Ohio Update

Midwest Cover Crops Council
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At OSU, we have tested >32 cover crops:

- Indigenous vs. exotic
- Legumes vs. non-legumes
- Summer vs. winter
- Short rotation vs. long rotation

To evaluate their suitability for:

- Biomass and nutrient management
- Biomass N contribution
- Nutrient recyclers
- Other characteristics

Ohio - Red Clover Research

- Dr. Robert Mullen, Soil Fertility Specialist
- Fall tillage vs. chemical kill no-till
- Nitrogen rate study
  - 0, 80, 160 lb/acre N in 3 year study
  - Biomass, Soil nitrate, and Corn yields
  - Nitrogen benefit or rotational effect?
COWPEAS
~ 3 - 4 tons dry matter
~ 2.5 - 3% N in biomass
~ C:N ratio 15 – 20
~ 125 - 150 lbs N/acre

WINTERPEAS
~ 3 - 5 tons dry matter
~ 2 - 2.5% N in biomass
~ C:N ratio 15 – 20
~ 100 - 150 lbs N/acre

Winter-killed cow peas planted in July 2003

Cover crops killing
Vinegar (5% acetic acid) @ 35 gal ac⁻¹
Roll over
Roundup
Cowpea or winter-pea with oat is for good silage
Winter-killed – no herbicides
Can provide up to 150 lbs of N/a

Recommendations:
30 (10) lbs cowpea/winter pea plus 65 lbs UAN/ac is good for growing corn

Making No-till Corn Work!

Soil N content changes with no-till
Slow nutrient release from crop residues
More and diverse microbes in soil
Building SOM (savings account of C & N)
Initially soil compaction (denitrification)
moving to aerated soils (~denitrification) with cover crops and no-till

Annual Ryegrass
Vs.
without grass under no-till

Grand Lake St. Marys Watershed
P pollution from poultry and animal manures without cover crops and no-till

SOIL QUALITY WORKSHOP
RESEARCH PLOTS FOR IMPROVEMENT OF SOIL HEALTH

SOIL QUALITY TEST KIT
A simple test for active organic matter as a measure of soil quality

OSU Fact Sheet
Kit Order Form
CD created
OSU South Centers at Piketon
Crop, Soil & Water Analysis

Unique Lab Services
Competitive prices
Plant, soil and water analysis
Biological analysis
Chemical analysis
Physical analysis

Cover crops in conservation practices
All Ohio Chapter Soil & Water Conservation Society
February 7, 2008
Ohio Department of Agriculture, NRCS, Farm Bureau, SWCD, Extension
CD will be created

Natural Resource Conservation Service
Conservation Practice Standard Update
Cover Crop Code 340
Mark Scarpitti - State Agronomist

Conservation Tillage & Technology Conference
1 full session on cover crops
11 cover crop presentations
768 attended
Knowledge gained 0.9 on 1-5 scale
On-farm research funded
February 21 - 22, 2008
Ada, Ohio
Attend next year
Feb. 26 - 27, 2009

Questions?