

Bulbs, Corms and Tubers

Thanks to Parker County Master Gardeners, Lamar County Master Gardener and Texas Cooperative Extension personnel for their assistance with this article.

For more information on bulbs for Parker County, please refer to the real dirt: A Gardening Handbook for Parker County. <http://www.pcmg-texas.org/therealdirt.htm>

Bulb: Herbaceous plant with a fleshy underground storage organ made up of modified leaves. Includes both annual and perennial types. Examples: daffodils, amaryllis and lilies. Examples that are not bulbs: Tubers (caladiums), corms (gladiolus), rhizomes (iris) and tuberous roots (daylilies).

Annual bulb: A bulbous plant that is only useful for one season (does not reliably return and bloom each year). Examples: tulips, Dutch hyacinths and caladiums.

Short-lived bulb: A bulbous plant that only performs well for a few years and gradually declines. Examples: large flowered daffodils, some lilies, and most gladiolus.

Spring bulb: Bulbs that bloom in late winter or early spring. Most of these grow foliage during the winter and spring and go dormant in the summer. Examples: jonquils, snowflakes and narcissus.

Summer bulb: Bulbs that grow and bloom during the late spring and summer. Most are tropical in origin, go dormant during the winter and are somewhat tender. Examples: crinum, hymenocallis and cannas.

Fall bulbs: Bulbs that bloom in late summer and fall after a summer induced dormancy. They normally bloom without foliage and grow foliage during the fall and winter. Examples: spider lily (*Lycoris*), oxblood lily and rain lilies.

Naturalize: When bulbs multiply and spread on their own.

Perennialize: When bulbs return each year as perennials but may or may not naturalize.

Characteristics of bulbs: Easy, low maintenance, drought tolerant, light feeders, long lived, mostly propagated by division and can vary greatly in price.

Soil requirements: Most are not particular. Good drainage is best for most. Annual types require “annual soil mix.”

True Bulbs versus Corms

Corms resemble true bulbs but are solid in structure, with the growing bud atop the center or off to the side. The corm itself acts like an enlarged basal plate, producing roots from

the sides or the bottom and a growing bud at the apex or the sides. Often corms are enclosed in tunics, just like true bulbs. Many plants annually form a new corm above the old corm; the old corm shrivels and is absorbed into the new one prior to dormancy. Examples of true corms are: Colchicum, Crocus, Freesia, and Gladiolus.

Bulb Refrigeration

Bulbs are sometimes refrigerated to hold them back and extend the season for later planting. Tulips are refrigerated in warm climates to provide an extended winter situation without which they will not bloom. Most bulbs do not need refrigeration and should be planted in the ground as soon as possible, to prevent deterioration.

Mulches

In warm climates, mulches are valuable in winter and summer. They stabilize the soil temperature, but more importantly they help retain moisture during dry spells and protect bulbs against cold or heat. Almost any kind of mulch will do, but ideally it should be an inch or two deep in summer, and deeper in winter. An occasional light dressing of bug bait will discourage sow bugs, snails, and cutworms.

Withering Leaves

The most critical time for bulbs is when they have finished blooming. It is then they must ripen their foliage in order to bloom the following year. While doing this they turn from green to yellow and become unsightly. Gardeners may want to conceal this process and permit the poor things to ripen in peace. It's the price that one must pay in order to keep them healthy. It's a tough time for them, but it doesn't last long. Some gardeners bind the ripening leaves or weave them into bunches, but this only draws attention to them and has proven not to be the best for the bulbs. Actually the longer the ripening process, the bigger are next season's bulbs. Under no circumstances should the leaves be cut.

NOTE: Cutting the pollen off the middle of the flowers on lilies, not letting it touch the flower, will increase the bloom time on lilies.

BULBS, TUBEROUS PLANTS

(Listed are some bulbs and tuberous plants you may want to try. Some will do better than others but all warrant consideration.)

Agapanthus africanus. **Agapanthus lily, blue of the Nile lily**. This tuberous-rooted plant produces tall flowering stalks topped with umbels of pale blue flowers. Plants usually die out during the summer. **Really a zone eight plant.**

“I grow this plant in containers as I have more luck with them in containers than in the ground. I think they like to be crowded and a container helps facilitate this crowdedness.” (Parker County Master Gardener)

“I keep trying these in my garden. The large ones and the dwarf ones, I have tried them both. I plant in sun and they scald, plant in shade and they don't bloom. I give up. Can get the same color with Plumbago which comes back quickly in spring and gets about the same height.” (Parker County Master Gardener)

***Anemone coronaria*. Spring windflower.** (The 'bulbs' are more correctly described as tubers). It is probably best to treat them like an annual plant and start off with new bulbs every year. The vary-colored, poppy-like flowers are quite attractive. There is a fall blooming, herbaceous type of anemone, *A. japonica*.

***Canna lilies*.** Plant in full sun, bloom in late spring. Good to use in beds, borders, containers and as accents. Space low-growing varieties 10 to 12 inches apart and taller ones up to 24 inches apart. Plant four to six inches deep. Fertilize only when the plants are actively growing and keep the withered blooms picked off. They should be lifted and divided every three to four years. Leave three to four eyes on each division for strong, sturdy plants. Damaged canna blades become notched and ragged. When they mature and open, they look like someone has shot them with a B B gun. One finds robust caterpillars hidden inside leaf rolls. Canna leaf-roller caterpillars are clear white at first. They become semi-pale green with age. Lesser canna leaf-roller caterpillars are smaller and yellow. Large ornate butterflies lay eggs from which they hatch. The caterpillars spin silk thread used to pull leaf edges together. They hide inside the protective tube, presumably to avoid predators. Control canna leaf rollers with BT insecticides, Orthene or Sevin. BT insecticides contain a bacterium (*Bacillus thuringiensis*). They are sold under trade names such as Dipel. Caterpillars ingest the bacterium and die shortly thereafter. Orthene and Sevin are chemicals that may give a quicker kill of established populations. BT-type insecticides have worked. Treat before the damage becomes evident. You should know insects such as the canna leaf roller (*Calpodes ethlius*), will turn into the small golden-brown Brazilian Skipper butterfly.

“From research, I learned that once a canna finishes blooming (all the buds on the stalk), that stalk won't bloom again, and it is recommended to cut the entire stalk to the ground to provide air in the plants. You need to feel the stalk because some have buds forming, others don't. Of course, cannas such as 'Yellow King Humbert' have multiple buds and the old ones need to be removed so the plant stays pretty. I found this on a website while working in the Master Gardener office researching a call. I started

doing this and really liked the results. It seems the canna blooms better to me. It is logical that more energy is available for other stalks. I told one of our "customers" about it on a Master Gardener on-site visit, and I could tell she was reluctant to do it. When I saw her a year later, she told me she tried it and "it really worked." (Lamar County Master Gardener).

Colocasia esculenta. **Elephant's ear and Taro.** Can be used in moist soil, shallow water, beds, borders and in containers. Fast and easy to grow. Lift during winter to prevent freezing.

"I planted one 'Black Magic' Taro plant in our pond by the waterfall about four years ago. It comes back every year with even more vigor...and WITHOUT SOIL. It comes up through the rocks...just can't get rid of it. I transplanted some to another area before I realized how vigorous it grew...now it keeps coming back every year and I have so much by the middle of the summer. I noticed just last week that I already have two different taro plants coming up in the stream. Last summer, we were constantly cutting it back and digging it up. In a pond, the roots of the Taro plant may be invasive...it reminds me of my bamboo...a mistake in planting this plant in the pond. Now, a few years ago, I planted a 'Black Magic' Taro plant in the soil in a shady area and it didn't take over...matter of fact, it died or else I might have dug it up and thrown it away. However, I don't recall any problems with it in the ground...just the pond." (Parker County Master Gardener).

"I like the Alocasia elephant's ear. It is the one that has upright leaves. The Colocasia have the ears that hang down and take up more room and show wind damage more visibly." (Parker County Master Gardener).

Convallaria majalis. **Lily-of-the-Valley.** If "pips" are planted every year, these small, dainty flowers can be successfully grown. They will produce blooms shortly after planting either indoors or outdoors in a moist shady location.

Cooperia Drummondii, *C. pedunculata* and *C. Smallii*. **Rain lily.** These three forms of native rain lilies, two of which are white and one yellow, are well worth searching for after the rains. *C. Drummondii* (small white rain lily) is found in great abundance. *C. pedunculata* (great rain lily) is the large, white-flowered species that is occasionally found. *C. Smallii* (yellow rain lily) is the only one of this color known in this genus. These native plants are particularly useful as ornamentals when the bulbs are planted in the lawn grass. They do not interfere with the care of the lawn, and after the rains, the flowers show up within a few hours, and usually last two or three days. To add color to the planting, fairy lilies (*Zephyranthes* and *Habranthus*) can be set among the plants of cooperia. (Amaryllidaceae.) **Zephyranthes. Fairy lily, zephyr lily, shower-lily.**

These small, dainty rain lilies produce a profusion of blooms after each rain or heavy irrigation. Zephyranthes are usually classified as fairy lilies or shower-lilies but are often called rain lilies. Adapted species are: *Z. Atamasco* (white shower-lily), *Z. candida* (autumn shower-lily), and *Z. carinata* (rose shower-lily).

Crinum. The crinums are especially well adapted to thrive under almost any growing conditions. Their large, showy leaves are fully as attractive as the fragrant, lily-like flowers. Crinums multiply by division and will become a permanent part of the planting plan if allowed to remain undisturbed. The following forms are recommended: *C. americanum* (white crinum), *C. asiaticum (hybricum)*, (pink crinum), *C. erubescens* (rose-stripe crinum), *C. fimbriatulum* (milk-and-wine crinum), *C. scabrum* (rose-stripe crinum), and *C. zeylanicum* (drooping crinum).

“Another Parker County Master Gardener gave me some of her Milk and Wine lilies and I planted them last year in semi-shade. They bloomed but not like I have seen in other gardens. Will keep them in this spot for another year and then move them to more sun if they don’t bloom better. I thought maybe being their first year might be the problem with them not blooming prolifically.” (Parker County Master Gardener).

Crocus. Linear grass-like leaves are dark green with a central white stripe and yellow, white, purple and bicolor (white lined with purple) cup shaped flowers that bloom in the winter and can be used in beds and borders. Their height is approximately four inches and their width is



Photo from: FreePhoto.com

approximately three inches. Needs well-drained soil; propagation by separation of the corms; very cold hardy; blooms late winter.

Dahlia. Grow in full sun to partial shade. Add plenty of compost at planting time. Use a low nitrogen fertilizer because too much nitrogen can result in lots of foliage, with few flowers. Keep the soil moist but drained, at all times. Space smaller varieties 16" apart. The largest varieties should be spaced two feet apart,

allowing ample room for growth. Dahlias should be pinched back twice to promote bushier growth. Do so the first time after there are 3-4 sets of leaves on the stems. Dahlias will bloom in mid summer. Stem tips will develop multiple buds, usually three. To grow bigger blooms disbud the two side buds, leaving the middle, terminal bud. Dahlias may succumb to a hard frost. Either dig up the tubers, and place them in a bed of dry sand or provide winter protection by adding a thick layer of mulch.



Dahlias can suffer from a variety of insect infestations. These include slugs, sucking insects, red spiders, and mites. Use slug pellets for slugs and snails. Apply insecticides or repellents regularly. Disease problems can also occur. Treat early with a fungicide.

Photo from
FreeNaturePictures.com

***Gladiolus* sp.** The plants require full sun and an abundance of water. They are obtainable in a wide range of colors and color combinations.

“I only plant the Byzantine gladiolus because the others have to be staked to stand on their own. The Byzantine bloomed in late April, and were standing erect.” (Parker County Master Gardener).

***Gloriosa Rothschildiana*.** **Climbing-lily, glory lily, flame lily**. A bulbous, tuber plant having bright green leaves; climbing stems; red and orange, lily-like flowers; and small black seed. This plant is well adapted but it is quite slow growing. Can be used in containers or in the ground.

***Habranthus Andersoni*.** **Copper rain lily**. This small rain lily is native to many parts of Texas. It produces small yellow flowers; the outsides of the petals are coppery-red.

***Hedychium coronarium*.** **Butterfly lily, ginger lily**. A tuberous rooted plant that flourishes best in a moist location. It has upright stems with sheathed leaves and fragrant white flower clusters which are produced during the spring and fall seasons. Partial shade to full sun. Zones 7b-11. Ginger lily is a tropical plant. It tolerates an occasional light freeze and frost. A hard frost will kill it to the ground but it may come back quickly.

Ginger lily is easy to propagate - simply dig it up, cut the root into eight pieces and replant.

***Hemerocallis*. Daylily.** Daylilies are well adapted to conditions in this region. They are obtainable in a large range of colors ranging from lemon yellow to tawny orange, and several colors are obtainable in the double-flowered form. The following species of daylilies are recommended: 'Stella D'Oro', 'Midnight Magic', 'Victorian Collar', 'Moonlit Masquerade', 'Hunter's Touch', 'Elizabeth Salter', 'Barbara Mitchell', 'Jason Salter', 'Orange Velvet', 'Dragon's Eye' and 'Olive Bailey Langdon'.

"I'd add 'Yellow Bouquet' daylily to the recommended list. It's a repeat bloomer and does as well for me as 'Moonlit Masquerade'. I got around four or five re-blooms from both of those daylilies last summer and that's saying a lot. 'Yellow Bouquet' reminds me a lot of 'Stella D'Oro' as they are about the same color and size; however, I like the ruffle appearance of 'Yellow Bouquet' better...the multiple re-blooming is a bonus." (Parker County Master Gardener)

"The only two problems with daylilies that I have encountered are spider mites when it gets hot weather and iron deficiency on certain ones. My 'Stella D'Oro' bloom for such a long time and are increasing each year. The ones at city hall (Aledo) bloom for a long time also." (Parker County Master Gardener).

(**Note:** For more information on daylilies, check the featured article for May 2007 on this website.)

***Hippeastrum*. Amaryllis.** Red Lion is a long term, beautiful bloomer. Fertilizer is important to keep them blooming. Bulbs that bloom best are given a small amount of low nitrogen fertilizer (use 4-8-8, 3-9-9 or 5-10-10 ratios). Possible diseases are: leaf scorch or red blotch, bulb rots, mosaic, and southern blight.

"I (a Parker County Master Gardener) emailed Jerry Parsons regarding if I should cut back my 'Red Lion' amaryllis foliage after they had finished blooming and he replied to my email with this statement."

"All bulbs grown outside as perennials derive food from the green foliage and store it (food) in the bulb to facilitate next year's growth. If you cut the green foliage down after it has finished blooming, you deprive the bulb of this food. It may not keep it from blooming the next year, but it will certainly effect the size of the blossoms and may eventually cause the death of the plant." Dr. Jerry Parsons is a Horticulture Specialist with the Texas Agricultural Extension Service.

“This helps me remember not to cut the foliage on any bulb after it's finished blooming, and my amaryllis have never looked better. They've been blooming for about five or six weeks now and just about finished blooming for now, but I don't plan on cutting the foliage back.” (Parker County Master Gardener).

Lycoris squamigera (*Amaryllis Hallii*). **Pink amaryllis**. This plant is similar in appearance to hippeastrum but is not as vigorous. It produces dainty pink flowers.

Hyacinthus orientalis. **Dutch hyacinth**. These bulbs make excellent pot plants, but are not adapted to outdoor culture. After the bulbs bloom in March, they should be allowed to dry thoroughly and stored in a cool, dark, dry storage space. You can replot them in the early fall for regrowth and blooming.

Hyacinthus orientalis var. *albulus*. **French-Roman hyacinth**. These sturdy small plants are well adapted, and they produce such a profusion of blooms out-of-doors that they are quite popular with most flower growers.

Hymenocallis caribaea. **Spider lily**. The species native to Texas is recommended for general use. It is quite hardy and will thrive under almost any growing conditions.

“The spider lily I have likes lots of water. Have it by the pond and it thrives.” (Parker County Master Gardener).

Iris (**Bearded**). For general use, the rhizome forming, tall bearded (German) iris (*I. germanica*) is recommended. Have a high heat tolerance. Possible diseases for iris are: leaf spot, basal rot, soft rot, rust, mosaic.



“When the Parker County Master Gardeners started at the Aledo Community Center as a project, we dug up lots of white iris. We left them in a pile in the hot summer sun for other gardeners to take to plant. After about two months some of the rhizomes were still viable and after planting they did wonderfully. This is a real testament to their hardiness.” (Parker County Master Gardener).

Photo from FreeNaturePictures.com

Dutch *Iris*. (*x hollandica*) Grows to a height of 18-24 inches, should be spaced about three-six inches apart and takes full sun to partial shade. Bloom mid spring to early summer in a variety of colors that are good for cutting. They have average water needs and can be propagated by dividing rhizomes/bulbs (including offsets).

***Leucojum vernum* and *Leucojum aestivum*.** **Spring Snowflake** (*Leucojum vernum*) and **Summer Snowflake** (*Leucojum aestivum*) are bulbous plants. They have narrow, strap-like, dark green leaves. The flowers are small and bell-shaped, white with a green (or occasionally yellow) spot at the end of each petal and have a slight fragrance. The spring snowflake normally grows six-eight inches tall though it may reach up to fourteen inches. It flowers late winter or early spring.

The summer snowflake prefers wetter habitats. Despite its common name it also flowers from March to May, though slightly later than the spring snowflake. It is a taller plant than the spring snowflake and grows to around two feet but its flowers are smaller and are carried in an umbel of between three and seven.

***Lilium candidum*.** **Madonna lily.** This white flowering lily somewhat resembles the Easter lily. It is most adapted to the alkaline areas of Texas including North and Central Texas. This particular lily grows its foliage in the fall, blooms in the spring, and goes dormant during the summer. Due to its winter foliage, it might need periodic protection from extremely hard freezes and ice storms. It is propagated by division in the fall. The bulbs should be planted in the fall and allowed to remain undisturbed.

***Lilium formosanum*.** **Philippine lily.** The relatively obscure Philippine lily is perhaps the most adapted of all. It is a very tall growing lily (3-5 feet) that produces its cluster of drooping, fragrant, white trumpets during the late summer. Its narrow, grass-like foliage and late bloom time distinguish it from all other lilies. This lily begins growth in the early spring and goes dormant during late fall and winter. It is adapted to all areas of the state. The Philippine lily can be propagated by division or very easily by the many seeds that it produces. It commonly seeds out and naturalizes anywhere from the flowerbeds to the neighboring woods. It is the only lily that can be grown from seed to bloom in as little as one year.

***Lilium longiflorum*.** **Easter lily.** Easter lilies are especially well adapted to conditions in this region, and maintain themselves in a very satisfactory manner. The plants die down after blooming in the spring and reappear early the following spring.

“Each year the Union Gospel Mission in Fort Worth (a project of the Tarrant County Master Gardeners) receives Easter lilies that do not sell, from Target. We plant them in the gardens and they do well with little soil preparation and care.” (Parker County Master Gardener).

***Lilium tenuifolium*. Siberian coral lily.** The flowers of this lily are small, bright red in color and have recurved petals and prominent stamen. It blooms during the early summer season and likes sun. Propagation can be by seeds, scales or bulb division.

***Lilium stargazer*.** Oriental lily stargazer has extremely large pink flowers with white edges and spots of red that are fragrant, producing 4-5 flowers per stem. The dark green foliage makes a great contrast with its flower color. Stargazer has a plant height of 36" blooming in mid to late June; stargazer should be planted in full sun and in well drained soil. Proven to be resistant to rots and virus.



***Lilium tigrinum*. Tiger lily.** Tiger Lily (*Lilium lancifolium*, *L. tigrinum*): Its bright orange flowers speckled with dark spots are its easily recognized feature. The tiger lily begins growth in the spring, blooms in early summer, and then goes dormant for the fall and winter. It produces no seed but can be propagated by division during the fall or by planting the small bulbils

(mini bulbils) that are produced in the axils of the leaves. These should be cared for, as would other young seedlings. Plant in spring or fall. Fairly easy to grow.

Photo from FreeNaturePictures.com

“We have this bulb at Union Gospel Mission in Fort Worth (a project of the Tarrant County Master Gardeners). We started with two plants two years ago and this spring we have about eight plants. They need support or they will bend over in the bed. They get morning sun and afternoon shade. We love them with their appealing blooms (except for having to stake them). (Parker County Master Gardener).

***Muscari*. Grape hyacinth.** These are very small plants (six inches high) having dark green, very narrow leaves. The commonly planted variety, *M. botryoides*, produces pale blue flowers; *M. armeniacum* produces flowers of a deeper color.

***Narcissus Pseudo-narcissus*. daffodils.** These golden narcissus are very attractive during the early spring season, and are quite popular with some gardeners.

Concerning daffodil/narcissus: "I believe Keith (Keith Kridler's garden/farm in Mount Pleasant) told us that the leaves have to remain for six weeks to store

energy for next year's flowers. If you can allow the leaves to remain for eight weeks, the bulb will multiply. Keith is a Master Gardener, and he grows bulbs for Old House Gardens. Also, one recommendation in a gardening catalog (maybe White Flower Farms) was to plant daylilies in the daffodil/narcissus beds as their green foliage covers the old leaves pretty quickly. I'm trying that now but my new plantings are still too small to be effective...maybe next year." (Lamar County Master Gardener).

***Narcissus Tazetta*. Polyanthus narcissus, paper-white narcissus.** It is usually necessary to plant the bulbs every year to insure regular blooming. If allowed to remain undisturbed, the plants will become "splindling" and cease blooming. Very popular.

***Narcissus Tazetta* var. *orientalis*. Chinese sacred lily.** This plant differs from the better-known paperwhite narcissus in having larger flowers with yellow centers. Propagation is by dividing rhizomes, tubers, corms or bulbs (including offsets).

Oxalis. These very small plants produce clover-like leaves in most cases, and attractive vary-colored flowers. These plants, like the fairly-lilies, rain lilies, and star-of-Bethlehem lilies, make excellent edging or lawn plants. If allowed to remain undisturbed, they will multiply rapidly. It is recommended that the native species, *O. dichondraefolia* and *O. Drummondii* be sought out and planted. The latter produces very small bulbs and the plants bear clusters of several long stemmed, clover-like leaves, and lavender-pink, bell-like flowers having yellow center. *O. dichondraefolia* produces dull, kidney-shaped leaves and small yellow flowers. Other species that have proven well adapted are: *O. Acetosella* (white flowered), *O. Bowlieana* (Bowie's rose), *O. cernua* (buttercup), *O. corniculata* (creeping sour grass), and *O. rubra* (pink flowered oxalis).

"I have the Drummondii that has four clover-like green leaves with burgundy stripe in the middle. It is in a pot and it is mid-May and blooming a cute little pink flower with droopy head and yellow eye (see insert)" (Parker County Master Gardener).



Photo by: Parker County Master Gardener's Association

Then I have a dull gray oxalis that I use as a ground cover and it has four leaves with ruffled edges (see insert)



Photo by: Parker County Master Gardener's Association

I also have the burgundy one that blooms a pink blooms in May. I think the burgundy or purple one is the most popular oxalis.” (Parker County Master Gardener)



Photo by: Parker County Master Gardener's Association

***Ranunculus asiaticus*. Persian buttercup.** The small, tuberous plants produce large, bright colored buttercup-like flowers that are quite attractive. Ranunculus are rather exacting in their demands, and thrive best in a loose soil in a partially shaded location. The tubers should be soaked for several hours and then planted with the tapering points downward.

“Every year I plant these claw-like tubers and sometimes they do well and other years they are sparse and really don’t grow well. Never can understand why that happens. No rhyme or reason that I can figure.”
(Parker County Master Gardener).

***Rhodophiala bifida*. Oxblood lily, “schoolhouse lily”.** Called schoolhouse lily because it blooms when students return to school in late summer and early fall. Red blooms with shiny/glossy textured foliage. Height is 6-12 inches with spacing of 9-12 inches and prefers sun to partial shade. Once established, they are fairly drought-tolerant. Propagation methods are by dividing rhizomes, tubers, corms or bulbs (including offsets)

***Tigridia Pavonia* var. *grandiflora*. Shellflower, tiger flower.** This plant (really a corm) produces the typical three-petaled flowers of the Iridaceae family. The highly colored flowers are available in various shades of yellow, red and orange dotted with brown.

***Tulipa*. Tulip.** (Photo from FreePhoto.com) To achieve long, graceful stems and successful blooms, the tulip needs pre-chilling of the bulbs for 45 to 60 days prior to planting. Be certain that the bulbs remain dry to avoid mold or rot. Plant the bulbs immediately upon removal from cold



storage in December or early January. Locate the planting in full sun or partial shade in well-drained soil perhaps in a raised bed. Planting the bulbs beneath a deciduous tree will provide adequate sun before foliage appears in spring. Tulips make a more effective display when planted in masses of one variety and color. However, a number of varieties will assure a longer season of bloom and show of color.



Zantedeschia (Richardia).

Calla lily. These bulbous plants make excellent pot plants. The bulbs require a rest period during the summer, and must be forced for the production of winter bloom. *Z. aethiopica* (white calla), and *Z. Elliotiana* (yellow calla) are well adapted and produce large showy leaves and

flowers. *Z. Rehmannii* (pink calla) is a small, weak growing type.

“I have grown calla lilies outside for years and they have done quite well.”
(Parker County Master Gardener). *Photo from FreeNaturePictures.com*

Diseases and Pests

Basal rot - is caused by a *Fusarium* fungus that attacks dormant bulbs during warm, damp weather. Some bulbs are more resistant than others. The disease can be devastating, and explains why a successful planting sometimes fails to return a second season. It is best to avoid susceptible cultivars, while concentrating on cultivars known to be resistant to the fungus. *Rhizoctonia*, *Sclerotium*, and *Sclerotinia* are other forms of rot, and can also be treated with Benlate, a systemic fungicide and the chemical of choice.

Viruses - A number of viruses (mosaic, yellow stripe, white streak, and chocolate spot) can attack all amaryllids, iris, and many other bulbs. Sucking and chewing insects, along with contaminated tools and the contaminated hands of gardeners, easily spread virus diseases. Virused plants generally do not recover from their ailment and should be destroyed. On the other hand, there are plants that show virus-like symptoms, but later seem to recover. Some stresses often mimic viruses, but the plants outgrow them.

Thrip - While aphids, mealy bugs, grasshoppers, slugs, and snails are usually blamed for the spread of viruses, thrip are equally guilty. They can fly and are very active and so tiny that they easily go unnoticed, but they can disfigure flowers and disseminate virus diseases faster than any other insects but grasshoppers. They seem particularly attracted to white flowers, where they gather in large numbers. Spraying regularly with insecticidal sprays is the best method to keep them in check during the warmest months.

Nematodes can be devastating, particularly in sandy soils. It may help to plant nematode-detering plants such as marigold and Elbon rye, which can later be turned under.

Bulb mites are pests that attack plants already under stress. They rarely bother healthy plants. They multiply rapidly and can kill a plant in a short time.

Red spider mites can be a problem. Spraying or dusting with insecticides works. There are all sorts of sprays, but powdered sulfur is also valuable in treating them. Check the plants early in the season; by the time you see the damage, it may be too late.

Snails and slugs - These slimy things are noxious, but can be controlled with bug bait. Beer is also recommended for snails and slugs, leave a shallow container out overnight and the next morning remove it and throw the pests away.

Grasshoppers are killed by liberal dusting, sprays or with baits.

This recipe is from Jon Green, Texas Cooperative Extension Agent-Agriculture.

HOMEOWNER'S GRASSHOPPER RECIPE

2 ounces wheat germ

½ cup 5% Sevin

½ cup syrup

½ cup Kix or Kix style cereal

Mix wheat germ, Sevin dust, and then stir into the cereal.

Distribute in flowerbeds or wherever grasshoppers are active.

If you are concerned about your pets eating this mix, just place it in the toe of worn out pantyhose and hang it in a tree.

“If you choose to spray, do so in a downward stroke. This helps because the grasshoppers will jump into the material as they try to escape. Another favorite method is to step on them or smash them with a garden implement you have handy. This is one reason my garden shoes are never worn in the house.” (Parker County Master Gardener).

Spraying with insecticide controls mealy bugs and aphids, but it must be repeated frequently as they can be very bothersome.

Deer and rabbits can temporarily be kept away from bulb plantings with applications of blood meal. They hate it. But it must be reapplied after each watering or rain. This can get to be a bit of a nuisance in rainy spells, but it is a harmless way to add extra fertilizer to plants at odd times. One can also get similar results with sulfur powder or a mixture of blood meal and sulfur.