

# Soil compaction a hard problem for grain farmers

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Last year was an unusual year for many grain farmers. The weather conditions at planting and harvesting time made operations very difficult as soil moisture remained high throughout much of the year. The prevalent high soil moisture conditions around last year's harvest time could increase the potential for soil compaction.

We will have to wait and see what the weather brings this spring, but wet soils at planting time can also lead to soil compaction problems. Soil compaction is the physical compression of the soil into a smaller volume. Severe compaction problems negatively affect yields of grain crops, especially corn.

There are two types of compaction that grain producers should be aware of. Tillage compaction occurs with most tilling operations. Even farming implements that lift soil such as the moldboard plow compact the soil somewhat at the point where the plow edge pushes through the soil. Disking and rototilling are two of the largest causes of tillage compaction as these operations exert downward pressure on the soil.

Traffic compaction occurs as a result of operating large equipment in farming operations. The potential for traffic compaction is enhanced with the increasing size of farm equipment. Many grain producers have to utilize larger equipment because they are growing increasing acreages. As grain producers move into the coming production year, they should consider ways to minimize both tillage and traffic compaction.

Soil compaction is a hard problem to fix. The best way to deal with soil compaction is to prevent it. Utilizing no-till grain production practices are the best way to eliminate tillage compaction. However, traffic compaction can be a problem. Producers utilizing conventional tillage and no-tillage systems can minimize soil compaction by avoiding field operations during the times when the risk is the highest.

The greatest potential for soil compaction to occur comes when soil moisture content is high. Grain production activities such as planting, spraying, fertilizing, and harvesting should be avoided when soil moisture is high. Lowering tire pressure in the tires on grain equipment, and utilizing dual wheels on larger equipment can also lower potential for traffic compaction. When tillage is implemented, grain producers should avoid using a disk as much as possible. Chisel plowing is better for reducing the impact of tillage compaction.

The first step for addressing soil compaction is to determine if there is a problem. The first sign that could indicate a potential soil compaction problem is uneven growth throughout grain fields. Uneven growth may not be obvious close to planting time, but as crops mature and roots continue to develop, plants growing in compacted soils may appear stunted. However, there are other problems that could have these same symptoms.

Producers can also estimate the extent of soil compaction with a penetrometer. However, to best estimate soil compaction with penetrometer, soil moisture should be at field capacity. Soil moisture reaches field capacity when a fully wet soil profile has drained a couple of days. The soil should be too wet to till, but water should not be standing when you use a penetrometer to estimate the severity of soil compaction.

[http://www.centrankynews.com/winchestersun/news/agriculture/soil-compaction-a-hard-problem-for-grain-farmers/article\\_8ee7c102-e17b-5f3f-8a05-ee3f1a481fd9.html#.UyhBYXHJ98g.email](http://www.centrankynews.com/winchestersun/news/agriculture/soil-compaction-a-hard-problem-for-grain-farmers/article_8ee7c102-e17b-5f3f-8a05-ee3f1a481fd9.html#.UyhBYXHJ98g.email)