

Perspective

Agricultural technology in rural areas

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DESCRIPTION

Agricultural technology, often known as agrotechnology, is the application of technology in agriculture, horticulture, and aquaculture with the goal of increasing output, efficiency, and profitability. Agricultural technology can refer to agricultural products, services, or applications that improve different input/output processes. Advances in agricultural science, agronomy, and agricultural engineering have resulted in applied agricultural technology improvements. Technological advancements have shaped agriculture's history. Historians have identified a number of agricultural revolutions that marked significant changes in agricultural practise and output. These revolutions have been inextricably linked to technical advancements. Irrigation technology was created separately by a variety of distinct societies, with the earliest known instances dating back to the sixth millennium BCE in Khuzistan, which is located in the south-west of modern-day Iran.

Agro-textiles

Agro-textiles is a subset of technical textiles that focuses on crop protection and crop development, as well as lowering the hazards associated with farming techniques. Agrotexiles, in general, provide weather resistance, resistance to microbes, and protection from undesired elements and external forces. Agrotexiles contribute to better overall crop development and protection conditions. There are various textile products, fabric forms, fibres, and techniques used in agro-textiles that are useful for agriculture, primarily for crop protection and crop development, such as shade nets, thermal insulation and sunscreen materials, windshield, antibird nets, and air circulation for protecting plants from direct sunlight and birds. Mulch mats and hail protection are examples of agrotexiles nets, crop coverings, and so forth. Horticulture, aquaculture,

landscape gardening, and forestry all benefit from agrotexiles. More examples of use and application include livestock protection, weed and pest control, and so forth.

Agricultural technology types

Forecasting the weather: Weather forecasting is the use of science and technology to anticipate atmospheric conditions for a certain area and time. Weather forecasting has been attempted informally for millennia and professionally since the nineteenth century. Weather predictions are created by gathering quantitative data about the current condition of the atmosphere, land, and ocean, and then using meteorology to project how the atmosphere will change at a certain location.

Hydroponics: Hydroponics is a subset of hydroculture that involves growing plants, often crops, without soil using water-based mineral fertiliser solutions in aqueous solvents. Terrestrial or aquatic plants can grow with their roots exposed to the nutrient-rich liquid, or the roots can be physically supported by an inert material like perlite, gravel, or other substrates. Despite inert medium, roots can induce rhizosphere pH changes, and root exudates can alter rhizosphere biology and the physiological balance of the nutrient solution *via* secondary metabolites.

Soil moisture sensors: The volumetric water content of soil is measured by soil moisture sensors. Because direct gravimetric measurement of free soil moisture requires removing, drying, and weighing a sample, soil moisture sensors indirectly measure the volumetric water content by using another property of the soil as a proxy for the moisture content, such as electrical resistance, dielectric constant, or interaction with neutrons. The relationship between the measured property and soil moisture must be calibrated, and it may differ based on environmental

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conditions such as soil type, temperature, or electric conductivity. Reflected microwave radiation is impacted by soil moisture and is utilised in hydrology and agriculture for distant sensing. Farmers and gardeners can utilise portable probing tools. Soil moisture sensors are generally sensors that detect moisture in the soil.

Irrigation controller: An irrigation controller is a device used to handle automatic irrigation systems like lawn sprinklers and drip irrigation. Most controllers allow you to programme the frequency of irrigation, start time, and length of watering. Some

controllers offer extra functions like numerous programmes for varied watering frequency for different types of plants, rain delay settings, input terminals for sensors like rain and freeze sensors, soil moisture sensors, weather data, remote operation, and so on. The majority of contemporary systems use electromechanical or electronic controls. The controller in this case is linked to an electrical circuit that drives a solenoid attached to each valve (solenoid valve). When the solenoid is triggered, the water above the diaphragm is released, and the valve opens.