

Climate trends point to delaying fall nitrogen applications

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October is an important month from an agricultural standpoint.

Crop harvesting, crop drying, tillage and soil testing are among

the many weather-sensitive activities farmers hope to accomplish.

Some Octobers are fondly remembered for providing nearly ideal conditions for these activities while some are cursed for problematic weather. I have been looking at recent climate trends for October in Minnesota with one practical outcome being a recommendation to consider later fall fertilizer applications.

Since the last major widespread drought year, 1988, Minnesota farmers have had to cope with several wetter-than-normal Octobers. In 2007 and 2009 the statewide average rainfalls for October were greater than 5 inches.

For the majority of Minnesota farmers this meant delays in harvest and for several who reported more than 7 inches of October rainfall in those years the delays were not in terms of days but weeks. This was because the rainfall was frequent with 16 to 19 days of rain in some places.

Since 2000, only October 2003 and 2006 delivered less-than-normal precipitation; moreover, since 1988, 12 years have brought well-above-normal precipitation during the month. In fact, in 2005 a very rare October flash flooding occurred in portions of east-central Minnesota as severe thunderstorms brought 4- to 6-inch rains.

The silver lining in this October climate trend is the large fraction of the precipitation that goes into soil moisture storage and is available for the following year's crop.

Regarding temperature trends in October, most of the years since 2000 have brought above-normal temperatures during the month. In addition, fall frost dates have come a bit later in the month than usual, especially in southern counties.

Over the past several Octobers, including this year, daytime temperatures have exceeded 80 F on one or more days. In previous

decades this has been a rare occurrence.

A significant implication of the October temperature trend is warmer-than-normal soils, especially when considering the 50-degrees threshold for fall applications of anhydrous ammonia for nitrogen.

Soil temperatures have remained well above 50 degrees deeper into October and sometimes until near the end of the month.

For those who apply fall nitrogen this has been problematic because higher temperatures promote denitrification.

Later in the fall season has been a better time for anhydrous applications in recent years. For more information on wet fall weather and crops, visit the University of Minnesota Extension website at www.extension.umn.edu/go/1049.

Farmers can also find climatology updates from the Minnesota Climatology Working Group at <http://climate.umn.edu>.