A RESEARCH ON …. THE PROPAGATION OF ROSE PLANT …. IN BAHRAIN

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Introduction

The subject of our research is the Rose Plant. It gives us great satisfaction to do this study because the Rose plant, more than any other, can attract anyone and is ideally suited for the tropical climate of Bahrain. In this research, first of all, we intend to highlight the scientific family from which the Rose plant comes from:

**Scientific classification**

- **Kingdom:** Plantae
- **Division:** Magnoliophyta

*Bridal Pink*, hybrid tea rose, Morwell Rose Garden
Next, we would like to draw an imagery on its history – how the rose became red in colour:

Roses are known to be flourished before 35 million years ago. Romans believe that rose is a symbol of love and beauty. In the Arabic legend, all roses where white until one night a nightingale met a beautiful white rose and fell in love. Eventually his love was such that he pressed himself to the flower and thorns pierced his heart coloring the roses red.

Now, let us see the importance of Roses:

Rose hips are sometimes eaten, mainly for their vitamin C content. They are usually pressed and filtered to make rose hip syrup, as the fine hairs surrounding the seeds are unpleasant to eat (resembling itching powder). They can also be used to make herbal tea, jam, jelly and marmalade. A rose that has aged or gone rotten may not be particularly fragrant, but the rose’s basic chemistry prevents it from producing a pungent odor of any kind. Notably, when balled and mashed together the fragrance of the rose is enhanced. The fragrance of particularly large balls of mashed roses is enhanced even further. Rose hips are also used to produce an oil.
used in skin products. Rose shrubs are often used by homeowners and landscape architects for home security purposes. The sharp thorns of many rose species deter unauthorized persons from entering private properties, and may prevent break-ins if planted under windows and near drainpipes. The aesthetic characteristics of rose shrubs, in conjunction with their home security qualities, makes them a considerable alternative to artificial fences and walls.

**Location of the plant understudy**

When we are planting roses, we have to pick a spot that is well lit in the morning. We also need an area that is sunlit for at least 6 hours a day. Roses need a great deal of light if they are to grow properly. We also need to pick an area that has plenty of well drained soil. Organic matter like manure or lime helps to nourish the roots of the roses. We should soak the roots in water or puddle clay for many minutes, and cut off any root's ends that are broken. The first 3-4 weeks after planting the rose, you should water them often.

**Let me identify some of the common problems affecting the rose plant, their causes and solutions:**

1) **PROBLEM**-Leaves, especially new leaves, become twisted or curled and are covered with a white powder. Flower buds and canes may also be affected.

**CAUSE**-It is a fungus disease carried by wind

**SOLUTION** - Remove and destroy all infected leaves, including those on the ground. apply a fungicide once every 10 days

2) **PROBLEM**- Small red, brown or purple spots develop on upper leaf surfaces.

**CAUSE**- Spot anthracnose, a fungus disease. The fungus spreads in water.

**SOLUTION**- When symptoms appear, begin spraying with a fungicide once every seven days until all signs of the disease are eliminated. Do not water plants from above, since the fungus spreads in splashing water.

3) **PROBLEM**- Red or brown sunken spots with dark margins develop on canes. Cracks may appear within the spots. The spots enlarge and eventually encircle the cane. Leaves and stems above the damaged area turn yellow, wilt and die.

**CAUSE**- Canker, a fungus disease. The fungus spreads in water and enters the plant through cuts or wounds in the canes.
**SOLUTION** - Use sharp pruning shears and make the cut just above a node at a 45 degree angle.

4) **PROBLEM** - Small, rounded hole appear in leaves.

**CAUSE** - Aphids, semitransparent insects 1/8 inch long that cluster on new growth and flower buds. They suck the juice from the plant and secrete the sticky substance. Aphids can carry and spread diseases.

**SOLUTION** - Aphids may be knocked off plants with a stream of water. In severe infestations, spray with an insecticide or an insecticidal soap.

![Nurturing the Rose](image)

**Nurturing the Rose**

It's a good time to prune a climbing rose as the flowers appear on mature wood. By cutting it back now, it will have time before winter comes to make some growth and prepare next year's flowers.

**Rose varieties:**

Many rose varieties cuttings are best taken from young stems of the current season’s growth. When taking cuttings from "non-stop" varieties select stems on which the flowers petals have just fallen. For "annually flowering" varieties take cuttings in the late spring after the flowers have faded.

![Budding and grafting](image)

**Budding and grafting:**

If you intend to bud or graft plants the rootstock plants are produced from cuttings. First root the rootstocks from cuttings then perform the budding or grafting operations. Some growers graft and root the root stocks at the same time; this technique is called *stenting*.

**Grafting success may be improved using rooting hormones:**
Success of a graft union depends on the establishment of a callus bridge between the cut surfaces of scion and stock, and the subsequent establishment of a functioning vascular cylinder connecting scion and stock. Initial callus formation appears to develop about equally on the cut surfaces of both partners, arising not from the cambial layers but from parenchyma cells, mostly in the wood just inside the cambium. Soon after scion and stock calluses have merged, callus cells just below the cambial cells of the scion begin to divide in the same plane as the cambium. Waves of cell division proceed from the top down, suggesting that a regulatory stimulus moves to the cut surface from the growing-shoot tip. Callus parenchyma cells inside the new cambium cylinder re-differentiate into functioning xylem cells. Last of all, the new cambium begins producing phloem cells.

Propagate New Plants from Cuttings and Improve Transplanting.

Rose growers may have several varieties that are favorites. From these favorites there may be some which are desirable to propagate for new plants. Some rose may be older varieties which are no longer commercially available.

Propagating roses by rooting softwood cuttings is a simple way to obtain more plants. Some varieties are usually self-rooted. Other varieties have the upper portion budded or grafted onto a root stock; these root stocks are usually propagated from cuttings. "Old Garden Roses", shrub roses and miniature roses may be grown on their own roots. Modern hybrid teas and floribundas are less predictable.

Rose Pests
Even though the most carefully tended rose garden will occasionally have encounters with certain garden pests, this should never discourage you from growing and enjoying the ‘Queen of Flowers”. Unless you are planning to be a rose exhibitor, don’t stress yourself out with too many complicated measures of pest control. Of course, good garden management depends on learning how to prevent plant problems before they start by giving your roses optimum growing conditions including adequate sunlight, proper soil conditions, food, water and by practicing good garden hygiene; disposing of fallen and diseased leaves and buds.

If you are diligent about doing these things your roses should be healthy enough to resist most pests. If you inspect your roses daily (as most rose lovers do anyway) you should be able to catch any pest problems before they get out of hand. I usually just squish the offending bug, or remove the affected foliage or buds. A strong stream of water from your garden hose will also do the job nicely.

The next course of action would be an organic method of control such as insecticidal soap. These are best for obvious reasons, namely the neighborhood environment and you, your family’s and pet’s health. The following is a list of some of the pests you may experience and what methods are available to control them.

**Aphids**

Aphids (picture above) are tiny oval insects that are usually light greenish in colour. Appearing in the spring, they particularly love new succulent growth, draining the tasty sap from rapidly growing shoots. It is best to wipe out aphids when you first notice them, as they have incredible reproductive capabilities. A plant can literally be covered with thousands of aphids in a very short time if not dealt with immediately.

I have never had to use any chemicals to control aphids on my roses. They are easy to locate, simply look for them on the new tender shoots and squish them between your fingers. I have taught my children to find them; they love looking for “bugs” and they feel like they are doing their part in keeping our roses looking beautiful and healthy. For those of you that are
squeamish about touching bugs, just use your garden hose to spray them off. If you are consistent about doing this every few days you should not experience any problems with aphids in your garden.

You can also use insecticidal soap that you can purchase in any garden store or make your own. Another method to make your roses unpalatable to aphids and other pests is by spraying them with a $\frac{1}{2}$ and $\frac{1}{2}$ solution of Listerine and water. And don’t forget about ladybugs. They are a wonderfully beneficial insect for your garden, and aphids are one of their favorite meals.

**Earwigs**

If you see signs of chewing on your rose blooms and young leaves, you may have earwigs. They are a large and soft-bodied yellowish-brown insect with a pair of curved pincers. They hide during the day and come out at night to climb into your rose blooms and feed. A chemical soil drench around your rose should break the breeding cycle of this pesky insect.

**Cane Borers**

Cane Borers are nasty little insects that drill holes into the end of your rose canes, causing them to eventually die. The most effective method of control is to seal the end of all your canes with Elmer’s glue. If you also add food coloring to the glue, you will be able to keep track of which canes you have sealed.

**Inchworms**

Inchworms are tiny caterpillars that infest your rose buds and young leaves in the spring. Diligent hand picking is the best method of controlling them.

**Japanese Beetles**

A Japanese beetle infestation can be quite distressing as they have an insatiable hunger for rose blooms and sometimes even foliage. Preferring the lighter colored and stronger scented varieties, these pests lay eggs on your lawn and around your roses and return year after year. You can use a neem-based product to get rid of them or you can position a bowl filled with dish soap and water under the rose and tap lightly. They should fall out and drown in the solution. This procedure seems to be most effective in the morning or evening when the beetles are resting.
Leaf-Cutter Bees

If you happen to see small, perfectly circular holes cut into the foliage of your rose, you can be certain that the Leaf-Cutter Bee has visited. They usually seem to prefer the dull leaves of old garden roses to the modern hybrids. The bee uses the leaf cuttings to build its nest. Chemical controls are not necessary as they do not harm the plant and are rarely more than a minor nuisance.

Leafhoppers

Leafhoppers are very small, green or yellow insects that jump from the plant when disturbed. If you see a pale spotting on the tops of your leaves you may have leafhoppers. Spray the leaves with an insecticide when activity is seen.

Pear Slugs

Pear slugs are slimy, dark green and about ½ inch long. They are the larvae of the sawfly. You will most often find them in the spring eating holes in your rose leaves from the undersides. Pear slugs can do a lot of damage in a short amount of time, so act quickly. The best way to rid your roses of pear slugs is to squish them between your fingers. Insecticidal soap will also work very well.

Rose Weevil

The Rose Weevil is a very small insect about ¼ inches in length. They have long snouts that bore into the rosebud to feed and lay eggs. If you remove the affected buds, you will be successful in controlling them.

Rose Chafers

Rose Chafers are grayish beetles that are ½” long. They can be seen eating flower buds and petals. Spray with insecticide when the problem is
first noticed.

**Rose Gall**

Rose gall is caused by a wasp species that secretes a certain chemical that creates rounded swellings on rose canes. The wasp lays eggs inside the gall. The best thing to do is to prune off the affected cane and destroy it before the larvae emerge.

**Rose Midge**

Rose Midge can be devastating to your roses, specifically to the blooms. The larvae of this microscopic insect feed on growing tips that should result in buds. Unfortunately, the rose midge has no known predators and no natural means of control. Young larvae hatch in the soil, so the most effective means of control are used on the soil to kill them as they hatch.

**Sawfly Larvae**

These are caterpillar-like larvae, which feed on the leaves of your roses in the spring. They are about 1 ¼ inch long and are light green, some with black spots. If you get on top of this pest right away, you should be able to control them by simply hand-picking them. Look for them on the undersides of the leaves.

**Scale**

The scale insect forms tiny crust like formations on the stems of roses. The foliage may also be affected with a sticky honey-dew like excrement. These formations are actually the skeletons of the scale insect; they can be white, grayish or tan. The best form of defense is to simply cut off the offending stem and to dispose of it, or to spray with dormant oil in the winter.

**Spider Mites**

Spider mites are tiny pests that suck juices from the undersides of rose leaves. This results in yellowed, dried and curled up leaves that eventually fall off the bush. You may also see little webs on the leaves. Spider mites do most of their damage in hot, dry weather. You can get rid of them by using a strong spray from your garden hose to wash them away. Make sure you reach the undersides of the foliage, as this is where they do their damage. You can also try applying rubbing alcohol to the affected leaves. Spider Mites are not insects, so cannot be killed with insecticides.

**Thrips**

Thrips are tiny, slender, dark brown or black, sucking insects that damage and destroy opening rose buds turning them brown and leaving them only partially opened. They also feed on the upper surface of the leaf. They can be difficult to see
outdoors. If you think that your rose may have Thrips, take a cutting inside and shake it over white paper to see if any fall out. Look for a brownish black insect with a narrow body up to 1/16 inch long. They thrive in hot, dry conditions. Regularly watering your roses and spraying with an insecticide or simply cutting off the affected rose or leaf should do the job.

**Conclusion**

In the scope of our research on the Rose plant, we have covered wide ranging topics of interest – from the best suitable location to plant, the care that should be taken while planting, the common problems affecting the plant, the causes and remedial measures, propagating the plant, the common pests attacking it and measures to control them. Scientific farming and using the corrective actions against pests enable in large scale propagating the rose plant. It needs lot of sunlight and no doubt, is best suited for the Middle East countries.

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