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FIELD DIAGNOSIS OF WHEAT PROBLEMS

There have been many reports this spring of slow-growing wheat, often associated with late planting and sometimes with no-till production. In most cases, the problems can be traced to poor seed-soil contact, improper planting depth, and unusually cool soil conditions.

The following photos from Saline County, KS were taken April 9, and illustrate each of these problems very well. This field was planted Oct. 25 with a no-till air drill. The seeding rate ranged from 90 to 115 lbs/acre. At planting time, 8.4 gallons per acre of 10-34-0 was applied, followed by 40 lbs N/acre in November and 60 lbs N in February.



IMAGE #1. The seed slot had not closed properly under the residue in this area of the field, resulting in shallow seed placement, and uneven germination and emergence. The arrow shows the improperly closed seed slot.



IMAGE #2. Where a sprayer had gone over the field, the tires firmed the soil and the stand is better.

In the photos, stands are spotty and growth is below average. In this case, it was evident that some of the seed slots did not close properly. The poor seed-soil contact resulted in uneven emergence, poor root growth, and some stand loss during the winter. Where a sprayer had gone over the field, the tires firmed the soil and it is apparent now that emergence was better in the tire tracks.

Parts of the field had much slower emergence and growth than an adjacent area. In talking to the producer, it was explained that he was concerned that he was planting the seed too deep, so he adjusted the drill to plant more shallowly. In reality, his initial planting depth of about 1 ½ inches was just right. In the photo below, the effects of planting depth are still obvious in April. Where the wheat was planted deep enough, root growth is good and the plants are well developed. Where the wheat was planted too shallowly, the crown and seed is only about ½ inch below the surface and root development is poor.



IMAGE #3. The wheat was planted at the proper depth, and has good development in April. The wheat at right was planted too shallowly and has poor root development. The arrows show where the seed is.

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The April 11th full article can be accessed at:
<http://www.agronomy.ksu.edu/DesktopDefault.aspx?tabindex=999&tabid=538>