

APRIL 2021

FARM INSIGHT



OPTIMIZE CROP STANDS: 5 WAYS TO "JUMP START" YIELD

Are you Farming the Controllables?

"Recipe for Success"

The key controllables that impact profitability include:

- ✓ Manage crop residue
- Optimize Crop Stands
- Boost soil health & plant health
- Minimize plant stress (hint discover the value of ethylene inhibitors)
- Reduce tillage cost
- Utilize crop rotation & cover crops
- Biologically treat manure

With increasing corn production costs and fluctuating grain prices, the management decisions you make at planting become more important than ever. While you often hear that higher yield potential all starts with the seed, selecting the right genetics for your acres is only part of the story.

"Controlling the controllables is the key to success in crop production," said Dr. Jim Ladlie, owner of ProfitProAG. "It's easy to overlook some of these key controllables, however."

Some of these controllables influence crop stands, which impact yield potential. Uniform stands are essential. "Non-uniform stands result in lower yields, because the smaller, late-emerging plants cannot capture enough sunlight," noted the Iowa State University article "*What's the Yield Effect of Uneven Corn Heights?*" "Unfortunately, the yield loss from the 'late' plants is not made up by the 'normal' plants."

Continued on the next page...



FARM INSIGHT Featured Content

- * Page #1-3... Optimize Crop Stands: 5 Ways to "Jump Start" Yield
- * Page #3-4... Is 2021 Setting up to be a Drought Year?
- * Page #5... Weatherproofing your Crops in 2021 & Manure Foam Solution

In Next Month's FARM INSIGHT

- * How to Boost Soil & Plant Health: Are you Farming the Controllables?
- * Learn how to Weatherproof your Crops from Heat Stress & Drought

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Here are five ways to minimize these challenges and optimize your corn stand:

1. Set your planter for success. A perfect, picket-fence stand isn't just pretty; it's critical in maximizing yield potential. This means your planter has to be calibrated properly to prevent skips and doubles. "You only get one chance a year to plant, so it's vital to get your crop off to a good start," said Dennis Klockenga, a crop management consultant with ProfitProAG.

Preventing skips and doubles becomes even more of an issue if you have an older, finger-pickup planter. In years past, seed companies sized seed to work properly with finger-pickup planters. Once air-seeder planters became common, however, the need for companies to size the seed diminished. If you have a finger-pickup planter, proper calibration is essential. Work with your equipment dealer to calibrate your meters to the exact seed you'll plant. Another option is to consider upgrading to an air-seeder planter to manage skips and doubles.

Why are skips and doubles such yield robbers? Skips let the sunlight hit the ground, instead of reaching the corn plants' leaves for photosynthesis, which powers yield potential. Doubles mean one of the plants will become a sucker or tiller that robs water and nutrients from the larger plant. "During the growing season, get out of your pickup and walk your fields," Klockenga said. Take a hand trowel or pliers, and dig up some of the young plants, he added. "If there's a gap, was it a skip? Did the seed not germinate? Also, look for doubles and other things you can improve next year."

2. Follow proper planting depth. The ideal planting depth for corn is 2 to 2¹/₂ inches. If the seed is planted too shallow (less than 1 inch deep), nodal roots will be just below or on the soil surface. This may result in rootless corn, where corn is holding on by only the mesocotyl. It may also result in injury if the growing point is exposed directly to herbicides. If seed is planted too deep (3 inches or more), the seedling needs extra energy to push the coleoptile to the soil surface. Under these conditions, the coleoptile may split, causing the plant to leaf out under the soil surface. A variety of factors can aggravate this problem, including soil compaction, surface crusting and cold, wet conditions. "Get off your tractor periodically to check your planting depth," Klockenga said.

3. Avoid working the ground when conditions aren't right. Try not to work soil that's too wet, since this creates compaction. Also, avoid planting into soils that are too cold. Cold-shock syndrome can occur if the first water the seed imbibes is colder than 50 degrees. "If this happens, the cold water will shock the seed, and it may not germinate," Klockenga said. Instead of planting into soil that's 45 degrees, wait until the soil temperature is at least 50 degrees or higher. If the 10-day forecast is trending downward, you may want to leave the planter in the shed.

4. Give seedlings a better chance at success. A strong finish begins with a strong start. ProfitProAG's "Recipe for Success" includes seed treatment to get seedlings off to a good start. Consider **ProfitCoatTM**, a robust organic seed nutrient package and biological inoculant to help with germination, improved emergence and more

even emergence. J. Olson, a Minnesota organic grower has used ProfitCoat for more than 10 years. When he compared the ProfitCoat yields versus the control acres on his farm in 2020, he reported an increase of 8 bu/A, with a high of 25 bu/A on the acres treated with ProfitCoat.



5. Residue management. If crop residue isn't breaking down efficiently in your fields, it could be costing you yield potential on current and future crops. That's why proper residue management is another key component of ProfitProAG's "Recipe for Success." Never underestimate the power of microbes to break down residue efficiently and recycle nutrients. This "Second Harvest"

- Promotes soil health
- Improves nutrient retention
- Enhances nitrogen fixation
- Helps soils warm up faster in the spring
- Reduces disease and insect pressure
- Improves yield potential
- Boosts profit potential

Continued on the next page...

page 2...profitproag.com

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Crop residue breakdown can be applied in the spring, too. If we have afternoon temperatures in the mild 40's and above, we can apply the residue breakdown program. **BioSequesterTM** from ProfitProAG (or Environoc 501 for organic production) is a mixture of 25 microbes, including organic crop residue digesters, organic acids and nitrogen. It's designed to break down cellulose and lignin found in tough-to-digest corn stalks.

"When you start controlling more of the controllables, you can optimize your crop stand," Ladlie said. "This leads to higher yield potential, which translates into higher profit potential."

Let's Talk Yield

Intrigued by some of the ideas you've seen here? Want to know more about how to put the "Recipe for Success" to work on your acres? We welcome your questions to start the conversation.



Is 2021 Setting up to be a Drought Year?

You're focused on planting right now, but we're keeping an eye on signs that parts of the Midwest may be headed for a drought this year.

• A fairly strong La Niña is setting up. The resulting cooler-than-normal sea-surface temperatures in the central and eastern tropical Pacific Ocean impact global weather patterns, including drier-than-normal conditions in our part of the world.

• While the eastern half of the Corn Belt has adequate soil moisture for the 2021 planting season, the western half of the Corn Belt may not have enough moisture at planting, according to the National Oceanic and Atmospheric Administration (NOAA). "The ideal soil moisture for planting is 50%," reports Dennis Klockenga, a crop management consultant with ProfitProAG. In much of Minnesota, however, soil moisture levels are hovering around 30%. These levels are even lower in parts of North Dakota.

• NOAA is predicting above-average temperatures in the Corn Belt in its April-June 2021 outlook.

• The U.S. Drought Monitor (figure 1) is also indicating potential trouble in 2021. "Since the drought monitor was released in 2000, we've never seen a drought situation looking like this," says Eric Snodgrass, principal atmospheric scientist at Nutrien Ag Solutions. "There's extensive drought in the Northern Plains, with exceptional drought in the four-corner states."

• Since early April, much of South Dakota and parts of North Dakota have been under a Red Flag Warning, meaning warm temperatures, low humidity and strong winds can increase the risk of fire danger.

Heavy rains can create more challenges

The numbers tell a story that a drought is already here in some areas. NOAA's statewide precipitation rate map, which shows how dry or wet each state is, uses a scale is from 1 (record driest) to 126 (record wettest). North Dakota was ranked the driest state (1), as of February 2021, with Minnesota at 12 and Iowa at 71 (figure 2). Some parts of North Dakota are more than 30 inches short on moisture. To mitigate this deficit, North Dakota needs 200% of their normal spring rain this year, and all this moisture needs to soak into the soil.

Continued on the next page...

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That last point is critical. Let's hope for light, steady rains that will soak in the soil. Dry soil does not absorb heavy rain. The raindrops "bounce" off instead. This can lead to flooding, which can create more problems than dry fields.

You can take steps to drought-proof your soil and protect your crops. Learn more in the blog "Weatherproofing Your Crops in 2021" on our website (profitproag.com under the 'In the News' tab). We welcome your questions and look forward to working with you this year.



Figure 1 is a map of the drought situation as of April 15, 2021.



Figure 2 shows each states ranking in dryness.

page 4...profitproag.com

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APRIL 2021

In-the-Field INSIGHT

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The 2021 Drought??

What if we could weatherproof our crops and protect them from drought?

It's possible...

Want to learn more? Check out our website **profitproag.com** and look under the 'In the News' tab.

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