

Your NRCS source for plant materials technology in the southeast

A publication from the Florida, Georgia, Hawaii, and Mississippi  
Plant Materials Centers

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## Using cover crops: Mississippi farmer spotlight

Cover crops are useful in treating a variety of resource concerns, however integrating them into a farming operation can be difficult. Mississippi PMC manager Alayna Jacobs visits with two farmers about how they make cover crops work on their farms.

### 20 Years of Cover Crops on the Bailey Farm

Coley Bailey and his son Coley Little Bailey farm mostly cotton. Local soil conservationist Lee Clark and soil conservation technician Tanner Thornton are working with the Baileys to promote cover crop adoption in Yalobusha County. So how did they get started with cover crops? The Baileys planted 50 acres of wheat cover crop in 1997 for their Highly Erodible Land (HEL) plan. Coley noticed the areas with the wheat cover crop picked one bale per acre more than the non-cover cropped areas. Needing no further convincing, they planted most of their 3,000 acres in a wheat cover crop next year.

“The cotton crop can withstand about ten more days of dry weather if we have grown cover crops. Since we started growing cover crops, our soil organic matter has improved from 0.5% to 2%,” explains Coley. This year, they have added daikon radish to the wheat to break up subsoil compaction. “After we broadcasted the wheat with a spreader, we came back and drilled the radishes on top of the row but we offset it slightly from the cotton stubble,” Coley Little says (Figure 1). They hope to improve

water infiltration when the cotton crop is planted.



Figure 1. Radish and wheat cover crops on the Bailey farm in January



Figure 2. Mike Graves holds up a radish from his first cover crop in January

### Book your seat to upcoming PMC events

#### Florida PMC Spring Cover Crop Tour

Friday March 4, 2016  
10:00 am – 1:00 pm  
Brooksville, FL  
Open to the public & NRCS staff  
Contact manager Janet Grabowski for more information:  
352.796.9600  
[Janet.Grabowski@fl.usda.gov](mailto:Janet.Grabowski@fl.usda.gov)

#### Mississippi PMC Landowner Cover Crop Field Day

Wednesday February 24, 2016  
9:00 am – 12:00 pm  
Coffeeville, MS  
Open to landowners & NRCS staff  
(Lunch sponsored by the Grenada and Yalobusha Conservation Districts)  
Contact Sherry Bishop to RSVP  
662.675.8000 ext.100

### Monitoring Water Quality on the Graves Farm

Mike Graves and his sons farm corn and soybeans in Tippah County and planted their first ever cover crop last September after their corn harvest. Mike Graves wants to use cover crops to break up subsurface compaction and to increase soil organic matter. In addition, NRCS has teamed up with Mississippi State University to monitor edge-of-field water quality through an EQIP-based program under the National

Water Quality Initiative (NWQI). Monitoring stations will compare runoff from fields with and without cover crops for the next three years (Figure 3).

“The radish and wheat cover crop provided about 60-70% cover by January,” says soil conservationist John Estes. Estes used the Canopy Cover Free app on his smartphone to track growth of the cover crop. Canopeo is another free app that can help producers and NRCS staff quickly assess green canopy cover.

Mike Graves will grow soybeans next year and plant a cereal rye and crimson clover mix after harvest. Mississippi has expanded the NWQI program for three watersheds in the state with applications due in March to encourage adoption of projects similar to the Graves Farm.



Figure 3: MS State University sensors monitor water quality of field runoff



Figure 4: Cover crop mix is drilled into corn stubble on the Graves farm in October

## Selecting the correct inoculant for legume cover crops



Figure 6. Sunn hemp nodules

Plants of the legume family are able to fix up to 50-200 lb/acre of plant-useable nitrogen under optimum conditions. Acting Hawaii PMC manager David Duvachelle explains that one primary reason farmers plant leguminous cover crops is to fix nitrogen for their cash crop; however, this can only happen if the cover crop legume plant forms a symbiotic relationship with the correct bacteria (called rhizobia). (Table 1). Inoculating seed at planting can insure that the correct bacteria is available to the legume plant. Supplying an adequate amount of inoculant is important, as it takes 100-1,000 rhizobia per gram of soil to induce adequate root nodulation.

The un-inoculated seed should be mixed with inoculant prior to planting. Producers should follow the manufacturer’s recommendations regarding the strain of *Rhizobium* bacteria and the amount to be added to the legume seed. Find more information on inoculants [here](#)



Figure 5. Well-inoculated sunn hemp thrives at the Hawaii PMC

Table 1. Common legumes and corresponding rhizobium species

Plant species	Bacteria species
Vetch, Field pea	<i>Rhizobium leguminosarum</i> bv. <i>viciae</i>
Peanut, Cowpea, Pigeon pea, Lablab, Mungbean, Sunn hemp	<i>Bradyrhizobium</i> spp.
Soybean	<i>Bradyrhizobium japonicum</i>
Clovers: balansa, crimson, berseem, white, alsike, etc.	<i>Rhizobium leguminosarum</i> bv. <i>trifolii</i>

## Meet the new members of your PMC team

Georgia PMC manager Richard Barrett and the rest of the regional PMC team would like to welcome two new employees to the Jimmy Carter PMC in Americus. Mississippi also welcomes Terry Turner back to the team.

### GAPMC

Clyde Johnson  
Farm Foreman



- New farm foreman (September 2015)
- Previously worked with USDA-ARS as a biological science technician
- Background in corn research with Monsanto Chemical Company
- Clyde enjoys hunting, fishing, camping, attending church and spending time with family

### GAPMC

Nick McGhee  
Agronomist



- New agronomist (January 2015)
- Education in AgriScience & Environmental Systems (B.S.)
- Background in Agriculture and Natural Resources Extension with University of GA
- Nick enjoys camping, hunting, fishing and being outdoors

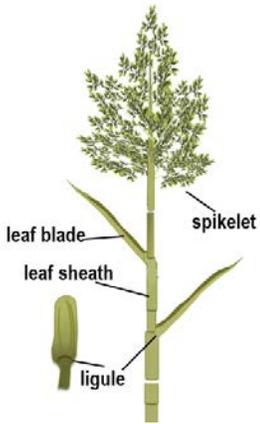
### MSPMC

Terry Turner  
Biological Sci. Tech.



- New biological science technician (August 2015)
- Background in commercial trucking
- Worked in the same capacity for the MSPMC 10 years ago
- Terry enjoys coon hunting with his team of beagles and spending time with his family

# Small grain identification



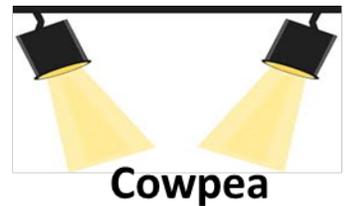
Identifying small grains without seedheads can be challenging. Producers and NRCS staff need to accurately distinguish vegetative characteristics in the field to evaluate stand success.

Florida PMC manager Janet Grabowski shares some quick tips to help identify cereal rye, common oat, and common wheat using vegetative grass morphology.

Find more species and tips [here](#).

	Cereal Rye	Common Oat	Common Wheat
<b>Seedhead</b>			
<b>Seedling</b>			
<b>Leaf sheath</b>	Leaf sheaths usually hairy, leaf blades may or may not have hairs	Leaf sheaths and blades usually hairless	Leaf sheath and blades usually hairless
<b>Ligule</b>	Short ligule	Rounded and finely-toothed ligule	Ligule rounded and often ragged
<b>Auricles</b>	Short, pointed auricles, not hairy	No auricles	Auricles if present, small and hairy
<b>Leaves</b>	Blue-green leaf color	Leaves upright, waxy with a bluish cast	Bluish to gray-green leaf color
<b>Leaf blade</b>	Leaf blades twist clockwise	Leaf blades twist clockwise	Leaf blades twist clockwise
<b>More info</b>	<a href="#">More cereal rye information</a>	<a href="#">More oat information</a>	<a href="#">More wheat information</a>

# Cover crop spotlight: cowpea



Even though temperatures in the Southeast are still chilly, it is important to talk to landowners who are interested in summer cover crops. One good choice for many situations, such as vegetable rotations, is cowpea. Cowpea (*Vigna unguiculata*) is an excellent summer cover crop for use in the Southeast because of its tolerance for hot conditions, exceptional drought tolerance, and ability to contribute 100-150 pounds of nitrogen per acre to the soil. Cowpea can grow on infertile soils as it scavenges P, K, and N. It also does an excellent job of suppressing weeds due to its bushy growth habit (Figure 11).

Which cultivar is best for the southeast? A new study in Georgia, Florida, and Mississippi is testing three top contenders below for adaptability.

**'Iron and Clay'** is the most common cultivar in the Southeast composed of two cultivars, Iron and Clay. Standout characteristics: resistance to root-knot nematodes and Fusarium, medium to late-maturing. This cultivar is a favorite for planting in wildlife food plots because the plants continue to grow and produce forage after the seeds drop (unlike many other cowpea cultivars).

**'Red Ripper'** is an heirloom variety from the 1800s with a vining growth habit and dark red seeds. Standout characteristics: early maturing (usually producing seed in 90 days), better adapted for use as a cover crop on sandy soils than Iron and Clay. Red Ripper seeds are quite tasty and can be eaten either fresh or dried.

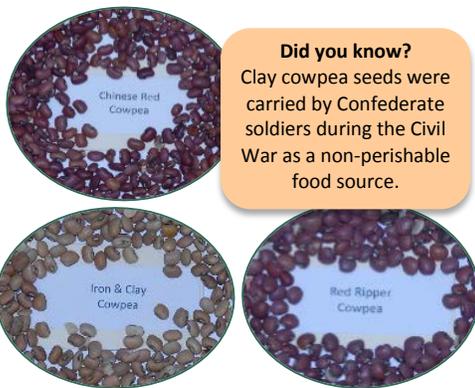
**'Chinese Red'** also is a vining plant with seeds more oblong-shaped than those of Red Ripper. Chinese Red is reported to be susceptible to root-knot nematodes, which may limit its use as a cover crop in the Southeast. Standout characteristics: good resistance to Phytophthora root rot, early-maturing, and produces high seed yields.

See the [SARE](#) site or [PLANTS database](#) for more cowpea information.



Figure 11. Cowpea leaves are in three parts (left), cowpea smothers weeds (right)

and produce forage after the seeds drop (unlike many other cowpea cultivars).



**Did you know?**  
Clay cowpea seeds were carried by Confederate soldiers during the Civil War as a non-perishable food source.

Table 2. Cowpea fast facts

Cowpea Plant Facts	Warm-season legume in the Fabaceae (Pea) family
Planting date	After harvest of winter vegetable crops, around when soybeans are planted (soil temperature is 65°F). May be hay/grazing crop between milo harvest and wheat planting (instead of soybeans).
Seeding rate	Varies; in general drill 30-90 lb PLS/acre for pure stand, reduced for mixes, 100 lb/ac or more for broadcast
Termination date	Varies, chemical or mechanical means should be done before stems become tough and seed pods are set
Mixes well with	Buckwheat, sorghum-sudangrass, pearl millet

## Contact Us!

- Brooksville PMC (Florida) (352) 796-9600
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- Jamie L. Whitten PMC (Mississippi) (662) 675-2588
- [National Plant Materials Website](#)

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Contact Alayna Jacobs at [alayna.jacobs@ms.usda.gov](mailto:alayna.jacobs@ms.usda.gov)