

Drainage:  
Number one input.

Most discussions on inputs revolve around return per acre in respect to bushels, or dollars. What is your most important asset? Good fertility? Excellent seed choices? Perfect weed control? Well maintained equipment? Superior management skills? Crop Insurance?

All these are important on today's grain farm but there is one rarely mentioned that trumps them all: Good drainage.

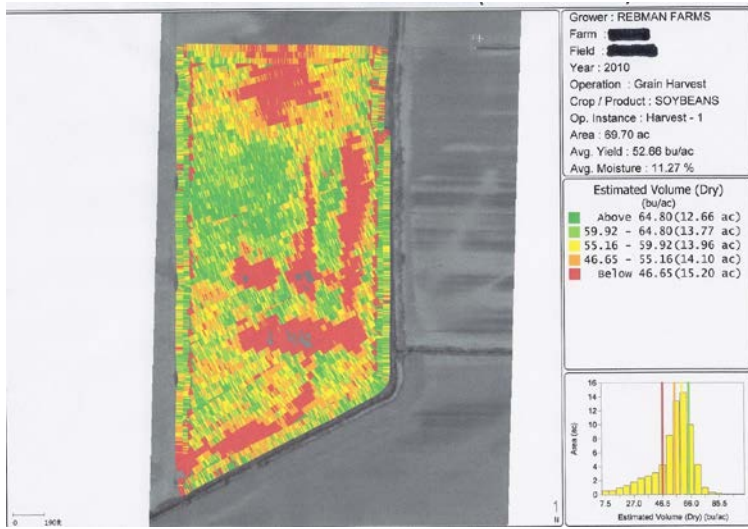
Drainage trumps all, because without good drainage, all the seed, high fertility or management skills cannot overcome poor drainage. With input costs on corn pushing \$350/acre, never before has input costs been such a high percentage of gross revenues. This is what makes good drainage so important. For all the cost involved in growing crops, you want to make sure you are maximizing the inputs you have to use to turn all those input dollars into profit. Good drainage makes for good, healthy soil. Oxygen content and particle separation within the soil must exist for optimum root growth. Good root growth makes for good water and nutrient uptake.

There are several reasons drainage is the "overlooked" input in many cropping systems. For one, the costs involved. A pattern tilled field can cost from \$500-\$1000/acre. That is not small change. But let's take a look at what you get for all those dollars: Timely field work and planting. First crop in often



means first crop out with the added benefit of being able to get next year's field work done. Sometimes that is not important, however, when we look back to the fall of 2009, we find that sometimes the effect can be quite large indeed. Another reason drainage is "overlooked" is that every year is different. A drainage problem one year may not show itself the next year if it is dry. Does that mean the problem is gone? Absolutely not! It just means that conditions that exacerbate the poor drainage condition don't exist in that crop year making it easy to forget or to put off that decision.

The biggest "bang for the buck" is to control your surface drainage. This must be done first before any thought of tiling on poorly drained soils could be entertained. If your surface drainage is not controlled, tiling will have a minimal impact. Many times a well placed waterway, or ditch can make a world of difference for a minimum of cost. Another reason drainage is routinely overlooked is that not all projects can be completed in our time budget. We often know what needs to be done, but time and weather work against us in completing our goals and we let short term budgetary constraints blind us to the long term effects of not only yields but profitability. Using yield mapping technology we employ, affected areas can be located and costs attributed to ineffectual drainage. Looking at the yield map of the field, you can see the effects of poor drainage. The red areas are identified and quantified in relationship to loss of yield and area affected. This is how we employ technology to help the landowner make a better business decision.



Tiling has come a long way. I farm land that still has functional clay tile that was put in by hand in the late 1800's. The tile is of varying depths, usually about 4-5' deep and no set pattern, other than the fact that the tile lines went to low areas in the field. Those types of tiles do not help much in a modern farming operation. They move water too little too late. They are too deep to save the crop from a really big rain. Modern tiling systems on the other hand are placed shallower and have a narrower spacing. This attacks two problems:

the large excessive rain that ponds water in the field and at the same time drought conditions that put the crop at risk when a good rain is at a premium. The shallower and narrower the tile spacing, the more water can be handled in a shorter amount of time. At the opposite end of the spectrum, when

water is in short supply, the shallower tile allows the water table BELOW the tile to remain undisturbed and well within reach of plant roots.



Recent wet weather, high land prices and high input costs have brought good drainage to the forefront. Before we try the newest seed variety, or pour on all that fertilizer, or buy that new guidance system, let's make sure we've done all we can in respect to drainage of our soil. It all starts there.

Click on the links below to find out more about drainage:

[http://www.iadd.info/iadd\\_fall10\\_005.htm](http://www.iadd.info/iadd_fall10_005.htm)

(Look on right side of site to download the Illinois drainage code and the Illinois drainage guide)

<http://www.plantmanagementnetwork.org/edcenter/seminars/ImpactsOfSubsurfaceDrainage/player.html>

<http://timewelltile.com/timewell.html>

