

BIOLOGY 3351 – PLANTS AND PEOPLE

DR. L. MALEK

(Fall 2007, Mon, Wed, Fri 3:30-4:30PM, RC0005)
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Course objectives:

Students will be introduced to the basic and essential relationship between plants (as food and resource) and humans (as dependent consumers), in the context of local food security. A few tropical crops will be introduced to add global perspective to the course. Ethnobotany principles and methods will be introduced. An independent community service learning project (interviews with community members), written report and brief writing exercises will improve students' oral and written communication skills.

Course prerequisite assumptions:

- Students have basic understanding of plant structure from introductory Botany (see Chapter 2 in Cotton)
- Students have good writing skills (from English courses) and ability to perform effective primary literature searches (Biology 2230 and 2910) – seek library help if not familiar with this!

Plant species (One third of lectures - wild ancestors, history of domestication, spread to N Ontario, crop characteristics, cultivation methods and yield, future improvement, diseases and pests, local cultivation where relevant and/or politics of production for tropical crops):

Zizania aquatica wild rice (Dr. Peter Lee)

Hierochloe odorata, sweet grass, aboriginal perspectives on plant ownership

Solanum tuberosum potato (Dr. David Law)

Malus sylvestris domestica apple (L.M.)

Zea mays corn (L.M.)

Heliantus annuus sunflower and oil seeds (L.M.)

Vaccinium blueberry (Dr. Connie Nelson)

mushrooms (Dr. Leonard Hutchinson)

forages (Dr. Tarlok Sahota)

Cannabis sativa industrial hemp (L.M.)

medicinal plants (L.M.)

Theobroma cacao cocoa (L.M.)

Musa sp. banana (Dr. Ron Harpelle)

Theory (One third of lectures, based on TEXTBOOK - Ethnobotany, Principles and Applications by C.M Cotton, Wiley, 1996):

Post-harvest physiology, crop preservation - storage and processing (introduction to written assignments)

Plant domestication

Conservation

Ethnobotanical methods

Agriculture - organic vs. standard, good agricultural practice, economics

Collecting plants - documentation, chain of custody, IP ownership issues, Convention on Biodiversity

Practical and CSL component (Community Service Learning - one third of lectures)

Plant use by aboriginal groups (TBA)
Agriculture in TB district (Mr. Rudy Buitenhuis)
Fruit and small fruit production in NW Ontario (Mr. Kevin Belluz)
Greenhouse crops in NW Ontario (deBruin's)
Local food storage, processing (bakeries, malting plant- Al Grunys, elevators)
Import and storage of food from distant sources (supermarkets)

Writing exercises (concise, one page maximum, 5% each) - (TEXTBOOK: Writing to Learn Biology, Randy Moore, Saunders College Publishing, 1992)

- (a) observation/description of fruit/vegetable spoilage process (due Oct 1)
- (b) reflection on literary (essay, poem, etc) or visual (painting, print, photo, landscape design, etc) representation of the esthetic value of plants to humans (due Oct15)
- (c) literature survey and critical analysis - biochemistry/microbiology of spoilage process or nutritional issues (due Oct 29)
- (d) method - protocol for food preservation/storage - based on interviews. In short, descriptive paragraphs, NOT in point/bullet format (due Nov 12)

Interviews with community members - crop production, preservation methods. Contacts to be made via ethnic organizations, gardening and community garden groups, farm organizations. Preservation and storage (root cellars, drying, pickling, salting, canning, fermentation) of locally wild-collected or farm- or garden-grown fruit or vegetables, mushrooms, etc. Meat and fish or unusual imported produce (grapes) acceptable if placed in appropriate cultural/ethnic context.

An ethics committee approved open-ended interview question set will be given to you.

Final paper (40%) synthesizing some of the above information into comprehensive article (at MOST 10 pages including 20 and more primary references) aimed at the general public with university education, containing significant components on the technique and science of the preservation method, social and ethnic context of the preservation method and historical/future implications of the process to food security. In other words, tell a good story, using your original research, while being selective in using information you found and deem useful to this "story". Digital illustrations with appropriate legends (see journals for layout and content of figure legends) are encouraged.

Paper submission to be preceded by: (1) comprehensive bibliographic search by October 1st.

Final submission to include: (2) final draft, (3) marked-up copy of the paper, thoroughly edited by a friend or family member, (4) editable electronic submission of the paper
Late submissions will be penalized by 5% grade deduction for each day late.

Information garnered may be returned to the community via web publication of qualifying papers.

Grading:

20% Mid-term (multiple choice)

20% End-term test (multiple choice)

20% (4 x 5% small write ups)

40% Final paper (5% early bibliography due Oct 1, 5% edited version, 30% actual final paper in hard copy and electronic editable format - not pdf)