

# Another Conservation Success Story...

## Pulaski County, Georgia

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### Suppressing Invasive Pigweed

By Jackie Busby, Soil Conservationist, Hawkinsville

Christopher Martin stood gazing across the large field of green, head high rye, thinking “What have I gotten myself into this time?” “Will my equipment get through this much rye?” “Can I get a good stand of cotton planting in rolled straw?” “Will this rye mat hold the pigweed back and give me the weed control I’ve been looking for?”

The current scourge of cotton production in Georgia and the Southeast is an herbicide resistant pigweed which is known as Palmer Amaranth. This high seed producing plant is rapidly increasing its territory despite herbicide applications. Previous weed wars made it obvious to Martin that new or additional weapons would be needed to take on this mutated pigweed.

**“I am increasing the acreage I am planting using the rolled rye technique,” — Christopher Martin.**

Research conducted by Stanley Culpepper, extension agronomist, specializing in weed science and others, proved that rolling down rye into a thick mat to block out sunlight is highly effective in the reduction of pigweed seed germination in crop fields. Research also indicates that allowing the cover crop to mature until it blooms, gives the best results by providing an extended period of soil shading.



Cotton with pigweed

Rye was chosen as the cover crop due to its chemical properties which discourages the “germination” and “growth” of other plants.

Establishing a thick, tall, rye cover crop on Martin’s farm was step one in this pigweed war. High seeding rates, early planting date, and/or fertilization can be used to obtain the desired high volume of rye cover. “I had tried rye cover crops and strip tilling before,” said Martin. “However, having this much rye, rolling the cover crop, and planting into a six inch strip, was new for me.”

The second step in the battle for control of Martin’s cotton and peanut fields was to roll the rye cover down in the same direction as the following crop will be planted. Martin, along with other producers in the pilot project area, developed a heavy steel pipe roller 21 foot long to roll down and compress the green rye plants. The heavy roller worked like a charm. It forced the mature but still green rye into a soil shading mat - very little of the rye stood back up. After rolling the rye, a herbicide was applied to kill the rye.

Finally, Martin planted cotton seed into six inch strips. This required some adjustments to his strip-till planter. During prior years, Martin planted into one foot strips. The goal is to disturb no more soil than necessary to get good soil seed contact. In addition, leave the rolled rye undisturbed to shade all areas except directly above the crop. “This planting resulted in an excellent stand of cotton, devoid of pigweed plants. Along with post planting applications of herbicides, the thick rye cover crop resulted in excellent suppression of the pigweed and other yield robbing



Martin shows how rolled rye is helping his peanuts.

weeds” said Jackie Busby, soil conservationist in Hawkinsville.

The rye cover deteriorated slowly and helped maintain exclusion of sunlight until the cotton was able to shade the soil surface and impede germination of weed seeds. Time was just what Martin needed, time to allow the planting of the crop into a weed free environment, time for the seed to germinate, and time for the seedling to grow into a crop big enough to shade the ground for itself.

Martin remarked that “I had my doubts when we started. Now after the second season of planting into a rolled rye cover crop; I am sold on the practice. I am increasing the acreage I am planting using the rolled rye technique.”

The Natural Resources Conservation Service (NRCS) offers cost-share to farmers in the Environmental Quality Incentive Program (EQIP) Pigweed Pilot Project Area as an incentive to implement these practices and combat the rampant onslaught of herbicide resistant pigweed. NRCS reimburses participants after the cover crop is planted and again after the strip cropping is applied to NRCS standards. This assistance is available for two consecutive years (in the same fields). Martin and many other farmers in the pilot project area are participating in this program.

Other partners in this pigweed project include the Georgia Cooperative Extension Service, the University of Georgia College of Agricultural and Environmental Sciences and the GA Cotton Commission.

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