The Fundamentals of Growing Roses In Central Florida

TYPES OF ROSES:

Hybrid Tea – This is probably the most popular class of roses, easily recognized by its specimens' large, shapely blooms typically contain between 30 to 50 petals. The hybrid tea's blooms are borne on long stems, either singly or with several sidebuds. (Examples of popular hybrid teas are Moonstone, Louise Estes, and Veteran's Honor).

Floribunda – The floribunda class is characterized by its profuse ability to bear flowers in large clusters or trusses with more than one bloom within the cluster in flower at any one time. (Examples: Our Lady of Guadalupe, Julia Child, Playgirl).

Grandiflora – This category of roses demonstrates the characteristics of both hybrid teas and floribunda classes. Blooms are borne on long stems and feature the form of hybrid teas with the cluster blooms of floribundas. (Examples: Gold Medal and Queen Elizabeth).

Miniature / Miniflora - This class of roses has increased in popularity due to its novelty and versatility. These roses can be grown successfully in containers as well as edging plants for flower beds. Flower form and foliage are miniature versions of both hybrid teas and floribundas. (Examples: Abby's Angel, Bee's Knees, Butter Cream, Conundrum).

Shrub – Shrub roses are characterized by their sprawling habit. They can grow from 5 to 15 feet or more in every direction. Noted for their hardiness, they are usually vigorous and produce large quantities of flower clusters. The English Roses by David Austin are placed in this group. (Examples: Abraham Darby, Belinda's Dream, The Dark Lady).

Polyantha – Polyanthas originated just after 1860 from seedlings of Rosa Mulitflora and gained much popularity in the early 1900s. Crosses of Polyantha roses and hybrid teas produced the first floribunda roses. Polyanthas are characterized by a profusion of blooms in many colors, as well as a contained growth. They are hardy, dependable, generally carefree plants that continually produce large clusters of small blooms. They are often used in containers to provide bright accents along walkways or on patios and decks. (Examples: Mother's Day)

Climber – Climbing roses are dominated by their growth habit: long arching canes with the ability to "climb" (if properly trained and tied) on to fences, walls, trellises, arbors and pergolas. This variety of rose offers a wide range of flower forms, shapes and colors. (Examples: Don Juan, Blossom Time, Clair Matin).

Old Garden Rose (OGR) – This category of roses (known before 1867) is special in "old-fashioned" beauty, frequently is fragrant, and possesses hardiness and resistance to diseases. There is much variation in form, color, and size among the dozen classes of old garden roses. (Examples: Souvenir de la Malmaison, Mrs. B. R. Cant, Old Blush, Louis Philippe).

FORTUNIANA - BEST ROOTSTOCK FOR GROWING ROSES IN FLORIDA:

Roses grown in Florida gardens will do best if they are grafted onto Fortuniana Rootstock. The long fine root system of Fortuniana is an ideal rootstock for our state's sandy soil. The extensive root system enables the plant to absorb the nutrients and water it needs to best produce food for growth. The more vigorous a root system, the more food can be transferred to the plant, and in turn, the more vigorous the bush. As an added bonus, Fortuniana Rootstock is very resistant to the many varieties of nematodes found in our sandy soil, as well as to gall, stem die-back and root diseases. Roses on Fortuniana rootstock are available from many local nurseries; look for a tag on the bush or pot that is marked, "Fortuniana".

BASIC STRAGEGIES FROM START TO FINISH - WHERE TO PLANT:

Planning your rose garden is everything! Spend some time in your yard before buying roses. Watch for where the sunlight is most available. A great majority of roses require at least six to eight hours of full sun each day to reach their maximum potential.

Consider the overall look you want to achieve by growing roses in your garden. Do you want height? Volume? Fragrance? Do you want roses growing in beds by themselves or incorporated in beds with other types of plants? It is recommended that you draw a little plan for the garden you envision. When you are faced with the daunting delight of choosing roses at a wonderful nursery that carries a large variety of rose bushes you may get "carried away" with your purchases! Many of us can tell you about the times we had "too many roses to plant in too small a space"!

Another important factor in selecting a site for growing your roses is to determine how well the soil drains. Though roses do like to be watered frequently, they do not like to sit in wet soggy soil. To insure that an area drains well dig a hole about 18" deep by 10 to 12 inches wide. Fill the hole with water and check it in about 30 minutes. If water is still standing in the hole, this area does not drain well, and if you choose this location it is suggested that the roses be planted in a raised bed. Raised beds require some type of boundary-support with landscape timbers, stacked stones, etc., in order to hold the amended rose soil.

Once you have a plan and understand your yard, its drainage and determine the best location for growing roses, you are then ready to purchase the materials for preparing the rose beds. The following products are recommended. Please note that the amounts given are for one "rose hole", (for planting one rose bush).

Planting Mix #1:

1 bag Jolly Gardener Pro Line C/25 Growing Mix ** (2.8 cubic feet) which has been completely saturated with water before mixing with the other planting materials.

3 gallons mushroom compost (fresh, not bagged);
1 cup Osmocote 15-9-12 with minors;
1 cup fish meal
½ cup elemental sulfur powder;
1 cup Milorganite;
1/2 cup Epsom salts;
½ cup super-phosphate (do not mix in with above ingredients - to be used in the bottom of the hole).

All above ingredients are to be thoroughly mixed together to form the "Planting Mix", except the super-phosphate which is to be used only in the bottom of the hole under the rootball.

Jolly Gardener Pro Line C/25 Growing Mix is comprised of 50 percent processed pine bark, Canadian sphagnum peat moss, vermiculite and pearlite. If you cannot obtain Jolly Gardner then look for a bagged planting mix that is comprised of similar ingredients.**

Planting Mix #2:

Consists of (by volume):

1/3 good topsoil;
1/3 organic matter (dehydrated cow manure and peat moss);
1/3 sandy soil from the hole that is dug;
1 cup of Milorganite;
½ cup super-phosphate (do not mix in with above ingredients - to be used in the bottom of the hole).

All above ingredients are to be thoroughly mixed together to form the "Planting Mix", except the super-phosphate which is to be used only in the bottom of the hole under the rootball.

Planting Mix #3: Mix Miracle-Gro® Garden Soil for Roses 1:1 with the existing soil.

All of the above planting mixes have been used by a variety of successful rose growers and will produce good results. You will decide which is best for you. Keep in mind that you can use one of them for a series of plantings, and then try the other for planting additional roses in the future.

PLANTING:

Space your roses at least 4 feet apart from trunk to trunk. It's best to plan for the size of bushes when mature and space further apart than nearer in order to allow air circulation and room to work among the roses. For each rose bush, dig a hole (approximately 14" deep x 24" wide). Using a 32-gallon round garbage can lid will easily mark the width.

Fill the planting hole with the planting mixture. Remember – Superphosphate is only to be mixed with the soil at the very bottom of the hole. Fill all areas of the hole with the planting mix and slowly water it thoroughly to hydrate all of the materials as well as eliminate any air pockets. Plant the rose bush so the level of the soil in the potted rose is slightly above the level of the soil in the bed surrounding the hole. You are striving to keep the graft (the area where the rose bush and the Fortuniana rootstock are joined) as high as possible above the soil line. This will allow the graft to be exposed to sunlight and air, allowing it to easily produce new basal growth and keeping the graft from becoming too moist, rotting, and/or developing disease. Remove any wire name tags from the trunk of the rose bush. When you secure the bush to a sturdy stake you can reattach the nametag to the stake. Never leave wire or any other non-stretchable material on the rose bush as it can girdle the canes as they grow.

Thoroughly water the newly planted rose bush every day for at least two weeks so the roots can become established within the planting hole.

CONTAINER PLANTING:

Certain types of roses (miniatures and polyanthas, for example) are excellent for planting in containers as long as the containers provide adequate drainage and contain the same type planting mediums as described above. The larger rose varieties, especially those on Fortuniana rootstock, will need a very large container (15 gallons or more) in order for the wide, shallow growth habit of the roots to be accommodated appropriately. Plastic containers are recommended over other types and they are much more economical to purchase. Full sun and more frequent watering are essential, as well as the same spraying schedule for insect and disease control as those roses planted in the ground. Container roses are especially showy as entrance "welcomers", beside gates and archways, and on patios and decks.

SUNLIGHT, WATER, AND MULCH:

The first of these two issues have been addressed above, but as your rose bushes continue to develop you will need to keep an eye on each one to insure the roses are receiving appropriate amounts of sunlight and water.

Sunlight – Roses must have at least six hours of full sun each day in order to reach their full potential. This means that you should watch all other plants and trees in your yard to assure that they do not grow beyond their initial planting scenario! If so, you must decide how to prune or remove them if you are to guarantee your roses an adequate amount of sunlight.

Water – The lack of water is the main reason that roses perish. Here in central Florida roses require at least 2" to 3" of water per week. More is recommended than less! Water thoroughly and deeply about twice each week, three times per week in hotter or windy weather. Fortuniana rootstock is shallow and wide so you will need to prevent the surface area of the entire bed from drying out. Most successful rose growers rely on an automatic sprinkler system with individual emitters at each bush which apply water over the entire surface of the bed, thus providing the consistent amount of water their roses need to thrive. Rain alone is not enough. Your roses should be watered early in the day so the foliage can dry quickly after watering. It is not recommended to water late in the day or during the night, as water sitting on the leaves will encourage blackspot, a fungal disease, to develop.

In the hottest weather you can give your roses a mid-day shower, either by a hand held hose or an overhead sprinkler. Yes you can get the foliage wet. If done early enough in the day the water should dry quickly on a hot sunny day. This shower washes off dust/pollution, cools the bushes a bit and freshens their appearance.

Mulch – You can either buy bulk or bagged pine bark nuggets or you can do with many of us do … scour the neighborhood when it's the time of year for oak leaves and/or pine straw to "fall". Search for those "solid gold" bags of leaves or pine straw which have been put out by the curb, or ask your neighbors to save their raked leaves and pine needles for you. They make fabulous mulch, and, since they are all organic, they will enrich the soil as they decompose. Whatever type of mulch you use, it is recommended to put down a 3 to 4 inch layer over the entire bed in order to provide adequate moisture retention and retard weed growth.

FERTILIZING AND SPRAYING:

Roses are high maintenance plants, and, as such, require that you attend to them adequately. They are heavy feeders and perform their best with a consistent diet. Bi-monthly light feedings of fertilizers will keep your roses at their best. Just as in the case of the "planting directions", there are a number of different fertilizing approaches which are reliable and provide excellent results, even though they do not always use the same materials or the same frequency. You will experiment with the choices and over time decide which is best for you. No matter what you feed your roses, always water the entire surface of the soil surrounding the rose bushes BEFORE applying any type fertilizer. Then water again after applying fertilizers, washing the fertilizer into the soil and/or mulch.

SUGGESTED ROSE FERTILIZING METHODS:

Method #1: Using a granular fertilizer tailored to roses which includes minor elements (e.g. Sunniland Rose Growers Special, Growers 16-5-10 Nursery & Rose Special), every two weeks broadcast evenly under the bush from the shank to the drip line ½ cup of fertilizer to large established bushes; 1/3 cup to smaller bushes; and 2 tablespoons to ¼ cup to miniatures and minifloras. Water roses well before and after fertilizing.

Method #2:

End of January (approximately 30 days before spring pruning) – Apply ¼ to ½ cup of Epsom salts per bush - (smaller amount for newly planted, smaller bushes. Larger amount for established bushes). Broadcast evenly under the bush from the shank to the drip line and water in well.

Mid-February to early March (at pruning time) and again in August - Per bush – Apply 2 cups (less for smaller bushes) of Purely Organic Mix or Mills Magic Rose Mix. Broadcast evenly under the bush from the shank to the drip line and water in well.

Every 30 to 45 days (beginning in March) per bush – 2 to 4 tablespoons of Sul-Po-Mag (smaller amount for newly planted, smaller bushes. Larger amount of larger, established bushes). Broadcast evenly under the bush from the shank to the drip line and water in well.

Every 60 days (March through January) per bush – 2 to 3 cups of Milorganite and ¼ to ½ cup of Epsom salts (smaller amounts for newly planted, smaller bushes, larger amounts for larger, established bushes).

April (after the first flush of blooms) & again in September, per bush – 1 cup of Osmocote (15-9-12 with minors), ½ cup for smaller bushes. Always water roses well before and after fertilizing.

SPRAYING YOUR ROSES TO PREVENT DISEASE:

Before we get into the subject of which chemicals to use for deterring diseases on your roses please understand the importance protecting yourself when mixing chemicals and applying pesticides. Purchase and use a respirator approved for pesticide application. Wear chemical/liquid resistant protective gloves, footwear that is non-absorbent, and proper protective clothing, such as long pants and a long sleeved shirt. This is extremely important. All of these necessary personal protections are available at most independent nurseries, local "big box" or hardware stores, or from many Internet sources.

To keep your roses growing at their best it is recommended that you spray your rose bushes at least twice per month in order to prevent or eliminate blackspot. Always read the entire pesticide label and be sure to follow the recommended dilution rates. In addition to application rates, the instructions on labels specify the type of personal protection equipment required for the applicator. Use a reliable systemic fungicide such as Ortho® RosePride® Rose & Shrub Disease Control (Cleary's 3336 or Honor Guard are alternatives), combined with a contact fungicide such as Dithane T/O (Dithane M-45, Pentathlon DF, Mancozeb, or Pentathlon LF are alternatives). The contact fungicide controls the fungus by contact thus killing the fungus. The systemic fungicide is absorbed into the rose leaf and makes the plant resistant to the fungus. Consistent use of a systemic/contact fungicide combination will prevent and control blackspot and your roses will be much healthier and productive.

Another fungus which we sometime encounter in central Florida is powdery mildew. It is most prevalent in the fall and spring during periods of cool nights followed by warm days. Symptoms of powdery mildew are crinkly leaves and a white powdery residue on the leaves, unopened buds and stems below the buds. Powdery mildew can be controlled with the consistent use of Immunox, Rubigan, Systhane or Eagle 20EW, following the recommended application rates and frequency of use as provided on the product label.

Always thoroughly water the roses at least 10 to 12 hours before spraying as this allows moisture to be taken up into the leaves and will prevent spray burn.

When spraying for blackspot, wearing your protective clothing, and using a pump up sprayer (for a smaller number of roses) or a power sprayer (for a larger garden), add one half of the amount of water necessary to spray your rose garden. To that water add the measured amount of one of the above recommended contact fungicide. Then add the labeled amount of one of the above recommended systemic fungicides. Next add a few drops of liquid dishwashing soap or a commercial spreader sticker. Fill the remainder of the spray tank with water to the desired level. With the sprayer tightly closed agitate the tank to mix the ingredients. Adjust the spray nozzle to the finest mist possible.

Spray when the foliage is dry, and when the air currents are lowest. When applying the spray materials, spray the undersides of leaves thoroughly, then lightly over the top. Remember to continue to agitate the tank to keep the chemicals is suspension as they will settle to the bottom.

Learn how much you spray each time, and only mix the about of spray material you can use in one spray application; they won't be good the next time you spray. Spray excess material over mulch in rose bed or on other ornamentals to dispose of excess. Maintain a record of the materials sprayed, rates, amount of spray mixed, and any and all materials added to tank mix. Store pesticides in a secure location where children cannot gain access. Use measuring spoons and cups specifically designated for chemicals and always store them with your pesticides.

Do not smoke, eat or drink while handling, mixing, spraying, repairing/cleaning spray materials or equipment. Clean spray equipment thoroughly after use. After the spray tank is emptied of all pesticides, triple rinse the tank with clean water. Be sure to run water through hoses, spray gun and nozzles. A small amount of non- foaming ammonia cleans residue and maintains a clean tank. Never use the same sprayer for herbicide application. Remove all clothing after spraying and shower to remove spray residue. Wash clothing separately in the hottest water available.

CONTROLLING ANIMAL PESTS ON YOUR ROSES: The main animal pests Florida rose growers may encounter are aphids, spider mites, caterpillars and thrips. Each has its own season and treatment for eradication and control.

Aphids may drop by to enjoy your roses. Aphids are small, soft-bodied, slow-moving insects that suck fluids from plants. Aphids come in many colors, ranging from green to brown to black, and they may have wings. They attack a wide range of plant species causing stunting, deformed leaves and buds. They can transmit harmful plant viruses with their piercing/sucking mouthparts. Aphids, generally, are merely a nuisance, since it takes many of them to cause serious plant damage. However aphids do produce a sweet substance called honeydew (coveted by ants) which can lead to an unattractive black surface growth called sooty mold. Aphids can increase quickly in numbers and each female can produce up to 250 live nymphs in the course of a month without mating. Aphids often appear when the environment changes - spring & fall. They're often massed at the tips of branches feeding on succulent tissue. If the aphids aren't too bad you might be able to knock them off with a jet of water from the garden hose. For a larger garden, or if the aphids are very abundant, we recommend that you spray them with either Malathion (50% EC), Merit, or Bayer Dual Action Rose & Flower Insect Killer at three day intervals until they are gone.

Dry weather and spraying for insects will encourage spider mite infestation. Spider mites are small, 8 legged, spider-like creatures which thrive in hot, dry conditions. Spider mites feed with piercing mouth parts, which cause rose foliage to appear yellow and stippled. Leaf drop and plant death can occur with heavy infestations. Spider mites can multiply quickly, as a female can lay up to 200 eggs in a life span of 30 days. You will notice the leaves taking on a mottled appearance and feeling gritty underneath. In really bad spider mite infestations, webs will be seen among the leaflets. Spider mites are relatives of the spiders, so insecticides are generally ineffective. For those with a small number of rose bushes the best

control for spider mites is generous use of a water wand to knock them off from the underside of leaves and interfere with their reproductive activities. In bad infestations, you may need to water wand daily until the mites are under control. After that, weekly use of a water wand should suffice. For a larger garden if a chemical control is needed use Avid 0.15EC, Floramite, or Forbid 4F to control this pest.

Caterpillars are easily controlled with Thuricide. Symptoms of caterpillar damage include partially eaten buds and leaves that are just lace.

Flower Thrips are small, winged insects that attack many types of plants. They can multiply quickly as a female can lay up to 300 eggs in a life span of 45 days. Most of the damage to plants is caused by the young larvae which feed on tender leaf and flower tissue. This leads to distorted growth, injured flower petals and premature flower drop. Thrips are particularly fond of and detrimental to white or very light colored roses. For best control begin daily misting as the buds begin to show color and continue misting them until the blooms are cut. The following insecticides are effective in controlling flower thrips: Orthene, Bayer Dual Action Rose & Flower Insect Killer, or Conserve SC. Use sparingly and always follow the directions and application rates given on the product label.

Chilli thrips, a relatively new pest in Central Florida, are native to southern Asia and attack over 150 species of plants. They were first detected on Florida roses in 2005. These pests are hard to observe as they are less than 1/5 the size of common flower thrips and much lighter colored. They can do considerably more damage to roses than flower thrips because they feed not only on the blooms but also the leaves and stems. They are particularly attracted to tender new leaves. Their feeding causes leaves to turn bronze in color, become stunted, and curl upward. Buds may become brittle and drop off the plant. Left unchecked, chilli thrips can kill rose bushes. Insecticides containing spinosad (Conserve, etc.), acephate (Orthene, etc.), and imidocloprid (Merit, Bayer Advanced products), applied as a foliar spray, provide effective control for this pest. Pyrethroid containing pesticides (e.g. cyfluthrin) are not recommended as they are not particularly effective against chilli thrips but are quite damaging to beneficial species. Obviously, the whole plant and both sides of the leaves must be sprayed to control this pest. Many local rose growers include one of the effective insecticides in their regular spray routine about once a month from March through November as a protection against chilli thrips attack.

ROSES: FERTILIZERS, FERTILIZING AND pH

There are two kinds of fertilizers – Organic and Inorganic (chemical). Organic fertilizers are decomposed plant remnants and animal wastes (as it is in nature). Bacteria and fungi break down these materials to the simple soluble elements which is the only way plants are able to utilize them. Inorganic fertilizers are simple chemical compounds that rapidly break down to available nutrients. Organic and chemical fertilizers are not antagonistic, they work very well together, and better results are obtained than with either alone.

There are 17 nutrient elements that are essential for plant needs. Major or primary nutrients include Nitrogen (N), Phosphorus (P), and Potassium (K). The secondary, or minor, nutrients are: Sulfur (S), Calcium (Ca), and Magnesium (Mg). The third group is called micronutrients or trace elements because they are required in very small amounts. They are: Iron (Fe), Manganese (Mn), Boron (B), Zinc (Zn), Copper (Cu), Molybdenum (Mo), Nickel (Ni), and Chlorine (Cl).

Nitrogen stimulates the plant into rapid and vigorous vegetative growth. Phosphorus influences flowering and fruiting, hastens maturity, encourages root development and early spring growth, increases disease resistance and strength stems. Potassium promotes general vigor and sturdy root formation, contributes to disease resistance, regulates the water management, promotes turgor of the cells (keeps the necks straight), and increases blossom size. All nutrient elements are just as important, but they are needed in very small amounts. However, two of these (Iron and Magnesium) are in a way more important and often deficient because of high pH, mineral imbalance or too high or too low soil temperatures. Iron is necessary for chlorophyll formation and as an oxidation catalyst. An iron deficiency is noted when the upper leaves are getting pale green and are showing so called "Fish Net" appearance – veins stay green and interveinal areas are very pale. Magnesium is part of the chlorophyll molecule.

The percent numbers on your bag of primary elements are always in a specific order: N-P-K: Nitrogen (N), Phosphorus (P), and Potassium (K). Watch for Chlorine (Cl) content on the label. Reject those that contain more than 5-6% Chlorine (the less the better). Roses are extremely sensitive to Sodium (Na) and Chlorine (Cl) ions.

Due to the frequent rains in summer or frequent heavy watering, the nitrogen and potassium in Florida's sandy soils leach out easily and out of reach of the plant's roots. That is why formulations with higher Nitrogen (N) and Potassium (K) contents are recommended. Numbers such as 16-2-8, 12-2-8, or 8-2-8, preferably with minor and trace elements. Some amount of Phosphorus is already naturally contained in Florida soils and so the middle number can generally be lower compared to the first and last numbers. The numbers on the label of a fertilizer product are only percentages of what is contained in the fertilizer and larger numbers do not indicate something is better or not as good if the numbers are low. The only thing that matters is the relationship between the percentage numbers and where the N, P, Ks are derived (organic or inorganic).

Soil pH is defined as the acidity or alkalinity of the soil. Numbers 0 thru 6.9 are acid; 7 is neutral; and 7.1 – 14 are alkaline (basic). Changing the soil pH is a slow and usually continuous process. In alkaline conditions the pH can be lowered by adding sulfur to the soil. In acidic conditions the pH can be raised by adding limestone. The soil pH is very important to keep in optimal range. Roses like a pH of 6.2 – 6.8 (slightly acidic). In this range the beneficial micro-organisms activity is at its peak. The bacteria are converting organic and inorganic fertilizers to water soluble compounds making them available to the plants. This is also the range where the most needed nutrients such as N, P, K, S, Ca and Mg are available for plants. When pH drops below 5.0 (very acidic), micronutrients such as Al, Cl, Zn, Cu, B and Mn are released in amounts which are toxic to plants. Most organic amendments will lower the pH slightly and many chemical fertilizers will lower the pH (some significantly).

It takes about one and a half pounds of limestone applied to 25 square feet to raise the pH one point (e.g. from 5.5 to 6.5). The type of limestone to add depends upon the level of magnesium in the soil. If the soil is low in magnesium, dolomite limestone should be used. If magnesium levels are sufficient then calcitic limestone should be used. December/January and July/August are the best times to check your pH and adjust it, though if improper pH levels are suspected, checking and correcting at this time is prudent.

In January or February (if you really want good roses) work some organics into the soil. Approximately 2 quarts of dehydrated cow manure, 2 cups of Milorganite, ½ quart of alfalfa pellets (or meal), ½ cup of Epsom salts and 2 cups of gypsum. Alternatively, you could utilize Purely Organic mix or Mills magic Rose Mix in place of the dehydrated cow manure and Milorganite. It takes 2 to 3 months for organics to break down and be available to the plants. Apply again in late July or early August.

After the major spring pruning, when new growth appears, start feeding the granular fertilizer (16-2-8, 12-2-8, 8-2-8), at the rate of ½ cup every two weeks for a standard size bush (a little more for larger and a little less for smaller bushes).

For miniature roses apply 1-2 tablespoons, but the best for them is a 20-20-20 soluble fertilizer at ¼ to ½ strength (depending on bush size) of the recommended amount on the label, applied every two weeks. Fish Emulsion is also very good for miniatures and should be used at 1 tablespoon per gallon of water, one quart of mix to every bush.

Always water thoroughly 12 hours before any fertilizer application and water slightly after applying. **BE CAREFUL WITH FERTILIZER APPLICATIONS. **DO NOT OVER DO IT** REMEMBER, MORE ROSES ARE KILLED BY OVER FERTILIZATION THAN BY STARVATION.**

ROSE PRUNING – Why? How? When?

Why? The act of pruning has several objectives:

First – All year round you should remove any dead, diseased or damaged wood in order to help preserve the health of the rose plant. As soon as you see any die-back or canker, cut the diseased portion of the cane off about two inches below the problem area.

Second – We prune to control the quality and quantity of flowers produced by the bush by eliminating unwanted wood such as crossing stems and those which grow toward the center of the plant. This improves air circulation, facilitates spraying and increases the size and health of desirable stems.

Third – Pruning rejuvenates the bush by removing canes 3 years and older, allowing new more vigorous canes (basal breaks) to emerge. Remove all unproductive canes down to the wood from which they originate, or at the bud union.

How? All pruning should be done using a sharp pair of **bypass** pruning shears or a pruning saw (key-hole saw) for those hard to reach, inner cuts. Using loppers is not suggested as they usually do not leave clean cuts, and ragged cuts are more prone to lead to dieback. Hands should be protected by wearing a pair of strong (preferably leather) gloves, as thorns can be painful, causing deep punctures that are hard to heal.

Avoid pruning young or newly planted bushes … or prune them only lightly. Removing the first flower buds on new bushes by pinching them out will stimulate the bush and direct the energy into growing a strong bush rather than producing flowers.

If you decide to do pre-pruning (see the "When" section below), the main pruning will only involve shortening the canes you have kept. The usual shortening is to take off 1/3 to ½ of the overall height. Tall canes are cut to the point where they are about 1/2 inch in diameter, leaving wood that is bigger in circumference than a pencil. Pruning cuts should be made approximately ½ inch above an outward facing bud eye at a 45 degree angle facing away from the bud eye.

In all pruning remember to leave as many leaves on the rose bush as possible, as it is from this "leaf factory" that your rose bushes will be fed through photosynthesis.

As new leaf growth begins to appear after pruning, thumb-prune (rub off with your "thumb") the tender growth emerging on the stems which is growing towards the inside of the bush or into neighboring canes. This is to keep inward-facing growth at a minimum, thus allowing better air circulation and more sunshine to reach the interior of the bush which minimizes fungal growth, such as blackspot and powdery mildew.

If desired a wire brush may be used to lightly brush the bud union of an established plant in order to remove the corky bark which develops as the bush ages. This will help stimulate the growth of more basal breaks.

When? Pre-Pruning can be performed in January before the main pruning season. This consists of eliminating dead, diseased and damaged wood, and removing unproductive wood. Pre-pruning is optional, with some rosarians avoiding it entirely to keep untimely new growth from developing.

The main yearly pruning is usually performed in Florida between mid-February and early March, preferably in the midst of a prolonged cold spell. As in other "rose-growing strategies" the when of pruning varies among rose-growers for a number of reasons, not the least of which is the timing of new growth and blooms to coincide with spring rose shows or special events.

STAKING YOUR ROSES - Fortuniana rootstock grows shallow and wide, sometimes reaching out in all directions 15 to 20 feet from the plant. Fortuniana does not form a deep tap root, thus does not provide support to the bush as it matures. Florida's strong winds during thunderstorms and tropical storms can easily topple a young unsupported rose bush. Young and/or small bushes can be staked by using bamboo stakes tied to the canes with a plastic, stretchy tie-tape, both are readily available at nurseries and big box stores. The stake should be hammered into the soil adjacent to a strong cane and secured to the cane

with the stretch tape. More than one stake may be used if the bush is sprawling or top-heavy. As a bush matures and becomes fuller and heavier the bamboo stakes no longer provide the necessary support. We recommend using four foot lengths of half-inch rebar hammered firmly into the ground. The above ground portion should be covered with a section of PVC pipe or garden hose. Use the same type of stretchy tape to secure a strong outward facing cane to the rebar stake.

CUTTING AND PRESERVING ROSES FOR ARRANGEMENTS - It is best to cut roses as early in the day as possible so they are fresh and well hydrated. Take with you into the garden your heavy gloves for protection, a pair of sharp bypass pruning shears, and two buckets of warm water. Cut the roses with the length of stems you desire for your arrangements (though during the hottest months it is recommended to cut shorter stems, leaving as many leaves on the bush as possible). Cut at a 45 degree angle above a five-leaflet growth or above an outward facing bud-eye whenever possible. Reposition your bypass pruners about ¼ inch above the end of the stem you cut, then put the pruner blade and the stem underwater in one of the buckets and snip off the end of the stem under the water. This prevents any air from being sucked up into the stem which would prevent the stem from taking up water in the vase. Put the newly-snipped rose stem into the second bucket of water to rest until all of the roses have been cut in the same way. You will have lots of little cut tips in one bucket and a fabulous array of cut roses in the other. Bring the bucket of roses inside and let them rest in a cool, shaded area for 30 minutes or more.

When arranging roses we recommend using either a homemade or commercial solution designed to extend the roses vase life. *Floralife* or *Chrysal Cut Flower Food* are both good products used according to the package directions. These solutions should be changed every three days and the vase washed thoroughly with soap and bleach. An alternative homemade solution can be prepared by mixing 1 quart of water with 2 tablespoons of lemon juice, 1 tablespoon of sugar, and ½ teaspoon of bleach. Another homemade solution can be prepared using 3 quarts of water and 1 can of Sprite (NOT diet). For bacteria retardation and reliable nutrition of the cut blooms, the commercial products are recommended.

After arranging your roses in the proper solution keep the vase in the coolest location possible, preferably in an air-condition room and away from direct sunlight. Enjoy your beautiful cut blooms!!

GLOSSARY OF BASIC ROSE TERMS

Alfalfa Meal (aka dried alfalfa, meal or pellets) - NPK Ratio [nitrogen-phosphorus-potassium] of 3-1-2. Is an organic soil amendment that contains the hormone triacontanol, a plant growth regulator. Microbes in the fermented meal activate soil organisms to convert nutrients into available forms for the plant. When used in excess alfalfa meal or pellets can have a detrimental effect on growth.

Anthracnose – Not much is known about this hard to pronounce fungal disease. It shows itself initially as leaf spots about ¼ inch in diameter, which make them easily confused with blackspot. As the infestation progresses the spots become purple to brown and finally light brown or tan with a red or purple margin. It is most severe in cool moist spring conditions. If it is confused with blackspot it is controlled with the same techniques and chemicals.

Aphids - Small, typically green, soft bodied, pear shaped insects which suck the juices from the tender rose foliage. Aphids tend to cluster on the new leaves and buds, and in their feeding activity they deposit a shiny, stick film called honeydew. Sooty mold sometimes grows on the honey-dew covered leaves. If the aphids are left untreated the foliage will become deformed and the flower buds will not open. For the control of aphids, please refer to "CONTROLLING INSECTS ON YOUR ROSES".

Basal Break – A basal break is a new cane that grows from the bud union on grafted rose bushes (and from the roots on own-root roses). Basal breaks are important in the development of your rose bush, as these new strong canes will eventually replace old, worn canes, maintaining the vigor and longevity of the plant.

Black Spot Fungus – (*Diplocarpon rosae) - Is the most common or prevalent disease of outdoor roses on a worldwide basis.* Small black spots of 2 mm diameter can be found on upper leaf surfaces as well as immature canes. These spots generally have a circular appearance having a feathery edge. Further development involves the appearance of yellow margins around the spot and a yellow condition that can extend into the entire leaf. Black Spot is spread by splashing water. Infection occurs after leaves are wet for several hours. Therefore, the disease is more serious during periods of rainfall. The fungus produces infectious spores throughout the year, causing repeated infections in warm, wet weather. Leaves less than two weeks old are the most susceptible to this disease. The fungus becomes active in a wet environment with a temperature of about 75 degrees. Usually the lower and inside areas of the plant are more likely to be infected because these areas have longer time periods when water is available on leaf surfaces allowing the germination and penetration of the fungus.

Blood Meal – Dried powdered blood collected from cattle slaughterhouses. It is a rich source of nitrogen, so rich that it can burn the roots if used in excess.

Bone Meal – Long lasting source of phosphorus, a primary nutrient for roses. Bone meal also has low levels of nitrogen, potassium and calcium. The nutrients contained in bone meal are slowly released in the soil. It is recommended to use bone meal only when planting a new bush and then only in the very bottom of the rose hole, not throughout the entire planting mix.

Botrytis Blight (*Botrytis cinerea)* - Botrytis blight is common in all parts of the world. Botrytis is a gray fungus that generally lives on dying tissue. With the right conditions, any dead plant tissue can release thousands of Botrytis spores. Botrytis infection occurs when water remains on leaves or buds for an extended period of time. The most common symptoms usually are seen on flowers and young flower buds which droop and produce a cottony grey fuzzy fungus.

Bud Union – In grafted roses, the bud union is where the scion (the top flowering portion of the bush) and the rootstock have been joined (grafted) together.

Bypass Pruning Shears – A pruning tool used to cut stems and canes who's blades move and "bypass" each other as the stem is cut, in much the same way as a pair of scissors cuts. Anvil pruning shears have one blade and a stationary "anvil" which the blade meets when cutting. The anvil pruning action tends to crush instead of cutting the stem, leaving ragged tissue behind, making the stem more susceptible to bacteria, fungi and insect invaders. Bypass pruners leave a cleaner cut and are recommended for rose care.

Calcium – See **Gypsum**

Cane Borers – Generic term for several different small wasps and bees that nest in the pith of cut rose canes. Insects bore a hole down the middle of the pith in order to make their nests; thus they are often called "cane borers".

Chelated Iron – The trace element Iron in a soluble, chelated form, making it easily absorbed by the plant. Iron is necessary for chlorophyll formation. Signs of iron deficiency are light green/yellowish leaves with dark green veins.

Compost - a mixture of decayed plants and other organic matter used as a soil amendment worked into the soil or to top dress establish beds. Compost promotes microorganism activity, improves soil character and helps with moisture retention. Sometimes referred to as 'Brown Gold'.

Dehydrated Cow Manure – Organic dry, heat treated cow manure; soil amendment, slow release, will not burn plants, low nitrogen, phosphorus and potassium content of 2-1-2.

Deadheading – When a rose flower fades, falls apart, or otherwise dies, it is called a spent bloom and should be cut off the plant to encourage repeat flowering. Cutting of dead flowers is called deadheading.

Dieback - Dieback of roses can be caused by many different fungi and frequently more than one fungus is involved in dieback. The pathogens enter stems through wounds or attack plants that have been weakened by some other cause. Dieback is often more prevalent on plants that have been defoliated by blackspot and is generally favored by wet weather which allows spores to infect wounds before they heal.

Dolomitic Lime – Soil additive that helps raise the pH in acidic soil.

Downy Mildew (Peronospora sparsa) - Often confused with blackspot, but much more serious, downy mildew has the capability to defoliate a plant within 24 hours. Angular, dark purple blotches appear on the foliage. Leaves often turn brittle and easily drop from the plant. Fortunately downy mildew is less common than other rose diseases. It usually shows up after long periods of cool, wet weather. Downy mildew generally cannot occur when daytime temperatures are above 85 degrees.

Epsom Salts (Magnesium Sulfate) **-** Provides Magnesium, a secondary nutrient which promotes large, vigorous stems and blooms, and helps promote photosynthesis as Magnesium is the center molecule for chlorophyll production. Magnesium is also widely thought to help stimulate basal and lateral breaks.

Fertilizer – a combination of chemical elements, either organic or inorganic. Organic fertilizers tend to release their nutrients slowly. In contrast, inorganic, or chemical fertilizers are released immediately. Both organic and chemical fertilizers are broken down by soil microbes in order to be available to the plant. They are then absorbed by the plant primarily through the roots in the presence of moisture. Photosynthesis transforms these nutrients into sugars and starches which are used by the plant for energy, growth and flower production.

Fish Emulsion – A well rounded fertilizer derived from partially decomposed blend of finely pulverized fish. When mixed with water and used as a soil drench it is a good source of immediately available nitrogen and multiple trace elements.

Flower Beetles (Euphoria sepulcralis) – These beetles, which feast on rose blooms (mainly for about one month in the spring) look like Japanese Beetles, but are not. The University of Florida identifies them as E. sepulcralis, a type of scarab beetle. Their grubs live in the soil, then pupate and become adults, living for one year. Adults are about ½ inch long, dark brown to black, with metallic bronze or green reflections. The best control is hand picking them off the blooms and squishing or drowning in a solution of soapy water.

Fortuniana Rootstock – The best rootstock to choose for growing roses in Florida. This rootstock, originating from China, comes from the Fortuniana Rose, also known as the "Cherokee Rose". It is well suited for Florida's sandy soil, as its fine far reaching shallow roots allow the plant to absorb much needed nutrients and moisture. It is also cold and heat tolerant and nematode resistant as well as resistant to stem die back and root gall. Whenever possible always choose plants that are "grafted on Fortuniana".

Grafting – The art and skill of taking a hardy rootstock such as Fortuniana and joining a piece of a stem from the desired flowering variety (the scion) to that rootstock so they eventually fuse and create a new rosebush which is "grafted on Fortuniana".

Gypsum - is a soft sulfate mineral composed of calcium sulfate and is used by rosarians as a soil amendment which provides calcium and sulfur. Gypsum is also helps flush excess salts from the soil and aids in aerating compacted soils.

Lateral Break – Along with basal breaks, lateral breaks form the main canes which are the foundation of your rose bush. Lateral breaks generally emerge along the larger stems near the bottom of the bush.

Leaf Cutter Bees – Rarely seen bees that leave behind distinct circular cuts along the edges of the rose leaves. They use these cut pieces to line their nests. About the size of a honeybee they are great pollinators. The damage they do is only cosmetic and generally will not affect the health of the rose bush. Cutter bees are difficult to control and best left alone.

Magnesium Sulfate – see Epsom Salts

Midge - Less than 1/8 of an inch long, the rose midge lays eggs on succulent new growth and under sepals of flower buds. The eggs hatch and feed on the new growth causing it to turn brown and die, preventing the development of a bud. The telltale sign, a tiny crisp burnt-like bit of foliage at the tip of new growth is often the first sign of a midge infestation. A garden infested with midge will have few if any blooms, as most immature buds will be destroyed.

Milorganite (Sewer Sludge) – The recycled product of activated sewer sludge in its heat treated form. High in nitrogen, it is a good source of iron and trace elements, is slow release, generally will not burn young plants, is inexpensive and found in many garden centers.

Mushroom Compost – Organic compost used to grow mushrooms commercially. Unpasteurized mushroom compost can be purchased in bulk from local mushroom farms and mulch/soil companies. It is very inexpensive and it offers a rich soil-building medium, which roses love.

Nitrogen – The first component on a fertilizer analysis ratio. It is the "N" in N-P-K. Nitrogen stimulates the plant into rapid and vigorous vegetative growth. Roses generally do best with a constant supply of small amounts of nitrogen, either from an organic or inorganic source. If there is not enough nitrogen available the rose bush will lack vigor. If too much nitrogen is present the rose bush will produce excess vegetative growth with fewer flowers and be susceptible to pests and diseases.

Organics – Fertilizers which are derived from once-living organisms. They can be from animal wastes (manures), vegetable matter, fish meals, and former plant materials (compost). Organic supplements support healthy soil microbes which enrich the soil and in turn make beneficial soil nutrients more available to the plants.

Peat Moss - Consisting of partly decomposed sphagnum moss, peat moss is harvested from areas in which water and topography combine to create a bog. Canada is the world's leading exporter of peat moss and harvests it on a commercial scale. Peat moss is a light, fibrous material that has a large cellular structure which allows it to absorb up to 20 times its weight in water, which it will slowly release into the surrounding soil. Although poor in nutrients, peat moss does add needed organic content to poor soils. Sphagnum peat moss is used to lighten and aerate soils and also to bind and enrich loose, sandy soils. Rose roots thrive and do their best in a light and airy soil that has been modified by the addition of a lot of organic matter, such as peat moss or compost.

pH - pH is a measure of the hydrogen ion concentration in water. In soil we are measuring the pH of the soil water solution. The pH scale runs from 0 to 14, with 7.0 being neutral. Values of pH below 7 are considered to be acid, values above 7 (reflecting fewer hydrogen ions) are considered alkaline. Rose bushes absorb nutrients through their roots as ions. Therefore the pH of your soil is extremely important because it has a large effect on the availability of nutrients essential for growth. pH also affects the activity of soil microorganisms. Nutrients are maximally available when the pH of the soil is in the 6.3-6.5 range, i.e., "slightly acid". A soil pH that is too low or too high would render important nutrients unavailable, (or in some cases over available), and your roses will react accordingly.

Phosphorus – One of the three major elements, phosphorus influences flowering and fruiting, hastens maturity, encourages root development and early spring growth, increases disease resistance and stem strength. Phosphorus is the "P" in the N-P-K listed on the fertilizer bag. Supplied in balanced granular fertilizer. Supplemented by use of bone meal or super phosphate in the bottom of the planting hole. Note that Florida's soils are naturally high in phosphorus and repeated applications of phosphorus is not recommended as it will bind up other nutrients making them unavailable to the plants.

Potassium – One of the three major elements, potassium promotes general vigor and sturdy root formation, contributes to disease resistance, regulates water management, promotes turgor of the cells (keeps the necks straight), and increases blossom size. Potassium is the "K" in the N-P-K listed on the fertilizer bag. Rose bushes deficient in potassium may be stunted, have weak stems and brown edges on the leaves.

Powdery Mildew – (Spaerotheca pannosa, var. rosae) – A fungus that thrives in rose gardens when nighttime temperatures are near 60 degrees with humidity of 90% or above, followed by daytime temperatures near 80 degrees with 50% humidity. Prevalent in Central Florida November through March, powdery mildew spores are airborne and drift and settle on delicate and susceptible new growth at the top of the bush. The first symptoms are apparent on the leaves, which will be curled along the sides. As the disease progresses a white powdery substance forms on the leaves, buds and stems.

Pruning – Necessary for healthy rose bushes. There are two main objectives for pruning: 1) to keep bushes healthy by removing the old and diseased canes and to remove dieback; and 2) to control quantity and quality of blooms and to shape the bush. Major pruning is recommended between mid-February and mid-March, preferably during a cold spell; lighter pruning is done in late September/early October.

Root Gall – An abnormal bulbous growth affecting the shank of the bush, graft area and roots; can be caused by fungus, bacteria or virus and can be transferred to other rose bushes.

Rose Slugs - Look more like caterpillars than slugs. They are the larvae of primitive wasps called sawflies. Female sawflies (the adult life stage of rose slugs) lay individual eggs in slits along the margins of leaves. When the larvae hatch they begin feeding on the leaf. Once they are fully grown, they drop to the ground and pupate in cocoon like chambers in the soil, then emerge as sawflies. The larvae are light green with brownish- orange heads, and they range in size from 1/2 to 3/4 inch long. When fully grown, rose slugs closely resemble butterfly or moth caterpillars. Young rose slugs turn rose leaves to skeletons, leaving a clear layer of tissue that eventually turns brown. In addition to being unattractive, the damage also interferes with photosynthesis, thus possibly weakening the plant. Older larvae are larger and are able to chew on leaves, taking bites out of them, as a caterpillar does.

Scale - Parasitic feeding by scale insects reduces plant vigor and may ultimately so weaken the rose bush that it dies. The most common armored scales attacking our roses in Florida are the San Jose scale (Quadraspidiotus perniciosus), the rose scale (Aulacaspis rosae), and the Latania scale (Aspidiotus lataniae). Mainly found on the stems and branches of the plant, lack of control will allow the pest to spread to flower stalks and petioles. As the scale population increases the plant becomes stunted and weakened.

Secondary Nutrients – Required by roses in smaller amounts than the primary nutrients, but they are no less important. The secondary nutrients are: Sulfur (S), Calcium (Ca), and Magnesium (Mg), and are generally supplied by a complete rose fertilizer.

Spider Mites - Spider mites are small, 8 legged, spider-like creatures which thrive in hot, dry conditions. Spider mites feed with piercing mouth parts, which cause rose foliage to appear yellow and stippled. Leaf drop and plant death can occur with heavy infestations. Spider mites can multiply quickly, as a female can lay up to 200 eggs in a life span of 30 days. You will notice the leaves taking on a mottled appearance and feeling gritty underneath. In really bad spider mite infestations, webs will be seen among the leaflets. Spider mites are relatives of the spiders, so insecticides are generally ineffective.

Sulfur – A secondary nutrient that is essential for production of protein. Sulfur promotes soil activity and development of enzymes and vitamins and helps in chlorophyll formation. It improves root growth and promotes vigorous plant growth and resistance to cold.

Sul-Po-Mag – (Sulfate of Potash Magnesia) – is the commercial name for the naturally occurring mineral langbeinite. Sul-Po-Mag provides 22% sulfur (S), 22% potassium (K), and 11% magnesium (Mg), all essential for optimum rose growth. Sul-Po-Mag is virtually 100% water-soluble, which allows for immediate nutrient uptake, and is a neutral salt and therefore does not affect the pH of your soil. It is essentially chloride-free, containing 2.5% maximum, so it won't harm chlorine sensitive plants, such as roses.

Thrips – small, winged insects, one tenth to one twenty-fifth of an inch long, slender pale yellow to dark brown. Will infest all roses, but are particularly attracted to light colored blooms. They puncture the plant tissue and withdraw cell sap, leaving deformed leaves and brown dirty looking blotches on flower petals. Most active in the spring and fall but can be found all year long.