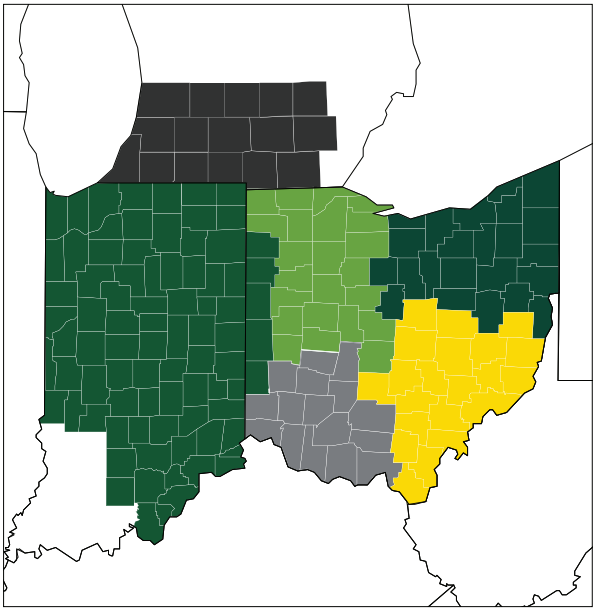
DID YOU KNOW?

The stress of soil temperature variation is not often talked about. In all of our agronomic management practices we need to seek to minimize the stress we put on our crop. Young corn and soybean seedlings can be negatively impacted by large soil temperature swings. Large temperature swings increase the chances of imbibitional chilling injury to young seedlings. Resist the urge to plant shallow when planting early. Temperature variation at different planting depths is yet another factor that should be taken into account in addition to soil moisture and soil type.

agronomy NOW

April 15, 2021



Welcome to agronomy NOW 2021! Last year, we launched this bi-weekly agronomic newsletter. Agronomy NOW contains in-season regional updates of planting progress, crop conditions and weather information. It also includes a timely agronomic article. The intent of agronomy NOW is to be timely and convenient to read and delivered as a text message. We will continue that effort for the 2021 crop beginning in a few weeks. For this first article of the 2021 season we will simply discuss two topics, as currently there has not been significant planting progress to address.

- Spring Herbicide Application Considerations
- Soil Temperature and Planting Depth Considerations

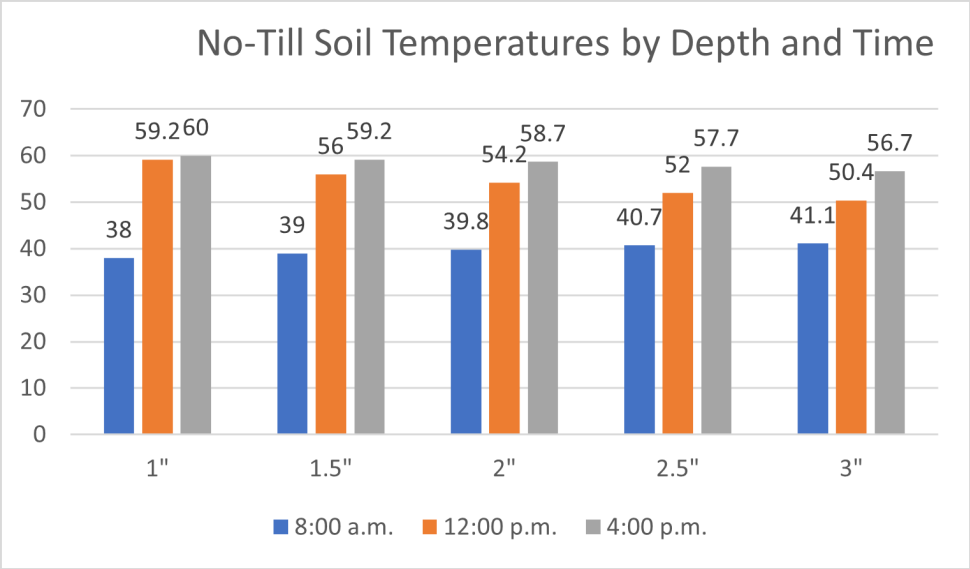
Spring Herbicide Application Considerations

This Spring has brought a stretch of warmer than normal conditions giving rise to significant winter annual growth. As Tri Ag Sales Agronomists have worked with growers, we have made some recommendations to apply a burndown while leaving out the residual products and coming back with those closer to planting. Residuals typically last 30 days to a max of 45 days, making us inclined to recommend these be applied as close to planting as possible, while keeping in mind plant back restrictions on some herbicides. Some of you may have already applied your planned soybean burndown with residual hoping that planting will soon follow. If it does, that should work out as expected. If planting gets delayed, we will need to anticipate an earlier in crop post application as our residual could run out of steam sooner than normal. For maximum yields, utilize weed height in crop as the trigger as to when to spray, not crop height. Your Tri Ag Agronomist will be available to make in-crop recommendations personalized to your situation as needed.

Soil Temperature at Various Planting Depths and Tillage Systems

Last Spring, on April 21st and 22nd, 2020, members of the Tri Ag Sales Agronomy Team took soil temperature readings at four different locations in Ohio and Indiana. These were also taken in both conventional till and no-till fields at 3 different times during the day. The principles behind this data still apply for this Spring planting season.

THE DATA: scroll below for the data summary

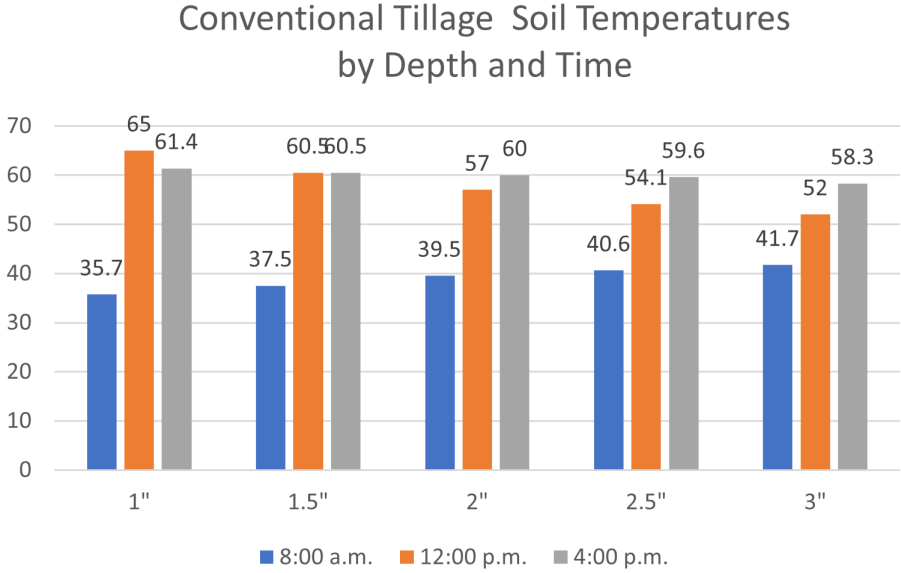


In no-till fields, soil temperatures varied throughout the day as follows:

- 1 inch depth 22° variation
- 1.5 inch depth 20.2° variation
- 2 inch depth 18.9° variation
- 2.5 inch depth 17° variation
- 3 inch depth 15.6° variation

In conventional tillage fields, soil temperatures varied throughout the day as follows:

- 1 inch depth 29.3° variation
- 1.5 inch depth 23° variation
- 2 inch depth 20.5° variation
- 2.5 inch depth 19° variation
- 3 inch depth 16.6° variation



DATA SUMMARY:

1. No-Till soil temperature was more consistent from the high to the low than conventional tillage.
2. Conventional Tillage systems averaged 2.2 degrees higher soil temperature at 4:00 in the afternoon than the no-till fields.
3. No-Till fields retained heat slightly better throughout the night and started the day 0.7° warmer than the conventional till fields as an average of all depths.
4. The deeper you plant in either tillage system, the less variation in temperature from the low soil temperature of the day to the high soil temperature of the day.

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