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INTRODUCTION – FIELD CROPS AGENT

Let me take this opportunity to introduce myself. My name is Kent Wooten, and I’ve been with Extension for over 20 years serving in various capacities. I was born and raised here in eastern North Carolina on a tobacco farm and attended North Carolina State University with degrees in Soils, Pest Control, and Agricultural Economics.

I am looking forward to working here in Robeson County as the Field Crops Agent. Please contact me here at the Extension Center at 671-3276 or E-mail me at Kent_Wooten@ncsu.edu. We will be using E-mail to communicate with you if you have access, especially on time-sensitive information. Please take a moment and send me your E-mail address, so I can develop a database to use to distribute future information. I look forward to meeting you, and please don’t hesitate to call on me.

WEED RESISTANCE TO HERBICIDES - GLYPHOSATE

In 2005, palmer amaranth (pigweed) resistance to glyphosate (Roundup) was confirmed in Robeson County. For years, we have relied heavily on glyphosate to control this weed. One palmer amaranth per 20 feet of row in cotton can reduce yield at least 7%, and a single female plant can produce 500,000 seeds. Palmer amaranth is a very aggressive and prolific weed.

In 2006, 99% of the cotton acreage, over 90% of the soybean acreage, and approximately 40% of the corn acreage in North Carolina was planted to Roundup Ready. We are becoming more and more dependent on glyphosate-based crop production systems. With such dependence has come increasing concern for the development and spread of glyphosate-resistant weeds. Palmer amaranth and horseweed are already documented, and some levels of resistance are showing up in common ragweed.

In most cases, weed control failures that follow herbicide treatments are not due to herbicide-resistant weeds. However, if you suspect resistant weeds, you may be correct if:
The field has been sprayed repeatedly with the same herbicide (or the same mode of action).

A patch of weeds occurs in the same spot year after year and is spreading.

Many weed species are controlled, but one particular species is no longer controlled.

Surviving weeds of the problem species may be in a patch where some are dead, some show variable symptoms, but all are approximately the same age as those that were treated and controlled.

If you suspect resistance based on the above, please contact me, so we can document the case and help control the spread if possible.

**Here are some general principles for delaying resistance:**

- Diversify crop production practices. Rotate crops, tillage practices, and herbicide modes of action when possible.
- Use rates of herbicides that are recommended for the size of the weeds treated. Use of recommended rates minimizes the survival of less susceptible weeds.
- As much as possible, include herbicides with different modes of action in the weed management program of each crop grown on the same ground. **Rotation of herbicides with different modes of action among years is the most efficient resistance management practice.**

(Mode of action describes the plant process affected by the herbicide that results in death of susceptible plants. In other words, the herbicide interferes with a specific plant function that the weed requires for growth and development. Herbicides with similar chemical structures tend to have the same mode of action. Resistance builds up in weeds when the same herbicide or herbicides using the same mode of action are continuously used in a weed management system. This is why it is so important to use herbicides with different modes of action in your weed management program.)

Specific measures include:

- Use preplant incorporated or preemergence and postemergence herbicides with different modes of action.
- Tank-mix postemergence herbicides with different modes of action.
- Use different herbicide modes of action at layby or second postemergence than those used in preceding treatments.

(As a general rule, it is recommended to use herbicides with at least 2 modes of action for corn and soybeans and at least 3 modes of action for cotton.)

- Limit the soil seed bank by continuously maintaining high levels of weed control.
- Survey the weed population each season and record observations. Scout for weeds that escape and spot treat.
- Keep a record of herbicide applications.
- If resistant populations are present, prevent movement of soil and plant debris from infested fields to clean fields.
- Look for areas of fields where one species of weed appears to survive control.
- If a weed control failure has occurred, kill the surviving weeds by means other than reuse of the failed treatment.

Glyphosate-resistant palmer amaranth is a serious concern as well as other resistant weeds. An aggressive management program is necessary to slow the spread of resistance. Be vigilant about uncontrolled patches of weeds. Weeds in patches that resist control should be investigated. If a weed management program has failed, do not repeat it in the same field.

**Soybean Variety Selection**

It is not too early to begin thinking about what varieties you will plant this year. Among the characteristics we often consider are maturity group, resistances, herbicide ready, height, seed size, and even color. Obviously, yield is what fills the hopper. But when
comparing varieties’ yields, make sure you make your selections based on your yield potential.

What do I mean by yield potential? Not every soil type on your farm has the same yield capability. With that in mind, select varieties that have proven to perform on soils with similar yield potential as those you have. Some varieties have proven to perform equally across all soil types while others perform differently across soils. These yields are based upon North Carolina Official Variety Tests on a minimum of 10 locations in 2002 through 2006. Yield predictions are based on 20, 40, and 60 bushels per acre yield environments.

Contact me for the North Carolina Soybean Variety Information to help you make your variety selections.

**Biodiesel**

Biodiesel is a diesel fuel replacement produced from vegetable oils or animal fats through a chemical process of transesterification. Modern engines have very narrow fuel lines and injectors, which are not conducive to vegetable oils and animal fats that are very viscous making it difficult to properly spray at low temperatures. Through the chemical process of transesterification, the oil is converted into biodiesel, which has a much lower viscosity than vegetable oil and animal fat. Biodiesel can be used in any diesel motor in any percent from 1% to 100% with little or no modifications to the engine. Some older engines (prior to 1993) use natural rubber fuel lines and should be replaced.

Biodiesel is not unprocessed vegetable oil; however, vegetable oil can be used in diesel engines with some modifications. It is not a mixture of vegetable oil or alcohol with diesel fuel that helps dilute vegetable oil in petrodiesel. And it is not Ethanol.

Biodiesel can be made from several different feedstocks from soybeans and canola to waste restaurant oils and animal fats. Some producers are producing their own fuel for their operations.

If you would like to learn more about biodiesel, please contact me and check out these resources online.

http://biofuels.coop
www.biodiesel.org
www.me.iastate.edu/biodiesel
www.uidaho.edu/bioenergy
http://attra.ncat.org/energy.php
www.cytoculture.com

**Wheat Yield Contest Change in Entry Deadline**

In our previous newsletter to wheat growers, the deadline for entry into this year’s contest was July 15, but that has changed to July 9. As a reminder, the sponsor of the contest in cooperation with Cooperative Extension is the North Carolina Small Grain Growers Association, Inc. The purpose of the contest is to determine which production practices produce the highest wheat yields for a given location and to give recognition to those growers who do an outstanding job of producing wheat. Any person who produces wheat is eligible to enter. The entry form, which we will furnish, requires a record of all production practices. The harvested area must be from three or more continuous acres with four straight sides. All growers who harvest 100 or more bushels per acre will receive a plaque welcoming them into the 100-Bushel-Per-Acre Wheat Producers Club of North Carolina. Please contact me if you are interested in entering this year’s contest.
UPCOMING EVENTS

May 2 and 3  
10:00 a.m.  
10-hour Initial Animal Waste Operators Certification Training Class -- Will be held at the Cooperative Extension Center in Bladen County, 450 Smith Circle Drive, Elizabethtown. The cost is $5 for the class or $30 for the class and manual. Since the manuals have been revised, we recommend purchasing a new manual to study for the test. Call 910-862-4591 to register by April 20.

May 17  
5:00 – 7:00 p.m.  
Traditional Private Applicators Recertification Training – Category V

7:00 – 9:00 p.m.  

July 24  
8:30 – 10:30 a.m.  
Traditional Private Applicators Recertification Training – Category V

10:30 a.m. – 12:30 p.m.  

September 18  
5:00 – 7:00 p.m.  
Traditional Private Applicators Recertification Training – Category V

7:00 – 9:00 p.m.  

October 4  
1:00 p.m.  
Pesticide Exam -- Tests will be given for those whose card expired and for first-time card holders (commercial and private). You must register with NCDA at 919-733-3556, so they will be properly prepared. Call us if you need study materials.

All of the pesticide meetings listed above will be held at the O. P. Owens Agriculture Center, Highway 72 West, Lumberton. Call the Extension Center at 671-3276 to register. Individuals with disabilities and/or special needs interested in these meetings should call so proper arrangements can be made.

Sincerely,

Kent D. Wooten

Kent D. Wooten  
Extension Agent  
Agriculture – Field Crops

KDW/dp