ISSN- 2230-7346
Journal of Global Trends in Pharmaceutical Sciences

FLORICULTURE-A REVIEW

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ARTICLE INFO

Key words:
Horticulture, Ornamental plants, Gardening Farming, Potential components

Access this article online
Website: https://www.jgtps.com
Quick Response Code:

ABSTRACT

Floriculture is an important branch of horticulture which deals with cut or loose flowers, ornamental plants such as foliage plants, trees, climbers, palms, bamboo, dried flowers, essential oils and landscape gardening. Floriculture includes Annual (seasonal), biennial & perennial ornamentals. Floriculture is one of the most potential components of the Horticulture. It provides employment opportunities to the many people. Floriculture has become one of the profit-making trades. As per National Horticultural Database, the most flower producing states are Tamil Nādu, Karnataka, Andhra Pradesh, west Bengal, Maharashtra etc. Ornamental plants are classified based on the life span, growth, market value, type of plants, mode of Propagation etc. The process of Floriculture includes following stages 1. farming 2. post harvest3.transport to market. 4. Distribution. 5. Retail 6. Consumption. India has exported 20703.46 Mt of floricultural Products to the other countries.

INTRODUCTION:

Ornamental plants and flowers are associated with our civilization since time immemorial. The first evidence of pipal as an ornamental plant comes from the seal of Mohan- jo-daro. Another example during the same period, depicting the use of an ornamental plant resembling weeping willow, comes from the seals of Harappa. There has been a mention of flowers and gardens in our ancient classic literature too. Although loose flowers were cultivated for domestic uses like making of veni, gajra, garlands, etc., and for various celebrations, such as marriage, birthday, religious offerings and other social gatherings, cultivation of cut flowers on commercial scale for domestic and export purposes is of recent origin in our country.[1]
Floriculture is an important branch of horticulture, which deals with cut or loose flowers, ornamental plants, Such as foliage plants, trees, shrubs, climbers, palms, bamboo, cacti and succulents, dried flowers, essential oils and landscape gardening. Gardening, an important Part of the floriculture business, has aesthetic value and is becoming a necessity for pollution-free environment in cities. Floriculture is a branch of horticulture that deals with the cultivation, processing and marketing of ornamental plants vis-à-vis landscaping of small or large areas, and maintenance of gardens so that the surroundings may appear aesthetically pleasant. Floriculture includes annual (seasonal), biennial and perennial ornamentals, such as cacti and other succulents, bromeliads, trees, shrubs, climbers, bulbous plants, lawn and ornamental grasses, bamboos, orchids, palms, cycads, foliage, bedding, pot and house Plants, cut and loose flowers, fillers, ferns,

seed and bulb production of ornamentals, dried flowers or plant parts, and other value-added products, such as extraction of essential oils, edible pigments, and their marketing vis-a-vis making and maintenance of gardens.

The Floriculture Industry in India comprises flower production and trade of flowers, nursery and potted plants, seeds and bulbs, nursery, plant rental services, propagation through tissue culture and essential oils extraction.

Importance and uses of floriculture: Floriculture is one of the most potential components of the Horticulture industry, being important from aesthetic, social and economic points of view. It has the potential

for generating employment opportunities round-the-year and earning foreign exchange. In many Countries, different floricultural value-added products are the main export items from the agriculture sector.

Let us now look at the importance and uses of commercial floriculture

Cut flowers

These flowers are harvested with stalk, especially for arrangement in vases, and are

lasting. These constitute a major share of the total world trade in floricultural Products. Important cut flower crops are rose, carnation, chrysanthemum, orchid, gerbera, lilium, anthodium, gladiolus, narcissus, bird of paradise, heliconia, anemone, ranunculus, tulip, calla lily, etc. Cut flowers are used in the preparation of bouquets and floral baskets as corsages, flower arrangements and for decoration purposes.[2]

Loose flowers: Loose flowers are plucked from plants without stalk just below the calyx. These are in great demand, especially In Asian countries, and used for making veni, rangoli, bracelets, hair adornments for women

and garlands, for garden displays, religious offerings and decorative purposes. Loose flowers comprise rose, chrysanthemum, marigold, Jasmine, tuberose, gaillardia, crossandra, barleria, chandni, kaner, hibiscus, spider lily.

Potted Plants

Potted plants are of considerable commercial importance for instant gardening and for indoor, as well as, outdoor decoration. These can be easily carried to places, which need to be landscaped immediately. The potted plant Industry is growing enormously. Potted plants may be either ornamental foliage or flowering. They are used for indoor decoration at homes, offices, commercial complexes, corporate offices, hotels, malls and other Sites for various functions and events. The importance of these plants is increasing because with the growing population and lack of open spaces, one has to depend largely on potted plants for decorating their houses and surroundings. Some examples of potted plants are aglaonema, aralia, azalea, begonia, calathea, chlorophytum, croton, diffenbachia, dracaena, ferns, ficus, kalanchoe, maranta, money plant, etc. [3]

Flower seed and planting material

There is a high demand for quality flower seeds, especially annual ornamentals and ornamental planting material. Different types of soil and climatic conditions In India enable seed production of practically all type of flowers. Flower seeds of annuals are produced in huge quantities for sale. A large number of bulbous Plants, such as gladiolus, tuberose, amaryllis, dahlia, Lilies, freesia, tulip, calla lily, etc., are multiplied and marketed.

Nursery: Nurseries are meant for multiplying and supplying plants and planting material, and by and large, providing guidance in the growing of ornamentals and maintenance of gardens. An ornamental plant nursery is a lucrative retail or wholesale business for the supply of various type of plants and planting material, such as nursery seedlings or prepared plants of trees, shrubs, climbers, perennials, foliage plants, bulbous plants, cacti and succulents, palms, Indoor plants, grasses, seeds, bulbs, etc.

Lawn

It is a green carpet for landscape. Lawn is a well-mown turf made in the field in front of a house or in garden. It Is an integral part of the garden, providing a beautiful environment to on lookers and emitting oxygen to the environment as lungs do for the body. Lawn has aesthetic and recreational value too. It also provides a suitable background for flower beds, shrubbery border and specimen tree. It improves the monetary value of a property. In landscape designing and in the establishment of lawns or in sports like cricket, golf, hockey, tennis, etc., different type of grasses is used. The Turf Industry has recently got a boost due to government policies for encouraging various kind of sports.

Perfumes

The demand for natural floral extracts like perfumes from flowers is increasing by the day. Some flowers, such as rose, jasmine, screw pine (kewra) and tuberose Are used for the extraction of essential oils for the preparation of perfumes or attar.[4]

Colour pigments

Flowers are used to extract natural pigments. Carotenoids extracted from flowers are used commercially in the pharmaceutical industry, and as food supplements, animal feed additives and food colorants. Marigold petals are used as an important feed additive for poultry birds to add to the yellow colour of egg yolk as the petals are rich in carotenoid pigment. These are also used to prevent humans from dry eye and night blindness. A yellow-coloured dye is extracted from chrysanthemum, which is used in food products and cosmetics. Orange-red edible

dye is extracted from the Arils of Bixa Orellana (sindhur), which is used in cosmetics and medicines for coating.

Colour pigments

Dried flowers

Plants of many species have flowers and foliages for a short period, and their availability is restricted to a particular time span. In the dry flower technique, flowers can be easily dried, preserved and processed to retain their beauty and everlasting character. Some flowers that are air dried and used as dry flowers include dahlia, larkspur, paper flower, annual chrysanthemum, marigold, straw flower, lotus pods, etc. [5]

Combat pollution

Open spaces like parks and plants help check air pollution. Parks are considered as the lungs of cities. The greater use of plants improves our health and also beautifies the environment. Planting different type of Plants

helps in checking air, water and noise pollution, and prevents soil erosion. Trees

provide shade and organic matter, which help improve the microclimate of an area.

Present status of floriculture in India

Due to change in lifestyles and increase in the per capital income of people, the demand for floriculture has increased substantially. At present, it has become one of the profit-making trades because of constant rise in the demand of flowers and its products. As per the National Horticultural Database, the major flower producing states are Tamil Nadu, Karnataka, Andhra Pradesh, West Bengal Maharashtra, Madhya Pradesh, Gujarat and Haryana. The various fields of revenue generation in Floriculture includes cut flower production, loose flower production, dry flower, nursery, potted plants, seed industry, extraction of essential oils and value-added products. Several seed companies have established production units in major flower growing states to meet the demand of flower seeds.[6] Seasonal flowers and seed production is an established business in Punjab, Karnataka and Maharashtra. The Government of India has set up six Agri-export zones for floriculture in Maharashtra, Sikkim, Tamil Nadu (two zones), Uttarakhand and Karnataka. The United States, Germany, the United Kingdom, the Netherlands and the United Arab Emirates are the major countries, which import floricultural Produce to India. The Agricultural and processed Food Products export development authority is responsible for the export, promotion and development of floriculture in India.

Classification of ornamental plants: Ornamental plants can be classified in the following manner.

Based on life span

Annuals: Plants, which complete their life cycle — from seed germination to seed production in one growing season, are called 'annuals'. They complete lifecycle—seed germination, growth, flowering, seed formation and die in one growing season or year. They require replanting every season. They are mostly grown through seeds and are commonly called 'seasonal', for example china aster, coreopsis, gomphrena, marigold, petunia, tithonia, verbena, zinnia, etc.

Biennials: These are plants that complete their seed-to-seed life cycle in two seasons or years. Usually, most of the temperate seasonal are biennial in nature as they complete vegetative growth in one season or year and flowering to seed formation in another season or year, such as amaranths, celosia, hollyhock, pansy, snapdragon, etc. These require replanting.[7]

Perennials: These are plants having a life cycle that is more than two years. These produce seeds or flowers every year once the bearing starts. They do not require replanting. Perennials are, usually, categorized into two groups.

Woody perennials: These comprise most of the trees, shrubs and vines, which have wo perennial and branches, superenniasia Saima, C. fistula, Peltophorum, Cassia biflora, Lawsonia Alba, Hperenni rosa-sinensis, Petreavolubilis, Quisquallis Indica, Vernonia eleagniaefolia, etc.

Herbaceous perennials: These include plants with soft and herbaceous (non-woody) main stalk, such as anthurium, bird of Paradise, geranium, gerbera, heliconia, pelargonium, periwinkle, portulaca, perennial balsam, sweet violet, viola, etc. [8]

Based on season of growth

Winter season annuals: Winter season annuals are hardy. These can grow during the rigours of winters and withstand low temperatures. The seeds of annuals are sown in September-October and the seedlings are transplanted during October-November. Examples are candytuft, antirrhinum, larkspur, nasturtium, pansy, petunia, Phlox, sweet sultan, verbena, etc.

Summer season annuals: These annuals are grown during the summer season and can bear high temperatures to produce flowers. The seeds are sown in February−end or the beginning of March, and the seedlings are transplanted in the end of March or April. Examples are cosmos, gaillardia, gomphrena, kochia, portulaca, sunflower, tithonia, Zinnia, etc. [9]

Rainy season annuals: These are grown in the rainy season and can produce flowers under high humidity and rain as compared to other annuals. The seeds are sown in June and the seedlings are transplanted in July. Examples are amaranths, balsam, celosia, cock's comb, gaillardia, etc.

Based on market value

Loose flowers

Loose flowers are harvested without stalk. Examples are barleria, bedding dahlia, Calotropis, chrysanthemum (spray type), chandni, crossandra, xeranthemum, gaillardia, jasmine, kamini, kaner (yellow and red), lotus, marigold, rose (fragrant desi type), shoe flower (hibiscus), sunflower, tuberose, water lily, etc. They are used for making argali, gajra, veni, garlands, and offered for worship at home, as well as, religious places.

Cut flowers

Cut flowers are fresh flowers, flower buds or spikes harvested along with their stalks attached to the flowers, the length of stalks being specified to individual Flowers. Examples of cut flowers are alpinia, anthurium, antirrhinum, bird of paradise, carnation, freesia, gerbera, gladiolus, gypsophila, heliconia, iris (bulbous), lupins, narcissi, orchid, rose (improved varieties), scabiosa, statice, tuberose, watsonia, etc. They are mostly used for bouquets and for vase arrangements.

Flowers yielding value-added products [10\

They are used as raw material in industries for the extraction of essential oils and also for preparing edible products, such as gulkand, rose water and pigments as natural colours. They are also used as dry flowers, such as acroclinum, jasmine, marigold, rose, etc.

Based on plant type

Herbaceous

Lilium, verbena, viola, etc.

Shrubs

Bougainvillea, jasmine, lawsonia, hamelia, nyctanthes, rose, tecoma, etc.

Trees

Gul mohar,palash, amaltas, kadamb, pride of India, etc.

Climbers and creepers

Adenocalymma, antignon,Rangoon creeper, madhulata, petrea thunbergia, etc.

Based on mode of propagation

Bulbous plants

Lily,narcissus, tuberose, tulip, etc.[11]

Cormous plants

Crocus, gladiolus, tritonia, watsonia, etc.

Rhizomatous plants

Canna, Hedychium, iris, lotus, etc.

Tuberous plants

Begonia,dahlia (root tuber), etc.

Production of floriculture

STAGE 1: FARMING

Land preparation – the soil is prepared to ensure the right nutrients are in place. It is then tested. The soil must possess a pH level of between 5.5 and 7 for the cultivation of roses, have good drainage properties, and be well-lit.

Planting of the flowers

PRUNING, WEEDING, SPRAYING– Roses must be watered three to four weeks after planting. They are pruned regularly.

FERTILISERS – in the case of roses, fertilizers are added three months after planting.

COSTS–Production costs are heavy. For example, in Africa, production costs for roses can be between $100,000 and $160,000 per 10,000 meters squared of greenhouse.[12]

STAGE 2: POST HARVEST

SORTING–flowers are sorted by quality and size, depending on market specifications (for example, into 10s, 20s, 25s or 50s)

CLEANING – they are cleaned to ensure that they are presentable for the series of inspections that they must pass. The flowers are also normally trimmed to the same length at this stage.

GRADING/INSPECTION – the flowers are graded according to their quality (based on freshness, color, intensity, etc.).

PACKING – the flowers are packed into boxes, which are specially designed to minimize damage when being transported.

TRANSPORT TO AIRPORT – they are then transported to the airport in refrigerated containers to ensure their preservation.[13]

STAGE 3: TRANSPORT TO MARKETS

Customs Clearance

AIRFREIGHT TO MARKET – a number of major airlines are heavily involved in the transport of flowers to market countries.The cost is typically $1.50-$2.05per kilogram (on average $0.14 per rose) for Ethiopian and Kenyan roses.[14]

STAGE 4: DISTRIBUTION

Customs Inspections

AUCTION INSPECTIONS AND REJECTIONS – when the flowers reach auction, low-quality flowers or flowers which have been damaged en route are rejected. If

everything has gone to plan, this normally brings the total amount of wastage to no more than between 3% and 5% of those that passed inspections at post-harvest stage

AUCTION – when they reach auction, floral company products are then purchased by buyers.

REGIONAL DISTRIBUTION – the transport of the flowers in refrigerated conditions is as rapid as possible to ensure that the flowers stay as fresh as possible.[15]

STAGE 5: RETAIL

ASSORTMENTS AND ARRANGEMENTS – normally at the retail stage flowers are sorted and made into different arrangements to make them appealing to customers.

STAGE 6: CONSUMPTION

PURCHASE – the customer will then purchase the flowers, taking cost factors and intentions for use into consideration.

USAGE – The possibilities for final use for the flower products are diverse, however, normally for decorative or for gift purposes.

TOTALCOSTS – INR100,000-150,000 per 10,000 meters cubed of greenhouse (excluding sale and marketing costs).

TOTAL PROFIT MARGIN – typically varies between 10% and 20%.[16]

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