

Soils 150 - 2002-03 Learning Goals Summary

This is a compilation of 2002 & 2003 Learning Goals from the “Daily Pages” you received in class. This synopsis does not include the learning goals (implicit or explicit) for some of the guest speakers. Make sure to review ALL of the class sessions, including those that are not on this list. Also, as I said in class, there may be a few here that were not used this year.

Introduction

What is Science, and where does it come into play in Agriculture and SFS?

1. What does the word science mean? Science vs. Technology
2. What does the practice of science look like?
3. Examples of science’s influence in agriculture and food systems historically
4. There are many current and upcoming issues related to foods where ability to understand basics of science will help inform your decisions.
5. *Personal goal of mine for whole course – see that a. science is a field/career for learning more about how our world works, testing ideas; b. science is conducted by humans who are dedicated & passionate about what they do; c. science is ONE factor in direction(s) society takes, balanced by social, economic, and political issues and needs.*

Resources and Worldviews: A Case Study (Huckleberries)

1. There are multiple perspectives in most, if not all, aspects of our food systems
2. Additional approaches to scientific inquiry – ‘Grounded theory’ is based on developing the observations before defining the hypothesis.

Overview of Agricultural Systems Around the World

1. There are a wide variety of agricultural systems classified by geographers. Some are ‘developed’ others ‘traditional’ (or ‘subsistence’). Some ‘single enterprise’, others ‘diverse’
2. The different production systems are connected to larger society via such things as technological advances and accessibility, transportation, supply & demand, economics of production, access to supplies and to food, population levels; political effects on distribution.
3. Where are the major production areas for important staple foods (e.g., wheat, rice, corn, potato,...)?
4. Mainstream US consumers rely on a *global* food system. Recently the idea of *local* food systems has been gaining momentum

Overview of Ag Systems Around the World, Including Systems and Subsystems

1. Continuation from last class, including discussion of systems and subsystems within each of the classifications.
2. One approach to looking at / assessing systems
3. What are the systems and subsystems involved in getting our food to us?

Agricultural Production for Sustainability

1. Introduce basic practices and concepts involved in agricultural production
2. Develop understanding of what is meant when people say ‘conventional’ or ‘industrial’ agriculture
3. Develop understanding of the practices of what some of the most common approaches and systems there are to practicing a ‘sustainable agriculture’

Origins of Our Food – Where does it come from and how does it get to Pullman?

1. The distribution of the origins of selected foods found on our local grocery store shelves, and the experiences of our peers in collecting this information.
2. Develop understanding of the general steps / sectors involved creating and delivering our food to us.
3. Develop an understanding of the concept of ‘Food Systems Analysis’

What, when and why of fertilizers - plant needs and uptake.

1. What is a ‘fertilizer’?
2. When we harvest plant material from a piece of land, we remove nutrients essential for subsequent plant growth – hence the need for fertilizers.
3. What are the essential nutrients for plant growth, and which most commonly need to be added.
4. Overview of differences and similarities between ‘synthetic’ and ‘natural’ fertilizers – what do *plants* need?.

What, when and why of pesticides - pros and cons

1. What is meant by a ‘pest’?
2. What is a ‘pesticide’?
3. Pros, and cons, of synthetic pesticides compared to other pest control methods.

Sustainability issues in soil, nutrient, and pest management.

1. What are some of the main ‘tools’ a producer has to enhance sustainability of their operation, the food supply, and the environment
2. Important terminology and concepts discussed with respect to sustainable production
3. There are a number of interactions & reinforcements amongst different “tools”

Effects of production and processing practices on water quality

1. Runoff and erosion degrade surface water quality (&decrease soil quality, too!)
2. Leaching of ag chemicals present a threat to ground water quality
3. What are the major chemicals that threaten surface & ground water quality?
4. Proper management of agricultural chemicals can greatly reduce threats to water quality.

Food Quality Assessment

WSU Small Farms Program – WSU research and education program

1. Definition of small farms
2. Overview of WSU Small Farms Program services and operations
3. Example of research (“science in action”)
4. Studies on pest control using *Integrated Pest Management* (IPM)

Plant breeding, genes and GMOs

1. What is plant breeding and why is it done?
2. What is the difference between traditional plant breeding and “genetic modification”?
3. What are the issues in production and use of GMO products?

Sustainable Animal Production

1. What is the current status of the US Livestock market?. (Including amount of production, the levels of imports and exports, trends in time, etc.)
2. Interpreting data from the US Census of Agriculture and other sources
3. Choosing appropriate graphical presentations of data, & presenting it to others

Sustainable Animal Production - II

1. The majority of livestock in the US today are raised in 'industrial settings,' under auspices of multinational corporations.
2. What are the sustainability issues associated with these practices?
3. Examples of a few alternatives

Biodiversity – On and off the farm

1. What is 'biodiversity'?
2. What threats are there, and why are they a concern?
3. Strategies to enhance / encourage biodiversity

Case Studies I – Quinn and Heath Farms

1. The role and balance of economic, social, and environmental factors in their production decisions .
2. The role of diversity in their fields, products, markets, etc.
3. The importance of knowing and working for their market(s)

Case Studies II – Roybal and Inaba Farms

1. Explore two more approaches to promoting farm and food system sustainability, including the role and balance of economic, social, and environmental factors in their decision-making.
2. Understand how socio-economic factors play into farm-scale decisions.

My Father's Garden (Innovation, Technology, And More)

Economic Factors in Sustainable Agriculture

Marketing Sustainably Produced Agricultural Products

Consumer Food Choices

Poverty, hunger, and food security

1. What is meant by the terms 'hunger,' and 'food security'
2. What are the main issues / areas in the USA with respect to food security?
3. WWW resources available to learn more.

Poverty, hunger, and food security II

1. What is meant by the terms 'household food security' and 'community food security'
2. What is embedded in these terms?
3. How can community food security be accessed?

Farm Workers and Social Justice

Community Food Systems

1. Develop basic understanding of what a community food system is
2. Be able to describe relationships that characterize a community food system.