

AGRONOMY 479 -- WEED CONTROL

Syllabus; Fall, 2009

- Aug. 24-27 Introduction, Weeds defined, characteristics, losses, ecology, origin, and classification (1, 2, 3, 4)
- Aug. 31-Sept. 3 The plant system and weed control (5); the soil system and weed control (6)
- Sept. 7-10 LABOR DAY (no class), Control methods – A scientific approach: The three goals. A five-step procedure. Realistic expectations. (7)
- Sept. 14-17 Control methods: Prevention, Mechanical, Cultural, Biological (7)
- Sept. 21-24 Introduction to herbicides (8), Plant herbicide interactions, Modes of action (9)
- Sept. 28-Oct. 1 Soil herbicide interactions (10), Herbicide resistance (11)
- Oct. 5- 8 Foliar applied (phloem mobile) herbicides (12)
- Oct. 12-15 Foliar Applied (xylem mobile only) Herbicides (13)
- Oct. 19-22 Foliar Applied Contact (non-mobile) Herbicides (14)
- Oct. 26-29 Soil Applied (no foliar activity) Herbicides (15)
- Nov. 2- 5 Control vs. life cycle; Control of perennials (16, 17, 18)
- Nov. 9-12 Weed Control in Field Crops, Small Grains, Small-Seeded Legumes (19, 20)
- Nov. 16-19 Pasture & Range, Vegetables, Fruits & Nuts, Lawns, Ornamentals, Brush
- Nov. 23-26 THANKSBIVING BREAK
- Nov. 30-Dec. 3 Aquatics, Total Vegetation Control (21)
- Dec. 7-10 WEED REPORTS, Review for Final
- Dec. 14 FINAL EXAM, Monday 3:00-4:50 PM

Instructor: Dr. Gordon Roskamp, KH 227, 298-1569

Texts: *Applied Weed Science* 3rd Ed. by Ross & Lembi

2008 Pest Control Handbook from University of Illinois

(optional) *Weeds of the North Central States* by NCWSS

(optional for \$25.00) *Weeds of Nebraska and the Great Plains*

Nebraska Department of Agriculture, Bureau of Plant Industry

P.O. Box 94756, Lincoln, Nebraska 68509-4756

Grade Scale: 90-100 = A, 80-89 = B, 70-79 = C, 60-69 = D, <60 = F

The final exam will be on herbicide family characteristics AND the appropriate herbicide to use in specific situations (for example, what herbicide do I apply to control winter annual broadleaf weeds in forage crops applied during the dormant season? OR what herbicide do I use to control common waterhemp in soybeans applied postemergence?).

This course is designed to be very "applied" in nature. Field trips will be taken to observe weeds, herbicide plots, and equipment. We will also study the same information that is used in the North Central Collegiate Weed Science Contest. Four events are included:

1. Weed Identification (by seed, seedling, or mature plant; proper common name and scientific name spelled correctly)
2. Herbicide Identification (herbicides are applied to 10 weeds and 10 crops)
3. Farmer Problem (Crop injury and/or performance problems are "staged", then the contestant will act as a herbicide representative to help the irate farmer solve his problem, determine what to do this year, and what to do next year to avoid the same results.)
4. Sprayer Calibration (two parts--team calibration of plot sprayer and individual written sprayer calibration problems)

IN ADDITION: Students will make a weed collection of 40 species (each worth 1 point + 25 points for neatness and sample quality) and a weed seed collection of 24 species (each worth 1 point + 10 points for seed quality). These collections are worth one hour exam (100 points).

The Final requirement for this course is the Weed Control Paper and Report described below:

Select a weed species in consultation with the instructor.

Write a paper on this weed and include the following:

Classification of the weed (Genus, Species, Family)

Identification of the weed as seed, seedling, flower, and mature weed, differentiating it from similar species

Economic damage of weed--importance in state, US, and world; spread of weed, and population studies in various important crops (effect of various stands on yield)

Chemical and Nonchemical control methods--give details on what herbicides, adjuvants, and rates to control this weed (at various sizes if postemergence) in at least 3 major crops

In accordance with University policy and the Americans with Disabilities Act (ADA), academic accommodations may be made for any student who notifies the instructor of the need for an accommodation. It is imperative that you take the initiative to bring such needs to the instructor's attention, as he/she is not legally permitted to inquire about such particular needs of students. Students who may require special assistance in emergency evacuations (i.e. fire, tornado, etc.) should contact the instructor as to the most appropriate procedures to follow in such an emergency. Contact Disability Support Services at 298-2512 for additional services.
<http://www.wiu.edu/provost/student/>

Laboratory Topics

Weed life cycles. Vegetative reproductive structures (2). Weed ID – Grasses & other monocots

Weed ID – Grasses and other monocots. Annual broadleaves

Weed ID – Annual broadleaves

Weed ID – Creeping perennial broadleaves

Weed ID – Biennials and simple perennials

Sprayers, pumps and nozzles (17)

Survey of management systems (14) Tillage equipment (18)

Herbicide injury symptoms and selectivity (6 & 19)

Carriers and adjuvants; formulations (16) Calibration (17)

Trouble-shooting performance complaints (19) Continue calibration (17)

Keeping herbicides on target (17)

Herbicide incorporation (17) Label interpretation (5)

Laws pertaining to herbicide use (5) Safety

New equipment and technology (20)