

HOS 6201
BREEDING PERENNIAL CULTIVARS

José X. Chaparro
ichaparro@ifas.ufl.edu
2119 Kilgore Hall
562-3076

Office Hours

Variable, email to set up appointment

Topics

Botany Basics

Flower Types
Asexual vs. Sexual reproduction
Pollination requirements
 Cross pollinated
 Self pollinated

Genetics

Gene Structure
Plant genomes
Mendelian Inheritance
Single gene vs. polygenic traits

Germplasm

Species Origins
Germplasm evaluation

Breeding cross pollinated crops

Breeding self-pollinated crops

Interspecific Hybridization

Breeding Strategy

Special Techniques

Mutation
Ploidy manipulations
Transformation
Molecular Markers

Intellectual Property

Grading

Exam 1 (100 points)

Exam 2 (100 points)

Make up exam will be given provided the student had previously notified the professor of a research or professional engagement.

Project (150 points)

Oral Presentation (50 points)

Project:Breeding Proposal

Select a Perennial Crop for which you will develop a breeding program.

The crop should not be the subject of your current graduate research.

The written report should cover the following areas:

Species origins and economic importance

botany and taxonomy

Genetics: chromosome #, ploidy, known mendelian traits, quantitative traits etc.

Important traits desired in improved varieties: stress, fruit quality, ideotype.

Technology available: Transformation, genomics, polyploidy

The breeding proposal must:

Describe what traits would be targeted and why.

What methods would be used to generate and screen progeny

Class Attendance

Student should notify professor as to missing class due to attending professional or research conferences.

Source Texts

Fruit Breeding, Volumes 1-3. J. Janick and J.N. Moore (Eds) 1996. John Wiley & Sons.

Methods in Fruit Breeding. JN. Moore and J. Janick (Eds) 1983. Purdue University Press.

Principles of Crop Improvement. N.W. Simmonds 1979. Longman Group Ltd.

Academic Honesty, Software Use, Services for Students with Disabilities, UF Counseling Services:

The University of Florida requires all members of its community to be honest in all endeavors. Cheating, plagiarism, and other acts diminish the process of learning. When students enroll at UF they commit themselves to honesty and integrity. Your instructor fully expects you to adhere to the academic honesty guidelines you signed when you were admitted to UF.

As a result of completing the registration form at the University of Florida, every student has signed the following statement:

"I understand the University of Florida expects it students to be honest in all their academic work. I agree to adhere to this commitment to academic honesty and understand that my failure to comply with this commitment may result in disciplinary action up to and including expulsion from the University." Furthermore, on work

submitted for credit by UF students, the following pledge is either required or implied: *“On my honor, I have neither given nor received unauthorized aid in doing this assignment.”*

It is to be assumed all work will be completed independently unless the assignment is defined as group project, in writing by the professor.

This policy will be vigorously upheld at all times in this course.

Software Use:

All faculty, staff, and students of the University are required and expected to obey the laws and legal agreements governing software use. Failure to do so can lead to monetary damages and/or criminal penalties for the individual violator. Because such violations are also against University policies and rules, disciplinary action will be taken as appropriate.

Campus Helping Resources:

Students experiencing crisis or personal problems that interfere with their general wellbeing are encouraged to utilize the university’s counseling resources. Both the Counseling Center and Student Mental Health provide confidential counseling services at no cost for currently enrolled students. Resources are available on campus for students having personal or lacking clear career and academic goals, which interfere with their academic performance. The Counseling & Wellness Center is located at 3190 Radio Road. The Student Mental Health and the Counseling Centers have consolidated into a single comprehensive center to better serve the needs of the University of Florida students and campus community.

1 1 University Counseling & Wellness Center, 3190 Radio Road, 392-1575; student mental health, personal and career counseling:

<https://www.counseling.ufl.edu/cwc/>

2 2 Student Health Care Center, 392-1161, personal counseling:

<http://www.shcc.ufl.edu/>

3 Sexual Assault Recovery Services (SARS), Student Health Care Center, 392-1161, sexual assault counseling; and

4 Career Resource Center, Reitz Union, 392-1601, career development Assistance and counseling.

Students with Disabilities Act:

The Dean of Students Office coordinates the needed accommodations of students with disabilities. This includes the registration of disabilities, academic accommodations within the classroom, accessing special adaptive computer equipment, providing interpretation services, and mediating faulty-student disability related issues. *Dean of Students Office*, 202 Peabody Hall, 392-7066 www.dso.ufl.edu.