



## Soil Conditioning Index (SCI)

Soil Conditioning Index (SCI) is a tool that can predict the consequences of cropping systems and tillage practices on the trend of soil organic matter. It provides a means to evaluate and design conservation systems that maintain or improve soil condition. Organic matter is a primary indicator of soil quality and an important factor in carbon sequestration and global climate change.



SCI gives an overall rating taking into consideration biomass production, field operations, and erosion rates. If the rating is negative, the level of soil organic matter is predicted to decrease under the system. If the rating positive, the level is predicted to increase under the system. Values near zero suggest the organic matter will be maintained near the current level. An upward trend in SCI will be an outcome of land management decisions based on improving the soil resource.

RUSLE 2 is the official NRCS tool that is used to calculate SCI.

### Components of the Soil Conditioning Index

OM is Organic Material: the effect of organic material returned to the soil from plant or animal sources, may be either grown and retained on the site, or imported to the site.

FO is Field Operations: the effect of field operations which stimulate organic matter breakdown. Tillage, planting, fertilizer application, spraying and harvesting crush and shatter plant residues and aerate or compact the soil. These effects increase the rate of residue decomposition and affect the placement of organic material in the soil profile.

ER is Erosion: the effect of removal and/or sorting of surface soil material by erosion processes which are predicted by water and wind erosion models, not for erosion form concentrated flow (gullies). Erosion contributes to loss of organic matter and decline in long-term productivity.

### Things You Can Do To Increase Your Score

- Raise crops that produce high amounts of residue that is retained on the field.
- Utilize cover crops when possible to increase organic matter.
- Utilize manure or crop mulch to add organic matter to the soil.
- Limit the number of tillage operations.
- Limit the amount of soil disturbance each operation creates.
- Minimize the amount of wind and water erosion occurring on the field.
- Use production techniques that will increase crop and residue production.