

Specific Objectives:

To provide knowledge of basic principles and physiology of ornamental crop production to the students of Horticulture.

Theory:

Introduction and importance; present status and future scope, Raising of important annuals, Growing of flowering perennials, foliage plants, succulents and flowering bulbs with their propagation and crop management, Seed and bulb dormancy, Pruning, training and shaping, Use of growth regulators, Manipulation of growth and flowering. Concept of Bonsai and topiary, Outdoor and indoor decoration, Flower exhibition, Flower arrangements.

Practical:

Seeding, raising and transplanting of nursery, Identification of annuals, herbaceous perennials, foliage plants, succulents and flowering bulbs with their propagation methods and management practices (pinching, disbudding, de-shooting etc.), Methods of breaking seed and bulb dormancy, Visits to ornamental nurseries, parks, cut flower shops, flower exhibitions and growing structures.

Books Recommended:

1. Arora, J.S. 2003. Introductory Ornamental Horticulture (4th Ed.). Kalyani Publishers, New Delhi.
2. Larson, R.A. 1980. Introduction to Floriculture. Academic Press, New York.
3. Chadha, K.L and B. Choudhary. 1986. Ornamental Horticulture in India. Indian Council of Agricultural Research, New Delhi.
4. Laurie, A. and Ries V.S. 2004. Floriculture: Fundamentals and Practices. Agrobios (India), Jodhpur, India.
5. Hessayon, D.G. 2007. The Flowering Shrubs Expert (3rd Ed.). Transworld Publishers, London, U.K.
6. Hessayon, D.G. 2007. The Flowering Bulbs Expert (3rd Ed.). Transworld Publishers, London, U.K.
7. Bhattacharjee, S.K. 2006. Advances in ornamental Horticulture. Eastern Book Corporation, Delhi, India.
8. McDaniel, C.L. 1979. Ornamental Horticulture. Prentice-Hall International Inc., Reston, Virginia.

Floriculture Definition:

Floriculture may be defined as the branch of Horticulture which deals with the culture and management of flowers and ornamental plants. OR

Branch of horticulture which deals with ornamental plants and their layout for the beautification of an environment.

- It has been derived from two words ‘flor’ means flower and ‘cultura’ means cultivation.
- But now in addition to flower other ornamental plants are also included in floriculture.

Importance of Floriculture

– As **Floriculture** deals with the culture of flowers and ornamental plants, it has great importance in our daily life as well as national economy.

-General importance of flower

- Flowers help getting out of illness through psychological enchantment.
- Flower gardens increase beauty of the house or an institution.
- Scent and perfumes are extracted from the fragrance of flowers e.g., Rose water, Atar.
- It is the source of incentive to the poets and writers.
- Flower is a national symbol. Jasmine is the national flower of Pakistan.
- Its beauty and fragrance give happiness to all irrespective of age and wealth.
- It is the principal component of public functions and anniversaries and also extensively used for decoration.
- Flower gardening is a good medium of passing leisure time and help keeping good health.

-Economic importance of flower production

- Perfume industries can be established in the country which can help improving national economy.
- Flowers can be a source of earning huge foreign currency by exporting them.
- Flowers can be considered as a commercial commodity. Commercial flower production may be helpful in increased earning of the grower.
- Establishment of flower production farms and perfume industries can help solving unemployment problem to a large extent.
- It provides scope to bring more unused land under flower cultivation.

Present status and fast growing Floriculture sector in Pakistan

Pakistan is an agricultural country, where the agriculture sector directly adds 21.4% to its GDP, provides 40% employment and 60% export. Horticulture as a sub-sector participates 11% in the

agriculture sector. Agriculture in Pakistan mainly revolves around the major crops like wheat, rice, cotton, citrus, mango etc. Horticulture occupies 6% of arable land of Pakistan, while floriculture occupies only 0.5%.

Floriculture is a fast growing sector of Pakistan, which will be the best option of enhancing income under restricted conditions. As Pakistan is blessed by favorable agro climatic conditions, cheap labor and easily available variety of soils, it has the potential to develop a strong floriculture sector.

The floriculture industry is famous around big cities like Karachi, Hyderabad, Lahore, Rawalpindi, Islamabad, Faisalabad, Multan and Quetta where flowers consumption is high.

For floriculture trade in Pakistan, Pattoki near Lahore serves as the center market from which about one million pieces of cut flowers are exported daily to different cities in the country.

The cities consuming the most are Karachi, Peshawar, Lahore, and Islamabad and there demand is increasing with time.

In Pattoki market flowers are packed in wooden or paper cartons and transported to different markets by railway and road without cold storage. Each wooden or paper carton contains 50 pieces of cut flowers.

The Pakistani flower industry is not at a high standard because of the unavailability of suitable facilities for harvest and post-harvest treatments, low productivity and high cost of production, poor cold chain storage facilities, lack of proper disease and pest control, lack of knowledge about the market, non-availability of skilled labor during harvesting, and the non-availability of a well-developed internal market.

The issues related to the market are lack of a proper cold chain, lack of cooperation between private and government sectors and inadequate transport facilities.

Now the government and private sector are trying to control these issues for enhancing the floriculture industry in Pakistan.

Future scope of flower cultivation

- Potted foliage and flowering plants are less perishable and has advantage over cut flowers. As most of the important foliage and flowering plants are native to the tropical region, they can successfully be grown in Pakistan as well as for export from Pakistan.
- Pakistan has a very good potentiality to become an important supplier of flower and ornamental plants to different countries of Asia, Middle East and Europe.
- The agro climatic condition is well suited for growing many flowers and foliage plants in Pakistan.

- Since Floriculture is a new industry in Pakistan it has a tremendous scope to develop.
- Bonsai culture is a recent development in the field of floriculture in Pakistan. In bonsai culture a large tree is transformed into a miniature form giving a lucrative look. Such plants have heavy demand in the society though they are expensive. To meet up local demand and for export many bonsai making farms can be established.
- v) Cactus is a high valued ornamental crop sold in plant nurseries and shops. Some progressive nurserymen and amateurs are trying to make special types of plants like grafted cactus and bonsai in small scale. This gives a hope for trade in Floriculture.
- vi) Tissue culture technology can be exploited for developing quality seedling in many flower spp. in order to get local as well as international market.
- There is a high demand of fresh flower and pot plants in Europe, America, Japan, Holland and Middle East. Very recently Pakistan Govt. has included flowers in the export policy. As such those flowers suitable for export such as rose, gladiolus, gerbera, tuberose, marigold, orchid etc. can easily be produced for this purpose.

GROWING ANNUAL FLOWERS

The term annual flower is define as, it grows from seed and then flowers and dies all in a single season or the same season. It is, therefore, called temporary visitor in the garden plantation.

Factors For Success

- Start with vigorous seedling plants or seeds.
- Prepare soil thoroughly.
- Set out plants or sow seeds at proper time.
- Plant at proper distances.

Purposes of Growing Annuals

- To provide mass of color for brightening the dark foliage of back ground shrubs.
- To fill in beds until shrubs grow large enough.
- To over plant bulbs beds after they have bloomed.
- Bedding to give large masses of color.
- For border plantation.
- For low edging around beds and walls.
- Quick growing screens by tall plants.
- For cut flowers.
- For drying purpose

- For growing in pots.
- For extraction of essential oils.
- Use for focalization.

CONSIDERATIONS WHILE PURCHASING THE SEEDS

- It should be fresh seed. Old seeds lost much of its viability.
- Do not buy too far in advance of planting time
- Keep the seeds dry and cool until it is planted.
- F1 hybrid seeds are always superior in quality and better than F2
- It should clean and free of weed seeds.
- Shriveled and under developed seeds are not good.
- It should be purchase by reputed firm.

CHARACTERISTICS OF SELECTED GARDEN ANNUALS

- Winter annuals.
- Summer annuals.

PRODUCTION TECHNOLOGY OF ANNUAL FLOWERS

Seed Sowing

- Remove stone, pebbles, gravels, etc.
- Cultivating the soil by spading many times.
- Seed bed should be finely pulverized but firm.
- Provide half inch layer of well decayed leaf mould /FYM
- Make shallow furrows and sow the seeds in them.
- Cover the seed with a layer of well decayed leaf mold /FYM
- Depth of the seed should be about twice its diameter thickness.
- Water the seed bed thoroughly using a nozzle adjusted for a fine mist.

- Cover the seed bed with news paper in order to check the evaporation or use any mulching material for the purpose.

- Remove the covering material when seedlings appear.

- To avoid the risk of damage by rain during the germination the seeds may be sown in wooden flats convenient sizes. 5-8cm flat depth is satisfactory. Flats can be moved in when it rains.

- Seeds or seedlings susceptible to damping off may be treated with suitable fungicide before sowing.

Preparation of flowering beds

- Good drainage and good soil preparation may be important with annuals as in case of trees and other perennials. After removing all the debris and weeds from the beds, well rotten farm yard manure or leaf mold should be added and mixed thoroughly with spade and watering these beds for the weed seeds germination which should be removed before the planting of seedlings. Before the soil is spaded second time, a complete commercial fertilizer with 8:4:4 ratio of NPK should be used of bed surface and mixed immediately in the soil and seed bed is ready for transplanting of annual seedlings.

Transplanting

- Small and younger seedlings stand transplanting better.

- Seedlings of summer annuals are usually ready for transplanting in 2-3 weeks after sowing.

- Seedlings of winter annuals are transplanted in 4-6 weeks after sowing.

- Lift the plants from the nursery beds carefully avoiding injury to the roots. The soil should not be too dry or too wet at the time of lifting the seedlings.

- Separate the plants carefully.

- Allow as much soil to remain with the roots as possible.

- Plant them in the beds as soon as possible. Roots should not be dry.

- Do not keep the uprooted plants in sun.

- Better plant in the evening time or early in the morning.

- Make wide enough holes to allow the root system undisturbed.

- Firm the soil around each seedling.

- Water thoroughly after transplanting.

Thinning

■ Thin the seedlings if grown direct in the flower beds leave the plants at proper spacing as recommended planting and culture chart. Seedlings are thinned when they have developed the leaves.

Watering

Water when needed, moisten the entire bed thoroughly, but do not water so heavily that the soil become soggy. Allow the soil to dry moderately before watering again. Avoid sprinkling water on the foliage and flower; it makes them susceptible to disease.

Cultivation

■ Hoe when the soil has moderately dried.

■ Hoeing should not be deep, as it would cut the fine roots.

■ Hoeing should be fine so that it can conserve the moisture effectively and provide aeration to the roots.

■ Remove all weeds.

■ Firm the beds after fine hoeing.

Removing Old Flowers

■ To maintain vigorous growth of plants, and promote more shoots and flowers remove mature flowers and seed pods, especially essential for Ageratum, Calendula, Cosmos, Marigold, Pansy, and Zinnia.

Cutting Of Flowers

■ Plants for cut flowers should be grown in a separate section of the garden.

■ Early in the season when plants begin to bloom whole plants can be removed and used in flower arrangement.

■ Old flowers should be removed in order to promote formation of new shoots and flowers.

■ Later flowers have longer stems than early flowers.

Bulbs plants

Introduction

■ In horticulture, the word bulb includes underground modified stems which are used for propagation e.g. bulb, corm, tuber and rhizome.

■ Plants with tuberous roots are also grouped as bulbous plants.

■ These plants are commercially grown well both in plains and hills but the season of growth and flowering may vary. A bulbous plant has normally three phases during a year growth, flowering and dormancy.

■ Vegetative growth may precede flowering as in Gladiolus or flowering starts before the leaf emerges, e.g., Amaryllis. After growth and flowering, the plants in most cases, enter into rest period and the duration of dormancy varies with the type of plants and environmental conditions like temperature and humidity.

■ Although some hardy types of Freesia, Daffodil, Narcissus, Gloxinia, and Lilium may flower in plains but they do not show very attractive display of color and often fail to flower in the second year.

✓ Ornamental Bulbous plants have been popular with the gardeners for centuries.
✓ Some of them have a most romantic history.

✓ Remarkable beauty of their flowers is at the top.

✓ Variation in Varieties Form , Color Flowering season

✓ Ease of culture

✓ Adaptability to winter forcing

✓ Ability to withstand frequent hardships

✓ Present modern age demands

✓ Flowers from birth till death

✓ Festivals and functions

✓ Cut flowers play an important role in Interior decoration, Gifts and At various occasions at societies.

Pruning and training

The management of plant structure and fruiting wood is called pruning. It involves removing parts of a plant's top or root system to increase its usefulness. Limbs, branches, twigs, shoots, or roots can be removed. Pruning also includes the training of plants, or shaping them to forms that function more efficiently. Pruning is important for the successful production of fruits, nuts, grapes, and many flowers and ornamentals. Horticulturists look at the yield, size, colour, shape, or quality of flowers and fruit in terms of potential profit, while for amateurs factors like size, beauty, or quality are ends in themselves. Pruning helps both to achieve their goals more effectively.

Principles of pruning

Some important principles of pruning are summarized here,

Modification of apical dominance.

Apical dominance occurs when hormones produced in the stem apices travel down the stem and inhibit or reduce branching and growth of lateral buds. When the terminal growing point is removed, the production and flow of these hormones to lateral buds is stopped and the initiation rate of lateral growth of branches is increased.

Balance of roots and top.

Plant growth, development, and reproduction are significantly influenced by the ratio of roots to top. Reduction of leaf area in the growing season or reduction of the number of buds in the dormant season has little effect on root area, but a reduced number of growing points results in stronger shoots with larger leaves. Increased leaf area increases transpiration and photosynthesis, and puts more demands on the roots. However, root pruning reduces the absorbing area, slowing top growth. Stored food is utilized to replace roots, and top growth does not resume immediately after root replacement since manufactured food must first be stored in the stem. Proper pruning effects a balance of top and roots.

Altering growth phases.

Regular annual pruning of a growing tree stimulates shoot growth. Heavy annual pruning of young fruit trees delays early fruit production, therefore pruning should be minimal from the juvenile to the productive stage. For maximum flower and fruit production, however, a plant should show good annual shoot growth. If annual shoot growth decreases, as happens with older trees, pruning will stimulate growth, and production is usually increased. Nitrogen fertilizer produces a similar stimulating effect of increased shoot growth. Both fertilizing and pruning are useful in maintaining good flower and fruit production. However, excessive fertilizing or pruning can cause the plant to revert to a vegetative state.

Environmental factors.

Desirable pruning and training practices are influenced by several environmental factors (Denisen 1979:203-4).

1. Trees grown in heavy shade are pale colored, have fewer flowers, and are usually smaller. Frequent pruning to maintain good form allows light to strike the leaves and produces dense foliage in hedges.
2. Pruning can also influence air movement. In spreading foliage, air movement is increased. Open structures allow better spray penetration for controlling insect pests and diseases.
3. Excess moisture tends to produce water sprouts on trunks and primary branches. If excess moisture is preceded or accompanied by severe pruning, the increased water sprout production wastes plant growth.
4. Since pruning reduces transpiration, it is useful during drought periods.
5. Temperature should be considered when deciding whether to prune. Soft, succulent growth resulting from over-pruning or late summer pruning is more susceptible to winter injury, because there is less time for hardening and storing food before the cold weather.
6. Crown and crotch injuries due to cold are more likely on trees which have (not been trained or pruned to desirable branching angles).
7. The trunks of trees trained to a low-headed shape receive less intense light, and the bark may be protected from sun scald.

Objectives of pruning

Major objectives of pruning are summarized below (Denisen 1979:205-8).

a. Controlling the direction of growth. The natural form of a plant can be modified to induce it to branch and spread more profusely. Low branching types can be trained to branch higher. Branches can also be trained to grow away from utility wires or buildings.

b. Developing a strong framework. Some trees have naturally narrow crotch angles (40° or less from the vertical). Narrow crotches result in a greater loss of limbs from wind storms and heavy loads of fruit than crotches with larger angles. The strongest crotches are those in which branches grow up from the trunk at angles ranging from 40-90°. Scaffold branches should be evenly spaced around the tree, with each branch at least 90° from the next one.

c. Controlling the amount of growth. Pruning can either dwarf or invigorate a tree. The type, manner, and time of pruning is determined by the objective. A combination of dormant and summer pruning promotes dwarf ness. It is the frequency of pruning rather than its severity that

is critical in promoting dwarfness. Increased vigour is produced by dormant pruning of older wood.

d. Improving productiveness. Yield can be either increased or decreased by pruning. The type of pruning depends on the fruit-bearing habits or the vegetative response of each species. Decreasing the number of fruit buds will usually give fewer but larger fruits and may increase the percentage of desirable fruit. Severe pruning can stimulate excess vegetative growth of scion wood, but suppress fruit bearing.

e. Improving quality of product. Fruit has better colour and flavor with adequate light. Improving product quality is one of the main reasons for annual dormant pruning of many fruit trees.

f. Utilizing space efficiently. Training, staking, and pruning are done simultaneously when tomatoes or roses, for example, are grown for the most efficient utilization of space. Pruning facilitates cultural operations, for example good spray penetration and the use of maintenance equipment, and also makes fruit picking easier. Fruit trees with very high tops are difficult to harvest. .

g. Increasing the usefulness of plants. Pruning to modify growth increases plant utility. A properly pruned shade tree can provide heavier shade and a regularly clipped hedge can become almost impenetrable. Such trees and shrubs provide better screening and wind protection. The aesthetic qualities of ornamentals can be enhanced: roses can produce larger blooms; vines can produce more concealing foliage, and large or spreading plants can be miniaturized by training and pruning.

Training

Training is pruning management done to develop a tree framework strong enough to bear large fruit crops without the branches breaking. There are three main training systems: (a) central leader, (b) modified leader, and (c) open centre or vase system.

a. Central leader system. This system resembles the natural growth pattern of most trees. Trees are trained to a main stem and a series of wellspaced, subordinate lateral branches. Apical growth is encouraged, resulting in taller trees than with other systems. The advantage of this system is the development of strong crotches, and the disadvantage is internal shading, which may weaken the central leader and thus reduce the life of the tree

b. Modified leader system. This system reduces the height of the main trunk and encourages scaffold branches to become larger and longer, thus lowering the top of the tree. It combines features of the central leader and open centre systems. The central leader is cut back slightly so that it does not become dominant, and laterals are cut back and selected repeatedly until an appropriate number and distribution of branches is reached. The central leader is then cut and the

tree is left with a rounded open to low well spaced limbs, a strong framework, and well distributed fruiting wood. It is low enough to facilitate various orchard operations. This is the most desirable pruning system for many fruits.

c. Open Centre or vase system. This training system develops a series of well-spaced, coordinate lateral branches rather than a main or central trunk. These branches are cut back equally each year, which gives them equal dominance. The advantages of this system are sufficient light penetration for the fruiting of inner branches, and a low-headed tree that facilitates pruning, thinning, spraying, and picking. Its main disadvantage is that the tree becomes weak with crowded crotches which often break under a heavy load of fruit.

Summer Annuals

Sr #	Common Name	Botanical Name	Family	Flower color	Uses
1	Amaranthus (Love-lies-bleeding)	<i>Amaranthus caudatus</i>	Amaranthaceae	Red tassels	Bedding, arrangements
2	Balsam (Touch me not)	<i>Impatiens balsamina</i>	Balsaminaceae	Pink, red, white	Bedding, pots
3	Celosia (Cocks comb)	<i>Celosia cristata</i> <i>Celosia plumosa</i>	Amaranthaceae	Red, yellow, Orange Maroon	Bedding, pots
4	Cosmos	<i>Cosmos bipinnatus</i>	Compositae	White, blue, red, pink, yellow	Bedding, rockery
5	Datura plant	<i>Datura stramonium</i>	Solanaceae	White, pink, purple	Bedding
6	Gaillardia	<i>Gaillardia aristata</i>	Compositae	Yellow, red with yellow tip	Bedding, pots
7	Gomphrena	<i>Gomphrena globosa</i>	Amaranthaceae	White, purple, blue, red	Bedding
8	Sunflower	<i>Helianthus annuus</i> <i>Helianthus decapetalus</i>	Asteraceae	Yellow	Bedding
9	Kochia	<i>Kochia scoparia</i>	Chenapodaceae	Green and maroon color foliage	Bedding, pots
10	Marigold	Tagetes erecta (African) Tagetes patula (French)	Compositae	Yellow, maroon, orange, radish	Cut flower, bedding, border
11	Morning glory	<i>Ipomoea purpurea</i>	Convolvulaceae	Blue, purple	Climber
12	Portulaca (Gull-e- Dopehri)	<i>Portulaca grandiflora</i>	Portulacaceae	Pink, red, white, purple	Ground cover
13	Zinnia	<i>Zinnia elegans</i>	Compositae	Many brilliant color	Bedding, cut flower, pots

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Winter Annuals

Sr #	Common Name	Botanical Name	Family	Flower color	Uses
1	Ageratum	<i>Ageratum houstonianum</i>	Compositae	Silver	Borders, Edgings, Window boxes, Rock gardens and pots.
2	Alyssum	<i>Alyssum maritimum</i>	Cruciferae	Many brilliant colors	Border, rockery, stony places, window boxes
3	Antirrhinum (Dog flower / Snapdragon)	<i>Antirrhinum majus</i>	Plantaginaceae	Red, Orange, Pale Yellow, Violet, White and bicolor	Border, rockery, window boxes,
4	Aster (Michealmas Daisy)	<i>Aster novibelgii</i>	Asteraceae	Many brilliant colors	Bedding and cut flowers
5	Baby's breath (Gypsophella)	<i>Gypsophila elegans</i>	Caryophyllaceae	Many brilliant colors	Bedding, fresh and dried bouquets
6	Brachycome	<i>Brachycome iberidifolia</i>	Compositae	Yellow, orange, pale	Bedding
7	Calendula (Gull-e-Ashrafi)	<i>Calendula officinalis</i>	Asteraceae	Orange, Bright Yellow	Bedding for long season bloom
8	Chrysanthemum annual (Gull-e-Daoodi)	<i>Chrysanthemum morifolium</i>	Asteraceae	Unlimited colors	Bedding , cut flower and pots
9	Clarkia	<i>Clarkia elegans</i>	Onagraceae	Lilac, white rose, red, pink purple	Bedding
10	Cornflower	<i>Centaurea cyanus</i>	Asteraceae	Pink, red, purple, white and blue	Bedding and cut flowers
11	Dahlia	<i>Dahlia dandy</i>	Asteraceae	Many brilliant colors	Cut flower, pot and bedding.
12	Daisy	<i>Bellis perennis</i>	Asteraceae	Pale Pink, Pink, White with shades	Rockery and Border

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13	Flax (Lal Alsi Phool)	<i>Linum grandiflorum</i>	Linaceae	Red/Scarlet, blue	Cut flower and bedding
14	Gazania	<i>Gazania rigens</i>	Asteraceae	Yellow, multi-color.	Rockery and pots.
15	Ice plant	<i>Mesembryanthemum spp</i>	Aizoaceae	White, pink, red, orange, yellow and mix colors	Ground cover, bedding, border and rockery.
16	Linaria	<i>Linaria maroccana</i>	Plantaginaceae	Pink, Red, Yellow, Violet, Purple, White	Rockery and pots.
17	Nasturtium	<i>Tropaeolum majus</i>	Tropaeolaceae	Dark red, yellow, orange, red	Beds and border
18	Nemesia	<i>Nemesia strumosa</i>	Scrophulariaceae	Scarlet, Orange Red-Orange, yellow	Cut flower, window boxes and pots
19	Petunia	<i>Petunia grandiflora</i>	Solanaceae	Many brilliant colors	Beds, border, pots
20	Phlox	<i>Phlox drummondii</i>	Polemoniaceae	Many brilliant colors	Bedding and pots window boxes
21	Poppy (Gull-e-lala)	<i>Papaver rhoeas</i>	Papaveraceae	Red & reddish orange	Cut flower and bedding
22	Ranunculus (Buttercup)	<i>Ranunculus asiaticus</i>	Ranunculaceae	Pink, red, orange, orange, white, scarlet	Bedding, cut flower, flower arrangements
23	Salvia sage	<i>Salvia splendens</i>	Lamiaceae	Red, pink and purple	Bedding, pots
24	Statice	<i>Limonium sinuatum</i>	Plumbaginaceae	Red, pale yellow, violet. white	Beds, dry flower arrangement
25	Stock	<i>Matthiola incana</i>	Brassicaceae	Yellow, pink, violet	Beds, pots
26	Sweet pea (Matar phool)	<i>Lathyrus odoratus</i>	Fabaceae	Pink, red, Purple, white, bicolor, striped	Climbing

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Perennial Flowers

Sr #	Common Name	Botanical Name	Family
1	Aster	<i>Callistephus alpinus</i>	Compositae
2	Baby's Breath	<i>Gypsophila paniculata</i>	Caryophyllaceae
3	Candytuft	<i>Iberis sempervivirens</i>	Cruiciferae
4	Carnation	<i>Dianthus caryophyllus</i>	Caryophyllaceae
5	Chrysanthemum	<i>Chrysanthemum morifolium</i>	Asteraceae
6	Corn flower	<i>Centaurea montana</i>	Compositae
7	Daisy (English)	<i>Bellis perennis</i>	Compositae
8	Hollyhock (Gul-e-khaira)	<i>Alcea rosea</i>	Malvaceae
9	Lilium	<i>Lilium formosum</i>	Liliaceae
10	Salvia	<i>Salvia azurea</i>	Lamiaceae
11	Sunflower	<i>Helianthus orgyalis</i>	Compositae
12	Verbena	<i>Verbena canadensis</i>	Verbenaceae

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Red Color Flowering Trees

Sr #	Common Name	Botanical Name	Family
1	Gul mohur	<i>Delonix regia</i>	Fabaceae
2	Gul-e-Nishtar	<i>Erythrina suberosa</i>	Papilionaceae
3	Ashoka tree	<i>Saraca indica</i>	Fabaceae
4	Bottle brush	<i>Callistemon lanceolatus</i>	Myrtaceae
5	Simal/Sumbul	<i>Bombax ceiba</i> <i>Salmalia malabarica</i>	Malvaceae

Red Color Flowering Shrubs

Sr #	Common Name	Botanical Name	Family
1	Poinsettia	<i>Euphorbia pulcherrima</i>	Euphorbiaceae
2	Firecracker Shrub	<i>Hamelia patens</i>	Rubiaceae
3	Shoe flower	<i>Hibiscus rosa-sinensis</i>	Malvaceae
4	Gulab	<i>Rosa indica</i>	Rosaceae
5	Kaner	<i>Nerium oleander</i>	Apocynaceae

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Yellow Color Flowering Trees

Sr #	Common Name	Botanical Name	Family
1	Siris	<i>Albizia lebbbeck</i>	Fabaceae
2	Amaltas	<i>Cassia fistula</i>	Fabaceae
3	Parkinsonia	<i>Parkinsonia aculeata</i>	Fabaceae
4	Keekar, babul	<i>Acacia nilotica</i>	Fabaceae / Leguminosae
5	Himalayan maple	<i>Acer oblongum</i>	Aceraceae

Yellow Color Flowering Shrubs

Sr #	Common Name	Botanical Name	Family
1	Lantana	<i>Lantana camara</i>	Verbenaceae
2	Tecoma / Yellow bells	<i>Tecoma stans</i>	Bignoniaceae
3	Shoe flower	<i>Hibiscus rosa-sinensis</i>	Malvaceae
4	Candle bush	<i>Cassia alata</i>	Fabaceae
5	Cassia	<i>Cassia glauca</i>	Fabaceae

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White Color Flowering Trees

Sr #	Common Name	Botanical Name	Family
1	Devil tree	<i>Alstonia scholaris</i>	Apocynaceae
2	White Gul Mohur	<i>Delonix Alata</i>	Fabaceae
3	Black pepper	<i>Schinus molle</i>	Anacardiaceae
4	Bakain	<i>Melia Azedarach</i>	Meliaceae
5	Salt cedar	<i>Tamarix aphylla</i>	Tamaricaceae

White Color Flowering Shrubs

Sr #	Common Name	Botanical Name	Family
1	Murva	<i>Murraya exotica</i>	Rutaceae
2	Lantana	<i>Lantana camara</i>	Verbenaceae
3	Sanatha	<i>Dodonaea viscosa</i>	Sapindaceae
4	Gardenia	<i>Gardenia florida</i>	Rubiaceae
5	Frangi pani/ Gul-e-cheen	<i>Plumeria rubra</i> / <i>P. obtusa</i>	Apocyanaceae

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Climbers of Pakistan

Sr #	Common Name	Botanical Name	Family	Flower color
1	Rangoon Creeper (Jhumka Bail)	<i>Quisqualis indica</i> / <i>Combretum indicum</i>	Combretaceae	White and red
2	Bougainvillea (Bo-gan bail)	<i>Bougainvillea spectabilis</i>	Nyctaginaceae	Shocking pink, yellow, white, orange, light pink
3	Jasmeen (Motia, Mogra, Chambeli)	<i>Jasminum grandiflorum</i> / <i>Jasminum officinale</i>	Oleaceae	White
4	Trumpet vine (Tecoma bail)	<i>Campsis grandiflora</i>	Bignoniaceae	Red, Orange Golden (Yellow-Orange), Yellow
5	Bleeding heart vine (Chloro dam-dam)	<i>Clerodendrum splendens</i> / <i>Clerodendrum inerme</i>	Verbenaceae	Red
6	Honey suckle	<i>Lonicera japonica</i>	Caprifoliaceae	Whitish yellow
7	Bombay creeper / Curtain creeper	<i>Vernonia elaeagnifolia</i>	Asteraceae	Off-white
8	Ivy, Creeping fig	<i>Ficus pumila</i>	Moraceae	Foliage beauty
9	Morning glory (Shakar qandi bail)	<i>Ipomoea purpuria</i>	Convovulaceae	Purple
10	Money plant	<i>Scindepsis aureus</i>	Aroideae	Foliage beauty
11	Harsinghar	<i>Nyctanthus arbotrestrus</i>	Oleaceae	Off white
12	Queen of night (Raat ki rani)	<i>Cestrum nocturnum</i>	Solanaceae	Pale yellow
13	King of the day (Din ka raja)	<i>Cestrum diurnum</i>	Solanaceae	Pale yellow

Ground covers

Places which are rocky, steep or otherwise unsuitable for turfing are planted with vegetation which will cover the ground and make the place more beautiful. Such place is called as ground cover.

Sr #	Common Name	Botanical Name	Family	Propagation
1	Alternanthera	<i>Alternanthera dentata</i>	Amaranthaceae	Cutting
2	Vinca	<i>Vinca rosea</i>	Apocynaceae	Seed
3	Fotolaca (Gull-e-dopehri)	<i>Portulaca grandiflora</i>	Portulacaceae	Seed and Cuttings
4	Spider plant	<i>Chlorophytum comosum</i>	Asparagaceae	Division and Suckers
5	Dicondra	<i>Dicondra repens</i>	Convolvulaceae	Seed and Suckers
6	Snake plant Mother-in-law's tongue	<i>Sansevieria trifasciata</i>	Asparagaceae	Suckers
7	Gul-e-Aqeeq	<i>Canna indica</i>	Cannaceae	Root tubers and Suckers
8	Crown of thorns, Euphorbia	<i>Euphorbia milii</i>	Euphorbiaceae	Cuttings
9	Haathi Kaan	<i>Colocasis antiquorum</i>	Araceae	Seed