

Integrative Biology 102: Lecture Outline

Green Revolutions

Lecture Objectives

At the end of this lecture (and after studying the texts), you should be able to:

1. give a brief history of agriculture.
2. explain the achievements of Dr. Norman Borlaug.
3. list the environmental and social impacts of industrial agriculture.
4. explain how industrial agriculture is dependent on access to fossil fuels.
5. analyze the sustainability of industrial agriculture.
6. relate population growth and food security to success in agricultural methods.
7. give examples of alternatives to industrial agricultural methods.
8. list agricultural advances that may lead to new "Green Revolutions."

Reading: Ch. 9.5-9.6 & 9.8, Leventin & McMahon Chapter 15 & Green Revolution: Curse or Blessing <http://www.ifpri.org/publication/green-revolution> Download pdf file linked to page.

Terms

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|-------------|--------------------|------------------------|
| * annual | * Green Revolution | * conservation tillage |
| * perennial | * C.G.I.A.R. | |
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1. The Green Revolution

2. Impacts of Industrial Agriculture

3. Growing populations & food security

4. Alternatives & solutions

5. Methods of the future

For the next lecture on DNA & Protein Synthesis, read Leventin & McMahon Chapter 7: Molecular Genetics through Translation. Be able to answer the following questions:

- What are the characteristics of DNA that enable it to be ideal as the genetic material of cells?
- What is meant by "semi-conservative replication?"