

TECHtalk[®]

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HELPING FARMERS FEED AND FUEL THE WORLD

TECHtalk is published monthly for dealers of Latham Hi-Tech Seeds, focusing on technology, agronomy, trends and news from around the seed industry.

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When to Use a Soybean Inoculant

by MARK GRUNDMEIER SOYBEAN PRODUCT MANAGER

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The downside of not using an inoculant when one is needed can be as much as a 50% loss in yield. So when should farmers use inoculants? That's always a tough question to answer since each crop year is different, and there are literally a 1,000 variables that factor into the decision.

Proper nitrogen fixation is crucial to obtain high soybean yields. For this to happen, nitrogen-fixing bacteria (specifically *Bradyrhizobia japonicum*) must be present in sufficient quantities in the soil. This bacteria stimulates plant roots to produce nodules that absorb nitrogen from

the air and convert it into ammonia, which the plant takes up through its root system. This nitrogen is then used to make amino acids, the building blocks for proteins, and chlorophyll. Chlorophyll is the molecule that converts sunlight, an energy source, into carbohydrates through the process of photosynthesis.

Researchers estimate that between 50 and 80% of the nitrogen needed to produce a normal soybean crop can be provided through nitrogen fixation. Active fixation usually starts at the V2 stage. From then on, more nodules develop and the amount of nitrogen that is fixed

continues to increase. The highest demand for nitrogen begins when seeds begin to form in the pods and continues through full maturity.

Keeping the above information in mind, below are some basic recommendations for using inoculants:

- 1** If soybeans have **NEVER** been grown in the field, you **MUST** use an inoculant!
- 2** If soybeans have not been in the field for three years, an inoculant is **HIGHLY RECOMMENDED**. Because nodule development is such a critical stage, I prefer to be on the safe side although some experts say an inoculant isn't needed for three to five years.
- 3** Use an inoculant if you're planting into soils that have a pH above 8.0 or below 5.8.
- 4** Consider using an inoculant each year you plant soybeans if your soil has a high sand content as Rhizobia bacteria do not survive as well in sandy soils as they do in soils with high organic matter content.
- 5** An inoculant might be recommended in cool, wet soils like no-till fields or if a field was under water for more than a week.

Prior to using the inoculant, it should be stored in an area with the temperature between 44°F and 77°F. Do **NOT** allow it to freeze, and do not treat seed that is frozen. Also do not let inoculant get too hot as this can kill the live inoculant bacteria; keep the inoculant away from direct sunlight. Lastly, when mixing your inoculant before use, do not use chlorinated water as this also will kill the bacteria.

For the cost, inoculants can be a great insurance policy! Feel free to call me with any questions related to this topic or other crop production practices.

Watch for the Latham Advantage After Planting



by **LYLE MARCUS** CORN PRODUCT MANAGER

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Latham Hi-Tech Seeds takes great pride in the seed quality that goes into every bag of Latham® seed. You have a great opportunity to observe this first-hand each spring as you watch your crops emerge.

Looking at fields as they emerge can help you gain valuable information to use later in the year, whether you're making sales calls or trying to make the best decisions for your own operation. Here are a few steps for you to consider making this growing season:

- Take the time to walk your own fields and make notes on what you see for each hybrid.
- Visit key customers and walk their Latham fields, showing them the early vigor and growth from high-quality Latham brand seed.
- If you planted a Latham SuperStripSM or Showcase corn plot, spend some time early in the growing season, noting differences you see between hybrids.
- Contact your RSM to find plots in your area that you can visit to observe emergence.

Determining a hybrid's uniformity of emergence is so important. The actual stand versus planting rate carries some weight in overall yield, but uniformity of emergence carries the greatest burden of producing top yields. Fields that have all plants emerging in a 24- to 36-hour period will produce the highest yields. Plants that emerge a week later than the first plants will not produce at the same level.

A North Dakota State Crop and Pest report from June 7, 2018, shows corn plants that emerge five to 10 days after the first plants will yield only 65% of the yield of the first emerged plants. Kansas State research shows that a two-leaf stage delay of 1 in 6 plants caused by uneven emergence can result in as much as a 4% yield reduction.

Key notes to take when looking at emergence timing:

- **Seedbed uniformity**
- **Trash removal from seed furrow area**
- **Uniformity of seed depth**
- **Differences you can note on same hybrid under different field conditions**

Your spring observations help tell the story on late-season standability, variability in flowering, and variability in maturity. Looking at fields early and taking good notes will also assist you in building better field-by-field recommendations with your customers. You can tailor your presentation with reminders of how they can optimize uniform emergence.

Early season observations allow you to obtain valuable information. Taking a little time for this will pay huge dividends in understanding end-of-the-year results.



The Fast Lane to High Yield Begins With Early Vigor



by **COREY CATT** FORAGE PRODUCTS MANAGER
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Some of our most important equipment only gets used once a year for a short period of time. Just as we blow the dust off our equipment in the spring and refamiliarize ourselves with the equipment, we must remind ourselves about the impactful observations we should be making throughout the growing season.

Sometimes we miss the emergence observational window in the spring as we're in a mad rush to get the crop in the ground and sprayed. Plant breeders, farmers and agronomists have their own observational styles. The main thing is that we all take time to make the observations. It's especially important to take notes on your test plot and crops planted on your soil.



2019 Experimental that emerged in cold, wet soil at least 5 days ahead of the rest of plot.

Every year is different, so we can always learn something. In 2019, my research plot was planted mid-May into cold, wet soil. I cringed as I was planting into conditions that were less than ideal. I was pushing to get done as there was a week of rain in the forecast, and it started to mist as I was planting. I finished planting as

mud started collecting on the gauge wheels. Then we got two weeks of heavy rains that compacted the soil. It remained cold and cloudy, which created a situation of inhibitional chilling. I couldn't rotary hoe as it was so wet, but I reconciled with myself that this will be a good test of EARLY VIGOR, and it was.

Last year's test plot provided some great observations. As I was eagerly waiting for emergence, I thought how the poor seed was just shivering two inches below the surface and might succumb to

the cold. A few hybrids fully emerged. Some were at 1-leaf stage while the rest of the plot was barely at spike. The tenacity of the seed, paired with strong treatments, provided good protection. Most of the seed eventually emerged and the seedlings reached for the sun.

Modern seed treatments offer such amazing protection against soil-borne pathogens, paired with good seed quality. Hybrids that are predisposed with strong genetic early vigor make for fast emergence. Corn needs about 90 to 100 heat units to emerge.

Latham's Product Team constantly watches for hybrids that have amazing early vigor scores. In addition to that, we are vigilantly looking at emerging seed protection technology. Risk reduction is critical, and every un-emerged seed is at a risk to soil pathogens. Once the seedling hits sunlight, the plant is on the expressway to top yields! Active photosynthesis takes place and the plant's immune system becomes even stronger to defend that top yield.

Field Notes Help Maximize Yield

Observing your crop is key to maximizing yield. Be sure to walk fields early. Emergence is a factor of many variables such as air temp, soil temp, soil moisture, planting depth and seed quality. Keep in mind that you won't see major emergence differences every year.

Note those hybrids that pop through the ground before anything else, especially in cooler, wet soils. We all vary a little on how we rate staging. When a hybrid is at least 50% at spike stage, I rate it "spike." Then when 50% is at first leaf, I rate it "first leaf" and so on.

Please let your Latham® RSM and me know what you're seeing in the field. I'm always eager to know what you are seeing in your plot as this information is most relevant to you and your farm. Taking emergence notes will help with your 2021 seed selection. It seems like a small detail, but every detail is critical. Fast emergence reduces risk and gets the seed in the fast lane to top yields!



Zone In: Tips for Choosing Planting Population and Genetics

by **DARIN CHAPMAN** PRECISION AGRONOMY ADVISOR
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Having a good planting plan before you go to the field is important to maximize your return on investment (ROI).

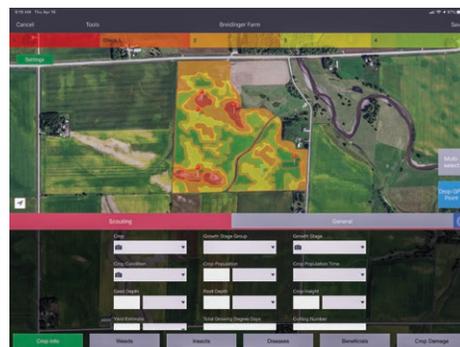
Today's seed and precision ag technologies allow us to take a more sophisticated approach to how much we plant and where we plant it. Planting the same genetics on an entire field at the exact same population does not optimize the potential for unique zones within a field. In some situations, you may be planting too high of population or placing the wrong genetics.

Scouting fields throughout the growing season is worth your time. You might notice that, in certain zones of the field, your corn is catching a disease or cannibalizing itself. This could be due to over population or the wrong genetics. Perhaps corn plants didn't have the tolerance for the amount of water or nutrients to thrive in a particular zone if those same genetics are more productive in another zone in the same field. You might also notice a difference in stalk health between zones.

The key to choosing the best hybrids on a field-by-field basis is walking your fields throughout the growing season and taking good notes. Latham's Data ForwardSM app provides a scouting tool with satellite imagery to monitor crop health and take notes by management zones. You can drop GPS points, take

photos, and write notes that tie it to each point in the field.

If you're using variable rate seeding, create different management zones for each planting rate across the field. If you're walking a field, pull up that particular management zone on the map to scout the field by management zone. This is a great way to conduct population studies. On-farm research like this helps you determine the best hybrid or optimal population by zone in your field.



One of the many benefits of using the scouting tool in Data Forward is that you can connect with your Latham Agronomy team. We can review your scouting data remotely and answer any questions. Plus, the information entered into the Data Forward app is stored year after year. The ability to review several years of data will show trends and lead to better decisions.

Contact your Latham Agronomy Team today to get setup with our FREE scouting tool!