

News Column

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SATURATED SOILS

It was exactly two weeks ago today (counting from the day I wrote this and not the day you are reading it) that I had a conversation with a local farmer who was concerned that he was planting too much of his soybean acreage before mid-May. I told him to keep planting – it might start raining and forget to stop.

Farmers have been telling me for months that we are in for a dry summer. While they could be correct, it is plenty soggy at my house today, prompting me to wonder what will happen to newly planted or newly emerged corn and soybeans if it keeps raining.

Let's start with corn. Saturated soils early in the growing season can lead to shallow root systems and problems handling drought stress later in the season. Plants with shallow roots are also susceptible to standability problems during periods of high winds later in the season.

Young corn plants can only survive 2-4 days when the growing point is fully submerged. If the growing point is not completely submerged, or is submerged for less than 48 hours, then young corn plants have a much greater chance of survival.

While doing a little research on this topic, I was surprised to learn that temperature influences the extent of damage from flooding or from saturated soils. Cool, cloudy weather limits damage from flooding because growth is slowed and because cool water contains more oxygen than does warm water.

Nitrogen loss by either denitrification (loss of N to the atmosphere) or leaching is also a

concern, but we aren't to that point yet. I'm sure most producers are still more concerned about drought than they are too much water.

Most soybeans in this area are either just planted, or just emerged. Newly emerged soybean plants can survive 48 hours under water, and sometimes up to seven days when temperatures are less than 80 degrees Fahrenheit.

While the ability to survive under water up to seven days seems encouraging, soybeans don't do well in water-logged soils. Soils remaining water-logged for several days will often cause more injury than will 48 hours of submersion.

During germination, saturated soils can be devastating. Saturation for 48 hours can decrease germination by 30 to 70%, and can cause twice the yield loss as compared to saturation for 24 hours or less.

Once plants are emerged, water-logged conditions that last less than two days often cause little or no yield loss. Therefore, it is those newly planted soybean fields that remain water-logged for several days that are of most concern.

I'm not good at predicting the weather, but my guess is that – because I chose this topic for today's column – rains will have stopped and soils will be drying out by the time this hits print.

In fact, the sun is peaking through the clouds and it is getting brighter outside as I try to wrap this up. The great thing about writing this columns is that I will get another chance in two weeks. So,...I'm just going to hit send and go with this topic today instead of starting over and writing about sunshine.

If you have questions, you can reach me at the Riley County Extension Office at 785/537-6350. Or, you can send e-mail to gmcclure@ksu.edu.

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