

TECNIQUES OF ORNAMENTAL PLANTS PROPAGATION

INTRODUCTION

Plants in contemporary gardens are selected not only for their flowers, but also for multi-season characteristics such as leaf form, foliage texture and colour. Flowers remain important, but the garden world is taking advantage of new possibilities offered by an enormous range of ornamental herbaceous plants. These include annual, biennials and perennials.

Annuals: annuals or seasonal are the group of plants which complete their life cycle in one season or in one year. They germinate, grow, bloom and go to seed in one season. These plants die each season, therefore they must be planted the following season or year. Annuals produce flowers once until they set seed or die. Most annuals are easy to grow and make colourful container planting and hanging baskets. Their quick growth from seeds or transplants is gratifying for young gardeners. Some annuals reseed and come up from the previous year's plants. Small gardens often benefit from these self-seeding annuals. On the other hand, formal gardens require a precise layout. Volunteer seedlings are best removed when utilizing this style (formal gardens) of design.

Perennials

Perennials grow more slowly than annuals, and many will not bloom the first year. You can start from seed bed and transplant them to a final location when they are sturdy enough to move. Perennials are often ready to transplant late in first season.

Biennials

They usually require two full years to complete their growth cycle. The first year they develop foliage but do not flower. The second year, they flower and go to seed.

PROPAGATION

Annuals and biennials

Annuals flower generally are started from seed or purchased as seedlings. some seeds can be sown directly in the garden depending upon location .it is often best to start with young transplants planted indoors or purchased .many other annual and biennials do best if started on a propagation bed or other heat source and then transplanted. Buying seedlings from nurseries is convenient, especially for annuals with very fine seed such as petunias, lobelia and impatiens. Unless you have excellent propagation facilities, these plant are more difficult to grow from seed.

Method of planting flowers:-plants can be classified into categories depending on the practice

A: propagation from seed:- this is known as sexual production .Example of flowers propagated by seeds include Chrysanthemum ,sunflower, marigold, celosia, carnation, asters, daisies, etc.

B: vegetative propagation:-also known as asexual reproduction e.g. Bengonia, Chrysanthemum, coleus, roses authurium. This propagation method is extensively used in ornamentals plants production. It involves the use of plant vegetative propagation is dependent on plant part utilized in propagation. The methods include cutting, division, bulbs, corns, rhizomes, etc.

Cuttings:

Many plants can be propagated from either tip or root cuttings. Generally, tip cutting are easier to grow than root cuttings. Take 5-to 15cm long tip cutting from plant. Remove all foliage from the lower one third of the cuttings, insert cutting into a clean planting mix which can contain different media (topsoil, river sand, corn cob, sawdust, rice husk and/ or compost). This planting mix can be purchased commercially or prepared locally in appropriate ratios cover cuttings with clear plastic to retain moisture and support the plastic to keep it from touching the foliage. Place the cuttings in a light area but out of direct sun. High temperature can build up under the plastic on worm days and thereby leading to unviable cutting. When cutting resist

a slight tug, they began to rot. Poke holes in the plastics to provide more air circulation. Remove the plastic altogether once the roots are formed. When the root systems are large enough, transplant cuttings to a nursery bed or container and begin fertilizing. Examples:

i) Propagation from stem cutting :-hardwood cuttings(yellow ficus, anthurium)semi-hard wood cuttings (bougainvillea),stem-bud cuttings(camellia),soft wood cuttings(kalanchoe,jasmine,begonia,oleander),

ii) Propagation from modified stems:-Rhizomes (Heliconia),stolons(fragaria,strawberry),stem tubers(chlorophytum),Bulbs (lilium),Corms(Gladiolus)

iii) Propagation from leaves:- Leaf petiole cuttings (pelargonium, African violet),leaves and leaf sections (Begonia,sansevieria).

iv) Propagation from roots:-plumbago

v) Propagation by grafting and Budding:-Budding (Roses), Grafting (Rhododendron).plants propagated using any of the above methods can be planted in the nursery. Nurseries seek to provide the following conditions for growing transplants:-protection from pests, including higher animals, rain, excessive sunlight and extremes of temperature.

DIVISION

As herbaceous perennials develop established root system, many spread into large clumps and can be propagated by division. Divide perennials as part of your general garden maintenance. Growth and performance decrease when plant gets crowded. Division rejuvenates plants and results in extra plants that can be sold. Some plants, like Alaska wild iris, perform better if divided regularly. Dividing perennials when they are dormant or just beginning to grow is optimal, allowing a full season for root development. Time the division to allow the root development before the plant normally blooms. Transplant with a generous amount of its roots intact. Select vigorous shoots from the outer part of a clump and discard the Centre. Then, divide the plant into several sections of three to five shoots each. Make large divisions. Small

piece will not bloom much the first year. Before planting, add compost or other organic materials to the soil. Example (Tuberous Begonia, Button fern).

Bulbs, corms, rhizomes, tubers and tuberous roots

Many garden plants are classified botanically as Bulbs, corms, rhizomes, tubers and tuberous roots. All of these underground structure store food for the plant. Bulbs are composed of a thin, flattened stem surrounded by fleshy leaf bases called scales. Root grow from a basal plate. Onions, narcissus, tulips and lilies are examples of plants that form bulbs.

Slicing an Onion vertically and observing the interior gives a good at a bulbs anathomy.

Corms have solid interiors, developed from swollen stems. If you cut one open, you see a homogenous mass inside. Root from at the base, and examples include croths, gladiolus and anemone.

Tubers are swollen, modified, underground stems. They don't have basal plates where roots originate. Tubers comes in various shapes and include caladium. Tuberous root are composed of root tissue example are dahlias and tuberous begonias.

Rhizomes are specialized stems that grow horizontally at or just below the soil surface. Lily-of-valley has rhizomes.

Like other herbaceous ornamentals, bulbs, corns and tubers are classified as hardy or tender.

Layering

Stems still attached to their parent plant may form roots where they touch a rooting medium (Figure2).When severed from the parent plant; the rooted system becomes a new plant. This method of vegetative propagation is called layering. It is highly successful because it helps the cutting avoid shortages of water and carbon dioxide that often affect cuttings from other methods of propagation .The rooting medium should provide aeration and a constant supply of moisture. Example of plant that can be propagated by layering includes dracaena, Ficus.

Table 1: Annual flowers and vines

COMMON NAME	SCIENTIFIC NAME	COLOR
Ageratum	Ageratum houstonianum	Purple ,pink, white
Aster	Callistephus chinensis	Pink, red, yellow ,purple, lavender, white
Bachelo's button	Centaurea cyanus	Blue, pink, white, maroon
Begonia,Wax	Begonia semperfloren- cultorum	Pink ,red, white: foliage can be Bronze, reddish, yellow spotted
Blanket flower	Gaillardia pulchella	Red and gold bicolor
Butterfly flower	Schizanthu pinnatus	Pink, magenta, red, purple, lavender, all with white
Calendula	calendula officinalis	Orange ,apricot, yellow, yellow with red tinge cotta, purple, lavender;
Carnation	Dianthus caryophyllus.	White
Cockscomb	Celocia argentea	Red, orange, yellow, gold
coleus	Coleus brumei	Variegated in incredible colors
coreopsis	coreopsis grandiflora	Golden yellow
Cosmos	Cosmos bipinnatus	Magenta, lavender, white
Cosmos	Cosmos sulphureus	Red, orange, yellow
Fanflower	Scaevolaa emula	lavender, pink, white
Flowering cabbage, flowering kale	Brassica oleracea	Green leaf with white or lavender centers
Godetia,satin,flowe	Clarkia amoena	Pink magenta, red, orange lavender ,white
heliotrope	Heliotropiumar borescens	Purple white

impatiens	<i>Impatiens wallerana</i>	Pink ,magenta, red, orange, lavender white
Johnny-jump-up	<i>Viola tricolor</i>	Single colour or mixes of pink, red, peach. purple, blue, yellow white
Lavatera	<i>Lavaterari mestrus</i>	Pink, white
Licorice plant	<i>Helichrysum petiolare</i>	Foliage silver or chartreus
Livingstone daisy	<i>Dorotheanthus bellidiformis</i>	Pink, magenta, orange, peach yellow, lavender, white,
lobelia	<i>Obelia erinus</i>	Purple, blue, rose, magenta, white, some with a white eye
Love-lies-bleeding	<i>Amaranthu caudatus</i>	Maroon
Malva	<i>Malva sylvestris</i>	Purple
Marguerite daisy	<i>Argyranthemum rutescens</i>	Pink, magenta, yellow, lavender, white
Marigold,African	<i>Tagetes erecta</i>	Gold, yellow, orange, cream
Marigold,french	<i>Tagetes patula</i>	Gold, yellow, orange, maroon
Marigold,signet	<i>Tagetes tenuifolia</i>	Yellow, orange , maroon
Monkey flower	<i>Mimulus X hybridus</i>	Gold, yellow, often with red blotches reddish-orange
Moss rose	<i>Portulac grandiflora</i>	Rose, magenta, yellow, orange, salmon lavender, white
nasturtium	<i>Nasturtium majus</i>	Orange, golden yellow, pale yellow, red
Nemesia	<i>Nemesia trumosa,</i>	Pink, magenta, purple, bleu, lavender,
Nicotiana	<i>Nicotian sylvestris,N.alata</i>	Pink, rose, red, white, cream, green
Osteospermum	<i>Osteospermum eclonis</i>	Pink, rose, peach, purple, lavender, white

Pansy	pansyXwittrockiana	Clear color, mixed, color, many with black faces, purple, blue, pink, red, yellow, orange, white, black
Petunia	petuniaXhybrida	Pink,magenta,red,yellow,purple,blue,lavender,w hite,bicolorpicotee
Pansy	Pansy X wittrockiana	Clear colors, mixed colors, many with black faces, purple, blue, pink, red, yellow, orange, white, back
Petunia	Petunia X hybrida	Pink, magenta, red, yellow, purple, blue, lavender, white, bicolour, picotee
Phlox, annual	Phlox drummondii	Rose, magenta, red, purple, lavender, peach, white or with a white eye.
Pincushion flower	Scabiosaatro purpurea	Lavender, maroon, white
Poppy, California	Eschscholziacalifornic a	Golden yellow, orange, red, white
Poppy, shirley	Papaverrhoeasred	Pink, peach, white, picotee
Rudbeckis	Rudbeckiahirta	Gold with black greed eye, orange, maroon
Salvia, blue	Salvia farinacea	Blue, cream
Salvia, painted	Salvia viridis	Pink, purple, cream
Salvia, red	Salvia splendens	Red, cream
Snapdragon	Antirrhinum majus	Pink, rose, magenta, yellow, orange, peach, purple, lavender, white
Statice	Limoniumsinuatum	Rose, yellow, purple, blue, lavender, white
Strawflower	Helichrysumbracteatu m	Gold, red, maroon, pink, white
Sunflower	Helianthus annuus	Gold, yellow, maroon
Swan River daisy	Brachycome	Lavender, pink, white, yellow

	iberidifolia	
Sweet alyssum	Lobulariamaritima	White, purple, lavender, magenta
Twinspur	Diasciabarberae	Pink, rose, salmon magenta, red, yellow, purple, all with black veination
Velvet flower	Salpiglosissinuata	Pink, magenta, red, purple, lavender, some with a white eye
Verbena	Verbena X hybrid	Orange, cream
Zinnia	Zinnia angustifolia	Pink, red, yellow, orange, purple, lavender
Zinnia	Zinnia elegans	White, cream, green

NOTE: Feasibility report on Ornamental plant propagation is available on request.

For further information, contact

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