京都外語大　2013年

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　次の文を読んで，下記の設問に答えなさい。なお，＊の付いた語（句）には本文の後に注があります。

Most people in the United States don’t realize that they’ve been eating genetically engineered\* foods since the mid-1990s. More than 60% of all processed foods on U.S. supermarket shelves ―― including pizza, chips, cookies, ice cream, salad dressing, corn syrup, and baking powder ―― contain ingredients from engineered soybeans or corn.

In the past decade or so, the genetically engineered plants that go into these processed foods have leaped from being rare fruit and vegetables grown in greenhouses to crops planted on a massive scale ─ on 52.6 million hectares in 13 countries, including Argentina, Canada, China, South Africa, Australia, Germany, and Spain. On U.S. farmland, the area planted with genetically engineered crops jumped nearly 25 times from 1.5 million hectares in 1996 to 35.7 million hectares in 2001. More than 50 different “designer” crops have passed through a government review process, and about a hundred more are undergoing field tests.

Genetic change or modification is not a recent thing. Humans have been altering the genetic structure of plants for a few thousand years, keeping seeds from the best crops and planting them in following years, breeding and crossbreeding\* varieties to make them taste sweeter, grow bigger, and last longer. In this way we’ve transformed the wild tomato from a fruit the size of a grape to today’s giant, juicy tomatoes. From a weedy plant with an “ear” which was barely 2.5 cm long has come our 30-cm-long ears of sweet white and yellow corn. In just the past few decades, plant breeders have used traditional techniques to create varieties of wheat and rice plants which produce more grain. They have also created hundreds of new crop varieties using radiation and chemicals.

But the technique of genetic engineering is new, and quite different from conventional breeding. Traditional breeders mix together related organisms\* whose genetic structures are similar. In so doing, they transfer a great number of genes. By contrast, today’s genetic engineers can transfer just a few genes at one time between species that are distantly related or not related at all.

Genetic engineers can pull a desired gene from almost any living organism and insert it into almost any other organism. They can put a rat gene into lettuce to make a plant that produces vitamin C or blend genes from an insect into apple plants, offering protection from various diseases that damage apples and pears. The purpose is the same: to insert a gene or genes from one organism carrying a desired characteristic into another organism which does not have that characteristic.

The engineered organisms that scientists produce by transferring genes between species are called transgenic organisms. Several dozen transgenic food crops are currently on the market, including varieties of corn, pumpkin, soybeans, and cotton. Most of these crops are engineered to help farmers deal with long-time agricultural problems: weeds, insects, and disease.

While many scientists see great potential in the products of this new biotechnology, some scientists see uncertainty and even danger. Critics fear that genetically engineered products are being rushed to market before their effects are fully understood. In North America and Europe, the value and impact of genetically engineered food crops have become subjects of intense debate, provoking reactions from excessive optimism to strong political opposition.

〔注〕\*genetically engineered：遺伝子を組み換えた

\*crossbreed：異種交配させる

\*organism：有機体

問A　本文の内容に基づいて，次の英文を完成するのに最も適当なものをa～dの中から一つ選び，マーク解答用紙にマークしなさい。

31. Between 1996 and 2001, farmland in the U.S. that used genetically modified crops

a. decreased nearly 25 times from 35.7 million to 1.5 million hectares.

b. jumped on a massive scale from 1.5 million to 52.6 million hectares.

c. produced more than 75% of all the processed foods in supermarkets.

d. increased in area from 1.5 million hectares to 35.7 million hectares.

32. An example of more traditional genetic modification is

a. putting a rat gene into lettuce in order to produce vitamin C.

b. how scientists have shrunk yellow corn to a2.5-cm-long ear.

c. the way breeders have increased the size of wild tomatoes.

d. keeping seeds from “designer” crops that are under review.

33. The main goal of today’s genetic engineers is to

a. move a desired trait from one organism to another by inserting a gene.

b. transfer a great number of genes from one organism to another one.

c. use traditional methods to create rice plants which produce more grain.

d. mix together related living creatures with similar genetic structures.

34. According to the passage, transgenic food crops are

a. being produced by traditional techniques of genetic crossbreeding.

b. helping farmers deal with long-time problems like weeds and insects.

c. currently not on the market because of opposition from consumers.

d. offering farmers protection from fires that damage apple trees.

35. Critics of the food products that are created with this new biotechnology

a. worry that we do not fully understand the long-time effects of using them.

b. see great potential in the new varieties of corn, pumpkin, and soybeans.

c. fear that genetically engineered food crops will become subjects of discussion.

d. believe that farmers should not genetically modify their food crops in any way.

36. The most appropriate title for this passage would be

a. The Reasons Farmers Don’t Plant Biotech Crops.

b. The Dangers of Transgenic Food Products.

c. The Ways Our Food Is Being Altered Genetically.

d. The Debate over Processed Foods in Japan.

問B　二重線部を本文に即して具体的に日本語で説明し，記述解答用紙の所定の欄に記入しなさい。

問C　本文の下線部を和訳し，記述解答用紙の所定の欄に記入しなさい。