

Pros and Cons of Genetic Engineering

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Genetic engineering, which connotes the artificial modification of an organism's gene or trait, brews both advantages and disadvantages to the concerned parties. It can be applied to both plants and animals. The practice is done through an assortment of diagnostic procedures such as molecular cloning. In the past, proponents of technology never believed such innovations would arise because of the research constraints (Porter, 2014). However, with the advent of sophisticated medical equipment, genetic engineering stamped root in societies. Despite the progress and vast accreditation of the practice, some critics still fault the viability of genetic engineering. Genetic engineering promotes longevity, environmental sustainability, and agriculture, which not only improve human life but can also elicit long-term adverse impacts on societies, hence the need for appropriate control measures when practiced.

It has always been daunting to transfer desirable traits among organisms. However, the cloning practice has come to the rescue of various people who may wish to transfer specific genes to their offspring. Researchers trust that they may have the capacity to treat heart attack patients by cloning their heart cells and infusing them into infected areas. Besides that, another favorable position, which is still a mere theory, is that skin cells could be developed for fire casualties. New, advanced, and useful pharmaceuticals products can be created through genetic engineering. Cloning has also enabled doctors to develop parts of the brain for injured cerebrum (Zaves, 2014). They can also come up with spinal cells for the incapacitated, which shows the growth potential of the development.

Genetic engineering is instrumental in the environmental realm. Scientists can now engineer microorganisms' metabolic capabilities, which are useful in solving environmental problems. These genetically engineered microbes are useful in mining industries since they clean

up highly toxic mining waste. With the rapid population growth around the world, transgenic animal and plants seem to be the only potential way of combating the problem of food shortage. Transgenic animal and plants aim at improving food productivity and quality. Other advantages of transgenic plants include the increase in resistance regarding herbicides, pesticides, frost, drought and disease (Porter, 2014). This technology enables the farmers to eradicate weeds and pests without affecting the crops.

Despite the many advantages, there are several drawbacks to genetic engineering technology. There are scientists convinced that the existence of genetically modified genes can have permanent effects on humanity. There are also moral concerns, especially from religious people concerning whether man has the right to alter the course and law of nature. Genetic engineering also questions Darwin's theory; "survival of the fittest." There are significant concerns about the long-term effects of genetic engineering considering the scanty details about its potency. This concern makes many people cautious and reserved about embracing it fully. In human health, the greatest concern is that genetically engineered crops could contain harmful toxins that may be detrimental to humans (Zaves, 2015). Genetically modified microbes released into the atmosphere cannot also be controlled. Hence, they could cause harm to the natural ecosystem.

In conclusion, despite the many benefits accrued from genetic engineering, it is necessary to apply its benefits with caution. A revered advantage is the creation of transgenic plants that take less time to mature and are more nutritious. Their economic significance cannot be ignored. Though the short-term effects of genetic engineering are well known, long term effects should also be kept in mind before the technology is fully embraced. Societies should consider the moral and ethical issues regarding genetic engineering instead of only its constructive value and

economic importance. Scientists, as a result, have a calling to educate masses on the adverse impacts of genetic engineering.

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