



ACS

Agricultural Consulting Services

Winter/Spring 2016 Newsletter

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Interseeding Cover Crops

How it's getting done on some farms in Cayuga County
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There are many interseeded cover crops planted in Cayuga County this year, thanks in part to the efforts of Jonathon Martin with Auburn Ag Products. With the many potential benefits of cover crops and the challenge of getting them adequately established *after* corn silage or grain, it is no wonder there is such interest in interseeding. The interseeding concept is that a cover can be planted using an interseeder into a growing crop without competing for nutrients while also improving soil quality, organic matter, and reducing the potential of runoff or nutrient loss.



Twelve row interseeder designed to plant a cover crop into a growing crop.

Interseeding typically takes place on corn staging V5 to V7, giving the cover the best chance to establish before the canopy closes. The cover crop depends on adequate soil moisture and sunlight to get established. After the canopy closes, the cover goes dormant during the warmest parts of the growing season and resumes growth after corn harvest. Interseeding covers have been used on soybeans as well, with best results in a ridge till situation.



"Indy Mix", a combination of tillage radish, annual rye grass, and crimson clover interseeded at V4-V5. Photo taken 3 weeks after seeding.

While interseeding cover crops is not a new practice, in recent years it has grown in popularity. During the 2015 growing season, Jonathon put interseeding to the test. It was their first year attempting the method, with a mentality of "Can this successfully be done in NY?" He worked with 9 Cayuga County growers on almost 1,000 acres to interseed a cover. They used a 12-row interseeder and went straight to work seeding until the corn grew too tall.

Jonathon worked with each grower to select a seed mixture that would best suit each farm's conditions and current crop rotations. The most popular used were the "Indy Mix" and "Dover Mix" from Cover Crop Solutions. The Indy is a mix of Tillage Radish, Crimson Clover, and Annual Ryegrass. It was interseeded at 15 lbs./acre at a depth of around $\frac{3}{4}$ of an inch. The Dover is a mix of Tillage Radish and Oats. It was interseeded at 25 lbs./acre at a depth between $\frac{1}{2}$ - 1 inch. Since there is not one specific mix that can be used in every situation and crop rotation, custom seed blends can be tailored to a grower's needs.



The same "Indy Mix" mid-November post silage harvest.

While Auburn Ag Products' seeders only interseed cover crops, there are new machines being developed with the ability to apply nutrients and post-emergent herbicide applications during the interseeding process. This would allow a grower to make fewer passes through a field, reducing compaction and operating costs while seeding an early cover. This also offers substantially more time for the cover to establish before winter. Fly-

on broadcast application with small aircraft has been used as an alternative to interseeders with some success.



Sample on the left was a seeding drilled post-harvest. Both samples to the right were interseeded into V5-V7 corn. Interseeded cover showed more than 10 inches greater growth over post-drilled by mid-November.

If you want more information on interseeding, contact your ACS Service Manager or Auburn Ag Products.

10 Things You Should Know About the New CAFO Permits

Draft new CAFO Permits for New York state farms were released for public comment just before the end of last year. Comments from farm groups, planners, and the public were submitted to the NYS DEC in February. ACS Planners reviewed both new permits and made their comments to the DEC. Collectively, ACS has a ton of experience with the CAFO Permit program: how it works well, how it doesn't. We expect that the DEC is as interested in making the CAFO program work, and work well, as we farmers and planners are, and will take our interests into account when they issue the final, legally binding permits. New permits are to become effective on July 1, 2016.

The Basics of the New (Draft) CAFO Permits:

1. There are two different permits. First, the ECL (Environmental Conservation Law) Permit, GP016001, operates under NY state law. It is a "No Discharge" permit. It is for an operation that has been designed, constructed, operated and maintained to not discharge manure or process wastewater. Only those farms that are in full compliance with their CAFO permit and have completed all required Best Management Practices will be eligible for the ECL permit.
2. Second, the Clean Water Act (CWA) Permit, GP016001, is more like the national EPA CAFO Permit. It is a permit to discharge manure or process wastewater under clearly defined conditions
3. Both draft permits are written clearly, not a chore to read. We encourage you to get copies and come to your own conclusions. They are available at <http://www.dec.ny.gov/permits/6285.html> (or ask us for copies).

4. Farms who already have CAFO Permit coverage will need to reapply to become covered under one of the new permits. They continue to have permit coverage and have 150 days after the July 1 to submit a Notice of Intent and CNMP Certification to the DEC to register under a new permit.
5. Farms must consider both permits carefully before choosing one. The significant change in the draft CWA Permit is a requirement that a farm must submit a copy of its Annual Nutrient Management Plan to the DEC. The plan will be posted to a public notice board (website) and DEC will take public comments on plans for 30 days. The Clean Water Act requires public access to government documents related to its enforcement.
6. The new ECL permit, on the other hand, holds farms to a higher standard. It must: EPA does not allow states to regulate farms to lower standards than EPA does. The higher standard is that the farm does not discharge. The new ECL permit requires farm to plan to not discharge during a 100 year storm, instead of a 25 year storm as in current plans. What does that mean? An informed re-evaluation of the whole farmstead for stormwater flow paths, and maintenance of more storage space for a 100 year storm event.
7. A significant change, for both permits, is that farms must notify the DEC prior to constructing a manure storage greater than 1 million gallons, or expanding livestock more than 20%.
8. If there is a discharge, a farm covered under the ECL permit would no longer be eligible for its protection and would need to apply for the CWA permit.
9. Both permits bring in a new term: Wet Weather Standard Operating Procedures. They are "those management strategies determined by the facility to prevent discharges to surface waters of the State up to, and including, the 100 year, 24 hour storm event". It is not clear what this means. The CWA permit requires these WWSOPs only for new swine and CAFOs; the ECL permit, all farms.
10. Major differences remain between the two permits. The Clean Water Act Permit has met challenges in the courts for 40 years, even with its provision for citizens to file lawsuits, and has been tested with EPA inspections. The state ECL permit has not yet been tested in the courts, though it has been backed by state law and doesn't require the Annual NMP Submittal.

Farms have 150 days to sign up for one or other permit after July 1, meaning you will need to decide by December 1.

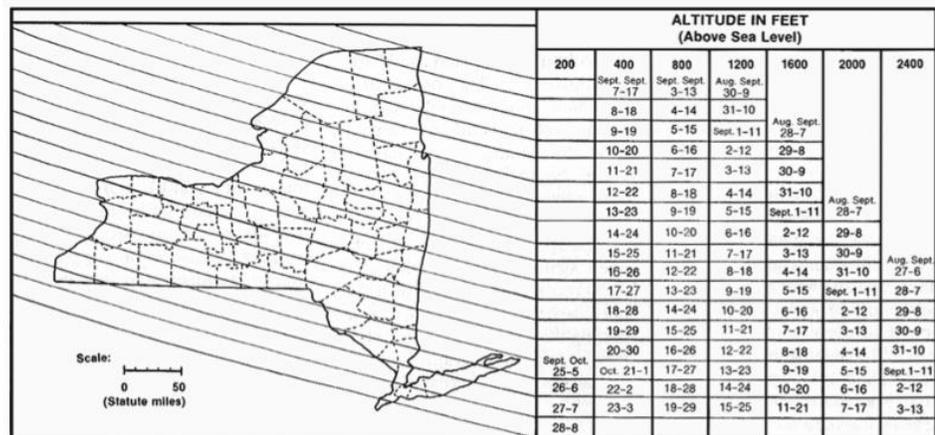
Right now, DEC is considering all comments and what changes it may make to the new CAFO Permits. ACS planners and consultants are busy working on your 2016 CAFO Updates, nutrient management recommendations, and 2015 Annual Reports, while anticipating how the new permits may change the world of CAFO compliance.

Winter Wheat Survival

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Below is the result of some winter research: a detailed review of winter

hardiness and how to have the best success getting wheat plants to overwinter, and the criteria we use to evaluate overwintering success.



Hessian Fly-Free Table. Source: Cornell Cooperative Extension. Cornell Guide for Integrated Field Crop Management. Ithaca, N.Y.: Cornell Cooperative Extension, 2016.

Understanding the Hardening Process

There is a physiological process of winter hardiness or cold tolerance triggered by the gradually cooling temperatures in the fall and shortening day length. When wheat plants go through this process, they develop an antifreeze-like substance that protects them from the harsh winter. For maximum protection, plants need to go through a 4-6 week process in the fall where soil temperatures are below 50° Fahrenheit in order to fully initiate cold tolerance. Once the wheat become fully winter-hardy, it will remain in that state as long as crown temps are below 32° F and good energy reserves have been established earlier in the fall. The ideal scenario would be bare soil in the fall with gradually cooling temperatures, and once plants fully harden, a 1-2 inch snow pack will help insulate them from the dramatic weather fluctuations in the winter.

Winter hardiness is not a fixed process; if crown temps reach 50° F or more they will un-harden and will re-harden if crown temps go below 50 again; plants re-harden but they will not achieve maximum hardiness again. After wheat becomes fully hardened, if cold temps at the crown reach single digits, injury can occur. If the crown temp remains in the single digits for an extended period of time, death can occur. Even in a state of winter hardiness, the wheat continues to respire and the roots may even continue to slowly grow, as long as the soil is not frozen.

Ideal planting conditions for optimal survival

- Plant after the Hessian fly-free day, but early enough in the fall so that plants develop a crown and secondary root systems in order to build and store good energy reserves. (See the corresponding table taken from the Cornell Field Crops Technical Guide.)
- Seed placed phosphorus can ensure healthy growth in the fall and can lead to better winter hardiness.
- Planting to a depth of 1-2 inches to prevent weak spindly seedlings. Ideal conditions are well developed crowns in well-packed soil and buried below 1" of soil.

- Plant early enough to ensure 1-2 tillers in order to be able to store enough energy reserves to survive the winter and a minimum of 4-5 leaves.

Spring evaluation of winter wheat

- The crown must be evaluated in order to determine winter survival. Healthy, white crowns and newly developed roots means the plants are in good condition.
- There may be some brown, dried leaves on the upper portion of the wheat canopy; this does not necessarily indicate winter kill. Any green leaves do not signify winter survival, the crown is the key.

Wheat green-up is just around the corner. Good luck with your crop this year!

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