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Abstract: This article is not a scientific analysis of rose rootstocks, but rather, will provide general information about the three most common rootstocks found on Central Florida roses, and how they differ. The goal is to provide those newer to rose growing a better understanding of why grafting onto other rootstocks usually produces a better, more beautiful rose bush.

A Discussion:

Three Rootstock Options For Central Florida Roses

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This article is not a scientific analysis of rose rootstocks, but rather, will provide general information about the three most common rootstocks found on Central Florida roses, and how they differ. The goal is to provide those newer to rose growing a better understanding of why grafting onto other rootstocks usually produces a better, more beautiful rose bush.

We are always hoping to introduce others to rose growing and provide them with the knowledge necessary to succeed. I can clearly recall my first several rose society meetings and the use of terms such as “grafted”, “rootstock”, *Fortuniana*, and “own-root”. For the most part, I was lost. Although I loved to garden, I had no experience with any plants that had been grafted. It was not until I invited two very special rosarians to visit our garden and give me advise, that I had the courage to finally ask, “exactly what does own-root mean?”

What follows is a general discussion of the importance of roots to the rose bush and information about the differences, advantages and disadvantages of *Fortuniana* rootstock, **Dr. Huey** rootstock, and roses grown on the own roots, **own-root** roses.

How Important Are Roots To The Rose?

In a word, the roots are of *paramount* importance. The roots of the bush determine how the bush will ultimately perform.....under best, or worst circumstances. Given all the right stuff; water, sunlight, fertilizer, and reasonable protection from insects and fungus, one rose will flourish and another decline.....depending on the rootstock.

The roots perform three major functions for the rose bush; they **anchor** the plant into the ground, they **absorb** water and dissolved nutrients, and they **translocate** them up and through the plant. They can also serve as a storage vehicle in the case of plant dormancy or serious drought. The overall size of the root system generally determines the size of the plant. Small roots, small plant, and so on. Likewise, the condition of the plant may be an indicator that there is a problem with the root system.

When planting a rose we want to provide it an improved, rather loose soil so that the roots can move freely as they grow. If your planting medium is dense, the roots will have to work very hard to get through it and thus, the root system will remain smaller and weakened. We want to make life easier for our roots. The word for the texture of the soil we strive for is **friable** which means, loose or crumbly.

What are Grafted Roses?

Over the course of time, gifted and questioning individuals have strived to find roots that are really wonderful and use them to grow plants that they love, but that *do not* have a great root system. Imagine that you like a particular rose bloom, but the bush that produced it can't take the cold, or the heat or just doesn't live very long.

Why not attach that cutting or bud to a better root system? That way, you could have a better, longer lived root system (perhaps even one that is resistant to nematodes) producing that beautiful bloom for many years to come.

Grafting is the solution that has been used to solve this dilemma. The subject of grafting is an entire book in itself. The internet provides countless sites with articles on the subject. Here, we will only address that grafting can be done in two ways; 1) budding, or 2) attaching the **scion** (rose cutting) to the selected rootstock in a variety of methods. Grafting is the method for providing a more suitable rootstock to the desired rose variety.

Most importantly, for those of us in Central Florida, it allows us to select a rootstock that will perform better in our hot, sandy, nematode laden soil.

Fortuniana Rootstock

Fortuniana is a lovely, white OGR that blooms on a robust and very large bush. It blooms only in the spring. Much is written about this rose, but much more is written about its roots. To an exhibitor of roses in Florida and other hot and humid areas, it has become the buzzword for “success” in growing award winning roses. To others, who just want to grow the biggest and most blooms they can on their rose bushes, there is no other roots stock worth their consideration.

What follows are some advantages and disadvantages that may be encountered when choosing *Fortuniana* as a rootstock.



Photo of *Fortuniana* courtesy of the Golden Isles Rose Society website.

Fortuniana Rootstock

- Produces a very large root system that can ultimately reach out well over 10' from the bush.
- Must be staked. The roots system is shallow and does not go far enough into the soil for adequate support for some time.
- In case of extended periods of wind, the stakes need to be removed allowing the bush to "lay down".
- Although said to be drought tolerant, there are reports of some own-root roses tolerating extreme drought better than a fortuniana grafted rose.
- Roses grafted to Fortuniana are more expensive because of limited supply and grafting costs.
- Bushes are normally far larger than that of the **scion** (rose variety grafted to the rootstock).
- Produces far more and generally larger blooms than either own-root or Dr. Huey rootstock.
- Considered the most **nematode** resistant of all rootstocks. (Nematodes are microscopic roundworms worms that are abundant in Florida's sandy soil. Some are beneficial. Others eat the roots of roses and other plants causing them to decline and ultimately die. Nematodes apparently find the roots of Fortuniana distasteful.)
- Persistent digging by animals can damage the root system. This problem does not exist for most rose growers, but those of us in the country have had to deal with it all to often.
- Longer lived than most Dr. Huey or own-root roses. Some Florida roses on Fortuniana are confirmed to be 40 years old or more.
- Fortuniana is **evergreen**. It does not require a dormant period.
- Fortuniana produces **suckers**. Suckers are sprouts from the rootstock, which begin below the bud union or graft. Since the Fortuniana leaves are very different in appearance than most rose leaves, they are easily recognized and should be removed.
- Many rose varieties are not available on fortuniana.
- Fortuniana rooted roses appear less receptive to transplantation than other rootstocks.
- Fortuniana is susceptible to cold damage. In early 2009 our property received several days of 15-degree temperatures. A very large fortuniana bush and several roses grafted to fortuniana were severely damaged and ultimately died. All own-root and Dr. Huey roses survived. Such low temperatures are rare in Central Florida, but should they occur, it would be wise to consider temporary winter protection.
- Because of its extensive root system, herbicides added to neighboring grass or plantings *could* impact Fortuniana grafted roses.
- A rose grafted to Fortuniana cannot be propagated except by cuttings, which will produce an own-root rose.

Dr. Huey Rootstock

Dr. Huey is a dark red large flowered climber producing beautiful blooms each spring. Our garden contains a *Mayor of Casterbridge* David Austin rose that produces a lovely light pink bloom. Several years ago, I noticed several sprays of a totally different bloom intermingled with the Spring flush. Since the bush was grafted to Dr. Huey it was evident that suckers from the rootstock had come up through the center of the very large bush. No way would I be able to remove them completely. Therefore, it was decided that we would enjoy the unusual display each year. (See photo below.) I once exhibited a spray of Dr. Huey at a Spring Rose Show and watched as visitors looked at the bloom with surprise. Most do not think of Dr. Huey as anything but a commonly used rootstock. However, it is also a really lovely rose!



Dr. Huey is probably the most common rootstock used in the US today.

Dr. Huey has some excellent characteristics and bushes should not be passed up simply because they are grafted to this stock.

Our first 500 roses were grafted to Dr. Huey rootstock. They were quite spectacular and some still survive and show good vigor after 10 years. These are some items to consider when considering roses grafted to Dr. Huey rootstock.

- Dr. Huey produces a large, compact and robust root system extending down two feet or more.
- Bushes on this rootstock will perform quite well for five years and superior varieties may reach over 10 years, before succumbing to our Florida growing environment.
- Dr. Huey rootstock typically does not require staking.
- Plants on this rootstock are susceptible to nematode damage so it is recommended that you mulch heavily and add large quantities of organic material on a regular basis.
- Dr. Huey requires a period of dormancy to perform at its best. It may be that plants on this rootstock will survive longer and maintain vigor for a few more years if planted in the Northern areas of Central Florida, where we receive cooler temperatures.
- Because Dr. Huey is commonly used, a large selection of rose varieties are available in the marketplace. Plants can be purchased by mail order, bare root or in pots at local nurseries.
- Dr. Huey tends to produce many suckers. If not removed they can take over the grafted variety.
- Roses grafted onto Dr. Huey are usually less expensive than those on fortuniana rootstock.
- In our experience, Dr. Huey grafted roses transplant easily.
- This rootstock produce bushes that are *typical* in size rather than very large, as with fortuniana.
- All remarks relating to the *graft* or *grafted* roses apply to Dr. Huey as well as fortuniana. Both must be properly maintained.

Own-root: Roses Grown On Their Own Roots

Own-root roses are not grown on a stock. Instead, they grow on roots that form from cuttings taken from a selected rose variety. Grafting, in general, is on a decline. Roses growing on their own roots will become more common in the future. Many major rose suppliers have reduced or stopped this practice due to high production costs and availability of skilled labor. Breeding or hybridizing emphasis is being placed on classes of roses that grow well on their own roots. These include shrubs and ground cover roses, but for the most part excludes hybrid teas. Our garden currently has just as many rose varieties growing on their own roots, as we have on fortuniana rootstock. When purchasing roses (because of certain own-root advantages) we look more often for roses that will perform well without being grafted. Although there are also disadvantages to own-root roses, we may see an increasing number in the rose marketplace. Disadvantages will become fewer with improved breeding.

Comments about roses grown on their own roots are noted below.

- Roses grown on their own roots can be easily propagated, provided they are not patent protected. The bush and its root system are genetically identical.
- Roses on their own roots are usually less expensive than any grafted variety.
- The quality of the root system depends entirely on the genetics of the variety. Some roses produce good own-root systems. Others do not.
- The root system of most own-root roses will be generally smaller than those of grafted roses. However, if discussing Chinas and Teas and many of the OGR's, theirs is a huge root system.
- If a rose growing on its own roots freezes to the ground it will come back as the same rose.
- Depending on the variety, some roses grow very well on their own roots and can live for 40 to 50 years or more.
- Most own-root roses do not adapt well to our Central Florida soil, and are highly susceptible to nematode damage. As with Dr. Huey rootstock, the use of mulches and organic material is recommended.
- The variety of roses available as own root is very wide.
- Varieties grown on their own roots may be even more drought tolerant than fortuniana grafted roses. It all depends on the genetic makeup of the specific cultivar.
- To date, there are very few Hybrid teas that grow well on their own roots.

Final Thoughts

When purchasing roses it is important to consider many things. Will this rose do well in my area? How much time will do I want to devote to rose care? What about cost and projected life of the plant?

Perhaps the most important factor to consider is, how good is this variety genetically?

Whether it is grafted or growing on its own roots, *genetics* will determine the plants ultimate capabilities. For those of us in Florida, nematodes are with us, no matter how good the rose. We simply need to plan ahead and provide the best environment we can for the roses that we choose.