

Improving Soils with Cover Crops



Dr. Bill Lester
UF/IFAS Extension

What are “Cover Crops”

- A crop grown for the protection and enrichment of the soil
- Not normally harvested or consumed- grown to be plowed under
- Basically a grower skips a cropping season to grow a cover crop (or to protect against soil erosion during the off-season in other areas)

Why Grow Cover Crops

- **Cover crops are crops grown to improve the farming system (annual and perennial crops)**
 - can improve the physical, chemical and biological properties of the soil
 - supply nitrogen and/or other nutrients
 - reduce leaching of nutrients and pesticides, reduce erosion

Why Grow Cover Crops

- Mitigate damage from plant pests
- Reduce pest population densities
- Attract beneficial insects
- Reduces weed population

Soil Quality

- Physical Properties:
 - Adds organic matter to the soil
 - Improves soil texture
 - Increases water holding capacity
 - Cements soil particles together to increase aggregate stability

Nutrient Management

- Certain cover crops can add nitrogen to the soil (especially legumes)
- Can sequester nutrients during off-season to limit nutrient leaching
- Limits nutrient leaching and runoff into water resources

Pest Control

- Provides a habitat for beneficial insects
- Can be used as a mulch cover for row middles
- Important for controlling plant parasitic nematodes
- Prevents and crowds out weeds (very important for summer season)

Cover Crop Selection

Types

- Summer vs. winter crops
- Annual vs. perennial crops
- Legumes vs. non-legumes

Management

- Satisfy objective
- Easy to establish w/ minimal inputs
- Easy to manage w/ available equipment

Annual Cover Crops

Summer

- Cowpeas
- Hairy Indigo
- Sunhemp
- Velvetbeans
- Sorghum-sudan grass

Winter

- Crimson Clover
 - Hairy Vetch
 - Winter Rye
- ❖ Legumes

Summer Annuals

Cowpeas



Sunhemp



Sorghum-sudan Grass



Winter Combination of Clover, Rye and Hairy Vetch



Termination

- Short- turn under with shovel or tiller
 - Medium- hedgeclippers then turn under
 - Tall- hedgeclippers, cut at ground level
 - No-till: Cut or crimped and left to lie on the soil surface
- ❖ Note: An unmowed rye/hairy vetch mix sustained a population of aphid-eating predators that was six times that of the unmowed volunteer weeds and 87 times that of mown grass and weeds (Bugg et al., 1991).

Commercial Roller Crimper



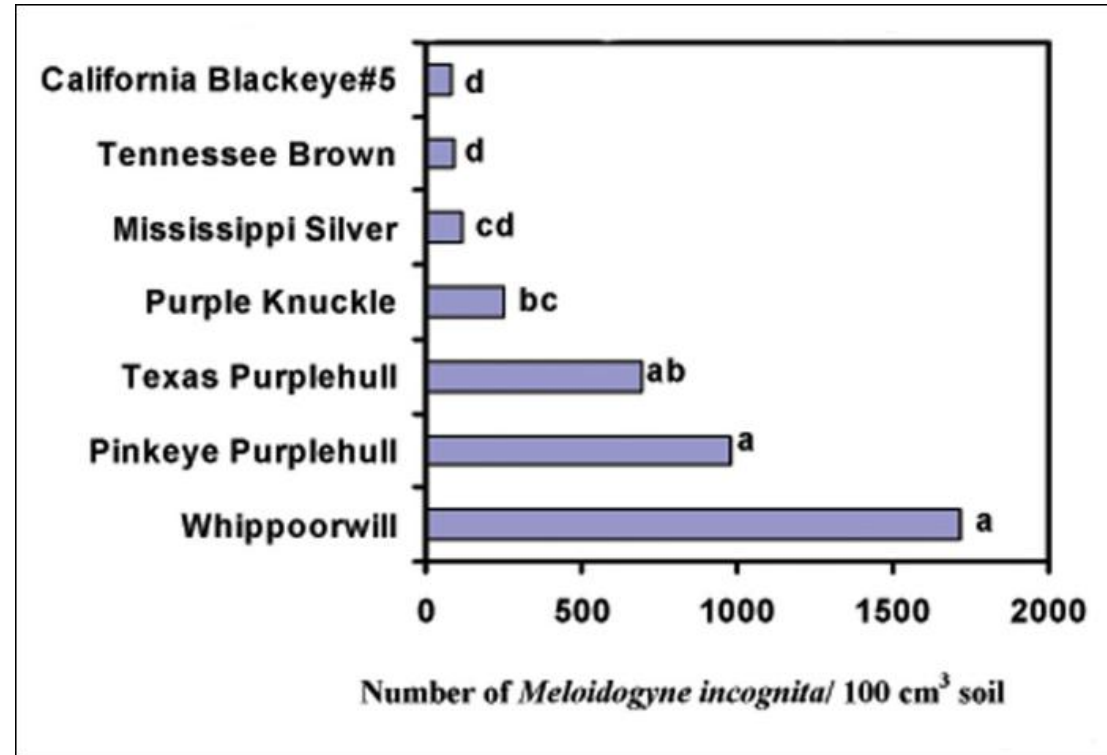
Perennial Cover Crops



Using Cowpeas for Nematode Control

- The effect of cowpea in nematode management is cultivar dependent
- A given cultivar may discourage certain species of nematodes and be a great host for other nematodes
- Start with nematode count

Cowpeas and Root Knot Nematodes



Questions?

UF/IFAS Hernando County Extension Service

16110 Aviation Loop, Brooksville, FL

(352) 754-4433

extension.hernandocounty.us