tpo_21

Genetic modification, a process used to change an organism's genes and hence its characteristics, is now being used to improve trees. Through genetic modification, it is possible to create trees that produce more fruit, grow faster, or withstand adverse conditions. Planting genetically modified trees on a large scale promises to bring a number of benefits. First, genetically modified trees are designed to be hardier than natural trees; that is, they are more likely to survive than their unmodified counterparts. In Hawaii, for example, a new pest-resistant species of papaya tree has been developed in response to ringspot virus infestations that have repeatedly damaged the native papaya-tree population. Planting the genetically modified papayas has largely put an end to the ringspot problem. Moreover, genetically modified trees promise to bring a number of economic benefits to those who grow them. Genetically modified trees tend to grow faster, give greater yields—of wood, fruit, or other products—and be hardier. This allows tree farmers to get faster and greater returns on their farming investment and save on pesticides as well. Finally, the use of genetically modified trees can prevent overexploitation of wild trees. Because of the growing demand for firewood or building timber, many forests around the world are being cut down faster than they can be replaced. Introducing genetically modified trees—designed for fast growth and high yield in given geographic conditions—would satisfy the demand for wood in many of those areas and save the endangered native trees, which often include unique or rare species.

Now listen to part of a lecture on the topic you just read about. Sure, there're some benefits to planting genetically modified trees, but are these trees really as great as they first sound? When you examine the subject closely, there are some serious problems and costs associated with using genetically modified trees. First, genetically modified trees may be resistant to one particular condition, but that doesn't necessarily ensure their survival. Ya see, a typical nonmodified tree population is genetically diverse. That means that for most threatening conditions—poor climate, insects and other pests, whatever—there will be at least some individual trees of any given species of tree that are resistant. So even if most of one kind of tree are killed, those few resistant ones will survive and ensure the survival of that species of tree. But genetically modified trees are genetically much more uniform, so if they're exposed to an environmental challenge they haven't been designed for, they'll all die. So if the climate changes or a... a new pest invades an area, the genetically modified trees will likely be completely wiped out. Now as to the second point, there are hidden costs associated with growing genetically modified trees. You see, the company that genetically modified the tree, tends to charge tree farmers much more for its seeds than unmodified tree seeds would cost. Also, after you've grown the tree, you can't just collect the seeds and plant a new tree for free; by law, you have to pay the company every time you plant. And finally, genetically modified trees might actually cause even more damage to the local wild trees. Ya see, genetically modified trees often grow more aggressively than natural trees do, and genetically modified trees are typically planted among natural trees. As a result, the genetically modified trees outcompete the native trees for resources—sunlight, soil nutrients, and water—eventually crowding out the natural trees.

Summarize the points made in the lecture, being sure to explain how they

challenge the specific points made in the reading passage.

Do you agree or disagree with the following statement? For success in a future job, the ability to relate well to people is more important than studying hard in school. Use specific reasons and examples to support your answer.