



## Modern Crop Protection; is Expensive but it's Pathway to Prosperity

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The world is looking forward to the future of agriculture, keeping this global problem in mind, now all the elements in the agricultural sector are working on research. Fluctuations in all the three factors namely temperature, rain and humidity are worrying and will have an impact on the future planning of agriculture. We are currently witnessing the strange effects of climate change such as floods in Rajasthan, drought in China, temperature rise 00in Europe. This can lead to major changes in crop composition. New technologies such as gene editing are being used for modernization in agriculture sector.

Agriculture Minister Narendra Singh Tomar says that by using modified seeds, we can increase production by getting crops that are resistance to diseases. By implementing some pilot projects in the agricultural sector, we will get information about which type of seeds to use in agriculture, what crops should be grown in different areas of soil and water, along with what new concepts should be used by farmers to increase production significantly. Through this concept and project, the agricultural supplier chain will be able to plan 'just-in-time' procurement and logistics in an accurate manner.

Green emissions will have good and bad effects. Because, the amount of carbon dioxide will increase. But it is from air, water and sunlight that crop plants produce food. Therefore, increasing carbon dioxide will be beneficial to some crops. But crops like wheat will face big problems. Even if the temperature rises by one degree, the production of wheat will decrease by 10 quintals per hectare. Therefore, scientists are working day and night to create varieties

that come in less time and are tolerant to climate change. By closely studying the diverse structure of plants, new varieties of crops will be introduced by making changes at the molecular level. Drought tolerance varieties development is possible with the help of Gene editing techniques by changing the genetic makeup of the plant, In terms of biosecurity.

Now day' s, technological progress is seen in the agricultural sector. Farming may be automated using technology, as well as digitization is bringing about a sector change in sustainable agriculture. That's why farmers and industrialists will turn to smart agriculture. Hence, smart agriculture is emerging as an upcoming concept by stopping crop loss in less time and making efficient use of resources.

Global Positioning System (GPS) is a new technology that allows modern farmers to spray water, eliminate weeds and pick fruits, take pictures of the field and take corrective measures in a very short time, thus accelerating automation in agriculture. Farmers can capture the view of the field location on their mobile phones to high resolution power through robots and drones. So if an area is infested with pests disease farmer can reduce the damage by spraying at the right place at right time, and the use of fertilizers is determined by soil testing which will increase the productivity of the farm.

The role of biotechnology in agriculture is going to be very important in the future. "Increase in the use of biotechnology in crop and livestock breeding will make new and improved seeds and ani-

mal breeds available in the market. Scientific techniques like tissue culture, hybridization, plant breeding, genetic engineering, hybridize plants with better traits to produce disease resistant plants. Transgenic plants are being developed that are disease resistant, insect resistant, drought tolerant and have high yield potential. Therefore, the income in agriculture will increase and the profit will increase.

On the other hand, soil malnutrition will increase. A production of 50 tons per hectare of sugarcane in use means that 50 tons of organic matter (biomass) is extracted from the soil by the farmers in a year. We are giving negligible food to such land. Since the prices of useful fertilizers will increase, the amount of fertilizers used by organizations and groups will also decrease. Alternatively, the use of fertilizers based on micro (nano) livestock technology will increase.

Simultaneously climate change may increase the prevalence of modern pest diseases in the future. Therefore, new ingredients with environmentally friendly pesticides will come into the market. Of course, crop protection components will be modern but expensive. Because the world's most powerful companies are coming together for research and trade. But ordinary farmers cannot afford the expensive inputs. In such a case, companies, organizations, groups in group farming will effectively control pests and diseases by spraying simultaneously through drones.

Now the second change refers to livestock related to agriculture. Poultry, dairy food management is based on agricultural crops. Therefore, techniques that prioritize essential elements will also be used in crops used for livestock. Livestock crops will become more nutritious. You see, soybeans are used extensively in livestock.

Better, faster, and modern services will increase smallholder farmer productivity, providing gains in poverty reduction, nutrition, education, and income.