

Newsletter

March 28, 2024

The first quarter of 2024 has been full of wind, snow, rain, abnormal high temperatures and volatility in all the agricultural markets. The project price for corn has been set at \$4.66, notably below the harvest price that was set last fall. See historical the price chart below for grain corn in Hartley County Texas.

Hopefully everyone signed up for their Multi-Peril Crop Insurance before March 15th. You might have noticed with the lower projected prices your premium is covering less dollars per acre in 2024. Looking at the long-term forecast and the fact it is an election year we are all facing uncertainty in agriculture. So, let's all focus on what we can control and work towards making the best decisions for our operations regardless of outside factors. Upcoming insurance deadlines are listed below, and crop hail rates have been released for the 2024 season. Remember, Addison is working with us full-time in the insurance department and will be glad to field any policy or pricing questions 8am-4pm Monday through Friday. Please let us know how we can better serve your needs!



	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Projected	4.15	3.86	3.56	3.56	4.00	3.88	4.58	5.90	5.91	4.66
Harvest	3.79	3.34	3.54	3.58	3.68	3.66	5.24	6.77	4.81	
Volatility	0.19	0.16	0.18	0.14	0.14	0.14	0.21	0.21	0.17	0.18

April 29th Production Reporting 2023 Corn

June 5th Final Plant Date 2024 Corn

June 20th End of Late Plant Period Corn

July 1st Premium Billing Date for Fall Crop

July 15th Spring Crop Acreage Reporting Deadline

July 15th Annual Forage Sales Closing Date

Here's to a wet and safe 2024 Spring!

John Brewer

Corn Vigor and Seed Quality Testing

Key Points:

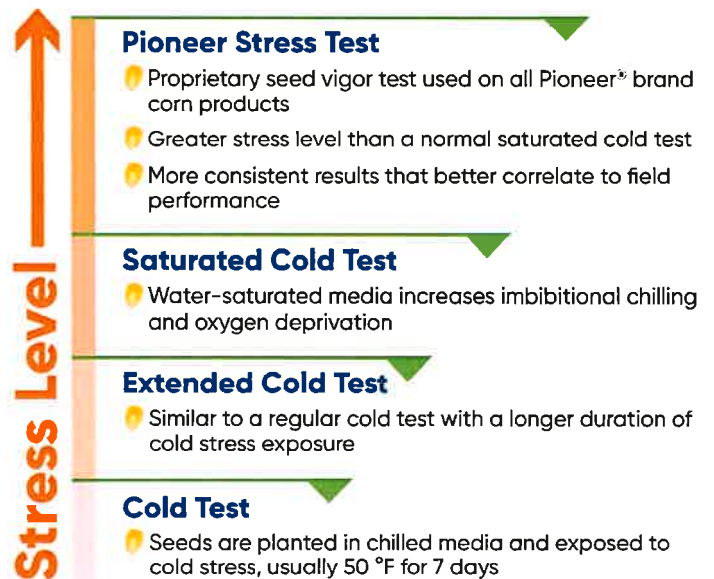
- The Pioneer Stress Test (PST) is a proprietary vigor test used on all Pioneer® brand corn products.
- Pioneer Stress Test and field trial results are used to assign stress emergence ratings that characterize a hybrid's genetic potential to tolerate cold, wet conditions and germinate normally.
- The Pioneer Stress Test allows for optimal characterization of seed quality, which helps to ensure growers get the highest quality seed for planting.

Cold Stress is Common During Germination

- Successful germination and emergence of corn is determined by three primary factors: environmental conditions, hybrid genetics, and seed quality (Figure 1).
- In North America, corn is nearly always subjected to some degree of environmental stress during germination and emergence.
 - Corn is a warm season crop, with an optimal soil temperature range for germination and emergence of 85-90 °F (29-32 °C).
 - Soil temperatures at planting are usually below, and often well-below, this range.
- The need for corn to tolerate stressful environments during germination and emergence means genetic vigor and seed quality are both critical for establishment of a successful crop.
- Corn vigor tests have been used for decades to simulate stressful soil environments and assess the ability of hybrids and specific seed batches to germinate under those conditions.

Cold Germination Tests

- The Association of Official Seed Analysts (AOSA) defines vigor as those seed properties which determine the potential for rapid, uniform emergence, and development of normal seedlings under a wide range of field conditions.
- Lab assays to test vigor are commonly referred to as cold tests. Different variations of cold tests have been in use in the seed corn industry since the 1950s.
- In North America, the most commonly used vigor tests are the cold test and saturated cold test.
 - A **cold test** typically consists of planting seeds in chilled media and maintaining them at low temperature, usually 50 °F for 7 days, followed by a grow out period at a higher temperature to assess germination.
 - An **extended cold test** is a variation offered by some labs with a longer duration of cold stress.
 - A **saturated cold test** increases the stress level by using water-saturated media, which increases imbibitional chilling and oxygen deprivation. Seeds are often placed embryo side down in order to increase overall stress levels.



- Unlike warm germination scores, which are derived using an industry-wide standard protocol and required by law to be reported on bag labels, cold test methodologies are not standardized and may vary among labs.
- Consequently, a cold test or saturated cold test score does not constitute an objective performance rating that is comparable across labs, but rather must be interpreted relative to the specific protocol that was used.

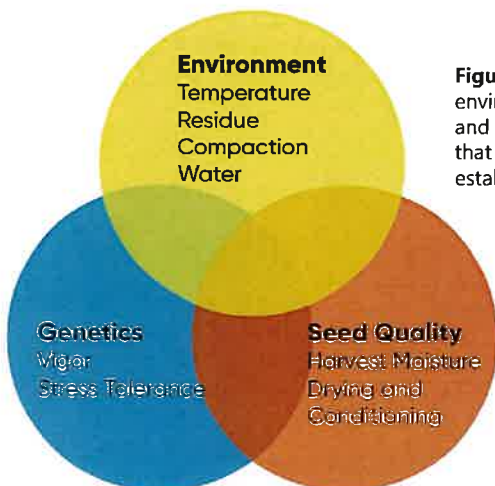


Figure 1. Critical environmental, genetic and seed quality factors that affect corn stand establishment.

Pioneer Stress Test

- The Pioneer Stress Test (PST) is a proprietary vigor test used on all Pioneer® brand corn products.
- It was developed in the early 2000s as an improvement upon the saturated cold test.
- The Pioneer Stress Test imposes extreme imbibitional chilling and anaerobic stresses, beyond that of the saturated cold test.
- The Pioneer Stress Test has proven to be more predictive of hybrid performance under extreme cold stress and to provide better differentiation among genetics and seed lots (Figure 2).

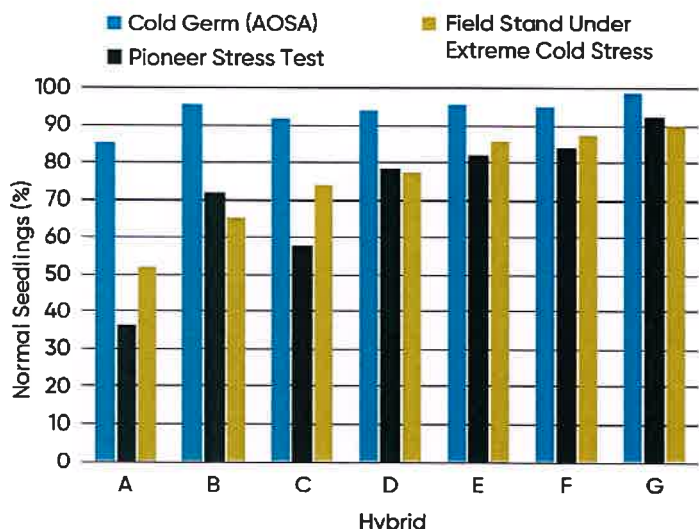


Figure 2. Cold germination test (AOSA protocol) and Pioneer Stress Test results of several hybrids compared to actual field stand establishment under extreme cold stress conditions.

A good vigor test is one that is rapid, reproducible, objective, and correlated to field emergence under stressful conditions.

Field Validation

- The Pioneer Stress Test is continually validated in field research trials.
- Early-planted stress emergence trials are conducted every year across multiple locations.
- Research sites are chosen to reflect the various seedbed and environmental conditions likely to be experienced by farmers.
 - Some eastern locations often have extended cold and wet conditions that persist into late spring and early summer.
 - Northern and Midwestern sites are more likely to provide extreme day/night temperature fluctuations.
- Field validation has shown that the PST produces consistent, reproducible results that strongly correlate to field emergence under stress (Figure 2).

Stress Emergence Scores

- The Pioneer Stress Test is used to support hybrid advancement decisions and also to support breeding efforts to improve early season stress tolerance through marker-assisted selection.
- For hybrids that are advanced to commercial status, Pioneer Stress Test and field trial results are used to assign stress emergence ratings that characterize a hybrid's genetic potential to tolerate cold, wet conditions and germinate normally.
- Figure 3 shows differences in emergence between two hybrids with differing stress emergence ratings in several field trials that experienced cold stress after planting.

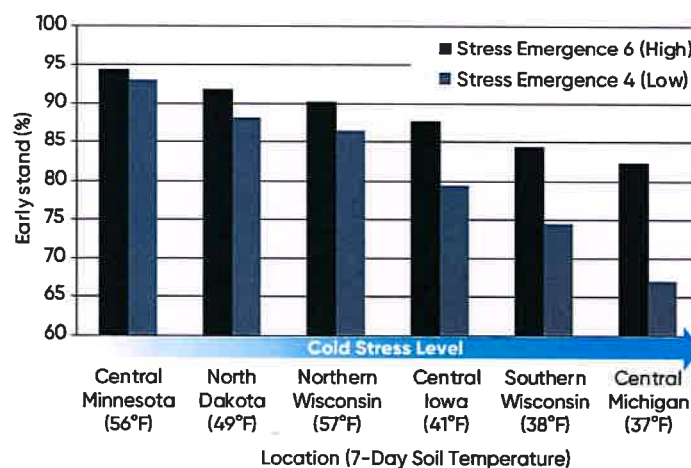


Figure 3. Average stand establishment for high and low stress emergence score hybrids in six stress emergence locations in 2018. Locations are sorted from least stressful (left) to most stressful (right) based on average early stand.

Ensuring Seed Quality

- Pioneer has the seed industry's highest production and quality control standards, assuring growers they get the highest quality seed for planting.
- The Pioneer Stress Test allows for optimal separation between high and low quality. It can detect small differences in vigor that may indicate a seed lot needs to be discarded.
- The Pioneer Stress Test has the ability to detect imminent standard (warm) germination failures in seed lots.

Testing Points

- New crop seed is tested in the fall at harvest to determine the initial quality.
- After conditioning, all seed sizes of each sizing run are tested again; all seed sizes must meet the same high-quality criteria.
- Carryover seed must meet the same quality criteria as new crop seed. Pioneer does not differentiate between new crop and carryover when evaluating test results.
- **Pioneer customers can be confident that every batch they plant has been thoroughly tested in this extensive screening program and meets Pioneer's industry-leading standards.**

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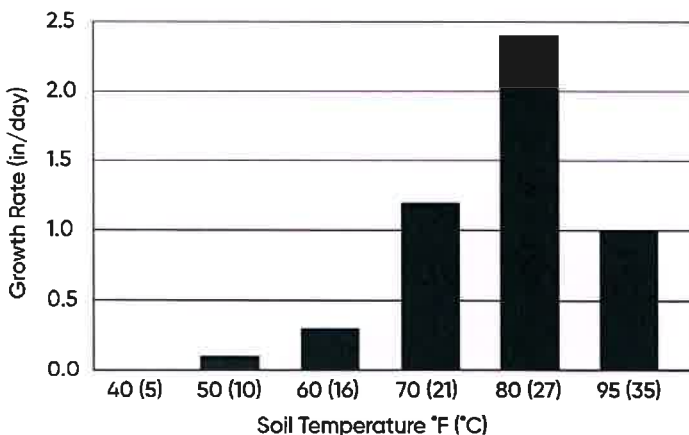
The foregoing is provided for informational use only. Please contact your Pioneer sales professional for information and suggestions specific to your operation. Product performance is variable and depends on many factors such as moisture and heat stress, soil type, management practices and environmental stress as well as disease and pest pressures. Individual results may vary. Pioneer® brand products are provided subject to the terms and conditions of purchase which are part of the labeling and purchase documents. CF210302

Early Corn Planting Considerations

Factors to Consider Before Planting Corn

1. Soil temperature of at least 50° F (10° C) at 2-inch depth and preferably a warming trend in the 3 to 5 day forecast.

- Germination and root development will not occur below 50° F (10° C) (root growth will be extremely slow even in the low 50's).
- Prolonged exposure to low temperatures reduces seed and plant metabolism and vigor and increases sensitivity to herbicides and seedling blights.
- The risk of chilling injury decreases incrementally as the soil temperature increases above 50° F (10° C) during the initial imbibition (water uptake).
- Sustained temperatures of 20° to 25° F (-7 to -4° C) or below can penetrate the soil enough to damage the coleoptile, mesocotyl, or the growing point and cause plant death in seedlings that haven't emerged from the soil.



Prolonged exposure to soil temperatures below 50° F (10° C) promotes seed deterioration and seedling disease.

Soil temperature at planting is a key environmental component of stand establishment; however, soil conditions after planting are also critical.

2. Minimum of 24-hours of rain-free following planting.

- When a dry seed imbibes cold water (typically 50° F (10° C) or below), imbibitional chilling injury may result (causing corkscrewed shoots, fused coleoptiles, premature leaf emergence underground, and other germination oddities).

- Cold water can also cause cell walls in the germinating seed to rupture. Ruptured cells can have ill-effects on developing seedlings and can also attract disease pathogens and insects.



Coleoptile injury from freezing temperatures.

3. Avoid planting right before a period of large temperature swings.

- Even if the "average" soil temperatures are above optimum, seedlings can be adversely affected by wide swings in soil temperatures. Affected seedlings will have stunted and distorted leaves and may or may not emerge from the soil.
- Research has shown that a swing of soil temperatures of more than 27° F (-3° C) (soil high temperature minus soil low temperature > 27° F) may adversely affect mesocotyl growth.
- Sandier soils can often be planted earlier in the spring because they dry out faster than heavier soils; however, sandy soils tend to experience wider temperature fluctuations, especially on clear nights with cold air temperatures.
- The effect of adverse conditions can and does vary from seedling to seedling, causing erratic and uneven stands.

Cold-temperature induced "corkscrew" damage symptoms.



The foregoing is provided for informational use only. Please contact your Pioneer sales professional for information and suggestions specific to your operation. Product performance is variable and depends on many factors such as moisture and heat stress, soil type, management practices and environmental stress as well as disease and pest pressures. Individual results may vary. April 2015. CF150406 (210226)



Planter Preparation for Spring

Laura Sharpe¹ and Mark Jeschke²

Summary

- Preparing your planter for spring planting is critical for the success of your next crop.
- Start with the basics like tire pressure, planter leveling and parallel linkage arm wear. Then move to seed tubes, double disc openers, meters, and closing wheels.
- Finally, check your technology, including wiring, monitors, and sensors. Store data and prepare for new fields.

Planter Leveling

For proper disc cutting action, seed delivery, planting depth accuracy, and press wheel action, planters need to run slightly uphill, particularly as they age and the parallel linkages become worn. Check your planter for its levelness. If the planter is running downhill, it may require adjusting the hitch position.



Parallel Linkages

Parallel linkages wear over time, which can lead to excessive movement of the row unit. Bushing wear will tend to make a row unit plant slightly shallower with more tendency for erratic seed distribution. With your planter raised in the air stand behind each row unit and push up and side to side. If you find that the row unit moves excessively, it is time to replace the parallel linkage bushings.

Opening Discs

Sharp cutting double-disc openers can either make or break a planter. A business card can be used to determine if the discs have the necessary 2 inches of cutting edge contact (see below). The V-trench they form is critical for good seed-to-soil

contact and uniform emergence. As disc openers wear, they will no longer form a firm cutting point. This can lead to an irregular furrow, shaped like a "W" instead of a "V" resulting in variable seed depth placement and a lack of seed to soil contact. Discs should be replaced when wear exceeds factory specifications, which is typically when they have lost ½-inch or more of their original diameter. A good visual indicator that discs need to be replaced is when the original bevel on the edge of the discs is gone.



Depth Gauge Wheels

Depth-gauge wheels should be checked to make sure that they turn freely, move up and down easily, and run tightly against the opening discs. This is important to ensure that soil doesn't flow between the wheels and the opening discs and into the seed trench, which can result in irregular seed placement and planting depth variability. Yearly inspections will tell you if the gauge wheel arm bushings are worn and if the wheels need to be shimmed in against the double disc openers.

Seed Tubes

Inspect seed tubes and vacuum for obstructions, leaks, and loose fittings, and continue to do this regularly throughout spring planting season. Clean seed tube sensors routinely, and make sure to adjust vacuum pressure according to seed size and shape.

Check your seed drop tubes to be sure they are free and clear of any obstructions, and make sure that they are not worn by your double



disc openers. Rough edges caused by wear can alter your planter's seed drop accuracy. Any hindrance or obstruction that interferes with seed drop can result in erratic seed distribution, even though meters are functioning perfectly. If seed tubes are worn, they should be replaced. If the planter is equipped with seed firmers, they should also be checked for wear and replaced if necessary.

Meters

Meters should be taken apart before each planting season for cleaning and to check parts for wear. Finger pick-up metering units should be recalibrated after 100 acres have been planted per row unit. Confirm that all seals on vacuum meters are in working order and seed discs are flat and not warped. Double check the clearance between the seed disc and the housing to prevent vacuum leaks. Inspect any belt or brush within the meter, and in high-speed delivery systems, for wear and misshapen bristles or paddles. It is also important to check the bowl tension on John Deere ExactEmerge™ planters. If the bowl tension is too loose, seeds may not end up getting to the brush belt for delivery to the seed furrow.

Coulters and Row Cleaners

Coulters and other attachments can impact seed to soil contact, especially with heavy residues. Coulter depth and sharpness are important to allow residues to be cut cleanly rather than crimping and pushing them into the seed furrow. Most coulters should be set to run about 1/4 inch above the depth of the double-disc openers. Be sure that coulters and residue attachments are aligned properly with the double-disc planted too deep and double disc openers not turning properly.

Make sure row cleaners gently sweep residue – you don't want to move soil, just residue. Watch the row cleaners running. Fixed row cleaners shouldn't turn constantly; they should gently turn sporadically, especially through areas of thick residue. Floating row cleaners should maintain constant contact with the ground, following the contours and providing a clean and consistent path for the depth gauge wheels to follow.

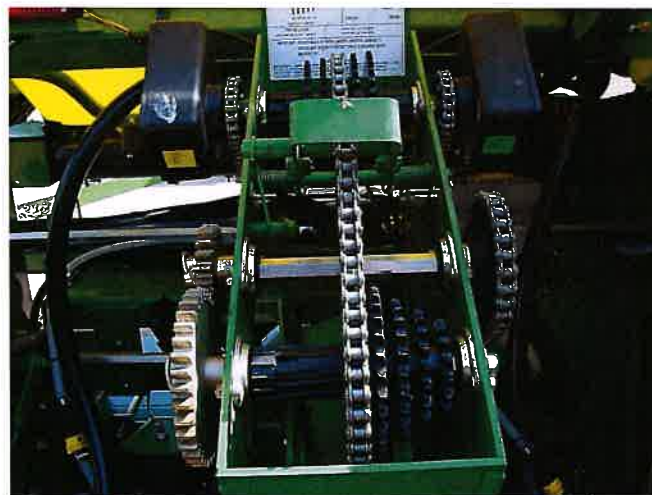
Closing Wheels

For closing wheels to perform properly, it is important to ensure that they are aligned with the opening discs. To check alignment, set the planter on the ground and pull ahead about 5 feet. Look at the mark left behind the planter by the double disc openers. The mark should run right down the centerline between closing wheels. If a closing wheel is running too close to the seed furrow, adjust the closing wheels to bring it back to the center.



Chains and Sprockets

Check all chains, sprockets, and shear pins for wear and proper tension. If they are worn or chain links are stiff, the chain should be replaced. Make sure chains are lubricated properly.



Technology Check

Check all wiring harnesses, ensure all wiring is connected and in working order. Consider gathering loose cords with zip ties. For all add on equipment, check all electric sensors, down force compressors etc.

Review all monitors, remove old prescriptions. Load VRS planting scripts from Granular Insights prior to planting and ensure planter is accepting the prescription. Utilize agronomic tools from Granular Insights like population charts for hybrids based on seed price, yield environment, and commodity price. Scan corn seed batch tags for final planter settings to optimize seed drop. Have your planting plan pre-loaded into the monitor and onto all employee smart phones for simple stress-free planting.

Safety Check

Perform a safety check on all planting equipment to make sure lights and signals work properly so you don't risk accidents when moving from one farm or field to another. Ensure that all farm equipment has the appropriate slow moving vehicle signage. Clean windows to ensure operators can see clearly. Ensure the hitch pin is secure and safety chain is attached, especially for road travel.

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February 2022

REX BRANDON

PIONEER STRATEGIC ACCOUNT
MANAGER



New 3-month outlooks were released last week from NOAA. Predictions are expected to lean above normal temperatures and lower precipitation for the next 3 months. With a semi wet winter, conditions are beginning to dry within the top 6-10". For wells below 5 GPM, a full 5' profile of subsoil moisture is highly advised on 2024 corn acres. Consider the pre-water guidelines found in our 2024 Texas Irrigated High Plains Product Positioning Guide. A general rule of thumb: 1' of applied water for every foot of dry soil in sandy soils and 1.5-2"/ft on medium to heavy soils.

Stress Emergence Scores –

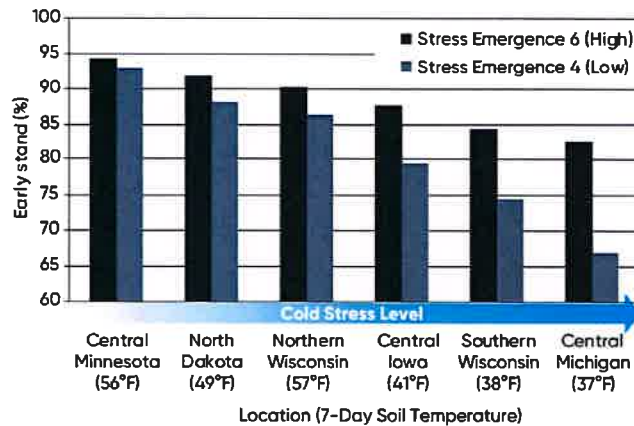
There is no industry-standards or official protocol for Cold Tests. 3rd party labs set their own protocols for running and interpreting their results. The Pioneer Stress Test is a proprietary vigor test, generally imposing a higher level of stress on the seed than other 3rd party results. Pioneer has the seed industries highest production and quality standards, assuring growers the highest quality seed for planting. Consider these Stress Emergence Scores. Any hybrid not listed is considered a 5.

Below Average (4)

- P1847AML
- P1718AML
- P1366AML/Q

Above Average (6)

- P17677AM/Q
- P1359AM
- P1108Q
- P0817Q



New Products –

P13777PCUE/V – High yield racehorse style hybrid under good irrigation and best managed acres. Excellent ear flex with above average grain quality and an excellent disease package. Look to replace P1718aml and P14830aml

P13544V – Eastern style mid season triple with great heat and drought tolerance. An agronomically improved P1464. Moderate ear flex makes for a flexible hybrid for lower gallons to moderate gallon circles.

P12393V – Very high yielding, stable triple for grain or silage. Taller hybrid with good roots and moderate ear placement. Improved roots, brittle and GLS tolerance than other mid season triples. Replace 1370Q and 1278Q.

P10625PCUE/V- Durable, tougher hybrid with great performance at an earlier maturity. Nice ear flex with girth. Great ear fill and deep kernels. Replace 1108Q, P0908aml and P1197.

P08527V- White cob early season triple with good durability and yield potential. Similar to P0908aml. True 108 CRM that will finish much quicker than P0817Q. Good ear flex very nice test weight. Excellent Goss' wilt score.

CURRENT	NEW
AcreMax (AM)	(PCE) Powercore Enlist RA <i>RA=Refuge Advanced</i>
AcreMax Leptra (AML)	(PCUE) Powercore Ultra Enlist RA
Qrome (Q)	(V) Vorceed

