

OVERVIEW:

1. The sciences of botany and ecology provide a major foundation for development of our agricultural, industrial, and medical technology; and, provide a basis for proper uses of these technologies in human culture.
2. The case of Roundup® Ready soybeans provides an example of the partnership of industrial, chemical, and genetic technology to provide a strategy for eliminating “weeds” from soybean fields.
3. Our discussion will focus upon how botany and ecology are essential to understanding and evaluating the use of Roundup® Ready soybeans.

READING: Visit and read the resources provided at the Roundup® Ready Soybean Link at <http://www.cedarville.edu/academics/sciencemath/silvius/2130/03rounduplink.html>. You may wish to research other sources but these provide an example of viewpoints.

DISCUSSION QUESTIONS:

The following questions will be the basis for our discussion. Take time to read up on the topic via internet and other sources you may wish to pursue; then answer the following questions on the attached form. Bring the form to class where you will have opportunity to contribute to discussion within your cooperative learning group.

1. What benefits are possible to farmers who grow Roundup® Ready soybeans or other R® R crops?
2. Explain the genetic and cellular-biochemical basis for “Roundup® readiness?”
3. List aspects one must consider to decide on the advisability of using Roundup® and R® R crops?
4. Biological sciences address issues at every level of biological organization. List the “hierarchical levels of organization” from “ecosystem to molecule” which you have learned in general biology. Then, assign your considerations in #3. to the most likely level where expertise would need to be brought to bear. Which aspects require understanding from outside the biological sciences?

USING Web CT IN DISCUSSION:

We encourage you to use the WebCT threaded discussion format (or meet as a group) for interaction before class time to improve the quality of written or oral responses given in class. Substantive contributions to WebCt threaded discussion and in-class discussion will both be considered in evaluating your individual and group effort and comprehension. WebCT offers reluctant contributors in class a chance to express insights in the threads and often this encourages oral contributions in class as well. The following procedure is suggested:

1. Complete your individual reading and study of the topic and write answers to the questions.
2. Select one or two aspects of the topic in which you were particularly interested and post comments or pertinent questions on WebCT according to instructions given in the BIO 2130 home page. You may also wish to respond to comments/questions posted by your group members.

Trouble with WebCT or web pages? – Please send an email to computerhelp@cedarville.edu with “WebCT” in the subject line.

Name(s) of Members in Attendance: _____

INSTRUCTIONS: Bring a printed copy of this page to lecture with your individual answers ready to be collected at the beginning of class, or left in your hands as notes to contribute to your group's discussion in class. Blank forms may be provided for your group's responses and collected either before or after class discussion. Group members in attendance will each receive quiz points reflecting either the quality of individual responses (written on your individual copy) or the group responses (one page collected from each group after group discussion). You must be in attendance to receive credit.

GROUP DISCUSSION: As a Cooperative Learning Group, appoint a discussion leader and recorder. Then, proceed to write brief responses below based upon prior study and input from each member. Be sure to include input from all members who seek to contribute as each is encouraged to do. You may be asked to submit an answer to only one or two of the questions from the assignment.

1. What benefits are possible to farmers who grow Roundup® Ready soybeans or other R® R crops?
2. Explain the genetic and cellular-biochemical basis for "Roundup® readiness?"
[Check to determine if all group members have reached a satisfactory answer to this question. A written answer here is not required.]
3. List aspects one must consider to decide on the advisability of using Roundup® herbicide and R® R crops?
4. Biological sciences address issues at every level of biological organization. List the "hierarchical levels of organization" from "ecosystem to molecule." Then, assign your considerations in #3. to the most likely level where expertise would need to be brought to bear. Which aspects require understanding from outside the biological sciences? {Use the reverse side of this form for your response.)