**Technology In The Field O**

**f Agriculture & Farming**

India is global agriculture power house. India’s agriculture is largly dependent on nature, but today climate change and global warming issues create a lot of problem in the field of agriculture. Its time reach to educate the farmers in the use of modern technology and innovative ideas to increase the productivity and raise profitability. Information Technology has a very big role in farming and agriculture practices, with the advent of digital technology, the scope has widened in large scale. Innovative ideas in agriculture is leading an evolution in agriculture practice as like green revolution, hence reduce the loss and increase the efficiency. The uses of digital and analytic tools are driving continuous in the improvement of agriculture. Farmers can use scientific data and technology to enhance crop yields and keep themselves abreast with cutting-edge methods of farming. New-age technologies mainly focus on robotics, precision agriculture, artificial intelligence, block chain technology, and more.

Crop health monitoring

Soil nutrient measurement

Field

Crop yield

Crop yield prediction

Cultivation

Pesticides management

Drone

Fertilizer management

Farmer

Irrigation management

Data storage

Satellite Image

Technology affects many areas of agriculture. India managed to achieve self-sufficiency in food grain production by leveraging modern methods of agriculture along with farm mechanization. The proliferation of internet technology offered farmers unprecedented access to valuable resources and tools which make the farming more easier. Internet has large production and planning tools to help them forecast future crops. Decades ago, the idea of tractors driving themselves on the farm was invented. The entry of GPS technology has completely changed everything. GPS provides location information at any point near or on the earth’s surface. So, farming machines developed with GPS receivers can recognise their position within the farm. At present tractors are with GPS technology. Additionally, GPS guided drones are increasingly used to perform the tasks such as crop spraying, livestock monitoring and 3D mapping. One of the major advance in agriculture sector is the use of AI. Modern equipment and tools based on AI helps in data gathering and assist in precision farming and informed decision-making. Remote sensors, drones, and satellites gather whole day and night data on weather patterns in and around the fields, providing farmers important information on temperature, rainfall, soil and humidity, etc. AI finds a slow acceptance in our country compared to other countries. But nowadays AI plays a major role in weather/climate prediction. Communications technology made a smart farming possibility. Nowadays Sensors are using in agriculture sector to provide data to farmers and it will monitor the crops given the environmental conditions and challenges. These sensors are working on wireless connectivity and help to find in many areas such as determining composition of soil and percentage of moisture content, nutrient detection, location for precision, etc. Sensors help farmers save on pesticides, and labour, and result in efficient fertilizer application. The use of chips and body sensors can help to prevent disease outbreaks and are crucial in large-scale livestock management. Chips and body sensors can able to detect illness early and prevent the infection. Mobile technology has also playing an important role in monitoring crop irrigation systems. With the help of new technologies, farmers can control their irrigation systems via smartphones and computers instead of driving to each field.

The world population will become around 9.8 billion by 2050 according to United Nations report. The biggest challenge that we facing will be insufficient food. The increasing role of information technology in agriculture field can solve these issues. India has a long way to go in the adoption of modern farming practices through technology. We know that Technology affects many areas of agriculture, such as pesticides, fertilizers etc. Biotechnology and genetic engineering place an important role in pest resistance and increased crop yields. Irrigation methods and transportation systems, processing machinery have improves a lot with the invention of technology. Utilization and adoption of new technology can create miracle in agriculture sector.