

Field Notes: June 29, 2009

Drought threatens survival of farmers.

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An old saying is that “it never rains at night in June”; but as most area producers are being reminded, it seldom rains during the day in June either. Crops are now in vulnerable stages of development, with corn pollinating and filling ears, soybeans blooming and setting pods, and cotton struggling to keep up with the calendar. Most of the state is experiencing an extended drought; and along with the lack of moisture high temperatures are making the situation even more dangerous.

It seems that we are experiencing a repeat of the early summer drought that has affected Mississippi crops for several years; but this time it is even more troubling since temperatures are daily reaching into the mid to upper nineties. Most recently we have experienced uncommon easterly winds. Old farmers will tell you that an east wind is very destructive since it seems to remove moisture from crops and soils more rapidly than wind from the usual westerly direction. I will confess that I have never understood how wind direction can make such a big difference; but when you look at crops suffering in fields it becomes apparent that there may be some truth in this statement.

During seasons like this, irrigation becomes a popular subject, and farmers consider making large investments in land forming, wells, and irrigation equipment. I completely understand their feelings as they watch their carefully tended fields burn for lack of moisture. However, there are other ways of making more water available to crops – methods that are far less expensive than irrigation equipment, and that improve other situations as well. We’ve talked about these before; but it can’t hurt to mention them again.

A good raised bed on which to plant the crop is definitely a good beginning. This bed should preferably be constructed in the fall, which allows it to settle during the winter months. This bed should be stabilized with either planted or volunteer vegetation during the winter months. During this settling period the soil has a chance to “re-form” itself so that water moves according to the natural laws of physics, by capillarity and diffusion, downward during periods of good rainfall; but more importantly upward during periods of drought. Reduced and no-till systems are preferred as a means of allowing the soil to reach its maximum ability to move water within its mass. I know that a lot of farmers have had bad experiences with these

systems, especially when it comes to planting and stand establishment; but the main reason for these problems has been that of planting before these well-watered soils which are slow in changing temperature have the necessary time to warm up. Those who have overcome the urge to plant at the time their neighbors with tilled soil are planting have learned that no-till plants usually catch and pass plants in tilled soil.

The big advantage for reduced and no-tillage systems comes during times like we are experiencing now as deep water moves upward to feed the crop; and no-till plants that are well colonized by mycorrhizae are capable of extracting more of the stored soil water than plants in tilled soils. If you find this difficult to accept, then look for yourself. Go out in the field in mid afternoon during a drought and check both tilled and no-till fields. Feel the leaves in both systems; and you will find that leaves in no-till fields are cooler – a sign of adequate moisture. You will often see tilled fields wilting while no-till fields show little sign of wilt.

The real advantage of no-tillage is that it does not cost anything, as opposed to major expenses for all the hardware needed for irrigation. Land forming to improve drainage is of course an exception to the no-tillage concept. Well drained fields allow plants to develop better roots, and remain healthier during wet periods; then they are more capable of dealing with drought when it arrives. Fuel savings alone can often lead to profit instead of loss.

It seems that too often people jump to the conclusion that the more money they spend on something the better it is. However when it comes to drought tolerance the reverse can easily be true. Along with good soil fertility, soil pH in the optimum range, crop rotation, and good drainage, reduced and no-tillage agriculture can mean survival instead of more debt. Thanks for your time.