Cover Crops in Organic Row Crops

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Soil Types & Slopes

• Predominantly Marshall
• Judson and Zook in bottoms
• Shelby and Exira on eroded hill sides
  • From level to 18% slopes
  • try to fit in rotation to these different soils
Our Rotation...It depends!

- Corn
  - Winter Wheat CC
- Soybeans
  - Winter Wheat-Grain
  - Winter Peas-CC
- Corn
- Oats
  - Clover/Alfalfa/CC Mix
  - Hay
Rotate crops/Tillage on long slopes
Why Use Cover Crops?

- Reduce Erosion
- Fix Nitrogen and scavenge nutrients
  - Long term organic success
- Weed Control
- Soil Health??
- Soil Texture/Quality?
- Always want something living in soil
One Farmers View on Soil Health

• Description is difficult
  • Organic matter level
  • Soil type
  • Texture
  • Structure
  • Smell
  • Feel
    • These are all combined!
Your Soil... CRUMBLY or CLODDY?

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Seeding

- Seed costs using organic seed can be expensive
  - Try to use home grown seed whenever possible
- Don’t be afraid to start small
- Experiment!
- Be careful of fancy expensive mixes
Sorghum sudan grass, radish, peas, soybeans, winter wheat, alfalfa
Seeding at last cultivation
Clover peeking through
Aerial Application of winter wheat into corn
September 25
Aerial seed winter wheat at harvest
November 5
Drilling winter wheat after corn harvest with conventional drill
October 24
December 25 wheat emergence
May 4
Future Goal

Gandy Air Seeder
- Seed at last cultivation
- Photo Credit Robert Alexander
Robert Alexander’s Results

Clover
Rye Grass
Radish
Benefits Realized

• Less erosion
• Less weed pressure
• Higher yields
• Higher water holding capacity
• Higher water infiltration rates
• Lower fertility inputs required
A good legume meadow increases yields of the following corn crop as much as an equivalent of 100 to 160 pounds of fertilizer N.

Research done in 70s
Differing root masses

Winter wheat and peas

Radish and Sorghum Sudan Grass
Earthworm tunnels
Organic Termination

- Timing
- Tools Used
- Residue management
- Future Impacts
  - Insects
  - Soil moisture
  - Following field passes
Organic Termination

- John Deere 550 Mulch Master
- 24 inch sweeps
- Treader wheels shake soil out of roots
- Run Shallow 3-4 inches max
Organic Termination

• Chisel Plow with 20 inch sweeps
• Run Shallow
• Watch for dry forecast
  • May have to closely follow with harrow to prevent ground from drying out
Organic Termination
Terminated 2/3 of wheat cover crop with disk
Note the Soil Texture