

STRONG STANDS WITH PIONEER



WHY IS A STRONG STAND IMPORTANT?

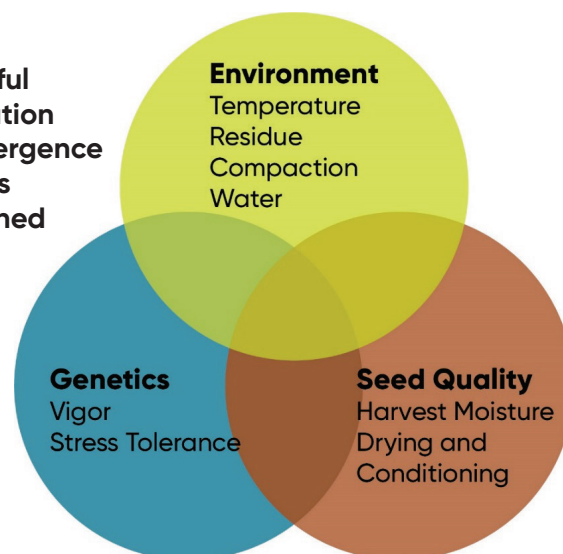
So many management decisions go into setting yield goals, but achieving uniform emergence can influence yield outcomes anywhere from 5 to 9 percent.

Factors INFLUENCING YIELD AT PLANTING

1. Achieve uniform emergence (5-9%)
2. Plant within the optimum window (2-5%)
3. Achieve the correct population (1-2%)
4. Achieve uniform plant spacing (1-2%)

Four planting factors and their estimated typical impact on yield¹

Successful germination and emergence of corn is determined by three primary factors:

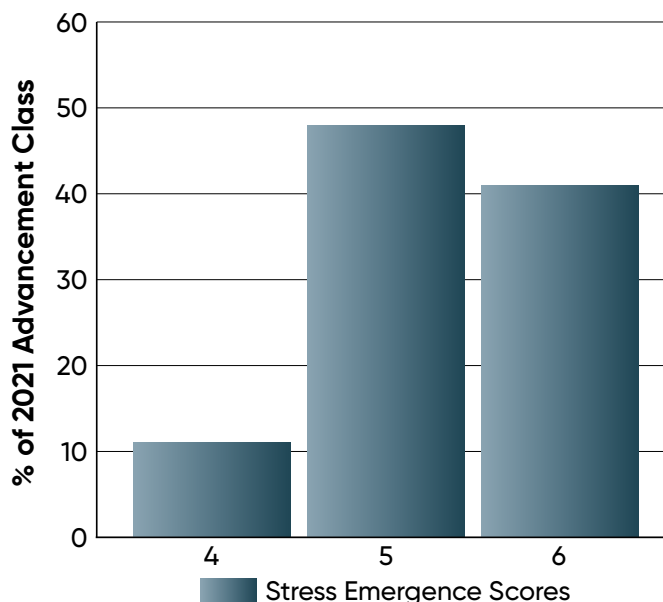


WHAT DOES PIONEER DO TO HELP ENABLE A STRONG STAND?

All Pioneer® brand corn products are developed and adapted for local conditions

- Plant scientists breed products with a farmer's management practices in mind
 - Research fields are planted at the same time farmers are planting
 - Research fields test at the same planting populations as farmers are using
- Advanced breeding technologies allow plant scientists to predict and select genetics with improved early season stress tolerance before testing in the field
- Stress emergence is an agronomic trait taken into consideration when we advance products

- Emergence scores for the 2021 Pioneer brand corn advancement class portfolio:

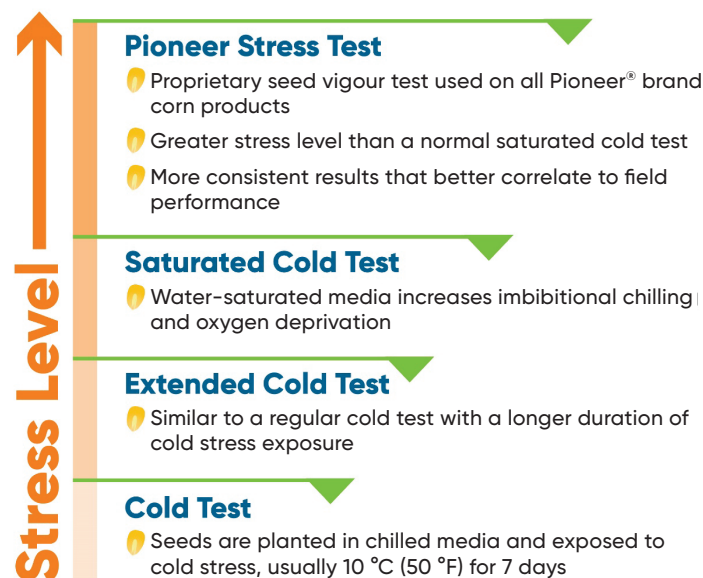


THE PROPRIETARY PIONEER STRESS TEST SETS THE STANDARD FOR PIONEER VIGOUR

- **Pioneer Stress Test goes beyond the saturated cold test**

- Imposes more extreme chilling and anaerobic stresses
- Proven to be more predictive of hybrid performance under extreme cold stress

- Provides better differentiation among genetics than cold germination test
- Allows for optimal separation between high and low seed quality, and detects even small differences in vigour



Pioneer customers can be confident that every batch of seed has been extensively tested and meets Pioneer's industry-leading standards

- Upholding the highest production and quality control standards is critical to ensure the highest quality seed for planting
- Seed lots must pass the standard germination and the Pioneer Stress Test to make it to a farmer's field
- Seed lots must pass quality testing, which occurs at new crop harvest, after conditioning, and if carried over to the next season
- All seed sizes must meet the same high-quality standards

LumiGEN® seed treatments protect our elite genetics from early-season disease, insects and nematodes to help with strong emergence and maximize yield potential.

- The most robust seed treatment package available in the industry includes premium protection from Lumiscend™ Pro fungicide seed treatment, Lumivia™ insecticide seed treatment and Lumialza™ nematicide seed treatment.
- Lumialza™ nematicide seed treatment shields roots with an expanding bio-barrier protecting corn from yield-robbing nematodes for more than 80 days while cooperating with beneficial microorganisms.

PROTECTION

Diseases:

Pythium
Fusarium
Rhizoctonia
Corn head smut

Insects:

Wireworm
White grub
Black cutworm
Fall armyworm
Seed corn maggot

Nematodes:

Sting
Needle
Lance
Stubby-root
Root-knot
Dagger
Lesion

Lumiscend™ Pro

FUNGICIDE SEED TREATMENT

Lumivia™

INSECTICIDE SEED TREATMENT

Lumialza™

NEMATICIDE SEED TREATMENT