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Green Technology in Agriculture

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Green technology (GT) is a broad term and a field of new innovation ways to make environmentally friendly changes in daily life. It is created and used in a way that conserves natural resources and the environment. Agriculture generates food and reliant on natural resources to do the proper development of the agriculture sector. Moving toward a more sustainable route of economic development necessitates excellent stewardship in agricultural production, since both food and natural capital are required for current and future generations. The use of green technology is supposed to reduce the amount of waste and pollution that are created during production and consumption. The United Nation Asian and Pacific Center for Agricultural Engineering and Machinery (APCAEM) stated that the sustainable agriculture development for the eradiation of poverty by guaranteeing environmental sustainability. Such agro-based environment friendly technology is "Green Technology (GT).

Green energy offers a promising alternative to traditional energy sources. The fact the renewable energy accounts for only a modest proportion in meeting the world's energy demand means that there is a missing link in their potential and their implementation the barriers in their implementation. The Earth Summit at Rio adopted Agenda 21 on June 14, 1992, which proposes various actions to be implemented from now and into the 21st century to accelerate sustainable development. The green technology policy to provide direction and motivation to continuously enjoy good quality and a healthy environment should be based on pillars Energy, Environment, Economy etc.

Biofuel:-

Biofuels are alternative fuel made from plant and plant-derived resources. Biofuels are used mainly for transportation. There are two types of biofuels: a) Bioethanol, b) biodiesel. Bioethanol, the principal fuel used as substitute for petrol for road transport vehicles, is mainly produced by the sugar fermentation process of cellulose (starch), which is

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mostly derived from maize and sugar cane. Biodiesel on the hand is mainly produced from oil crops such as rapeseed, palm, and soybean. India being an agricultural country, has huge potential for the development of biomass energy sector and this will pave the way to achieve sustainable development in the coming years.

Organic farming:-

Organic farming means the farming without using chemical fertilizers and pesticides. In this farming system the aim is to cultivate crops in such a way that increases the soil fertility without harming the environmental quality. This can be accomplished by using on-farm agronomic, biological and mechanical methods in exclusion of all synthetic off-farm inputs.

Permaculture:-

Permaculture, originally 'Permanent Agriculture', is often viewed as a set of gardening techniques, but it has in fact developed into a whole design philosophy, and for some people a philosophy for life.Permaculture is an innovative ethics and design based process used to make agriculture more sustainable, restore soil, conserve water, and redirect waste streams. The process is inspired by the everyday relationship found in nature. The easy to remember primary ethics of permacullture include earth care, people car, and resource share.

Renewable Energy As A Green Energy:-

Renewable energy, often known as clean energy, is critical for agriculture's long-term viability. A renewable resource is a natural resource that can refill itself to replace what has been consumed; it cannot be depleted, making it a sustainable resource. Currently, the majority of agricultural machinery is powered by fossil fuels, which emits greenhouse gases into the environment and contributes to the hazardous effect on climate change. Renewable energy as a green technology and sustainable agriculture are an excellent matching part since these natural resources can be gathered together, providing farmers with a steady source of revenue generation with the desired effect.

Such type of green technology mainly useful for agricultural as well as all agricultural allies sectors. Solar thermal technologies are another green technology which is becoming more favoured. It converts solar heat radiation into heat energy and can be used to

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heat water, solar greenhouse etc. Wind turbines are a popular choice for farmers because they do not use up much land. They can b used to pump water for irrigation. Biomass is made up of living things like Maize, Plants, and animal excrement. After that, the substance is burned to produce energy.

Zero Tillage:-

Zero tillage, or no-till farming, is a method which eliminates the need to plough the soil or the use of any heavy farm machinery. Because the soil is not disturbed as much as with regular farming methods, the amounts of greenhouse4 gases released from the soil is reduced and less erosion and runoff occurs. Zero tillage also improves the rate of soil carbon sequestration (the amount of carbon the soil absorbs and stores) and utilizes crop residue left on the soil surface from the previous crop. Overall, the green method of farming helps to reduce the amount of greenhouse gase4s entering our atmosphere while at the same time cutting costs for farmers.

Vertical farming:-

Vertical farming is the process of growing crops in vertically stacked layers rather than the traditional horizontal farming vertical farming can be a sustainable urban method of farming, providing environmental, economic and social benefits. Farmers will see an increased yield and reduced water and fertilizer waste. This new technology has been found to cut water consumption by as much as 95%. Because the crops ar5e in a controlled climate, there is less need for pesticides as pests and diseases are not in the soil.

Irrigation Monitoring Practices:- The water monitoring is a basic process to improve irrigation district management, providing information about delivery and demand water quality, and irrigation and drainage water quality, on space and time, identifying the infrastructures and operation bottlenecks, health, and environmental risks, and the required farm practices adjustments to cope with water scarcity and quality problems. The irrigation reuse, controlling its physiochemical and microbiological quality is of utmost importance to prevent and control the health safety of farmers, food and consumer safety, as well as soil salinization. Wireless and remote monitoring system are now available and they farmers to gain better control of their operations, making smarter decisions about their water usage and

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distribution. This can be particularly helpful in very large farms with a lot of land to look after.