

TIME TO TILE

Installing subsurface drainage can boost yields up to 30 bu.

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The Great Black Swamp, with its seasonal floods and mosquito swarms, was once the defining attribute of Williams County in north-west Ohio. Thanks to the drainage tile industry developed in the 1850s, the once nearly uninhabitable county is now known for its fertile soils.

Still today, tiling the gently rolling fields makes financial sense for many farmers in the area. "Every piece of ground I buy or rent, I like to tile," says Doug Rupp, who farms more than 2,000 acres of corn and soybeans near Stryker, Ohio.

Tiling provides Rupp with a wider planting and harvesting window and improves yields. In some cases, tiling also helps prevent or minimize erosion.

Subsurface Benefits. This fall alone, Rupp installed close to 190,000' of tile, an investment tallying nearly \$100,000 or about \$900 per acre. On rental property, he works out an agreement with the landlord to spread the expense across a number of years until he can regain his original investment.

Rupp expects to recoup his tiling investment in 12 to 15 years. "In some cases, it will pay for itself even faster if your ground tends to be wet," he notes.

Soil type, moisture level, ground slope and cost are all factors to consider prior to installing tile, says Lynn Davis, Rupp's tiling contractor. Farmers need to evaluate each field on an individual basis to determine what's required, as tiling needs can vary substantially, Davis says.



> For the quickest return on investment, consider tiling the most productive ground first.

PHOTO: DARRELL SMITH

The sidebar below, provided by the University of Minnesota Extension Service, highlights additional considerations to help farmers assess their farm fields.

The Process. Subsurface drainage removes excess water from the soil profile through a series of pipes. "We're basically providing a channel of least resistance in your fields that gives subsurface water a way to drain off," Davis says.

In northwest Ohio, Davis typically installs tile at 30" deep and 25' to 30' apart. However, he says, farmers in some areas of the country get adequate results from installing tile 100' apart at a depth of up to 4'.

Tiling creates an underground zone that moves water off the field, enabling oxygen to better reach crop roots and stimulating growth.

"The guys who have yield monitors here can virtually pick out every tile as they go across the field because the yield will spike," Davis notes.

Work by Larry Brown, an ag engineer at The Ohio State University Extension, shows that fields with subsurface drainage can increase corn yields by up to 30 bu. per acre and soybean yields by up to 12 bu. per acre.

For farmers who are considering subsurface drainage, Davis recommends tiling the best producing ground first. "Tiling those fields will give you the fastest return on investment," he says.

Second, don't skimp on the size of tile used, especially the outlet tile that the lateral tile discharges water into. "As contractors, we don't like to put outlet tiles in because it's time-consuming; the customer does

not like to pay for them because they are costly for the little they contribute to field drainage. But a properly sized outlet is the single most important part of a drainage system," he says. ■

Before installing a drainage system in a field, consider the following:

- Local, state and federal regulations
- Soil information
- Wetland impact
- Adequacy of system outlet
- Field elevation, slope (grade) and topography assessment
- Economic feasibility
- Present and future cropping strategies
- Environmental impacts associated with drainage discharge
- Easements and rights-of-way
- Quality of the installation