

GMO (Genetically Modified Organisms) Debate

Are GM Crops a Good Thing?

Many people object to the use of GM crop plants. They argue that there is a potential for "superweeds" to arise through cross-pollination of natural weed species with herbicide-resistant crops, or that "superbugs" will evolve that are no longer susceptible to the toxins in pest-resistant crops. Many are concerned about potential allergic reactions to novel proteins, antibiotic resistance arising from the selectable markers used to develop the crops, or other unforeseen effects on public health. Others voice concerns that not enough research has been done to fully understand the implications of altering plant diversity. People also voice concerns on the lack of government requirements for labeling of foods in the US.

Proponents of GM foods argue that these crops are beneficial for the environment, because they reduce the use of herbicides and pesticides, chemicals that are potentially toxic to the environment and human health. In addition, these crops may preserve arable land by reducing stresses on the land, improve the nutritional value of food in developing countries, and allow crops to be grown on previously non-farmable land.

Group Assignments & Research

The class will be divided into two groups - one group supporting the development and use of GM crops and the other opposing the use and development of GM crops. Within your group research information that supports your group's contention. Each team needs to write a 4 minute opening statement and assign spokespersons. In addition, each group needs to create a pro /con data sheet to be submitted to Mr. Rath at the end of the debate. The data sheet should include:

- * a list of why we should use GM crops.
- * a list of why we should not use GM crops.
- * If you are pro, find research to refute the con. If you are con, find research to refute the pro.

The Debate Format

Opening Statement: Proponents of GMO use present an opening statement outlining the benefits of GMO crops (4 minutes).

Break: Opponents assemble a list of questions they believe shows holes in the proponents' argument (2 minutes).

Questions: Opponents present questions (2 minutes).

Opening Statement: Opponents of GMO use present an opening statement outlining the reasons why GMO crops should not be allowed (4 minutes).

Break: Proponents assemble a list of questions they believe shows holes in the opposition's argument (2 minutes).

Questions: Proponents present questions (2 minutes).

Rebuttal: Proponents present answers to opponents' questions (2 minutes).

Rebuttal: Opponents present answers to proponents' questions (2 minutes).

Closing arguments: opposing view (3 minutes).

Closing arguments: supporting view (3 minutes).

Grading rubric

Opening Statements

- 4 Eloquent, very well organized, researched, and presented.
- 3 Well organized, researched, and presented.
- 2 Somewhat organized, researched, and presented.
- 1 Lacking organization, partially correct research, not well presented.

Questions

- 4 Questions were thoughtful, raised legitimate concerns, were research based and were well presented.
- 3 Questions were somewhat thoughtful, raised some concerns, and were well presented.
- 2 Questions were not research based, did not raise legitimate concerns, or not well presented.
- 1 Questions were unrelated to the subject, did not raise legitimate concerns, or not well presented.

Rebuttal

- 4 Students used research to directly refute the questions.
- 3 Students used research to partially refute the questions.
- 2 Students improperly used research to attempt to refute the questions.
- 1 Students did not refute the questions.

Closing statements

- 4 Closing statement was eloquent, very well organized, presented.
- 3 Closing statement was well organized, researched, and presented.
- 2 Closing statement was somewhat organized, researched, and presented.
- 1 Closing statement lacked organization, used partially correct research, and was not well presented.

Working as a team member (as ranked by other team members)

- 4 Fully participated and contributed to the team.
- 3 Participated and contributed to the team.
- 2 Partially participated, somewhat helpful.
- 1 Little participation, little help.

Pro/Con Data Sheet

- 4 Outstanding and thorough
- 3 Very good and informative
- 2 Reasonable but lacking some information
- 1 Incomplete and lacking significant information

Recommended GMO-Based Web Sites & References

Agbios database of GMO crops, how they were made and when they were approved (<http://www.agbios.com>).

US Dept of Agriculture Economic Research Service data on how much of the US is growing GMO crops (<http://www.ers.usda.gov/Data/biotechcrops/>).

Cornell University Public Issues Education Project GMO informational web site (<http://www.geo-pie.cornell.edu>).

European Commission, Joint Research Centre, Review of GMO Detection and Quantification Techniques, 2002-07-23, Bonfini Laura, Heinze Petra, Kay Simon, Van den Eede Guy (<http://www.jrc.cec.eu.int>).

Pro-GMO web site with educational links (<http://www.monsanto.com>).

Anti-GMO web site (<http://www.greenpeace.org>).