GENETICALLY MODIFIED FOOD

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Part 1

1. What are the three topics the lecturer is going to talk about?

2. Name some examples which the lecturer is mentioning with regard to a gene or an inherited character or trait?

3. In what way do these genes give us the characteristics?

4. What is the genotype and what is the phenotype?

Part 2

5. What does the lecturer mean by the term 'environment' in this lecture?

6. What can genes tell us about the characteristics of an individual?

7. What is RNA?

8. What do the proteins in our bodies do?

Part 3

9. What does the lecturer call DNA?

10. How are Genetically Modified Organisms created?

11. Why is the normal selective process of breeding not always successful?

Part 4

12. Which species of animal can be successfully bred using GM technology?

13. What is the difference between genetic modification and selective breeding?

14. What was the worry when the original experiments were done to move single genes from one organism to another using bacteria?

Part 5

15. What example does the lecturer give of the destroying of an environment by the accidental introduction of an alien species?

16. Which animal which was introduced into England from France after 1066 as a source of food is now found everywhere in England?

17. What were the main reasons to make a genetically modified crop plant?

Part 6

18. What is the difference between processed and unprocessed food?

19. What properties do processed foods have that are not found in unprocessed food?

20. What examples does the lecturer give of toxins in fresh foods?

Part 7

21. How is the genetically modified enzyme *kymosin* produced?

22. Why did an extra enzyme introduced into tomatoes improve the manufacturing process and the taste?

23. Why did American policy on some GM food crops change public attitudes in this country?

Part 8

24. Why is soya lecithin used in a lot of processed foods?

25. What are the health concerns in eating GM food?

Part 9

26. What do the Americans mean by 'substantial equivalents'?

27. The lecturer mentions two kinds of 'intrinsic objections'. What are they?

28. What are the 'extrinsic objections' mentioned?

Part 10

29. As an example of ecological disturbance, the lecturer mentions a very big experiment which compared GM crops with normal crops? What was found in this experiment?

30. What is the reason for this?

31. What does the lecturer say about the global issues relating to GM food?

Key

1. 1)Genetic modification (GM) and what that means.
2)GM food and food safety.
3)Some of the wider issues related to GM food.

2. Colour of your eyes/hair and height

3. They do so by interaction with the 'environment'.

4. The genotype is the collection of all the genes, and the phenotype is the collection of all the characteristics.

5. Here it means the environment within a cell. It is a bigger concept of 'environment' than global surroundings, for example.

6. You can tell what characteristics they might have, their potential.

7. RNA is a molecule temporarily made to interpret DNA as proteins.

8. They control the physical appearance of a person through the medium of molecules.

9. He calls in linear code.

10. Taking the DNA sequences and transferring them from one organism to another.

11. Because you have no control over the mixture of genes in the new animal.

12. Horses and donkeys.

13. In GM you choose one piece of DNA and move it to another animal. In breeding you take all the genes from one animal and mix them with all the genes of another within the same species.

14. It was thought that new organisms would be created that would be more pathogenic.

15. Seamen landed on islands in the Indian and Pacific Oceans where the rats from their ships decimated the local wildlife.

16. The rabbit.

17. A crop that is easier to grow and resistant to weed killers and insect attack.

18. Unprocessed food is eaten in its natural state, such as fruit, and processed food has been produced by combining various raw materials and changing them into a popular food.

19. They often have additives to keep them fresh and artificial flavouring and colouring to make them attractive to the consumer.

20. All the parts of the potato plant except the tubers are poisonous, and in the tomato every part of the plant except the fruit is poisonous.

21. The gene for *kymosin* is introduced into a microbe which is made up in big vats.

22. Firstly they ripened more slowly which made them more easy to handle en route to the factory and less ripe so there was less water to dispose of when making tomato paste.

23. It appeared to take away the choice between buying GM or non GM foods and made the public so suspicious that they refused to buy any foods that might be GM enhanced.

24. Because it is an excellent emulsifying agent.

25. The fear is that the food may contain poisons, or may give the public allergies of various kinds.

26. They test two identical foods, one is genetically modified and the other is not. If the genetically modified food is different by only .1% then they say it is normal.

27. The first is the ethical question, if the creation of the world is seen in religious terms then changing the natural order is working against the Creator. The second is that the public do not trust what scientists tell them when they say that GM modified food is harmless as there is no long term proof that this is true.

28. Some people don't object to GM itself, but they are concerned that the GM food crops might contaminate neighbouring fields with adverse results. The other objection is that the American decision to market GM altered foods and non-GM foods together deprives the customer of the right of choice.

29. The flowers, insects and the birds that grew around the GM fields were different from the others.

30. This is due to the pesticides that were used. On the GM crops which were pesticide resistant, they used different levels of a different pesticide from the other normal crops.

31. He says that there is concern that the multinational corporate companies will try to enforce industrialized agriculture on countries in Africa and South East Asia which will put them into debt and that there are better ways to develop agriculture in these countries.