

# TURN ROWS

A NEWSLETTER COVERING THE SOUTHERN REGION OF NORTH CAROLINA

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## Topics:

- Goodbye 2013
- Late Planted Cover Crops
- Timely Applications for Weed Control
- Hessian Fly Management
- Soil pH Affecting Yields

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## Saying Goodbye to 2013

**CAUTION:** Information & recommendations presented are applicable in the Southern Region of NC & may not apply in your area. Consult your local extension agent.

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We may not all be looking forward to 2014, but I do believe that most everyone will be glad to see 2013 end here within the month. The year gave us extremes in terms of seasonality, weather and production yields. Many producers started off the year with a very wet spring wheat harvest which continued over into corn and soybean planting. This region of the state saw tens of thousands of acres that were not able to be planted in a timely fashion resulting in prevented planting strategies. We saw growers switch seed planting at the last minute due to marketing futures and again the continued weather fiasco. Following the wet spring, we became very dry and then right about corn harvest another wet period. Overall corn yields were above average, and the same with early planted soybeans. Our late planted soybeans and most cotton did not fare as well in terms of yield. As producers finish up small grain planting, we certainly hope and pray for a successful upcoming year in all facets of agriculture. From all the agents involved in the TurnRows production we thank you for your continued support for Cooperative Extension, and look forward to serving you in the new year.



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# **Late Planted Cover Crops**

Jessica Morgan---Anson County

The benefits of winter annual cover crops have long been known to producers in North Carolina. Erosion control, water infiltration, weed control as well as possible Nitrogen contribution from legumes are all benefits to utilizing cover crops. With summer crops being harvested so late this year, it is important to note that planting a cover crop late is better than not planting at all. However, there are certain covers that do better with the lower temperatures and shorter season.

Cereal grains, crimson clover, hairy vetch, winter peas and common vetch are all widely adapted to soil and climatic conditions in NC, however there are some limitations when we get this late in the season. Hairy vetch tends to be more winter hardy than other legumes and can typically be planted later. Hairy vetch is a little more difficult to manage since it has a vine like nature but has the added bonus of Nitrogen accumulation since it is a legume.

Stand establishment of small grains can be obtained with planting dates later than those of legumes, even getting into December in the coastal plain areas. Rye, wheat, triticale and oats are all options for late planting in the piedmont and coastal plain. Late fall harvested crops, like soybeans and cotton, can benefit from a stand of small grains as cover. Seeding rates are 1 to 1 ½ bushels per acre for rye, triticale, and wheat and 2 bushels per acre for oats. Seeding depth should be between ½ inch for finer-textured, clay type soils and up to 1 ½ inches for coarse, sandy soils. Drilling is the most reliable way to obtain a have a successful stand, broadcast is an option if the soil has been broken up and smoothed.



Hoyt, G.D., Waggoner, M.G. & C. Crozier. "Soil Facts: Winter Annual Cover Crops." North Carolina State University. North Carolina Cooperative Extension Service. 2004.

Mannering, J.V., Griffith, D.R. & K.D. Johnson. "Winter Cover Crops- Their Value and Management." Purdue University. Department of Agronomy. Purdue University Cooperative Extension Service. 2007.

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# **Timely Applications for Weed Control**

Mac Malloy---Robeson County



Winter weeds can be very competitive for water and nutrients in wheat production. Generally, larger weeds are more difficult to control.

Timely applications are critical to achieve optimum weed control, especially for troublesome weeds such as henbit, chickweed, annual bluegrass, and Italian ryegrass.

TimThese same weeds can be emerging at planting, so don't let them get a head start on your crop. Applications for some weeds, such as annual bluegrass, need to be made before they reach the size of a quarter.

In no-till situations, a preplant burndown application of paraquat or glyphosate is highly recommended. Consider using residual herbicides, such as Valor SX or Sharpen, in the burndown application to suppress early-season

weeds. For early postemergent control of most winter broadleaves in wheat, apply Harmony Extra SG after wheat reaches the two-leaf stage before the weeds get too large. Several other options are available later in the season when the wheat has reached more advanced growth stages. Axial XL, Hoelon, Osprey, and Powerflex are all labeled for postemergent control of Italian ryegrass. Be sure to rotate mode of actions of these herbicides in areas that haven't already developed resistance. Osprey is the only herbicide labeled for postemergent control of annual bluegrass in wheat.

Since herbicides control weeds by affecting some type of growth process, applications should be made when weeds are actively growing for best results. Avoid applications during drought, wet, or cold conditions. Better activity is obtained with most postemergence herbicides under warmer temperatures. Nighttime temperatures should be above 35°F for three days before and three days after an application. Many herbicides used in small grain production should be applied at specific growth stages to avoid crop injury.

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## Weed Control Continued..

Be sure to check the N.C. Ag Chemicals Manual and product labels for specific details before selecting an herbicide. For more information, check out the 2013 Small Grain Production Guide found at [www.smallgrains.ncsu.edu](http://www.smallgrains.ncsu.edu). Hardcopies should be available at your local Extension Center as well. Remember, one of the best tools to suppress weeds is to maintain a healthy, vigorous crop.

## Hessian Fly Management

Paige Burns---Richmond County

Hessian fly is a pest North Carolina growers have learned to deal with in recent years. Once more familiar in the mid-west, it's becoming more common in wheat fields in North Carolina. There are several reason for this: early-planted wheat is more susceptible to Hessian fly infestation, and double cropping and no till cropping systems favor the insect. Wheat stubble in the field or nearby is often the source of infestation. The adult Hessian fly is quite small, with two prominent legs that give it a similar appearance to a mosquito. The tiny, brown eggs are laid in lines along the leaf grooves and are extremely hard to see. Hessian fly can be found as early as August or September, in volunteer wheat, and complete a life cycle to lay eggs in wheat planted in October and November. After hatching, the larvae migrate down between the stem and the leaf sheath, and begin feeding. Infestation may cause tiller stunting and dieback, and can even reduce plant stand if infestation is severe. An additional generation may impact spring wheat beginning in March, when larvae move into the stem joints, causing weak plants, small heads, and may result in plant lodging where infestations are heavy.

Because the eggs of Hessian fly are so hard to see, the best way to monitor for the presence of the pest is weekly check ups on wheat development from late November into December. As the wheat is monitored week by week, are plants progressing or going backwards, with dying tillers? Dead leaves, excessively green leaves in the plant, and/or leaves that are more broad than typical may be symptoms of Hessian fly infestation. Gently dig up a wheat plant and check at the base of the tiller, pulling the leaf sheath away from the stem. The maggot-like larvae, creamy to translucent white, will be nestled down beside the stem. You may also see the pupae, which are brown and have the size and appearance of a flax seed.

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## Hessian Fly Continued..

How to manage this pest? Cold temperatures kill adults, however in our area the timing of a killing frost is hard to predict, and growers usually can't wait on cold temperatures to plant wheat. Tillage destroys the wheat stubble in which the pupae survive the summer, if tillage is an option. If Hessian fly was a problem in the previous wheat crop choose a resistant variety (for a list of varieties: [http://www.smallgrains.ncsu.edu/\\_Misc/\\_VarietySelection.pdf](http://www.smallgrains.ncsu.edu/_Misc/_VarietySelection.pdf)), and include a seed treatment with a neonicotinoid such as Cruiser or Gaucho. If you did not use a seed treatment or planted a susceptible variety and have Hessian fly history, consider spraying at the 2-3 leaf stage with Warrior or Mustang Max, which will kill hatched adults. In the spring spray as adults emerge, usually in March. Keep in mind such sprays will only kill hatched adults; research has not demonstrated impacts of pesticide sprays on larva, which are protected in the stem joint or leaf base, and while sprays may have some residual impacts, the effects have not been documented.



For more information link the Hessian fly management publication at: <http://www.aces.edu/agriculture/insects-diseases-weeds-pests/HessianFly/> Download a free .pdf with interactive links to web-based data at: <https://store.aces.edu/ItemDetail.aspx?ProductID=13507>. A video on Hessian fly biology management is also available at: <http://www.youtube.com/watch?v=Z4WnuXs0QGc> - t=15.

## Soil pH Affecting Yields

Keith Walters---Hoke County

*Written by: Dr. Ronnie W. Heiniger, Extension Corn Specialist*

Soil pH is an important factor in determining crop performance in North Carolina. Low pH levels affect nutrients by converting them into forms that are not readily available to the crop. In addition, low pH levels can increase the solubility of plant toxic metals such as aluminum resulting in stunted growth and a general lack of plant vigor. Because the soils commonly found in the southeastern US tend to be highly weathered and average yearly rainfall is high, pH levels in the surface and subsoil horizons tend to be low. In the sandy soils of the coastal plain, native pH levels often average less than 5.5, and on organic soils pH levels below 3.8 have been found. Therefore, to obtain optimum plant growth it is critical that soils be limed to increase pH levels.

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## pH Continued..

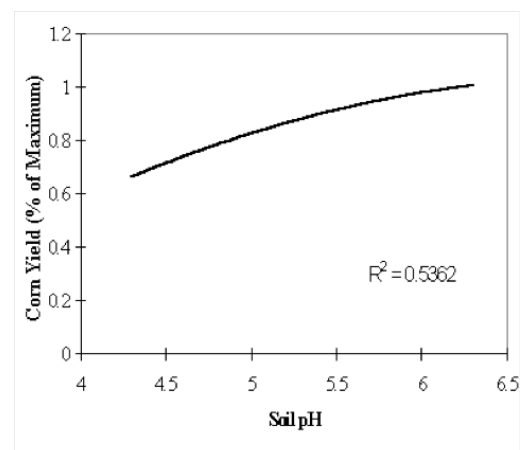
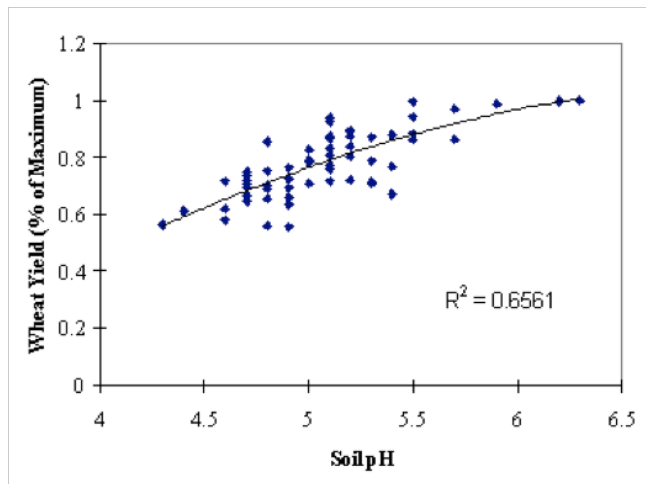
Current recommendations for soil pH levels depend upon the amount of aluminum in the soil. This varies by soil type. Following are the recommendations made by the North Carolina Department of Agriculture concerning target pH levels on different soil types:

Soil Type	Target pH
Mineral Soils	6.0
Mineral Soils	6.2
Mineral/Organic Soils	5.5
Organic Soils	5.0

In planning when to apply lime and how much lime to apply, it is critical to understand the affect of pH levels on crop performance. Figures 1 and 2 show the response of wheat and corn to different pH levels. Yield reductions in both of these charts are expressed as the percent of maximum yield expected under the prevailing environmental conditions. It is important to recognize that potential crop yields are determined by the weather conditions experienced during the year. Therefore, it is difficult to determine the absolute yield reductions caused by low pH levels without considering the weather conditions. To determine the impact of pH levels in any given situation, first determine the potential yield of the crop and then multiply that yield by the percent of maximum found for a given pH on the two figures presented here.

Fig. 1. The relationship between soil pH levels and wheat yields on mineral or organic soils in North Carolina.

Fig. 2. The relationship between soil pH levels and corn yields on mineral or organic soils in North Carolina.



## *pH Continued..*

Lime recommendations are a function of soil class, target pH, current pH, level of acidity (Ac) and residual credit (RC).

$$\text{Tons lime/acre} = \text{Ac} \times [(\text{target pH} - \text{current pH}) / (6.6 - \text{current pH})] - \text{RC}$$

To calculate the lime recommendation, you need the following information. Target pH can be found in the table shown above. Current soil pH and Ac values appear on the soil test report. RC is any amount of lime recently applied, reduced by a certain percentage for each month that has elapsed since application: 8% for mineral soils (MIN), 16% for mineral-organic soils (M-O) and organic soils (ORG). Residual credit decreases as the amount of time after the last lime application increases. After 12 months have passed since the last application of lime, the residual credit is 0.

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