**Issues related to genetic manipulation exam question**

Anti-GM campaigners think that GM crops may escape into the wild and become invasive species. Scientists say that crop plants are not good at competing in the wild, which is why we do not see agricultural crops growing outside of carefully tended fields. A 10-year study was carried out into the possibility of transgenic crops persisting in the wild, in the event of their escaping from cultivation. Four different transgenic crops and their non-transgenic counterparts were grown in 12 different habitats.

The four different crop plants were:

* Herbicide-tolerant oilseed rape
* Herbicide-tolerant maize
* Herbicide-tolerant sugar beet
* Potato plants that made a toxin poisonous to caterpillars.

1. Outline the advantages of growing one of the transgenic crops listed above.

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The mean percentage survival rate, at the end of the first growing season, of all the transgenic crop plants was less than that of their non-transgenic counterparts. The population sizes of all the crops declined sharply after the first year and all the crop populations of maize, rape and sugar beet were extinct in the wild after four years. One crop of non-GM potatoes survived in one habitat for 10 years.

1. Using the information above and your own knowledge, assess the potential danger to natural habitats of cultivating these transgenic crops.

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1. Discuss the ethical implications of growing GM crops.

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