

NEWS BREAK

Sunday's News Break selects an article from Sunday, October 30, 2016 of The Seattle Times print replica for an in-depth reading of the news. Read the selected article and answer the attached study questions. **Please remember to always preview the content of the article before sharing with your students.**

Article: Promised bounty of genetically modified crops doesn't materialize (Main, A4)

Pre-Reading and Vocabulary

- *What is your prior knowledge about genetically modified foods? Do you want to eat these types of foods? Why or why not?*

Vocabulary: Match the words to the numbered definitions in the chart below.

A. data	1. absolutely necessary, essential, or requisite
B. deviate	2. any combination of two or more business enterprises into a single enterprise
C. discernible	3. standing out so as to be seen easily; conspicuous; particularly noticeable
D. indispensable	4. individual facts, statistics, or items of information
E. merger	5. able to be discerned; perceptible
F. predictable	6. to turn aside, as from a route, way, course, etc.
G. prominent	7. able to be foretold or declared in advance

Comprehension

1. The controversy over genetically modified crops has long focused on largely unsubstantiated fears that they are what?
2. But an extensive examination by The New York Times indicates the debate has missed a more basic problem. What?
3. The promise of genetic modification was twofold. What were the main reasons for producing GMO's?
4. What does yield mean?

5. One measure, contained in data from the U.S. Geological Survey, shows the difference in the use of pesticides. Since genetically modified crops were introduced in the United States two decades ago for crops like corn, cotton and soybeans, the use of toxins that kill insects and fungi has fallen by a third, but the spraying of herbicides, which are used in much higher volumes, has risen _____ percent. By contrast, in France, use of insecticides and fungicides has fallen by a far greater percentage — 65 percent — and herbicide use has decreased by 36 percent.
6. Profound differences over genetic engineering have split Americans and Europeans for decades. What's their difference in opinions?
7. Fears about the harmful effects of eating genetically modified foods have proved to be largely without scientific basis. The potential harm from pesticides, however, has drawn researchers' attention. Why?
8. The industry is winning on both ends. Why?
9. Two farmers, 4,000 miles apart, recently showed a visitor their corn seeds. The farmers, Bo Stone and Arnaud Rousseau, are sixth generation tillers of the land. Both use seeds made by DuPont, the chemical company that is merging with Dow Chemical. What were the differences?
10. By contrast, at Rousseau's farm in Trocy-en-Multien, a village outside Paris, his corn has none of this engineering. Why?

Group Discussion Questions or Extension Essay Questions:

With the world's population expected to reach nearly 10 billion by 2050, Monsanto has long held out its products as a way "to help meet the food demands of these added billions," as it said in a 1995 statement. That remains an industry mantra.

"It's absolutely key that we keep innovating," said Kurt Boudonck, who manages Bayer's sprawling North Carolina greenhouses. "With the current production practices, we are not going to be able to feed that amount of people."

- With reviewing the statistics and research that has been done in the article, what do you think the United States should do?
- Do you think Monsanto's primary goal is to meet food demands? Why or why not?
- Do you think food innovation is important? Why or why not?
- How can companies balance food production and meeting health standards for human consumption?

A broad yield advantage has not emerged. The New York Times looked at regional data from the United Nations Food and Agriculture Organization, comparing main genetically modified crops in the United States and Canada with varieties grown in Western Europe, a grouping used by the agency that comprises seven nations, including the two largest agricultural producers, France and Germany.

Michael Owen, a weed scientist at Iowa State University, said that while the industry had long said genetically modified crops would "save the world," they still "haven't found the mythical yield gene."

- A yield advantage has not emerged yet, based on data. What do you think the end result will be for genetically modified crops here in the United States? Do you think Europe will have a change of heart and start using genetically modified products? Why or why not?

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Newsbreak Answer Key: October 30, 2016

Vocabulary

- A. 4
- B. 6
- C. 5
- D. 1
- E. 2
- F. 7
- G. 3

Comprehension Questions

1. Unsafe to eat
2. Genetic modification in the United States and Canada has not accelerated increases in crop yields or led to an overall reduction in the use of chemical pesticides.
3. By making crops immune to the effects of weed killers and inherently resistant to many pests, they would grow so robustly that they would become indispensable to feeding the world's growing population, while also requiring fewer applications of sprayed pesticides.
4. Food per acre
5. 21%
6. Although American protesters as far back as 1987 pulled up prototype potato plants, European anger at the idea of fooling with nature has been far more sustained.
7. Pesticides are toxic by design — weaponized versions, like sarin, were developed in Nazi Germany — and have been linked to developmental delays and cancer.

"These chemicals are largely unknown," said David Bellinger, a professor at the Harvard University School of Public Health, whose research has attributed the loss of nearly 17 million IQ points among American children 5 and younger to one class of insecticides. "We do natural experiments on a population," he said, referring to exposure to chemicals in agriculture, "and wait until it shows up as bad."

8. Because the same companies make and sell the genetically modified plants and the poisons. Driven by these sales, the combined market capitalizations of Monsanto, the largest seed company, and Syngenta, the Swiss pesticide giant, have grown more than six fold in the past 15 years. The two companies are separately involved in merger agreements that would lift their new combined values to more than \$100 billion each.
9. The seeds looked identical. Inside, the differences are profound.

In Rowland, N.C., near the South Carolina border, Stone's seeds brim with genetically modified traits. They contain Roundup Ready, a Monsanto-made trait resistant to Roundup, and a gene made by Bayer that makes crops impervious to a second herbicide. A trait called Herculex I was developed by Dow and Pioneer, now part of DuPont, and attacks the guts of insect larvae. So does YieldGard, made by Monsanto.

Another big difference: the price tag. Rousseau's seeds cost about \$85 for a 50,000-seed bag. Stone spends roughly \$153 for the same amount of biotech seeds.

10. Because the European Union bans most crops like these. "The door is closed," said Rousseau, 42, vice president of one of France's many agricultural unions. His 840-acre farm was a site of World War I carnage in the Battle of the Marne.