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## Let seedbed conditions help dictate wheat planting date

The 2003 winter wheat crop varied from poor to excellent across the state. The best dryland winter wheat yields were in the 80- and 90-bushel per acre range. The lowest yields were in areas that did not receive ample or timely rainfall, or were affected by freeze, high temperatures in late May, diseases such as stripe rust and wheat streak mosaic, or insects such as the army cutworm and the wheat head armyworm. Overall the yields in most areas were good to excellent but left little soil moisture for the next crop, raising the question of how long to wait for moisture before seeding.

For tilled seedbeds (usually fallow) where the seed can be placed in firm soil at the correct seeding depth for the winter wheat variety, the crop producer's best option is probably to go ahead and seed even if the soil is dry and the wheat seed will not germinate immediately. Wheat requires 41% seed moisture for germination which is 9% more than corn (32%) but 10% less than soybean (51%).

The maximum depth a winter wheat variety with a short length coleoptile can be planted is 2 inches in a silt loam soil. In extremely fine-textured soil with a high clay content, reduce planting depth by up to ½ inch. In coarse-textured soils with lots of sand, increase planting depth up to ½ inch. For winter wheat varieties with medium length coleoptiles these seeding depths can be increased by ½ inch; for varieties with long coleoptiles seeding depth can be up to 3 inches with the adjustment for the soil texture. Warmer soil tends to shorten the coleoptile length. The coleoptile penetrates the soil and results in seedling emergence. If the seed is planted too deep, beyond the elongation of the coleoptile, seedlings cannot emerge and the result will be a poor stand.

If the seedbed is loose and the seed would be placed in loose soil, delay seeding until there is moisture is received to firm the seedbed. Seed placed in a loose seedbed is one of the leading causes of winter injury - root and crown rot.

Before beginning to plant, make sure openers and disks are not worn. For hoe drills, good quality spear point or

eagle back openers usually improve performance. Hoe drills, especially those with wider row spacing, are able to plant the seed deeper because they can build a ridge and plant in the furrow. Slow ground speed so adjacent rows are not covered with soil. The seeding depth then becomes the soil cover over the seed. If the seedbed was not tilled too deep, it usually is possible, with the hoe drill, to place the seed in firm, moist soil. Deep tillage or applying anhydrous ammonia with knives can dry out the soil, so it could be impossible to place the seed in firm moist soil even with a hoe drill.

As with everything, there are drawbacks to the hoe drill. The biggest is that if a hard rain occurs, the ridges will be destroyed and the seed, or developing plant, will end up under too much soil cover.

Seeding with a disc drill in a loose seedbed almost guarantees disaster and should probably be delayed until there is moisture.

For continuous cropping do not till. If you do till, the seedbed will dry out to the depth of tillage. The soil should be firm after soybeans are harvested. If planting winter wheat this year, make sure the drill is running lower in back than normal. Transfer more drill weight to the back of the drill and add extra weight to the drill. This will allow for penetration into dry, hard soil, forcing the seed into the soil and insuring seed to soil contact. Also, don't plant wheat too shallow. When using disc drills, plant at a depth of 2 inches.

Do not seed winter wheat much earlier than the suggested seeding date for your area. Early seeding leads to problems with diseases such as wheat streak mosaic and insects such as the Hessian fly.

As with all these rules there are exceptions. The biggest exception is to make sure you seed by the required date for crop insurance in your area.

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