# SCI

# Soil Conditioning Index

# What is SCI

A model (index) that predicts the consequences of cropping systems and tillage practices on the status of soil organic matter.

- ⇨ It predicts if organic matter will be accumulated or lost over time.

# What the SCI is Not

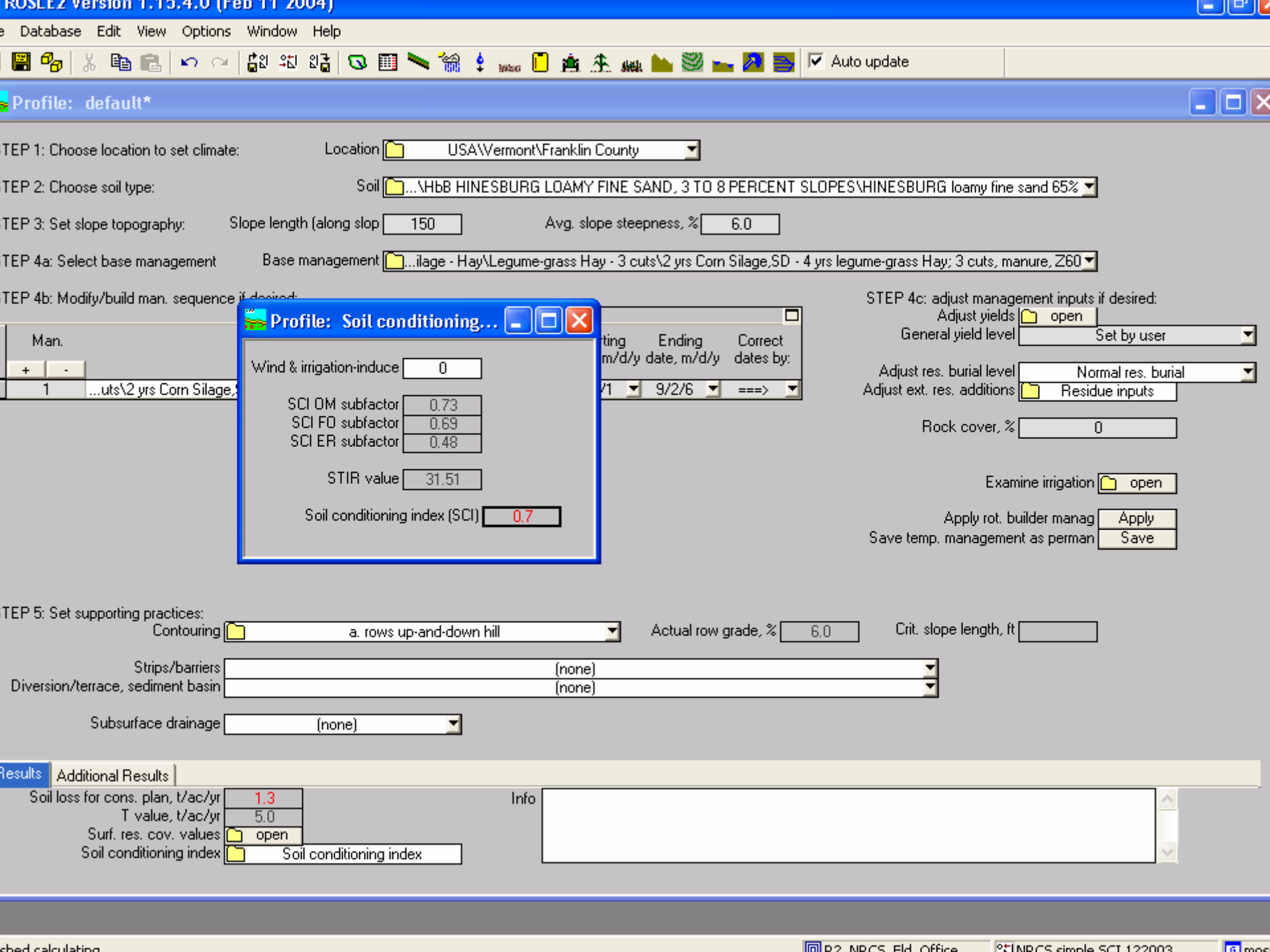
- It is not a soil quality index (it does not consider other measures of soil quality such as compaction or microbial activity)
- It does not measure or estimate the amount of soil organic matter
- It does not tell you what is an acceptable level of soil organic matter

# Three Parts of the SCI

1. Site Information – includes location and soils
2. Management Information – cropping system, rotation and tillage systems
3. Organic Matter – includes any addition or removals of organic matter such as harvest, residue and manure (additions of manure can increase the SCI number significantly)

# How to Use the SCI

- Use as a hardcopy spreadsheet
- Use as an Excel spreadsheet
- ⇨ Use as a subroutine in RUSLE II


RUSLE2 Version 1.15.4.0 (Feb 11 2004)
Database Edit View Options Window Help
Auto update
Profile: default*
STEP 1: Choose location to set climate:
Location
USA\Vermont\Franklin County
STEP 2: Choose soil type:
Soil
...\HbB HINESBURG LOAMY FINE SAND, 3 TO 8 PERCENT SLOPES\HINESBURG loamy fine sand 65%
STEP 3: Set slope topography:
Slope length (along slop
150
Avg. slope steepness, %
6.0
STEP 4a: Select base management
Base management
...ilage - Hay\Legume-grass Hay - 3 cuts\2 yrs Corn Silage,SD - 4 yrs legume-grass Hay; 3 cuts, manure, Z60
STEP 4b: Modify/build man. sequence if desired:
Man.
+
-
1
...uts\2 yrs Corn Silage,
Profile: Soil conditioning...
Wind & irrigation-induce
0
SCI OM subfactor
0.73
SCI FO subfactor
0.69
SCI ER subfactor
0.48
STIR value
31.51
Soil conditioning index (SCI)
0.7
ting m/d/y
Ending date, m/d/y
Correct dates by:
9/2/6
===>
STEP 4c: adjust management inputs if desired:
Adjust yields
open
General yield level
Set by user
Adjust res. burial level
Normal res. burial
Adjust ext. res. additions
Residue inputs
Rock cover, %
0
Examine irrigation
open
Apply rot. builder manag
Apply
Save temp. management as perman
Save
STEP 5: Set supporting practices:
Contouring
a. rows up-and-down hill
Actual row grade, %
6.0
Crit. slope length, ft
Strips/barriers
(none)
Diversion/terrace, sediment basin
(none)
Subsurface drainage
(none)
Results
Additional Results
Soil loss for cons. plan, t/ac/yr
1.3
T value, t/ac/yr
5.0
Surf. res. cov. values
open
Soil conditioning index
Soil conditioning index
Info

# What do the SCI Numbers Mean

- A positive number means that you are adding organic matter over the term of the cropping system or rotation

- A negative number means you are losing organic matter over the term of the cropping system or rotation

# Use of the SCI

- The SCI will be used as one measure of Soil Quality
- A cropping system or rotation **must have a positive** SCI number for it to meet the RMS Quality Criteria for Soils

# Example SCI's

- Continuous Hay = 0.7
- Continuous Corn, Moldboard Plow = -0.5
- 4 Years Corn, 4 Years Hay = 0.5
- 2 Years Corn, 6 Hay = 0.9
- Pumpkins (cont.) = -1.0