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PIONEER PREMIUM SEED & TREAT-MENTS, CROP INSURANCE, AGRONOMY SERVICES, FIELD DAYS, SEED WHEAT, SEED DELIVERY, & PERSONAL SERVICE

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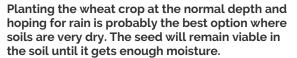


# CONSIDERATIONS WHEN PLANTING WHEAT INTO DRY SOIL

Soils in portions of western and central Kansas have become steadily drier through the late summer and early fall. Topsoil conditions are now very dry in many areas of Kansas. For wheat yet to be planted in these areas, producers are left with a few options.

Option 1 — "DUST IN" THE WHEAT

Producers can choose to "dust in" the wheat at the normal seeding depth and normal planting date, and hope for rain (Figure 2). Some farmers may consider planting it shallower than normal, but this could increase the potential for winterkill or freeze damage.



Before planting, producers should look at the long-term forecast and try to estimate how long the dry conditions will persist.

If it looks like there's a good chance the dry weather will continue until at least the back end of the optimum range of planting dates, producers should treat the fields as if they were planting later than the optimum time, as the emergence date will be delayed.

Rather than cutting back on seeding rates and fertilizer to save money on a lost cause, producers should increase seeding rates, consider using a

fungicide seed treatment, and consider using a starter phosphorus fertilizer to improve early season development.

However, producers should be cautious with in-furrow nitrogen or potassium fertilizers as these are salts and can make it more difficult for the seed/seedling to absorb water needed for germination.

There are some risks to this option. First, a hard rain could crust over the soil or wash soil off planting ridges and into the seed furrows, potentially causing emergence problems. Another risk is the potential for wind erosion if the field lies unprotected with no

ridaes.

Also, the wheat may not come up until spring, in which case it may have been better not to plant the wheat at all and plant a spring crop instead. In fact, not planting wheat and allowing soil moisture to build for a summer crop planted next spring is an option.

Probably the worst-case scenario for wheat planted into dry soils would be if a light rain occurs and the seed gets just enough moisture to germinate but not enough for the seedlings to emerge through the soil or to survive very long if dry conditions return.

Once the coleoptile extends to the soil surface, the plant must have enough moisture to continue

Continued on page 2

## PIONEER 2023 INFINITY PROGRAM



For 2023 Pioneer is continuing the Platinum,

Gold, and Silver levels. Benefits and qualifications for each are listed. It's not too early to start planning for 2023.

YOY= year over year PY = Prior Year

### Platinum Level

100% Customer **OR**> 10% YOY Acreage growth

QUALIFIERS

>100 YOY Acreage growth

AND

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### BENEFITS

100% Replant Granular Insights Financing; Prime –1 @ 22%

# Gold Level

BENEFITS

75% Replant

17% discount

Granular Insights

Financing: Prime -1 @

**QUALIFIERS**Retain Acres (90-109%)
of PY acres

**AND**Payment by Dec. 2nd

Payment by Dec. 2nd 2022

### BENEFITS

Silver Level

**QUALIFIERS** 

Feb 24th 2023

Invoice & Payment by

50% Replant Granular Insights Financing: Prime -1 @ 12% discount

### CONSIDERATIONS WHEN PLANTING WHEAT INTO DRY SOIL - CONTINUED

growth otherwise it will perish. This situation may be worsened if producers are planting wheat following a summer crop such as corn, soybean, or sorghum, which depleted subsoil moisture through late summer.

Without subsoil moisture to sustain growth, there can be a complete loss of the wheat stand. If late October brings cooler temperatures, dusting wheat in becomes a more interesting option as soil moisture from a possible rainfall event could be stretched further.

# Option 2 — PLANT DEEPER THAN USUAL INTO MOISTURE WITH HOF DRILL

Planting deeper than usual with a hoe drill can work if the variety to be planted has a long coleoptile, the producer is using a hoe drill, and there is good soil moisture within reach.

The advantage of this option is that the crop should come up and make a stand during the optimum time in the fall. This would keep the soil from blowing. Also, the ridges created by hoe drills also help keep the soil from blowing.

The main risk of this option is poor emergence. Deep-planted wheat normally has below-normal emergence, so a higher seeding rate should be used. Any rain that occurs before the seedlings have emerged could add additional soil into the seed furrow, making it even harder for the coleoptile to reach the soil surface.

Any time you increase the seeding depth, the seedling will have to stay within the soil just that much longer before emerging through the soil surface.

Delayed emergence leads to more potential for disease and pest problems. Additionally, deep-planted wheat generally results in reduced tillering and consequently a reduced number of

heads, which directly reduces the yield potential of the crop. It's even possible that the wheat would get planted so deep that it would germinate but never emerge at all, especially if the coleoptile length is too short for the depth of planting.

Generally speaking, it's best to plant no deeper than 3 inches with most varieties. It is also important to keep in mind that ridges formed by narrow press wheels can make the effective planting depth much deeper if the seed furrows fill in during a heavy rainfall event.

#### Option 3 — WAIT FOR RAIN BEFORE PLANTING

To overcome the risk of crusting or stand failure, producers may decide to wait until it has rained and soil moisture conditions are adequate before planting. Under the right conditions, this would result in good stands, assuming the producer uses a high seeding rate and a starter fertilizer, if appropriate.

If it remains dry well past the optimum range of planting dates, the producer would then have the option of just keeping the wheat seed in the shed until next fall and planting spring crop next year instead.

The risk of this option is that the weather may turn rainy and stay wet later this fall, preventing the producer from planting the wheat at all while those who dusted their wheat in have a good stand. There is also the risk of leaving the soil unprotected from the wind through the winter until the spring crop is planted.

Crop insurance considerations and deadlines will play a role in these decisions. Another consideration is to delay the bulk of nitrogen application until topdressing time in the spring, as wheat does not require much nitrogen in the fall. This would defer expenses until an acceptable wheat stand is assured.

# 2022 FALL WEIGH WAGON PROGRAM







We will have a weigh wagon available this fall for testing yields against both competing products, side by side comparison of Pioneer products and yield checks. Any and all yield data and product results are of the utmost importance to all of us. Call us and we will make every effort to get to your weighs in a timely manner. Receive your choice of a Pioneer sweatshirt, Pioneer insulated vest, or a Pioneer creeper as a thank you gift from Wildcat Agri-Services for taking the time out of your busy planting and harvest schedule to grow and harvest a test plot.

## **ALFALFA SEED AND INOCULANTS**

Premium alfalfa is in somewhat limited quantities. If you are considering planting fall seeded alfalfa please try to let us know as soon as possible. Blended alfalfa is in good supply at present.

**Alfalfa:** Pioneer has a good supply of Alfalfa varieties, for fall seeding in both blends and pure lines available.

**Inoculants**: Silage, high moisture grain, and alfalfa inoculants are also all available. All inoculants are in good supply, but some are a special order item, so plan ahead.



### HAVE SOMETHING TO SELL?

IF YOU WANT TO ADVERTISE FARM EQUIPMENT OR FARM RELATED ITEMS YOU MAY DO SO FREE OF CHARGE. DEADLINE IS THE LAST DAY OF EACH MONTH. SEND YOUR AD TO

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# ANHYDROUS RETENTION IN DRY AND COMPACTED SOILS

Applying nitrogen fertilizer in the fall rather than waiting until spring continues to be a popular practice among corn growers. Usually the cost is lower, there's more time for application, and soil conditions are often better than in the spring. While some growers have switched to applying all or part of their N in spring to reduce risk of loss by applying closer to the time when corn can use it, there is still a lot of N, especially anhydrous ammonia, applied in fall.

John Sawyer, Iowa State University Extension soil fertility and nutrient management specialist, says success with fall fertilizer N application compared to spring or sidedress timing can be enhanced by following these suggestions:

- Only use anhydrous ammonia.
- Apply in late fall after soils cool to 50 degrees F (at 4-inch depth) and are trending cooler.
- Consider using an effective nitrification inhibitor to further slow conversion of the ammonium form of N to the nitrate form.
- Avoid fall application to soils that are more prone to wetness or leaching (poorly or excessively drained soils).

#### What about dry soils?

Many areas of Kansas have dry soils this fall; fields are dry after the summer drought. Can anhydrous ammonia be applied to dry soils? Will it be held in dry soil? "Yes, dry soil can hold ammonia."

Even air-dried soil contains some moisture although quite low, he explains. Ammonia dissolves readily in water but is held or retained in soil by clay and organic matter. The problem with dry soil and low moisture content is soil moisture is needed to temporarily hold the ammonia so it can become attached to clay or organic matter as ammonium. Soil moisture allows the ammonia to go into solution and become attached to the soil.

If dry soils are cloddy and don't seal properly, ammonia can be lost at injection, or seep through the large pores between clods after application. Proper depth of injection and good soil coverage are a must for application into dry soils.

"Having wing sealers immediately above the outlet port on the anhydrous knife can help close the knife track, limit the size of the retention zone and reduce vertical movement of ammonia," Sawyer says. "Using closing disks on the anhydrous applicator is another option. Closing disks can reduce ammonia loss by covering up the injection track with soil to trap the ammonia as it moves to the soil surface. Reducing the application rate or narrowing the knife spacing can also help by reducing the concentration of NH3 in each injection band."

#### **Understanding process**

What happens when anhydrous ammonia is injected into soil? Several physical and chemical reactions take place, says Sawyer says. There's dissolution in water, reaction with soil organic matter and clay, and attachment of the resulting ammonium ions onto soil. These reactions all tend to limit the movement of ammonia, with water having the greatest initial effect.

The highest concentration of ammonia is at or near the point of injection, with a tapering of the concentration toward the outer edge of the retention zone. Usually the greatest ammonia concentration is within the first inch or two of the injection point with the overall retention zone being up to 3 to 4 inches in radius in most soils. Size and shape of an ammonia retention zone varies depending on rate of application, knife spacing, soil type and injection conditions (soil texture, structure, organic matter, moisture status).

Ammonia moves farther at injection in coarse-textured soils and soils low in moisture. Also, if the injection knife causes sidewall

smearing (when soils are wet), the ammonia may move back up the knife slot. Movement toward the soil surface can also occur for some time after application if soil dries and the knife track "opens up" as soil dries. There's also less soil moisture to retain free ammonia in solution with drying soils.

A similar movement within the soil can occur if soil breaks into clods at application and there are large air voids left in the soil and poor coverage of the knife track. These conditions can result in greater ammonia concentration toward the soil surface, and greater potential for loss into the air at or after application.

#### Chemical and biological reaction

When ammonia (NH<sub>3</sub>) is injected into soil, the initial reaction at the point of release is violent, Sawyer says. Ammonia reacts and binds with soil particles such as organic matter and clays. It reacts with water to form ammonium (NH<sub>4</sub> $^{+}$ ). These reactions help retain ammonia at the injection point. Soil moisture is important for limiting movement of ammonia but doesn't ultimately determine retention in soil. After conversion to ammonium, this form of N is held on soil and doesn't move with water. Only after conversion to nitrate (NO<sub>3</sub> $^{-}$ ), via the nitrification process, can N be lost from soil by leaching or denitrification.

Nitrification is the process by which microorganisms in soil convert the ammonium form of N to the nitrate form. Nitrification occurs first at the outer edges of an ammonia band and progresses inward as the initial effects of ammonia injection decrease and the soil conditions become more conducive to microbial growth. Nitrification rate will slow in dry soil but will resume quickly when soils rewet.

#### Will it damage corn next spring?

The potential is usually low for fall-applied ammonia to damage corn seed or seedlings next spring. However, if soil remains dry (and limits nitrification), or if the ammonia is injected shallow or there is poor soil structure (ammonia placed near the seed), or the rate of application is high, it's possible for ammonia damage to occur.

The best cure to avoid this is to inject ammonia deep enough with soil coverage to get adequate soil separation between point of ammonia injection and the depth where corn seed will be planted, or to offset the injection bands from future corn rows.

For example, if the injection point is 6 to 8 inches deep, the outer edge of the ammonia retention zone (which would be low in ammonia concentration) is 4 inches from point of injection. If seed is planted at a 2-inch depth directly over the ammonia track, the seed would be outside the applied ammonia band. Shallower injection, greater ammonia movement upward from the injection point, wider knife spacing or higher rates of N applied can lead to ammonia being in the seeding area at rates high enough to cause damage.

"Be mindful of what is happening at application when knifing in anhydrous ammonia, especially if soil conditions aren't ideal," Sawyer advises. "If you make an application round in the field and you can still smell ammonia from that application, then adjust the applicator to get better coverage of the knife track with soil or wait for better conditions."

If soil is breaking into clods, there isn't good coverage of the knife track with loose soil, and ammonia is escaping. Then stop applying the N, he says. "Remember, your nose tells you if ammonia is escaping. A white vapor is condensed water vapor, not ammonia, which is colorless. If you see white vapor emerging from soil after pulling through with the injector knives, then stop and either change the way the equipment is working or is set up, or wait until the soil has better structure or moisture content to get good coverage of the injected N."



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### **December 1st 2022 is the Pioneer Deferred Payment Deadline**

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WHEAT SCHOOL:
THE KEY TO
PLANTING IN
DRY SOILS

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#### **BILLING QUESTIONS**

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### **SEED PLANNING FOR 2023**

We have had a few customers starting to get with us on estimates on orders for the 2023 crop year. We know that it seems early, but the sooner we know the demand the better off we will be in attaining additional supplies of the leading hybrids. But it always seems that the early orders have a better chance at the hybrids, varieties, and quantities wanted vs. later orders.

Please let us know if you have interest in getting together to place your order before **December 1st 2022**.

# NATIONAL YIELD CONTESTS FOR 2022

If you are interested in entering into any of these contest please call Susannah at the office to get registered!

KOREY CARMICHAEL 316-641-3160







ALLIANCE

