

Web-based program designs more efficient farm terrace layouts

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From the time of the Babylonians to the Incas, terracing has been used to prevent water from eroding steep and hilly croplands. Designing terrace layouts can be time consuming and labor intensive. Now, University of Missouri researchers are developing a Web-based program that will design multiple farm terraces in a short time period. This technology will help farm experts choose the most efficient and cost-effective layout.

"Coupled with new computerized topographical information, the program would produce more alternative terrace layouts in a fraction of the time that manually devised plans require," said Allen Thompson, associate professor of [biological engineering](#) in the MU College of Engineering.

Using information about a farm, such as perimeter, the area to be terraced and data on how water flows on the property, the program will quickly produce several possible ways to terrace the land. Without terraces to prevent [soil erosion](#), valuable topsoil can be washed away reducing farm productivity and polluting [rivers](#) and lakes. Terracing and other soil conservation techniques can significantly cut the amount of soil lost each year.

"The program will help determine the best locations to collect and drain water, tell users how far apart channels and berms (the shelves that form) should be and possibly provide specific heights for the berms," Thompson said. "This system should provide a simple way to help produce farmable terrace designs acceptable to both landowners and

conservationists."

Currently, it can take farm experts an entire day to determine exactly where to place terraces within a 20-acre field. In contrast, this program would allow a person to plan several terrace options on a computer in an hour or two, Thompson said.

In the future, researchers hope the program will be able to produce plans with acceptable slopes as it smoothes any sharp curves along the terrace placement. This will ensure that the layouts are in accord with farm practices.

Source: University of Missouri-Columbia ([news](#) : [web](#))

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