AGVENTURE

Seeds *for* Success

Agronomy Update

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Winter Profit Plot

Last week, over 50 AgVenture Regional Seed Company participants gathered to hone their skills and refine their understanding of the science involved in growing profitable crops.

The intensive, one-day Winter Profit Plot workshop was held at the Indiana Crop Improvement Association (ICIA) facilities near Stockwell, Indiana on February 25. The event drew a crowd from across the country, gathering RSC owners, marketing managers and AgVenture Yield Specialists from 10 states. "This was an excellent program with everyone very engaged in our educational initiatives," said Chuck Schneider, AgVenture's business development manager.

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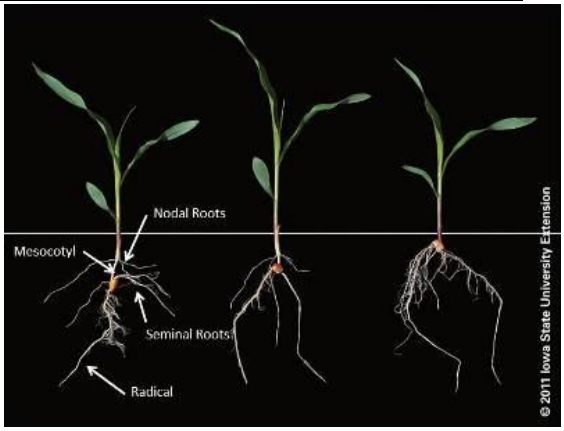
Make Uniform Emergence a Priority

Uniform emergence doesn't just happen; it is the result of a symphony of efforts and meticulous planning. Right down to the time that seedling breaks through the surface, a seedling that emerges even 4-6 hours after those next to it is likely to be slightly smaller all season. Where one in four seedlings is delayed in emergence by ten days, the overall field potential drops by 6 percent. Uneven planting depth and poor seed-to-soil contact are the primary reasons for uneven emergence. AgVenture strives for perfection at planting.

- Wait – don't get out in the field unless conditions are right. Working wet soils can cause compaction issues that contribute to problems the entire growing season and beyond.
- Manage tillage – carefully monitor tillage depth and consistency
- Downward pressure - seeding depth and consistent seed-to-soil contact are greatly influenced by planter down pressure. No matter what type of system you're operating, manage down pressure to assure you have enough force to achieve the proper planting depth, but not so much that sidewalls compact.
- Seedbed with adequate moisture – planting into soils at field capacity provides the seed an ideal environment for germination.
- Mind the Residue – residue can impede uniform emergence. It causes variable soil moisture and temperature which can contribute to uneven emergence. Consider using row cleaners to optimize conditions for germination.
- Depth and spacing – seed depth and seed spacing must be accurate to achieve an ideal plant stand. Work for perfect consistency.

The Root of the Matter

What goes on under the soil surface once that seed is perfectly placed is critical to our understanding of ideal stand establishment. Root system development is directly affected by seeding depth. That's because the mesocotyl compensates in length for the seeding depth. At ideal seeding depth and soil temperature and moisture conditions, the nodal root system forms ½ to ¾ inches below the soil surface.



The seminal roots initiate from the scutellar node – from within the seed embryo. The seminal root helps fortify the seedling's development by taking up water from the soil. However, a germinating corn seedling depends on the energy reserve of the kernel's endosperm or starch reserves for its initial nourishment. Once emerged, the seminal root development slows down and the nodal root system begins to develop, advancing from the nodes above the mesocotyl (photo: Iowa State University).

"We were very pleased with not only the topics presented, but with the deep level of meaningful discussion each of our participants brought to the table. They are focused and committed to bringing their customers the best information possible." Schneider explained that this profit plot meeting was the first in a series of meetings that will give RSCs and their teams access to professionals, technology information and practical applications for agronomic information and practices. "AVI is focused on providing outstanding technical support to our AgVenture Yield Specialists," Schneider said. "These highly focused seed professionals have the attention of their customers. We are committed to offering tools and training that respects that valuable relationship."

Grow with Confidence!

Chilling Seedlings Robs Yield Potential

One of the risks that newly planted corn faces is that of imbibitional chilling injury due to cold soil temperatures during the initial 24 to 36 hours after seeding when the kernels imbibe water and begin the germination process. In response to the imbibition of water, kernels naturally swell or expand. If the cell tissues of the kernel are too cold, they become less elastic and may rupture during the swelling process. Radicle roots and/or coleoptiles may cease development. Stunting or death of the seminal root system or deformed and elongated mesocotyl may also result. Check the weather forecast and the soil temperature to avoid losing maximum stand potential (source: Dr. R.L. Nielsen).

Soil Water Tension Explained

At planting, soil texture and soil moisture movement are two key factors influencing seed placement, and ultimately, stand establishment. Be sure to take into consideration soil type in your seed bed preparation. Clay soils, for instance, are comprised of more than 40 percent clay. They have significantly less water availability to seedlings as compared to loam soils, which typically contain 20-37 percent clay. Meantime, consider soil moisture movement as it impacts stand establishment. In dry conditions, water moves upward in the soil profile to the soil surface where soil water evaporation occurs. Tension or suction is the force that moves water upward in the soil profile. Greater tension is found in fine soil textures and dry soil. Water moves from wet areas (low tension) to drier areas (high tension). Where soil surfaces are drier, the soil tension is greater – "drawing" soil moisture from the subsoil to the soil surface (sources: USDA NRCS, Iowa State University, AgVenture).

Trait Talk

Here's a question from one of our readers: "What are some of the advantages of integrated refuge seed products?" Jeanne Storey, AgVenture Product & Technology Business Manager explains. "Our customers are rapidly adopting the use of integrated refuge products. These are seed products that contain, for example, a reduced refuge Bt seed (2 modes of action) and refuge (herbicide tolerant) seed intermingled within a single bag or container. An integrated refuge product really offers a nice set of benefits to growers.

- √ **Reduced Refuge** – since the major component of the blend contains more than one insect resistant mode of action you get the benefits of needing fewer refuge acres.
- √ **Planning and Time-Savings** – with the refuge is already included in the seed container, no separate borders are required. That helps optimize time use during the busy spring planting season.
- √ **Mitigate Risks** – there are countless hours and many dollars behind the science that allows us to offer trait technology. Sound stewardship makes sure that these traits remain effective for years to come. Integrated refuge also reduces the risk of errors when calculating refuge acres because the seed is planter-ready."

Talk with your AYS to learn what integrated refuge products might work best for your acres. *Have a product trait questions? Send an email to Jeanne Storey at: jstorey@agventure.com.*

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