

ORNAMENTAL HORTICULTURE (2+1)

Importance and scope of ornamental horticulture in India. Cultivation of annuals and canna. Commercial cultivation of rose, chrysanthemum, marigold and gladiolus; Making and maintenance of Lawn; Making and maintenance of Hedge and edging; Elementary Knowledge of common shrubs, climbers and trees and their various uses. Indoor gardening; Styles of gardens with special reference to Moghul and Japanese gardens: Flower arrangement and techniques to prolong vase life of flowers.



Note: Lectures are compiled from various books of ornamental horticulture. These lectures have been created in view of epidemics like Covid-19. The authenticity of its content is related to the books referenced and personal experience of compiler. The subject matter has been composed for teaching only and compiler will not be responsible in case of any dispute. Students can ask their queries on WhatsApp group 'Ornamental Horticulture' in case of any doubt.

Lecture I: Importance and scope of ornamental horticulture in India

Ornamental horticulture: Ornamental horticulture is the study of growing, arranging and tending decorative plants and flowers.

IMPORTANCE

Besides food and nutritional security, the aesthetic value is also equally important for our daily lively hood as well as for environmental purity.

Economic importance

India is bestowed with several agro-climatic zones conducive for production of sensitive and delicate floriculture products. Area under floriculture production in India was 339 thousand hectares with a production of 1991 thousand tonnes loose flowers and 867 thousand tonnes cut flowers. Floriculture is now commercially cultivated in several states with Tamil Nadu (20%), Karnataka (13.5%) West Bengal (12.2%), having gone ahead of other producing states like Madhya Pradesh, Mizoram, Gujarat, Andhra Pradesh, Orissa, Jharkhand, Haryana, Assam and Chhattisgarh. India's total export of floriculture was Rs. 571.38 crores/81.94 USD Millions in 2018-19. The major importing countries were United States, Netherlands, United Kingdom, Germany, and United Arab Emirates. There are more than 300 export-oriented units in India. More than 50% of the floriculture units are based in Karnataka, Andhra Pradesh and Tamil Nadu. With the technical collaborations from foreign companies, the Indian floriculture industry is poised to increase its share in world trade.

Plants increase tourism revenue

Landscape gardening an important role in directly attracting the tourism and film industries also adding value to exports by enhancing India's 'clean and green' image. Economic globalization has led to the rapid expansion of international tourism. Modern mass tourism has been earlier embraced by most of the governments in world as a "smokeless" (non-polluting) industry to increase employment and economic prosperity, especially in developing countries.

It was observed that mass tourism has adverse effects on the environment, culture, and economics of the local communities. To overcome the further negative effects of mass tourism on environment, the necessity to have a new concept of tourism was felt, that could protect the fragile areas from deterioration, and preserve it for future generations. It was discovered in the form of Ecotourism which can be only achieved by applying principle and practices of landscaping.

Landscaping increases property market value

A most important division in the work of a landscape gardener is the economic treatment of property as well as land, whereby the money value of it may be greatly enhanced, as it is made fit for divided residential settlement. Landscaping can add as much as 14% to the resale value of a building and speed its sale by as much as 6 weeks. By spending 5% of the value of home on the installation of a quality low maintenance landscape, it could boost the resale value by 15%, earning back 150% or more of your landscape investment.

Environmental

Air pollution

Plants in cities and parks have a significant impact on air quality for local residents. Not only do trees affect the concentration of air pollutants but also affect local air temperatures and the amount of ultraviolet radiation. Trees also can help reduce greenhouse gas concentration and emissions that affect climate change. Trees and parks can affect factors viz., air temperature, air pollution, ultraviolet radiation and climate change. These factors have important implications for environmental quality and human health in cities. A landscape ecosystems often offer significant amounts of open space that allow for relatively high densities of trees, shrubs, grasses, and other vegetated surfaces. Trees and vegetation in a landscape area can help reduce air pollution both by directly removing pollutants and by reducing air temperatures and building energy use in and near parks. These tree effects can reduce pollutant emissions and formation.

Heat effect

Rapid urbanization in the past 100 years has resulted in many environmental issues in large cities. Urban Heat Island which is the condition of excess heat in city centres is one of these environmental issues. The urban climate can be effectively modified by altering the amounts of heat energy absorbed, stored and transferred, and by adopting cooling strategies. Vegetation can be very effective as it delivers several mechanisms of cooling which achieved by landscape gardening of urban areas. Planted areas in a city tend to reduce daytime maximum temperatures, reducing radiant exchange at the ground surface. The effect of vegetation on the atmospheric heat island is manifested not only indirectly, in the form of a reduction of sensible heat flux from the cooler surface, but also directly in the form of evaporative cooling. Most field studies support the argument that a lack of vegetation in the city would tend to result in elevated daytime air temperature, and concomitantly, that a large-scale planting campaign may lead to a reduction of the daytime urban heat island.

Ultraviolet radiation reduction

Park trees can shield people from ultraviolet (UV) radiation, as tree leaves absorb about 95% of UV radiation. The reduction in UV exposure to park visitors is important because excess exposure to UV is the cause or contributing factors which are play an active role in developing skin cancer, and UV radiation is also blamed for contributing to cataracts of the eye.

Noise abatement

It is known that 70% of the world's urban population lives in developing countries. The increasing population and improving technology have brought about changes in the economic

and social structure of societies in the counties. Much of these urban populations are vulnerable to the ill health effects of noise. Despite being a less frequently considered type of environmental pollution; noise has a major negative impact on the quality of life in cities. Especially dense transportation systems, including roads, railways, and air traffic, characterize the modern urban environment. These systems have caused environmental noise (also known as community noise) pollution. Vegetation has been proposed as a natural material to reduce noise energy outdoors. Belts of trees and bushes situated between the noise source and the receiver can reduce the noise level perceived by the receiver. A number of studies have examined the acoustic performance of vegetation in reducing noise.

Soil erosion

Soil erosion is considered a serious problem all around the world. It is detrimental to topsoil, which contains nutrients and organic matter. During the last 40 years, nearly one-third of the world's arable land has been lost by erosion and land continues to be lost at a rate of more than 24.7 million acres per year. Landscape gardening is one of the most effective tools of control soil erosion. Vegetation maintain crucial interrelationship with soil properties, enhancing biodiversity for steeply sloped areas that have highly erodible soils.

Stormwater runoff

Reduction of stormwater runoff can be achieved through planting or conserving existing forested areas and creating other green infrastructure mechanisms, such as green roofs. Trees and soils improve water quality in that they can remove harmful substances washed off roads, parking lots, and roofs during rain or snow events. Vegetation can also reduce the need for costly stormwater treatment by retaining or slowing the flow of precipitation reaching the ground. These systems reduce the risk of major flooding and water treatment costs.

SOCIAL IMPORTANCE

People value different landscapes for different reasons. Some landscapes are appreciated for their highly aesthetic natural values. These include such iconic landscapes as Aksha beach, Neelgiri hills, Dal Lake, Tihri dam, and Gangotri origin as well as areas of wild and relatively undeveloped coastline, mountains, high country, lakes and rivers. Other landscapes are appreciated for their unique or special character which has arisen from the interaction of natural and human influences over time. Such landscapes can become an integral part of the identity of local communities. They provide a strong sense of belonging to 'our place' for residents and regular visitors alike.

Gardening is also a key tool for improved health by providing exercise, stress reduction, and relaxation. From the medical perspective, researchers have documented that people who interact with plants recover more quickly from everyday stress and mental fatigue. There has been an increased awareness in the restorative value of plants in hospitals, homes for the aged and senior centres. In such places, many "healing gardens" are being constructed for clients, staff and visitors. Gardening is a universal language that brings the community together. Its conversations and activities bring neighbors together, melting differences between racial and ethnic groups. Gardening is an effective tool to unite neighborhood.

Scope

Gardening which was only an art and science in the earlier days has now emerged as a huge industry. With the importance and need of gardening in improving and conserving the environment being strongly felt now, the concept of landscaping and gardening is growing rapidly. Ornamental gardening and landscaping has expanded as a multi-faceted industry encompassing activities such as propagating and rearing ornamental plants, landscaping,

production of growing media, pots and other accessories, *etc.*, generating huge employment opportunities and simultaneously promoting activities that would improve the environment. Ornamental horticulture generates self-employment opportunities round the year. The employment opportunities in this field are as varied as the nature of work itself.

- One can join the floriculture field as farm/estate managers, plantation experts, supervisors and project coordinators etc.
- Research and teaching are some other avenues of employment in the field.
- Marketing of floriculture products for different ventures is emerging as a potential segment of this field.
- Besides one can work as consultant, landscape architect etc with proper training.
- One can also work as entrepreneur and offer employment to others.
- In addition to these careers which involve research and actual growing of crops.
- Floriculture also provides service career opportunities which include such jobs as floral designers, groundskeepers, landscape designers, architects and horticultural therapists.
- Professional qualification combined with an inclination towards gardening and such other activities produces efficient floriculturists and landscaping professionals.

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