Weed Control in Field Crops (CS 052)
Fall, 2009
Class Syllabus

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Office hours: by appointment

Location: See below

Times: Lecture and Labs may be altered to meet the schedule of the instructor and lab TA. Attendance in both the lab and lecture are mandatory.

Lecture 1:30-3:20 pm – Thursday in 2104 Williams
Lab: 8:30-9:45 am – Tuesday and Thursday in 1403 Williams

Credit hours: 3

Catalog Description:
Principles involved in development of weed control programs and practical application of weed management techniques for major North Carolina cropping systems. Emphasis on proper use of herbicides. Laboratory includes weed identification and herbicide application methods. Upon successful completion of this course, the students will be able to:

1. Identify key weeds found in the major agronomic crops of North Carolina.
2. Explain the weed management from a historical perspective.
3. Explain the ecological aspects of weed growth and development that are essential in developing appropriate management strategies.
4. Describe the concept of weed interference and development of economic thresholds.
5. Properly calibrate spray equipment.
6. Describe the components of herbicide labels.
7. Distinguish among injury symptoms observed on crops and weeds that are caused by herbicides with different mechanisms of action.
8. Explain the fate of herbicides in the environment and define the factors associated with herbicide fate.
9. Describe the physiological processes involved with herbicide fate in weeds and crops.
10. Describe the process of developing transgenic crops and define the risks and benefits of this technology.
11. Define the causes of weeds developing resistance to herbicides and explain the indicators and management strategies associated with herbicide-resistant weeds.
12. Describes differences in weed ecology and management in reduced and conventional tillage systems.
13. Explain the role of adjuvants in herbicide performance and describe interactions among herbicides and other agrichemicals used in crop production.
14. Utilize current decision support systems used to manage weeds.
16. Develop appropriate weed management strategies for the major agronomic crops grown in North
Lecture Schedule:

The following topics will be discussed in the order listed below:

- Introduction to weed science
- Weed ecology
- Methods of weed control
- Herbicide families and mode of action
- Herbicide behavior in plants
- Herbicide behavior and fate in soil and the environment
- Compatibility of agrichemicals and use of spray adjuvants
- Weed thresholds and prescription weed management
- Weed management in reduced tillage systems
- Problem solving
- Weed management in cotton
- Weed management in peanut
- Weed management in soybean
- Weed management in corn
- Weed management in grain sorghum
- Weed management in small grains
- Weed management in pastures
- Weed management in organic production systems

Lab Schedule:

The following topics will be discussed:

- Weed identification
- Sprayer calibration
- Spray equipment and technology
- Herbicide labels

Prerequisites: none

Grading Scheme: Final letter grades will be based on daily quizzes (100 points), three one-hour exams (300 points), lab grade (300 points), and a final exam (100 points). Final grades will be determined according to the following scale. The + or - grading system will be used.

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<th>Grade</th>
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<tr>
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<td>B+</td>
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<td>B</td>
<td>82-85</td>
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Grades may be adjusted up if necessary so that the class average approaches a C (approximately 74%).

Attendance: Quizzes are given at the beginning of each class. You are allowed to drop three quiz grades.
Quizzes may not be made up. Absence will result in a zero for the day except with prior approved permission or in the event of a properly documented medical or family emergency. Attendance is necessary to perform well in this class because 25% of the final grade is based on daily quizzes.

**Attendance is essential to performing well in this class.**

For a complete explanation of the University Attendance policy, students should refer to the web site [http://www.ncsu.edu/policies/academic_affairs/polsRegs/REG205.00.4.php](http://www.ncsu.edu/policies/academic_affairs/polsRegs/REG205.00.4.php).

**Academic Integrity:** Students are expected to comply with University policies concerning academic honesty. Violations of academic integrity such as cheating, plagiarism, or giving unauthorized help to others will not be tolerated and will be dealt with according to the NCSU Code of Student Conduct which can be found at [http://www.ncsu.edu/policies/student_services/student_discipline/POL11.35.1.php](http://www.ncsu.edu/policies/student_services/student_discipline/POL11.35.1.php).

**Field Trips and Special Fees:** none

**Texts, Dates, and Prices:** *2008 North Carolina Agricultural Manual* and *Identifying Seedling and Mature Weeds* available from AG Communications (Butler Communications Building). Additional handouts and other written resources will be provided by the instructor.

**Disability Services:**
We especially wish to accommodate students with special needs. Please let us know if you would benefit from the services which are available (including van service to/from class, meals delivered to dorm rooms, tutorials, keys to campus elevators. Etc). If a learning disability exists, please contact DDS at 515-7623 (voice)/ 515-8830 (TTY) and your instructor in this course. The website address is as follows: [http://www.ncsu.edu/provost/hsd/current/appendix/append_k.html](http://www.ncsu.edu/provost/hsd/current/appendix/append_k.html)