United States Department of Agriculture

Natural Resources Conservation Service

COVER CROP$ TOOL

An Economics Decision Support Tool

Economics 101

Interest in cover crops is growing across Illinois and the country. The reason? The potential benefits they offer farmers. Before jumping on the trend, it is important to assess the impacts cover crops may have on your operation. Adding cover crops means new operational costs and other benefits—some with a real cash value. That's what most farmers want to know. NRCS has a new tool to assess the economics and focus on new costs and benefits. That knowledge is key to the decision-making process. It can improve farmers' ability to commit to using cover crops as a long-term and successful conservation solution on their farm.

About The Tool

The specific costs and benefits associated with adding cover crops to a rotation are highly variable and site specific. NRCS encourages producers and landowners interested in assessing the economic considerations for their farm to download the "Cover Crop Economics Decision Support Tool." This tool is a partial budgeting tool based in a spreadsheet. It helps producers, landowners, planners and others make informed decisions when considering adding cover crops to their production system. The tool is available for download from the NRCS IL website at **http://www.nrcs.usda.gov/wps/portal/nrcs/detailfull/il/soils/health/?cid=stelprdb1269028**. For more details, visit your local NRCS office.

What The Tool Tells You

Offering a partial budget analysis, the tool focuses only on operational changes you make. To keep the analysis relevant, the focus is on actual costs and benefits farmers see when they add cover crops. We focus on benefits easily expressed in terms of dollars. The tool offers a simple economic and financial comparison that does not require in-depth crop budgets or enterprise analysis data. Concepts that the tool considers include:

- *Time Frame* — When assessing the economics of cover crops, the 'time horizon,' or length of time you evaluate really matters. The short-term view, typically less than 10 years, assesses immediate benefits from cover crop use. The long-term view assesses continued and long-term use of cover crops, which may lead to more economic benefits like improved soil health.

Potential Benefits —

- *Direct Nutrient Credits* – These are credits farmers expect to receive and use for the cash crop they will plant after the cover crop. This credit counts as 'already applied' fertilizer that is readily available for the crop, reducing actual fertilizer farmers would normally purchase. Typically, these nutrient credits are associated with legume cover crops specifically managed to provide nitrogen credits.
- *Herbicide/Insecticide/Fungicide Input Reductions* – Cover crop residue, surface vegetation competition, and subsurface microbial activity may result in reduced chemical application needs for the following cash crop. For example, having an early season mulch layer may eliminate the need and costs for herbicide treatments.
- *Yield Increases* – When cover crops solve yield-limiting problems like compaction and moisture availability, growth of your next cash crop can improve. The tool calculates this benefit by assessing the value of the added yield per acre.

- *Reduced Erosion* – Cover crops may immediately reduce onsite soil erosion. This benefit includes an estimate of the fertility value per ton typically lost to soil erosion, which is now under control. In some cases, reducing erosion with cover crops also reduces machinery costs to repair gullies and clean sediment out of ditches.

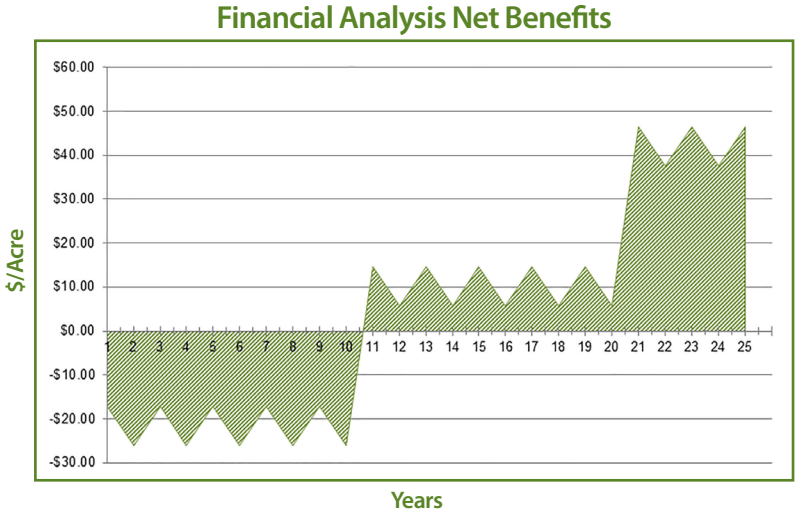
- *Grazing (short-term benefit)* – Using cover crops for grazing livestock that are already part of the farming operation is one of the most reliable ways to capture value from cover crops. Grazing cover crops can improve daily weight gain in stockers and offset hay and feed costs.

- *Overall Soil Fertility (long-term benefit)* – When used as part of a crop rotation over many years, cover crops impact both physical and biological soil properties. These soil improvements may result in the soil's ability to increase available nitrogen, phosphorus and potassium in plants/crops. This can offset the purchase of additional nutrients for crop production from external sources.

- *Improved Water Storage and Infiltration (long-term benefit)* – As soil organic matter increases, the soil's ability to store water also increases. The economic benefits of improved soil infiltration and water storage can reduce irrigation costs or increase the soil's resilience from drought in dryland systems and curb yield losses.

General Notes on the Tool:

- Please review the instruction page to understand data inputs required by users and the results the tool provides.
- The tool's analysis depends upon user-supplied values. Where users are unsure of exact variables, they can use the tool to run "what if" scenarios based on different potential ranges of data inputs. The model will store and retrieve up to 5 default scenarios and offer a starting point for running the model.
- The tool provides analysis results both numerically and graphically.
- A References & Citations page is included, which provides users with additional technical and scientific details used to build the tool.
- Results are presented in two ways, showing immediate short-term net benefits and long-term net benefits (up to 50 years). The long-term benefits assess the impact of improved soil health with continued use of cover crops.



Example from the tool's graphic display of financial results for a scenario assessing 25 years of including cover crops into a corn/soybean rotation where 10 years are required to change soil organic matter 1%. Graphic shows change in operating costs, negative numbers represent increased operating costs.

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