Name: _____

Abiturprüfung 2013

Englisch, Leistungskurs

Aufgabenstellung:

1. Outline Fedoroff's views on genetically modified crops in the context of the global food crisis and the policies of the Obama administration.
(Comprehension) *(16 Punkte)*

2. Analyse the way Fedoroff tries to convince the reader of her views. Take into consideration her use of language, the line of argument and persuasive techniques.
(Analysis) *(24 Punkte)*

3. Choose <u>one</u> of the following tasks:

3.1 Discuss Fedoroff's scientific and political views using your knowledge of genetically modified food and of other aspects of genetic engineering.
(Evaluation: comment) *(20 Punkte)*

3.2 Imagine you are an environmental activist. Write a letter to the editor of *The New York Times* in which you comment on Fedoroff's scientific and political views.
(Evaluation: re-creation of text) *(20 Punkte)*

Materialgrundlage:

- Ausgangstext: Sach- und Gebrauchstext (Kommentar der internationalen Presse)
Fundstelle: Nina V. Fedoroff, "Engineering Food for All", in: *The New York Times*, August 18, 2011
http://www.nytimes.com/2011/08/19/opinion/genetically-engineered-food-for-all.html?_r=1&scp=1&sq=genetically&st=cse

  Wortzahl: 766

Zugelassene Hilfsmittel:

- Ein- und zweisprachiges Wörterbuch

Name: _____

Nina V. Fedoroff

Engineering food for all

Nina V. Fedoroff, professor of biology at Pennsylvania State University, is a leading geneticist and molecular biologist. From 2007 to 2010 she worked as a science and technology adviser to the Bush administration.

Food prices are at record highs and the ranks of the hungry are swelling once again. A warming climate is beginning to nibble at crop yields worldwide. The United Nations predicts that there will be one to three billion more people to feed by midcentury.

Yet even as the Obama administration says it wants to stimulate innovation by eliminating unnecessary regulations, the Environmental Protection Agency wants to require even more data on genetically modified crops, which have been improved using technology with great promise and a track record of safety. The process for approving these crops has become so costly and burdensome that it is choking off innovation.

Civilization depends on our expanding ability to produce food efficiently, which has markedly accelerated thanks to science and technology. The use of chemicals for fertilization and for pest and disease control, the induction of beneficial mutations in plants with chemicals or radiation to improve yields, and the mechanization of agriculture have all increased the amount of food that can be grown on each acre of land by as much as 10 times in the last 100 years.

These extraordinary increases must be doubled by 2050 if we are to continue to feed an expanding population. As people around the world become more affluent, they are demanding diets richer in animal protein, which will require ever more robust feed crop yields to sustain.

New molecular methods that add or modify genes can protect plants from diseases and pests and improve crops in ways that are both more environmentally benign and beyond the capability of older methods. This is because the gene modifications are crafted based on knowledge of what genes do, in contrast to the shotgun approach of traditional breeding or using chemicals or radiation to induce mutations. The results have been spectacular.

For example, genetically modified crops containing an extra gene that confers resistance to certain insects require much less pesticide. This is good for the environment because toxic pesticides decrease the supply of food for birds and run off the land to poison rivers, lakes and oceans.

The rapid adoption of genetically modified herbicide-tolerant soybeans has made it easier for farmers to park their plows and forgo tilling for weed control. No-till farming is more

Name: _____

sustainable and environmentally benign because it decreases soil erosion and shrinks agriculture's carbon footprint.

In 2010, crops modified by molecular methods were grown in 29 countries on more than 360 million acres. Of the 15.4 million farmers growing these crops, 90 percent are poor, with small operations. The reason farmers turn to genetically modified crops is simple: yields increase and costs decrease.

Myths about the dire effects of genetically modified foods on health and the environment abound, but they have not held up to scientific scrutiny. And, although many concerns have been expressed about the potential for unexpected consequences, the unexpected effects that have been observed so far have been benign. Contamination by carcinogenic fungal toxins, for example, is as much as 90 percent lower in insect-resistant genetically modified corn than in nonmodified corn. This is because the fungi that make the toxins follow insects boring into the plants. No insect holes, no fungi, no toxins.

Yet today we have only a handful of genetically modified crops, primarily soybeans, corn, canola and cotton. All are commodity crops mainly used for feed or fiber and all were developed by big biotech companies. Only big companies can muster the money necessary to navigate the regulatory thicket woven by the government's three oversight agencies: the E.P.A., the Department of Agriculture and the Food and Drug Administration.

Decades ago, when molecular approaches to plant improvement were relatively new, there was some rationale for a cautious approach.

But now the evidence is in. These crop modification methods are not dangerous. The European Union has spent more than $425 million studying the safety of genetically modified crops over the past 25 years. Its recent, lengthy report on the matter can be summarized in one sentence: Crop modification by molecular methods is no more dangerous than crop modification by other methods. Serious scientific bodies that have analyzed the issue, including the National Academy of Sciences and the British Royal Society, have come to the same conclusion.

It is time to relieve the regulatory burden slowing down the development of genetically modified crops. The three United States regulatory agencies need to develop a single set of requirements and focus solely on the hazards — if any — posed by new traits.

And above all, the government needs to stop regulating genetic modifications for which there is no scientifically credible evidence of harm.

Annotations:

5 Environmental Protection Agency a US government organization that establishes rules and standards for protecting the environment – **22 shotgun approach** a method that relies on chance and luck –
39 – 40 carcinogenic fungal toxins poisonous substances produced by fungi and likely to cause cancer –
44 canola a plant that is used to make cooking oil