

## Prevented Planting & Soil Fertility

There's no question that this has been a very challenging planting season across much of the country, especially in the excessively-wet Midwest. Estimates show that half or more of the corn and soybean crop has yet to be planted, when farmers are normally just finishing up by now. This doesn't even factor in the potentially thousands of acres that were planted and are now drowned out by excessive rain or flooding. To top it off, extended forecasts don't look great, either.

Because of all this, it will be a big year for prevented planting insurance claims. While soil fertility may not be the primary factor in the decision on whether or not to plant (very) late, switch crops, plant a cover crop, or leave ground fallow, it is a very important factor to consider going forward in all of these situations.

Soil is a very dynamic system. While it can seem very static or unchanging, its productivity relies heavily on numerous external factors, both natural and man-made. Rainfall, temperature, tillage, cropping history, irrigation, fertilization, weed control, and pest control are just a few. Plus, all these factors will have different effects in different fields.

Soil texture, parent material, slope, and drainage can all change what effect those external factors will have. Because proper soil fertility is one of the single most important, and controllable, factors in growing a successful crop, regularly monitoring soil fertility is one of the most important, and easiest, things one can do. This is especially true in any situation that is out of the ordinary. The excessive rainfall, late planting, and potential non-planting of 2019 is a good example.



Most growers know that nitrogen is not well-held by soil and very prone to leaching. This year, it's very likely that in wet areas where fall or early spring nitrogen was applied, nitrogen is no longer present. Phosphorus is easily removed by soil erosion, which is also common this year. As I was flying into Champaign a few weeks ago, I couldn't help but notice the extremely flat fields of east-central Illinois were quite clearly showing signs of excessive erosion. Almost all fields had visible waterways forming in them, often showing soil color from an upstream field now very visible on a different-colored downstream field. Even potassium has the potential to leach in a very wet year. While it is normally held well to the soil surface, its bond is not as strong as other nutrients and some of it can slowly work its way downward in the soil profile.

Ground that has been flooded should always be tested the following fall. It may be good news for you, if fertile silt from upstream has found its way onto your fields. Your fertilizer needs may be reduced. But it could also be bad news, where your fertile topsoil is the stuff that floated downstream. Soil testing is the only way to find out.

There are other potential side effects to altering a typical cropping rotation, especially when leaving the land fallow. Fallow syndrome is the appearance of severe phosphorus deficiency and stunting when corn is planted the following year after land has been left fallow. In short, its primary cause is due to the reduction in the population of symbiotic soil fungi that normally help plant roots acquire phosphorus. The problem is more prevalent in soils that test lower in phosphorus. In-season solutions are not particularly effective, so increasing phosphorus rates with the guidance of soil test levels is very critical in post-fallow years.

If switching crops is a possibility being considered, there are often herbicide residual issues to contend with. One upside is that excessive rainfall may help reduce the efficacy or concentration of many soil herbicides, but it is difficult to know for sure. Herbicide residual testing is an option to see how much of a conflicting herbicide is remaining in soil. These tests are fairly expensive, but might be worth it in the right situation.

Financial decisions are almost always the top factor when deciding what to do in a challenging year such as this. Other factors like weed control in fallow or cover crop land can have long-lasting impacts. But there's no doubt that an equally important factor to pay attention to this year is soil fertility. While correcting fertility issues usually aren't free, they are fairly easy and straightforward with the right information. No matter what decision you make with regards to prevented planting this year, plan in advance to have your fields soil tested this fall. Even if it was tested recently, the amount of change in an extreme year like this can be dramatic. Knowing if you have any new fertility issues will save at least a little bit of stress from an otherwise very difficult year.

More about Fallow Syndrome:

[https://ipm.missouri.edu/IPCM/2016/6/Stunted\\_Corn\\_Following\\_Prevented\\_Planting-Fallow\\_Syndrome/](https://ipm.missouri.edu/IPCM/2016/6/Stunted_Corn_Following_Prevented_Planting-Fallow_Syndrome/)