

The history of the biotechnology application biology essay

[Technology](#)



**ASSIGN
BUSTER**

Biotechnology ApplicationName Of The StudentName Of The

UniversityBiotechnology ApplicationBiotechnology can be defined as the integrated use of physical, biological and engineering sciences for achieving the technological application of biological systems. Biotechnology deals with using of organisms or the products of an organism for the purpose of commercial. It has two main characteristics such as it works with the living cells and the molecules of the living calls. It used to take more practices for improving one's life. Here I had chosen the modern biotechnology application named as the Genetic Engineering. Genetic engineering is defined as the process of removing or adding a desired trait or characteristic by modifying the genes within an organism to or individual genes can be transferred between organisms. The Genetic Engineering deals with the modification of genes in crops or organisms. Genetic Engineering attracts and concerns for the consumers and their groups. Genetic Engineering can be used in agriculture as well as with the human beings. The crop plants such as corn, maize, potato, cotton, wheat, etc. can be developed for establishing the extra genes for the diseases and resistance for pest and to yield highly through the genetic engineering. How biotechnology application is doneHere, the modern biotechnology application that is Genetic Engineering is described below. Basically, every organisms can be made of cells and that contains the same genetic material which is named as DNA. The DNA stands for Deoxyribonucleic Acid. The unit of each DNA can be made of a combination of nucleotides such as thymine (T), cytosine (D) adenine (A), and guanine (G), as well as a phosphate and a sugar. The above nucleotides will be paired as strands and they twist together as a

spiral structure which is known as double helix. The double helix is nothing but DNA. The segments of the DNA will inform individual cells how to produce the specific proteins. So the segments are named as genes. Gene is the absence or presence of the specific protein which gives an organism a characteristic or a trait. It is known that more than ten thousand genes of different types are found in most animal and plant species. These group of genes of an organism can be organized as chromosomes within the nucleus cell. After that by the process of multi-cellular organism a single cell can be developed through an embryo stage and then into an adult. It is controlled by the cell's genetic information, genes interaction and products of gene with the factors of environments. When the reproduction of cells is done the double helix's DNA strands will get separated. Since the nucleotide A will pair with T and G will pair with C, every DNA strand will serve as a blueprint for each specific protein. Except from the mistakes or mutations in the process of replication, a single cell can be equipped by the information for replication of millions of identical cells. Since each organisms can be made of the same genetic material, nucleotides such as A, T, G, and C. The biotechnologists always use the enzymes for cutting and removing segments of DNA from an organism and it can be recombined with DNA in other organism. These are known as recombinant DNA or technology of rDNA. It is considered as one of the most basic tools of modern biotechnology (Judy Furlong, 2011). The rDNA technology deals with the DNA or the DNA fragments of different sources, which can be recombined and cut using the enzymes. The recombinant DNA will then be inserted into the living organism. Usually, the rDNA technology is used with genetic engineering. The rDNA technology will allow the

researchers for moving genetic information between the unrelated organisms for producing the desired characteristics or products or for eliminating undesirable characteristics. The modern biotechnology application Genetic Engineering is considered as the technique to remove, to modify or to add genes to the molecule of DNA for changing the containing information. By the information changing, the genetic engineering always changes the amount or type of proteins of an organism is capable of producing genes. Genetic engineering can be used for the production of human gene therapy, development of improved plants and drugs. Consider an example, for integrated pest management an insect protection gene known as Bt was inserted into many crops such as cotton, corn, and potatoes for giving farmers the new tools. Bt corn is always a resistant to European corn borer. This resistance will reduce a farmer's pesticide that is used for controlling the European corn borer, and it requires low chemicals and providing high yielding to Agricultural Biotechnology. Thus many improvements on genetic can be done with crops but programs of conventional breeding became slow. Example of biotechnology application

Based on the definition of biotechnology of this assignment as the integrated use of biological will achieve technological applications for the systems of biology. Thus genetic engineering does these things with the humans and agriculture. Genetic Engineering is used as a technique to engineer and for manipulating organisms' genes and genomes. An example is explained below. The gene which is responsible for human insulin production can be taken from the human genome and it should be integrated as bacterial genome by the technology of rDNA. After this

integration, the bacteria will express the human insulin gene. When the bacteria divides and grows, the insulin can be produced, by ensuring the sufficient supply of insulin for patients of diabetic. Benefits of biotechnology Application

The benefits derived from this biotechnology application are described below. Genetic Engineering helps for human cloning, medical treatment, pharmaceuticals, pregnancy cases, and agriculture. Genetic engineering helps for creating new pharmaceuticals when used on microorganisms. Genetic engineering helps in bio-remediation is nothing but the process of cleaning both pollution and waste. Genetic engineering had helped to lower the usage of pesticide and herbicide. Genetic engineering helps for the production of vaccines and some drugs in the plants. Genetic engineering helps for producing predictable and quicker way for generating the new cultivars. Genetic engineering produces sustainable agriculture. Genetic engineering produces genetically modified breeds. For humans, genetic engineering is helps in treating cancer and genetic disorders.

Concern with the use of biotechnology

Nowadays, biotechnologies are used widely and the concerns were raised. The main area which is to be concerned is genetically engineered food. By taking a look at benefits and risks of biotechnology application there occurs a serious issues. Here it is necessary to distinguish the risks of transcending and technology and risks of technology and inherent. Normally there will be no evidence for genetic transfers between pose of unrelated organisms for human health concerns and are different from those of any new plant or animal variety (Kulkarni, 2002). The risks associated with biotechnology will be the same for both

microbes and plants developed by methods of convention. These are about the biotechnology application.