

**For Immediate Release**  
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## **Boy Dreams of Easy Roses: The Knock Out® Story**

**By**  
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My dream to grow roses began with one plant in my parents' backyard.

Years ago, I was visiting my grandparents, and, as young boys typically do, I fidgeted. Being bored, I picked up a rose catalog from the coffee table and flipped through the pages.

That's all it took to discover a treasure trove of visual treats in extraordinary shapes, sizes and colors. The seed was planted — I was hooked on roses.

At nine I purchased my first rose, which I found out years later was 'Vogue.' My parents, concerned that I should spend my money wisely rather than on a plant that they thought was doomed to fail, suggested other alternatives, but I was determined.

I remember the first bloom. It was alive with a bright, saturated coral-pink color and an old-fashioned tea rose fragrance. I was successful, and I wanted to grow more. I wanted to get more colors, more sizes, and more fragrances that I had seen in the rose catalog.



I discovered how to shop for bargains - after all - I was only a kid and had a limited budget. Leafing through instructional books taught me the basics of how to propagate more plants through cuttings and bud grafting. Much to my parent's chagrin, within a few years our backyard was abloom with my rose "experiments."

Realizing I needed to share with others, I joined a local rose society. The group was a lively and creative bunch that took me under their wing and taught me, among many things, how to exhibit roses. At my first rose show, I was amazed when I won the sweepstakes for having the most blue ribbons. My family and friends couldn't believe it!

### **The Making of a Rose**

Eventually, I wanted to try my hand at breeding new roses. It didn't take me long to realize that growing roses would be more fun if it entailed less work. In effect, I would breed the maintenance out of roses!

Initially, I considered breeding roses to have greater cold weather tolerance, which would relieve northern gardeners of the need to apply and remove winter protection materials and the

necessity to replace plants that didn't survive when protection failed. Looking back, this was one of the easier goals to achieve.

One record-setting winter the temperature plunged to  $-30^{\circ}$  F and without the benefit of insulating snow, most of my roses survived!

### **No More Disease**

My ultimate passion was to breed roses that were hardy, resistant to diseases and pests and would need little preventative sprays to stay healthy. This was a bit more difficult to achieve.



Black spot, in particular, is a rose nemesis and occurs in humid climates east of the Mississippi. To combat black spot, chemical sprays are applied weekly for months. I wanted to build a rose with an extremely high resistance to black spot so that these sprays wouldn't have to be used.

This led me to wonder if the genetic raw material in wild roses could be shifted into the "modern rose" through selective breeding. I realized that breeding for disease resistance against black spot, fungus, and insects would save gardeners from fifteen or more sprays per year and would ultimately become more environmentally friendly.

Through my own research and affiliations with the American Rose Society and Rose Hybridizers Association — a group comprised mainly of amateurs dedicated to improving roses — I immersed myself in cutting-edge breeding techniques in hopes of successfully breeding a winter hardy, disease resistant rose.

### **The Hurdles**

So how does one breed a new rose? Hybridizing a new rose requires shuffling rose genes through cross-pollination. Seldom are the most desirable traits found in just one rose. Lots of varieties and tries produce many more inferior roses than just one good rose.

Another obstacle is the lack of fertility in cross-pollinated roses. Often when the results are close to what is desired, it isn't possible to breed any further into the next generation because plants are often sterile females that can't produce seed. For those roses that do produce seed, it takes three months or more for the seed to ripen in the hips. If these difficulties aren't enough, sometimes only one in five seeds will germinate. The low frequency of successful cross-fertilization attempts - one out of three- often leads to repetitive failures.

### **Not an Overnight Success Story**

Every year in my half-acre plot, I observed the old and new roses — hoping to spot a break through. Although each year seemed to produce advancements, most of my hybridized 'offspring' were flawed. Dominant genes frequently overpowered producing inferior traits such as poorly formed flowers with tissue thin petals, odd colors which faded unattractively, gangling stems armored with vicious thorns, inconsistent repeat blooms, and a high susceptibility to disease and pests of all kinds.

Still, with the odds against me, I persevered.

## First things First

Tolerance to cold seemed the easiest goal to achieve. During my observations and trials, I coined the term “crown hardy”, meaning that during cold winter temperatures, stems may be killed to soil level while remaining uninjured below. Rose plants having this trait perform well season-after-season without winter protection.



The crown hardy roses benefited from mulch applied to the soil year-round and aided in acclimatization the first winter. (Gardeners should make sure that crown hardy roses are planted deep, with the graft union – the swollen part above the roots where the stems emerge – to a point 1-1/2 inches below the soil level.)

To produce hardiness and disease resistance, especially to black spot - I used the roses Applejack, Carefree Beauty™, and Eddie's Crimson. Through trial and error, I developed a process where I collected diseased leaves early in the season, dried them on sheets of newspaper and blended them into a powder. I sprinkled the powdery substance copiously over the entire rose garden while the rose leaves were wet. To make sure that each disease had a good chance to infect the roses in the test, overhead watering added extra moisture encouraging the proliferation of disease.

Black spot usually presented within two weeks of this inoculation. Before the growing season ended, the highly disease resistant plants were easy to spot among the devastation in my garden. A friend of mine called this practice “benign neglect!”

## Never a dull moment

Striving to breed the maintenance out of roses, I found myself working harder than ever, performing all the usual gardening tasks along with keeping copious records.

In an average year, I made about 500 to 1,000 cross-pollinations, grew 300 to 500 roses from seed under fluorescent lights in my basement, which I planted in my backyard “laboratory”. In the process of producing many dead ends, I culled about 500 roses a year from a standing inventory of approximately 1,400 roses.

After 15 years of trial and error in rose breeding, a friend pointed in the direction of one particular new rose and said, “You know, Bill, if all your roses were as good as *that one*, you would really have something!”

The rose she pointed to, after ten years of rigorous testing throughout the nation, came to be named The Knock Out® Rose, ‘Radrazz’ winner of the world's most prestigious rose award: the All-America Rose Selections award for 2000. Wow, I was on cloud nine! In 2002, members of the American Rose Society bestowed their highest place for it among hundreds of recent rose introductions.

In 2001, noted rose authority Stephen Scanniello, author of “*A Year of Roses*”, and former curator of the Brooklyn Botanic Garden's Cranford Rose Garden, listed both Knock Out® and Carefree Sunshine™ (my second rose introduction) on his list of 10 favorites.

Now there are seven Knock Out® Roses in the family. The original Knock Out®, Double Knock Out®, Pink Knock Out®, Pink Double Knock Out®, Blushing Knock Out®, Rainbow Knock Out® (an AARS winner in 2007) and Sunny Knock Out® (new this year). People are always asking me “what's next?” Everyone wants a Knock Out® climber.

Has it been worth all the frustration and long hours? You bet! It's a great feeling to know that I contributed in developing low maintenance roses.

I still find the need to spend long hours with the stress of mosquito swatting and weed-pulling and getting my hands dirty – because there always seems to be so much more to do. I'm not finished with breeding low maintenance roses; I want easier roses in all different colors, sizes and fragrances. I suppose my aspiration is to have so many rose introductions that they will need a catalog of their own!

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(Sidebar #1)

A normal rose hip usually contains about 30 to 50 seeds. Astonishingly, the mother of **Knock Out**<sup>®</sup> germinated from the only seed in one hip that I was able to get. Ironically, **Knock Out**<sup>®</sup> was also an only seed. And the plant, as a late season runt, was almost discarded. Sometimes one needs to be a tough taskmaster. I'm glad, in this case I wasn't. **Knock Out**<sup>®</sup> was sent to The Conard-Pyle Company/Star<sup>®</sup> Roses for testing in August 1992, and the rest is history.

(Sidebar #2):

In breeding with the roses that directly produced **Knock Out**<sup>®</sup> (reference to the lineage chart), I found out that the father didn't produce hips and the mother produced only a few. Fortunately for me, the father produced some useful pollen and the mother produced some viable seed.

(Sidebar #3):

Some roses in **Knock Out's**<sup>®</sup> lineage lacked winter hardiness and resistance to disease. These roses were used in the breeding line for other qualities. For instance, the roses - **Tampico**, **Razzle Dazzle**, **Deep Purple**, and **Faberge**, were used principally because they were excellent mother plants that happened to have beautiful blooms. The rose **Playboy** also had beautiful blooms.

(Sidebar #4):

**Applejack** is a repeat blooming shrub rose - small, pink roses in clusters, which have a light sweet fragrance. Enjoy it for the mass of bloom rather than the individual flowers. The large 8 x 8 ft. plant is very winter hardy and quite resistant to blackspot.

**Carefree Beauty**<sup>™</sup> has 4-inch lightly fragrant pink blooms borne repeatedly – especially when the spent blooms are removed. The shrub grows to 4x4 ft. While the plant is resistant to blackspot, it is quite susceptible to rose Rust, a less troublesome disease of roses, except in areas with cooler summers.

**Eddie's Crimson** is a shrub rose, which blooms once. The small, perky, five petaled red blooms grow in profusion. The plant is extremely large, 10 x 10 ft., with exceptional disease resistance. Tip dieback can occur at –20 degrees F. In late autumn, the plant is adorned with purple autumn foliage.

(Sidebar #5):

For color and flower form I used the roses **Faberge**, **Tampico**, **Playboy**, **Deep Purple**, and **Razzle Dazzle**. This last group also provided useful female plants. Crossing these two groups together resulted in several genetic mismatches.

The mother of **Knock Out®** has white semi-double flowers opening from pale pink buds, a low wide-spreading growth habit, and a moderate resistance to blackspot and good crown hardiness.

The father of **Knock Out®** is a highly disease-resistant and vigorous plant, but the dark red flowers burn in the sun. It also exhibits borderline hardiness and is a plant with a tall growth habit.

In 1988, perseverance and hard work paid off when I united the mother and father.

*Picture caption:* **Knock Out®**, winner of the world's most prestigious rose award, the All-America Rose Selection's Award for the Year 2000.

**Knock Out®**, 'Radrazz', PP#11836, CPBR#0993