Planting Basics 3.19.2009 *03/26/09 10:23:22 AM*

Planting Basics
3.19.2009

I know we just got done with a major blizzard last week, but the warmer temperatures are making me think about spring. When I think about spring, I think about planting! Here is some planting information.

Corn:

Soil Germination Temp: The germination temperature is around 50 degrees. However, it is okay to plant corn when the soil is 47-50 degrees. Be careful not to plant corn into a soil that is too chilly. It can impact the seedling vigor and the overall plant stand of the field

Planting Depth: 1.5"-2.0" deep If corn is planted too deep, emergence can be a problem. If corn is planted too shallow, the brace roots may not develop properly and the corn can tip over in the middle of the season.

Planting Population: Can vary with soil type, flex in the hybrid, etc., but if I had to pick for the majority of our area, I would pick 32,000 seeds/acre. Growers are starting to experiment with corn plant populations because there is some evidence that because we have better hybrids today, our field can maintain higher populations and have a yield response from this adjustment. If you are interested in experimenting with this, talk to an agronomist about this idea on a field by field basis, as not all fields can maintain a high population.

Other ideas:

1) Check out your planter and try to get the most consistency possible for depth and even population- if uneven emergence or double seeds occur, the corn plant that emerges later than the rest will usually end up being a weed. This second plant is usually weaker and does not set a cob, but still takes moisture and nutrients away from the other corn plants.
2) Use phosphate starter- either a 2X2 band or liquid 10-34-0 is sufficient. 20lbs phosphate is recommended.

Soybeans:

Soil Germination Temp: around 54 degrees F- however, it is okay to plant when soil temperatures are over 50 degrees. Be careful not to plant into soils with cooler temperatures than 50 degrees. Soil temperatures within the first 24 hours after planting are critical to soybean seedling vigor. Soil temperatures at 40degrees for the first 24hours after planting can greatly reduce soybean germination. Also, the growing point of the soybean is exposed at emergence. This means that soybeans are susceptible to frost injury upon emergence.

Planting Depth: Around 1" or so- don't go too deep (2") otherwise emergence can be a problem especially in cool springs.

Planting Population: Around 180,000 -200,000 seeds/ac for solid or narrow rows. Between 150,000-180,000 for wider rows

Other Ideas:

1) Soybean seed is really sensitive to salts near the seed. This may not be the best crop to consider an in-furrow fertilizer application
2) Consider chelated iron in-furrow if you are planting on a field known for hot iron chlorosis. If you are interested in this, talk to an agronomist about best practices.

Wheat:

Soil Germination Temp: Minimum Germination Temperature is 40 degrees Fahrenheit. It is recommended to get spring wheat planted early so that the crop can be raised during the cooler part of the summer. The cooler temperatures during the yield determination stages

(before 6 leaves) will positively impact yield, so it is best to get wheat planted as early as possible. Because of this, many of the universities actually use a calendar date instead of soil temperature. South of Hwy2 NDSU/UMN recommends planting the last week in April. South of I-94 they recommend planting the 3rd week of April.

Planting Depth: 1.5"-2.0"- The deeper the seeding the more seedling vigor required to get the plant emerged. Also some semi-dwarf varieties have been known to have a shorter coleoptile which means they require shallower seeding.

Planting Population: An optimal harvest is stand is around 1.25 million plants per acre or 28-30 plants per ft2. Use this formula for calculating seeding rates for each seed lot that will be planted.

$$\text{Seeding rate(lbs/ac)} = \frac{\text{(Desired Stand in plant/Ac) / (1- expected stand loss)}}{\text{((Seeds/Pound) X (\% Germination))}}$$

Other Ideas:

1) Wheat is responsive to starter fertilizer such as 11-52-0 as a drill fill.

Sources:

NDSU ProCrop Website - http://www.ag.ndsu.edu/procrop/procrop.htm

The Small Grains Field Guide; J.J. Wiersma and J.K. Ransom, Copyright 2005 NDSU and University of Minnesota

http://www.montana.edu/roosevelt/articles/ag/Soiltemp.htm