

## **Cool, We Soils with Ruts**

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## **Cool, Wet, Soils with Ruts**

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There has been some concern with the lack of field preparation that happened last fall. Along with that, the late spring is not allowing our soils to warm up or dry out, and there are some fields with ruts in them. All of this will present some challenges this spring. Jodi DeJong-Hughes from the University of Minnesota just put this article together this week. Her area of expertise is soil structure and tillage. There are some good ideas in this article that may come in handy for these situations.

### **Spring Crop Management**

**Jodi DeJong-Hughes**

**Regional Extension Educator**

**University of Minnesota**

With the heavy fall rains, subsequent delay in harvest, and deep frost, many farmers were not able to complete their fall tillage. A wet fall also left many fields with deep ruts leaving farmers wondering what they should do this spring to prepare a good seedbed for their crop. Warming up the soil, preparing an ideal seedbed, and reducing early plant stress are key to getting the crop off to a good start.

### **Soil Warm-up**

Warming up a wet soil this spring can be difficult when fall tillage was not completed. Suggested strategies would be to remove the residue by baling if possible, plant soybeans as they are more tolerant to reduced tillage systems, preventative planting, shallow tillage, or burn a **select few** fields.

While burning the residue can help warm up a soil, there are a few set-backs. Burning crop residue releases nutrients. An average of 35 pounds of nitrogen and 6 pounds of sulfur from corn stalks is lost back to the atmosphere. At today's price that is over \$17.00/ac lost from the field. After burning corn residue, phosphorus and potassium are in an ash form and are subject to blowing away. There is approximately \$7.20/ac in phosphorus (12 pounds/ac at \$0.60 per pound) and \$37.80/ac in potassium (84 pounds/ac at \$0.45 per pound). Care must be given to incorporate the ash before it is blown from the field. Also, choose fields with heavy residue such as corn on corn or where a chopping head or stalk chopper had been used. Avoid fields near towns and major crossroads.

### **Ruts and Field Preparation**

The first instinct is to deep rip tire ruts to reduce the compaction effect. However, soil structure is the number one defense soil has against compaction and tillage destroys structure. To maintain the soil's natural structure, just fill in the ruts as best as you can and avoid the deep rippers. The effects of rutting up a field can be felt for 2-3 years after the event. Another compounding factor for reducing the depth of tillage is a wet soil profile.

Tillage should stay shallow in a wet soil. Deep rippers will only spear and slab the soil creating more problems. To initiate soil warm-up, start with a shallow tillage pass with a disk or super coulter. Run only 1-2 inches deep; enough to incorporate the residue within the top inch or two of soil. The drier the soil profile, the deeper you can safely go with tillage. If you are using a chisel plow, keep it shallow (2-3"), use narrow points and no wings, and make sure the points are not excessively worn. Once the soil dries out a bit, you can move to deeper tillage systems if needed.

## ***Equipment Preparation***

While the fields are drying out, think of ways to reduce any negative effects of your equipment on the soil and seedbed. To reduce compaction, properly inflate tires to manufacturer's specifications. Over inflated tires can lead to deeper and more intense soil compaction and under inflated tires lead to tractor inefficiency. Use the lightest tractor you own that can do the job efficiently.

When inspecting the planter and tillage equipment, sharpen blades and replace worn parts that can smear the soil. Consistent planting depth and spacing is important in a good year.

In a less than ideal spring, it is crucial. Slow down, don't rush planting. Mudding in the crop can cause smearing that can inhibit root growth. Use residue managers to help warm up the seedbed and adjust the down pressure for each field.

There is no easy answer for planting in a wet spring. Attention to detail and patience will pay off in the long run.