

Extension Notes

Personal Column for October 11, 2010

By Gary Hall, ISU Regional Extension Education Director

## **To Till or Not To Till**

The weather seems to be encouraging us to at least consider some tillage this fall. Warm, calm days are perfect for turning the soil. The question is, “to till or not to till?” The answer is “yes” for gardens and “maybe” for the fields.

**Gardens** prefer getting tickled with your tiller in the fall for next spring’s vegetables. Spring is often wet making it difficult to work soil without forming clods that remain the rest of the season.

Fall usually is drier allowing more time to work the soil when it is at the correct soil moisture content. Even if you work soil wet in the fall and form clods, the freezing and thawing that takes place in the winter will break them down, leaving a mellow soil the following spring.

Some insects often hide in garden debris. If that debris is worked into the soil, those insects will be less likely to survive the winter. Diseases are also less likely to overwinter if old plants are worked under. Also, the garden debris will increase the organic matter content of the soil.

Fall is an excellent time to add organic matter. Not only are organic materials usually more available in the fall (leaves, grass clippings, compost from your landfill) but fresher materials can be added in the fall than in the spring because there is more time for them to break down before planting. As a general rule, add 2 inches of organic material to the surface of the soil and till it in.

Tilling your garden this fall will provide you with a healthy soil for next spring. To till is the right answer for your garden.

**Fields** tilled in the fall can present other questions and as well as many different answers depending on the field according to Mahdi Al-Kaisi, an associate professor in agronomy with research and extension responsibilities in soil management and Mark Hanna, who is an extension agricultural engineer with responsibilities in field machinery.

Questions about the timing of tillage and the difference between fall and spring tillage are being asked. Even though tillage may be needed in certain situations and field conditions, well managed field and proper crop rotation generally may not call for tillage.

The two main factors for tillage in the fall or spring are soil moisture conditions and soil temperature. These two factors can have significant impact on soil fracturing, tillage depth, clod size and level of soil compaction. Therefore, soil moisture and soil temperature can influence tillage practice, and ultimately yield and soil quality performance.

Our fall hasn’t provided much rain so the soil would be more suitable for tillage and soil fracturing. Fall tillage is a better option now because there is less potential for soil compaction

and soil temperature favorable. When soil temperature drops to the freezing point it is not easy to fracture the soil, because the solid water (ice) in the soil prevents it from breaking into small clods.

However, tillage in general needs to be the last management option you consider. There are alternatives that are equally as effective as conventional tillage.

Over the past 10 years, long-term tillage studies show a wide range of yield responses in corn and soybean for different regions in Iowa. The main findings of this research so far are that soybean yields after corn shows no significant difference between tillage systems. In fact soybean in no-till performed as good or better than any tillage system (chisel plow, strip-tillage, deep ripping and moldboard plow).

The choice of tillage for corn is more complex. The important question to ask is, “how will tillage impact the soil’s long-term health and productivity?” Then you can answer the question, “to till or not to till?”

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