

**TABLE 3.1.** Increases in soil organic matter content and water-stable aggregates in a central Alabama soil after 10 years of in-row subsoiling to a 15-inch depth compared to disking and chisel plowing [54]

	Soil organic matter <sup>1</sup>		Water-stable aggregates
	Depth (inches)		
	0-½	0-1	
<b>TILLAGE</b>	<b>PERCENT</b>		
Conventional: disking and chisel plowing	0.9	0.9	37
Non-inversion: in-row subsoiling to a depth of 15 inches	1.9	1.5	58

<sup>1</sup>Soil organic matter estimated from total soil carbon content multiplied by a 1.724 factor.

**TABLE 3.2.** Carbon to nitrogen (C:N) ratios of some commonly used cover crops and manures<sup>1</sup>

<b>Cover crops</b>	<b>C:N ratio</b>
Mature cereal rye (heading)	40 <sup>[41]</sup>
Young cereal rye (before boot stage)	14 <sup>[36]</sup>
Wheat straw	100 <sup>[7]</sup>
Crimson clover (mid-bloom)	17 <sup>[41]</sup>
Hairy vetch (early-bloom)	11 <sup>[41]</sup>
Cereal rye/crimson clover	28 <sup>[41]</sup>
Cereal rye/hairy vetch	21 <sup>[41]</sup>
Cowpeas	13 <sup>[16]</sup>
<b>Manures</b>	<b>C:N ratio</b>
Poultry litter	14 <sup>[46]</sup>
Dairy manure (solids)	13 <sup>[46]</sup>
Swine manure	14 <sup>[46]</sup>

<sup>1</sup>The superscript numbers in brackets refer to the reference list number for the C:N ratio.

**TABLE 3.3.** The Soil Conditioning Index (SCI) for several management scenarios in the Southern Piedmont region [4]

Location	Soil series	Soil texture	Slope (percent)	Scenario	SCI
Watkinsville, GA	Cecil	Sandy loam	4	Monoculture cotton, spring chisel tillage	-1.1
				Monoculture cotton, fall chisel tillage	-1.8
				Monoculture cotton, no-till	0.12
				Cotton>annual rye, no-till	0.36
				Cotton>corn>corn>tall fescue (pasture years)	0.61

**TABLE 3.4.** The Soil Conditioning Index (SCI) for several management scenarios in the Southern Coastal Plain region [4]

Location	Soil series	Soil texture	Slope (percent)	Scenario	SCI
SC	Norfolk	Loamy sand	3	Conventional tillage, continuous cotton	-0.41
				No-till, continuous cotton	0.44
				No-till, cotton>annual rye>corn>annual rye	0.6
SC	Norfolk	Loamy sand	3	Conventional tillage, continuous cotton	-0.84
				No-till, continuous cotton	0.28
				No-till, cotton>annual rye>corn>annual rye	0.54
				Paratill, continuous cotton	-0.27
				Paratill, cotton>annual rye>corn>annual rye	0.45
				Paratill, corn>sun hemp summer cover crop>wheat>cotton>white lupin/crimson clover	0.56

**TABLE 3.5.** Representative management scenarios and Soil Conditioning Index (SCI) for the Southern Appalachian Ridges and Valleys region [4]

Location	Soil series	Soil texture	Slope (percent)	Scenario	SCI [4]
AL	Decatur	Silty loam	3	Continuous cotton, fall chisel plow	-2.6
				Continuous cotton, no tillage	-0.36
				Cotton>annual rye>corn>annual rye	0.17
				Cotton>annual rye>corn>annual rye, five tons per acre of poultry litter prior to cotton	0.21
				Cotton>annual rye>corn>annual rye, paratill prior to cotton	0.09