

Modern Agriculture and Artificial Intelligence

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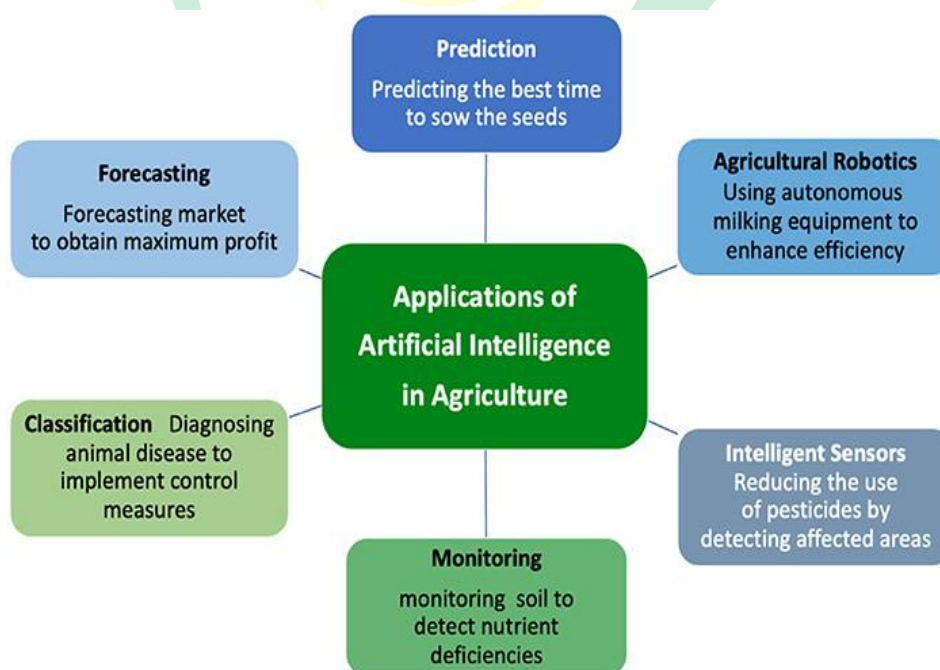
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Introduction:

Agriculture is the basis for the sustainability of our economy. It plays a vital role in the development of our economy in the long term. 75% of our country's population depends on agriculture. With the growing population, the demand for agricultural produce has been increasing. So to compete with this, production and utilization of enough material with limited resources is required. Artificial intelligence (AI) is the concept that can be used in agriculture to modernize agriculture and can produce more from less input".

Artificial Intelligence (AI) is an emerging technology in the field of agriculture. AI has brought an agricultural revolution. AI has been very useful for irrigation, weeding, and spraying with the help of sensors. The below figure represents the applications of AI in agriculture.



Modern Agriculture:

Modern Agriculture incorporates successful technologies such as AI with increased yield with less environmental effects. Modern Agriculture is an ever-changing approach to agricultural innovations, which helps farmers to get innovative ideas and produce higher yields.

Role of Artificial Intelligence in Modern Agriculture:**Weather Forecasting Using AI:**

Farmers find it difficult to identify the best time to sow, irrigate, harvest, etc. With the help of AI, farmers can analyze current weather conditions. This helps the farmers plan the type of crop to be grown in that locality and when to sow the seeds.

**AI Robotics:**

With their precise and repetitive movements, robots can automate various labor-intensive tasks such as seeding, weeding, and harvesting. These robots with AI enable them to perform the activity efficiently and accurately. This reduces manual labour and these are superfast machines.



Crop Health Monitoring Using Drones:

Drone monitoring helps the farmers to observe aerial views of harvest. This gives information related to water availability, soil variety, pest and disease infestations, etc... Drones capture images of the plant so that plant health status can be recognized.

**Benefits of AI in Modern agriculture:**

- Reduced Pesticide use
- Reduced water use
- Precision farming
- Crop health monitoring
- Increased sustainability
- Crop disease prevention
- Tackles labour shortages

Conclusion:

Artificial Intelligence (AI) stands as a transformative force, empowering farmers to amplify production capacity while minimizing production costs and labor-intensive tasks. As AI progresses, it gravitates toward increased automation with heightened accuracy, facilitating real-time management and steering traditional agriculture toward precision farming at a reduced cost. AI-based systems for the benefit of agriculture towards our well-being.