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Monitor Soil Moisture This Spring

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Current wet soil conditions present challenges to early season fieldwork. Whether it is planting beans or corn, cultivating or rotary hoeing – there is high potential to cause significant soil structure damage. Make a risk assessment before rushing out to the field on the first few days of dry weather to work the ground. When soil moisture is at or exceeds field capacity, there is an increased potential for soil compaction, particularly at topsoil depths.

The general rule is to minimize traffic on the field that would increase soil compaction.

Field operations will not achieve their objectives if the soil moisture conditions are not suitable. The decision to perform any field operation this season should be justified and weighed against disadvantages or damage to the soil structure. Soil compaction is a particular concern because the impact is significant when the soil's physical and chemical properties, such as infiltration rate, bulk density and nutrient availability, are altered.

The impact of wet conditions on soil physical and chemical properties is also a function of soil texture. Well-drained, medium-textured soils (loams, clay loams, silt loams, and silty clay loams) are much less affected than fine-textured soils (silty clay and clay) where saturated conditions are likely to exist due to poor drainage. The wet soil conditions of poorly drained soils may persist longer, depending on drainage availability, causing significantly increasing potential soil compaction and sidewall compaction with tillage operations, which may lead to poor seed germination. If planting and other field operations are rushed, poor seed germination and root development may result.

Check soil moisture

It is important to check for proper soil moisture conditions prior to implementing any field operation. Most of Iowa's soils have medium textures. For these soils, a simple method of checking soil moisture is the "feel" method. Probing the top 3-4 feet with a hand soil probe to assess the field's soil moisture conditions is time well spent.

Check the soil moisture status by pushing a ribbon of soil from between the thumb and index finger. If it breaks off within one or two inches, the potential for creating compaction is less. However, if the ribbon stretches out to four or five inches, it is still too wet and plastic. The chances are good that being in the field under these conditions may cause more problems than it will solve.

Another method is to make a ball of soil two inches in diameter and toss it through the air. If it hangs together until impact, it has a lot of cohesiveness, is still fairly plastic and probably is too wet to work the ground.

Right now is also a good time to evaluate fields to see whether drainage systems are working properly, especially for poorly drained and fine-textured soils. Keeping records of field moisture conditions can help in planning

drainage system improvements, if needed. Keeping field records on soil moisture conditions is as important as recording information about soil fertility, insects and management practices. These records help explain yield variability across the field.

However, under the current prevailing wet conditions, the best choice producers can make is to stay away from the field and avoid traffic on wet soil to reduce soil compaction.

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