

Drain Spacing Tool

<https://transformingdrainage.org/tools/drain-spacing/>



User interface for the Drain Spacing Tool. Users can select a specific field location and determine the optimum drain spacing to maximize return on investment.

Overview

The Drain Spacing Tool estimates the optimum drain spacing that maximizes annual return on investment in the drainage system. For an area of interest specified by the user, the tool provides drain spacing recommendations based on local soil and weather conditions.

This tool does not identify whether the field requires subsurface drainage. For soils that would benefit from drainage, this tool can be used as a guide to estimate the optimum drain spacing.

This tool covers the states shown with a red boundary in the tool screenshot above. This tool can be used for any combination of corn and soybean rotations.

How it works

The Drain Spacing Tool has a GIS user-interface that allows the user to zoom in and draw a polygon around the area of interest. This tool requires manual inputs for the selected area of interest.

What users provide

- Location and field boundary
- Design drain depth (ft)
- Target corn planting date
- Other optional inputs

What the tool provides

- Optimum drain spacing (ft)
- Design drainage coefficient (in/day)

- Estimated length of 4-inch drain pipe(ft)
- Estimated initial cost of system (\$)
- Drained-field area (ac)
- Other optional outputs

How the tool can be used

After confirming the need for subsurface drainage outside of the tool, the Drain Spacing Tool can be used by a variety of users to answer a range of different questions, for example:



Farmers, landowners and drainage contractors can use the Drain Spacing Tool to estimate the optimum drain spacing for their drainage design and estimate the cost of the drainage system.



Drainage engineers can use it to see the effect of drain depth and soil properties on drain spacing.



Educators and crop advisors can use it to educate people how to properly estimate the optimum drain spacing and avoid over-design of the system that leads to excess nutrient loss.



For more information

This tool is freely available at

<https://www.egr.msu.edu/bae/water/drainage/drain-spacing-tool>

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