed, damage or stress to the first few sets of developing nodal roots during V1-V5 can severely stunt or delay a corn plant's development. Damage to the first few sets of nodal roots forces young seedlings to continue their dependence on the kernel reserves longer than optimum. If stresses cause the seedling to rely longer on the nearly exhausted kernel reserves, stunting or even seedling death may occur. Among the biggest challengers to nodal root development include fertilizer salt injury, seedling diseases, herbicide injury, insect feeding damage, excessive wet or dry soils and subsequent crusting, and soil compaction. Some seedling stresses can be avoided or reduced through proper planning and timely response to an issue. Talk with your AgVenture Yield Specialist for additional suggestions specific to your acres.

### Notes on Starter Fertilizer

Until about the V3 stage, the young corn seedling relies upon its kernel reserves. V3 is a critical transition period that greatly influences how the crop continues to develop strongly and uniformly. Starter fertilizers begin to influence seedling development at V3 when one or more nodal roots tap into a starter fertilizer band placed approximately 2 inches to the side and 2 inches below the seed. Placed in this position, starter fertilizer has an advantageous positioning to over-the-seed placed starter fertilizers. That's because its position is more accessible to nodal roots and because higher rates of nitrogen and/or potassium can be used without risk of injury to the seed during germination and emergence.

## AgVenture, Inc.

is the nation's largest network of independently owned regional seed companies. Based in Kentland, Indiana, AgVenture provides a growing network of independently owned and managed regional seed companies with seed products meeting exacting standards for quality, together with leading-edge genetics and technology.

Since 1983, this unique marketing approach has allowed each individual company to match the hybrids it sells to the specific needs of the geographical area it serves. Combined with professional seed representation at a local level, AgVenture strives to help every grower realize more profit from every field.

**Grow with Confidence!**

## Manage Weeds Early, Manage Yield Potential

Early weed control is essential for optimum yields. Corn and soybeans hold on to their full yield potential until they reach a specific point in their development. Competition for sunlight and soil nutrients between early weeds and developing seedlings places yield-robbing constraints on young plants.

Corn seedlings retain their full genetic yield potential until they reach a specific time in the growing season, typically about the V3 stage. Called the "switch-point", after that stage, irreversible yield loss begins and adds up daily. Multi-year, multi-location university research and from Syngenta shows that a one day delay in herbicide application after the switch-point in corn results in a yield loss of 0.5 bushels per acre. Delay of a week would result in 3.5 bushels per acre yield loss.

Soybeans reach their switch-point later than corn, an average of 23-days post emergence at the second trifoliolate. After the switch-point in soybeans is reached, yield losses climbed to an average of 1.0 bushels per day for every day delay from the second to the third trifoliolate stage.

### Southern Corn Rust Appearing Early

Crop years 2014 and 2015 each saw Southern corn rust run rampant, not only in the South, but well outside of its "southern" home into Illinois, Missouri, Nebraska and Indiana. Plant pathologists point out that the last years, Southern rust appeared a full month earlier than normal. It's not too early to begin planning how to monitor fields for its presence, and to mitigate the 10-20 percent yield losses and reduced test weights it can cause. Southern rust is aggressive, developing and covering a field quickly, much more rapidly than other rust diseases. The yellow-orange pustules can quickly establish on the topside of leaves. Late planted fields are more susceptible to heavy infestation. Shady and low-lying fields that are typically prone to corn diseases should be carefully monitored.

## Corn: Switch-Point Yield Impacts

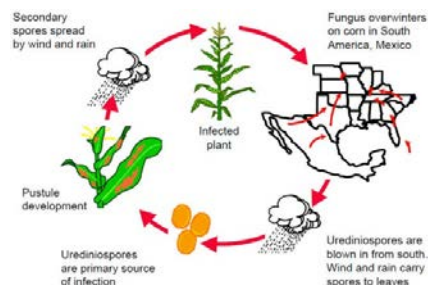
Days after Switch-Point	Average Pressure		Competitive/Stressful	
	Yield Loss (bu/a)	\$/acre	Yield Loss (bu/a)	\$/acre
1	0.5	\$ 1.75	1.0	\$3.50
3	1.5	\$5.25	3.0	\$10.50
7	3.5	\$12.25	7.0	\$24.50
10	5.0	\$17.50	10.0	\$35.00
14	7.0	\$24.50	14.0	\$49.00

\*Based on corn @ \$3.50/bu Syngenta

## Soybeans: Switch-Point Yield Impacts

Days After Emergence	Days After Switch-Point	Yield Loss (bu/a)	\$/Acre
21	0	0	0
22	0	0	0
23	1	1.0	\$8.50
24	2	2.0	\$17.00
25	3	3.0	\$25.50

\* Based on soybeans @ \$8.50/bu Syngenta



Connect with us on: Facebook Twitter LinkedIn YouTube  
[www.agventure.com](http://www.agventure.com)