

Do I want to do research in the field of transgenic plants?

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Biotechnology in simple terms is the application of biological organisms, systems, or processes to learn about the science of life and the improvement of the value of materials and organisms. It is a relatively new and fast-emerging field that integrates knowledge from several traditional sciences such as biochemistry, chemistry, microbiology, and plant biotechnology. There is no way to produce the quantities of feed needed for the rapidly increasing demand using conventional methods of cross breeding, with limited tillable land available.

India is a tropical country and there is a tremendous loss of crops due to deadly plant diseases. In order to control these diseases a lot of herbicides and pesticides are being used. Over the years, usage of pesticides and herbicides has led to several resistant varieties. More recently, farmers are beginning to use biopesticides and biofertilizers, but still their usage has not caught on due to inconsistent results and the cost efficiency when compared to chemicals. In the face of a proven slow down in the productivity gains from the green revolution, biotechnology or gene revolution is by default, our best, and may be, only way to increase production to meet future food needs.

Today, India needs high yielding varieties of pulses, cereals and oilseeds, which would need minimum irrigation, fertilizers and pesticides to meet feed requirements. Career opportunities which I had seen in biotechnology is of mainly medical biotechnology-diagnosis, treatment and prevention of diseases-have benefited from the use of biotechnology. Diagnoses of both infectious diseases and genetic disorders have been improved by assays using biotechnology. The development and production of preventative agents such as vaccines, and medications by animals and microorganisms have been expanded to include antibiotics, anti-toxins and other medicines.

New methods of treating diseases are also being explored such as injecting active genes into individuals to replace the inherited inactive genes which cause inherited disorders. Plant biotechnology is another area of biotechnology that is being used to increase crop yields by inserting genes for resistance to diseases or pests using genetic engineering techniques. Crops such as soybean and canola are being modified to increase their usefulness as industrial lubricants and to produce oils

lower in saturated fat that will have a longer shelf life.

Thus, I want to do research in the field of the transgenic plants, because due to the increase in the population day by day, there is shortage of the food across the world and currently the production of food is too less due to various factors. I would like to utilize my knowledge in biotechnology which can lead towards a clean environment and I am happy that I got the opportunity for studying biotech. I would also like to contribute my knowledge for the development and production of healthy food for all.