Ridge Tillage versus ...

- Cornstalks undisturbed since harvest
- Chopped cornstalks or soybean residue
- Scraped ridges

"Slow Growth Syndrome" In No-Till Corn

- Cool soil temperature
- Poor seedling root growth due to:
  - "Side-wall" compaction
  - Wet soils
  - Reduced nutrient mineralization
  - Residue toxicity
- Influenced by soil texture, crop rotation, hybrid maturity, and planting date (Carter, 1992)
Yield advantage of moldboard and chisel plow over no-till (1980-1984, n= 30 trials)

Source: Springman, Daniel and Mueller, 1986

Effect of tillage system on corn yields in Wisconsin (1978-1984)

Source: Springman, Daniel and Mueller, 1986

Yield advantage of chisel plow tillage over no-till 1986-2004 (“Long” Rotation trial, n= 7448 plots)

Comparative Effects of Agronomic Treatments on Earthworms

Relative numbers of large earthworm species for different land use practices. Indicates treatment is worst case assumption of broadcast use of soil granular insecticides.