

INTRODUCTION TO COVER CROP ROLLING & THE VA-USDA CRIMPER ROLLER DEMONSTRATION PROJECT

September 2006 Short Version - available at: http://www.va.nrcs.usda.gov/technical/crop_agronomy.html

1. Overview of VA Roller Demo Project

The goal of the Virginia-USDA Cover Crop Crimper Roller Demonstration Project is to evaluate the potential for increased use of cover crop rolling in Virginia. Our strategy is to provide two farm-scale cover crop crimper rollers for Virginia farmers and their advisors to try. Rollers and trailers to move them are available to borrow and use free-of-charge. Rollers are housed in Harrisonburg and Tappahannock. Scheduling is handled by the Soil & Water Conservation Districts in these localities. Call the contacts below to learn more about rolling or borrowing our rollers.

2. What Is Cover Crop Rolling?

Cover crop rolling is an advanced no-till technique. It involves flattening a high-biomass cover crop to produce a thick, uniform mat of mulch. A cash crop is then no-tilled into the mulch. If the right kind of roller is used on the right cover crop at the right time, the rolling process itself will kill or partially kill the cover crop. This means burndown herbicides can be reduced or eliminated. There are other potential advantages as well as disadvantages to this technique of no-tilling into a very thick mat of mulch.

Cover crop rolling has been used for decades on millions of cropland acres in South America. It has also been used successfully by individual farmers and researchers from Alabama to Pennsylvania, but has yet to see widespread adoption in the U.S.



Rolling down rye with our 15.5-foot unit in New Kent



Our 10.5-foot roller at work in Shenandoah Valley

Contacts for VA-USDA Roller Demonstration Project

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3. Who Should Consider Rolling?

Cover crop rolling is *not* for everyone. To help you decide if it might work for you, we've provided the following profiles of Virginia growers who we think are most likely to benefit:

A. Traditional Field Crop Producers

If you are a traditional field crop producer (corn, soybeans, cotton, etc.), cover crop rolling may be for you if most or all of the following are true:

1. You are an experienced no-tiller or you plan to become one;
2. You grow later-planted crops such as full-season soybeans or cotton, or you might consider delaying the seeding of earlier-planted crops like corn;
3. You grow cover crops, you are willing to kill them late, and you are willing to manage them for high biomass production;
4. You have a strong interest in maximizing soil organic matter and soil quality on your land.

B. Vegetable and Specialty Crop Producers

Many vegetable and specialty crop producers should take a close look at cover crop rolling, whether or not they have ever no-tilled a crop before. For example, there is a special place for rolling ahead of crops like no-till pumpkins because of the clear production advantages of keeping fruit from touching soil all summer.

C. Organic Producers

Cover crop rolling should be of great interest to all organic (pesticide-free) producers, because it opens the door to herbicide-free no-till and the cost-savings and soil quality benefits associated with reduced soil disturbance.

4. Which Cover Crops Roll Best?

A. Many Species

Rolling is for killing annual cover crops. It is most often used on winter annual cereal cover crops like rye. In Virginia, tall cereal rye appears to be much better suited to rolling than barley and wheat. This is logical because most barley and wheat has been bred for standability and short straw. Winter annual grass/legume mixes like rye/hairy vetch or barley/crimson clover also work well.

B. High Yields

Rolling is for killing high-yield cover crops. Even if the right species is rolled with the right tool at the right

growth stage, the full benefit of rolling will not be seen unless there is a lot of cover crop biomass. Therefore, you may need to spend more time and money growing a cover crop for rolling than you would growing a typical cover crop. For example, if you are trying to grow a high-biomass rye cover crop for rolling on a sandy Virginia Coastal Plain soil with low nitrogen (N) carryover from the previous crop, a minimum spring application of 30 lb/ac of N will probably be needed to achieve the desired biomass. Remember, we expect this investment in your soil to pay you dividends in the long run.

C. Uniform Stands

Rolling is for killing uniform stands of high-biomass cover crops. Uniform stands are important for uniform mulch thickness, which can have key planting and weed control implications.



Organic soybeans no-tilled into rolled rye, King & Queen Co.
No-herbicide no-till!



Our special trailers can lay flat on the ground if needed, so rollers can be loaded and unloaded without lifting.