

Cover crop cocktails come under the lens

Genevieve Slocum
King's AgriSeeds

This fall, King's AgriSeeds planted more than 50 small plots for research and demonstration of cover crops, showing mixtures of various species, as well as the effects of varying seeding rates and planting dates.

The plots showcase variations of grass and legume mixes, as well as some brassicas.

One of the research fields contains Masters Choice corn plots, in which the benefits of the preceding cover crop management were apparent — both visually and in the numbers.

These plots included 21 hybrids that all grew vigorously, maintained plant health and excelled in both grain — 181 to 283 bushels per acre at 15.5 percent moisture — and silage yields — 26.97 to 39.5 tons per acre at 65 percent moisture.

The plots had received no additional fertility other than a preceding crimson clover cover crop that had been grown to the full bloom stage, then sprayed and killed.

The clover was then spread with semi-solid manure. Following this, the corn plots were no-till planted into this nitrogen-rich mulch mat, which provided a steady slow-release fertilizer as the nitrogen in the biomass and ma-

nure mineralized over the course of the corn's growth.

The cover crop/manure mat formed a plasterlike consistency as it dried and provided excellent weed control until it began to break down.

Post-emergence herbicides were also sprayed to enhance and complete the weed control. During the company's cover crop field day, the mat was uncovered, showing earthworms busily working and feeding on the remains of the cover crop and pulling it down into their holes, digesting it and leaving nutrient rich worm castings in the plots, improving soil quality even more.

An adjacent field was planted in a mixture of hairy vetch, oats and crimson clover in preparation for 2015 corn research plots. This cover crop will be managed in a similar manner to last winter's crimson clover, sprayed and plastered with manure prior to the no-till corn planting next spring.

Because of the prolific, viny nature of the hairy vetch in the mix, the cover crops will be rolled down to flatten them into a mulch with a packer, after being sprayed and before the no-till planting of corn.

The three-species mix provides nitrogen from the legumes, a certain degree of other nutrient cycling and a diverse, weed-suppressing canopy.



Submitted photo

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Scholarships awarded at Pa. Grassland Evaluation Contest

HARRISBURG, Pa. — The Pennsylvania Grassland Evaluation Contest took place Oct. 14 at Penn State Ag Progress Days.

The contest is an experiential education opportunity for Pennsylvania high school students enrolled in FFA and 4-H programs, or members of high school affiliated clubs. Contest programs focus on the value and benefits of pasture management, livestock grazing and soil health. Winning teams receive scholarships toward their education at any accredited institution and the opportunity to compete in a National Competition in Missouri.

Nine student teams from across the commonwealth competed in this year's events. The 2014 winning team from Conococheague FFA

included students Grant Heckman, Blaine Peiffer, Austin Wingert and Jayce Keafer led by faculty adviser Sean Scanlon. All first-place team members received a \$500 scholarship for college.

Conococheague FFA Team II took second place with students Mikayla Barnhart, Paige Plessinger, Donald Barnhart and Benjamin Miller, all receiving a \$250 scholarship. Austin Wingert was the highest-placing individual for the contest and received an additional \$500 scholarship toward a college of his choice.

For more information or to sign up for next October's event, contact Dan Griffith, Westmoreland Conservation District, at 724-837-5271 or by email at wcd@wcdpa.com.

Hayfield is test ground for crop-soil health

DURHAM, N.H. (AP) — Researchers are testing the use of cover crops such as grasses and legumes on a 1-acre hayfield in Dover, N.H., to help farmers improve soil health.

University of New Hampshire scientists have teamed up with the Strafford County Conservation District to try out different combinations of the crops. The aim is to test all of the combinations of hayfield management and seeding — 64 plots total — to determine which approaches work best for soil health and hayfield productivity.

Such crops also are used to reduce erosion and control pests.

The team says the project is part of a larger effort to develop more sustainable agricultural systems and support climate-smart agriculture — not using tillage or chemical fertilizers.

The project is funded by the New Hampshire Agricultural Experiment Station at the University of New Hampshire College of Life Sciences and Agriculture.

Two of the district's pieces of farm equipment, a no-till seeder and a soil aerator, are being used in the research project.

Managing winter and spring annual weeds

JOHNSTON, Iowa — Winter and spring annuals germinate and emerge in late summer through early spring. DuPont Pioneer agronomists explain that these weeds can overwinter by becoming semi-dormant and resume growth in early spring, flower and complete their life cycle before or shortly after the typical spring planting season.

In the past, cultural practices such as herbicide use patterns or tillage methods have precluded winter and spring annual weed species from becoming agro-

nomic problems. However, weed control programs centered around nonresidual herbicide application have increased, particularly on soybean production acres. Winter annual weeds have become a more widespread issue, presenting an additional challenge for many farmers at planting time.

In the spring, the problems created by the growth of winter and spring annual weeds impact many aspects of crop production. In no-till fields, weed cover reduces soil warm-up and dry-down, potentially delaying planting and impacting seedbed quality. In

conventional tillage fields, several tillage passes may be needed to prepare a suitable seedbed. These weeds can also act as an alternative host for soybean cyst nematode, attract black cutworm moths and may facilitate seedling disease. Finally, weed competition itself may be an issue, as some species persist well into the summer.

A fall application of residual herbicide program is an excellent way to burn down emerged winter annuals and provide residual control of later-germinating winter and spring annuals in no-till and conventional fields.

Arm your silage with inoculants

Production of quality silage involves winning a war fought on a microscopic level between "armies" of microbes. Inoculants help reinforce the beneficial bacteria in this fight. These products are often lactic acid bacteria, or LAB, that provide an efficient front-end fermentation to maintain feed quality and stability.

There are many different LAB inoculants to choose from, and growers should select a product that fits the crop being ensiled, local conditions, farm practices and silage history.

"As a general rule of thumb, you can't go wrong with an inoculant that drops the pH of the

forage as quickly as possible, i.e., making a good fermentation better" said Renato Schmidt, Ph.D., technical services, Lallemand Animal Nutrition. "A rapid pH drop will help maximize dry matter and nutrient retention, plus it will minimize the risk of spoilage."

To achieve a rapid pH drop, Schmidt recommends looking for homolactic LAB strains such as *Pediococcus pentosaceus*, *P. acidilactici* and *Lactobacillus plantarum* that are proven to convert sugars efficiently to lactic acid.

Next, it's important to ensure the LAB are not limited for their

own food supply, Schmidt recommends. A good inoculant will contain enzymes to help feed bacteria. Also, using the right number of colony-forming units, or CFUs, per gram of forage will ensure there are sufficient amounts of "good" microbes that can help growers win the fermentation battle. Look for an application rate of 100,000 CFUs or greater for front-end fermentation inoculants. This is the

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