Heritage oo
Modern Roses

# Evaluation of the Performance of Heritage and Modern Roses 

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# Evaluation of the Performance of Heritage and Modern Roses 

## Introduction

The present research efforts on landscape roses began in June 1982, with the establishment of a small, eight-bed garden on the Mississippi State University campus. A patron of the University requested the research for the people of Mississippi because of the importance of the roses in home gardens ( $75 \%$ of all homes have roses), the commercial production of roses within the state, the volume of sales by garden and nursery centers, and the often devastating effects of the rose disease, blackspot. The patron's financial assistance encouraged the administration to include this research into the ongoing program on diseases of ornamental plants.
In June 1985, plans were developed to relocate the garden from the main campus to the Plant Science Research Center located north of the main campus. The increased size of the garden permitted establishment of 48 beds containing 1,330 plants. The planting included floribundas, grandifloras, hybrid teas, miniatures and old garden (heritage) roses.

Twenty-one classes of heritage roses have been grown there. The 13 beds accommodated 110-134 heritage rose plants at a given time.
Thirty-one beds ( 968 plants) were planted with floribundas, grandifloras and hybrid teas. Four beds were planted with miniature roses.
The performance of 185 modern roses and 121 heritage roses are presented in Tables 1 and 2, respectively.

## Garden Development

The garden site was selected by an official of the Mississippi Agricultural and Forestry Experiment Station, and a landscape architect drew the overall design of the area. Unfortunately, we were unaware that the area contained calcium particle deposits, which contributed to very high pH values in many beds. The location provided a beautiful view of the garden and surrounding area, but it was on a hill exposed to all wind directions and without any shade.
These factors affected the performance of many plants. Soil chemicals were applied to help ameliorate the detrimental effects of the high pH values. Nothing could be done to protect the garden from the hot
and cold winds and the intense sun effects of a long summer day.
Nearly all beds were constructed with internal drainage, structural perimeter limits, and were raised. The rooting medium consisted of a mixture of sand, soil, and either peat moss or ground pine bark ( $<3 / 8$-inch). Automatic irrigation was installed in each bed and was controlled by two timing devices.

The first plants were set in the garden in February 1986. The last plantings were made in February 1990. Plants that died or performed poorly were replaced with other cultivars.

## Culture

Plants were sprayed at irregular intervals for disease, insect, and mite control. Benlate ${ }^{\circledR}$ (benomyl), Daconil $2787^{\circledR}$ (chlorothalonil), and Funginex ${ }^{\otimes}$ (triforine) were alternately used for disease control. Sevin ${ }^{\text {® }}$ (carbaryl) was used for chewing insects, and Orthene ${ }^{\circledR}$ (acephate) and Mavrik ${ }^{\circledR}$ (fluvalinate) were used for other insects. Kelthane ${ }^{\otimes}$ (dicofol), Avid ${ }^{\otimes}$ (avermectin), and Vendex ${ }^{\text {® }}$ (hexakis) were used for mite control.
Nitrogen was applied as ammonium nitrate $\left(\mathrm{NH}_{4} \mathrm{NO}_{3}\right)$ or ammonium sulphate $\left(\left[\mathrm{NH}_{4}\right]_{2} \mathrm{SO}_{4}\right)$ depending on the pH of the individual bed soil. Sul-PoMag and sulfur were occasionally applied to the high pH soils. Iron chelate was applied to the foliage of certain plants at irregular intervals to help ease the nutritional stress imposed by the high pH in some soils. Limestone ( $80-90 \% \mathrm{CaCo}_{3}$ ) was applied to soils of low pH to moderate that disadvantage. Applications of materials were based on recommendations obtained from regular soil tests.

All plants were "heeled-in" above the "bud-union" with bark as winter approached. The material was removed from the plants in early March. All necessary pruning of modern roses occurred in mid-February and the tallest plants were cut back moderately in the fall to reduce "wind-rock" effects. Heritage roses generally were pruned only to remove dead canes or to maintain them within the allotted growing space.
The automatic watering system was set only for beneficial effects under the prevailing weather system that dictated the needs of the plants.
Environmental temperatures during the life of many plants ranged from $38.9^{\circ} \mathrm{C}$ to $-17.2^{\circ} \mathrm{C}$.

## Evaluation

Certain characteristics (class, color, and petal count) (2) of modern roses are given in Table 1 for the benefit of rosarians with less experience with roses than that of long-time rosarians. Class and color designations are also given for the heritage roses in Table 2. The classes of modern roses are abbreviated as: $\mathrm{F}=$ floribunda, $\mathrm{GR}=$ grandiflora, and $\mathrm{HT}=$ hybrid tea. Classes of heritage roses are spelled out as: Alba, Bourbon, Centifolia, etc. since they may be less familiar to many rose growers.

Designations for color follow that of the American Rose Society Color classification: $\mathrm{W}=$ white, near white, and white blend; LY = light yellow, MY = medium yellow, $\mathrm{DY}=$ deep yellow, and $\mathrm{YB}=$ yellow blend; $\mathrm{AB}=$ apricot and apricot blend; $\mathrm{OB}=$ orange and orange blend, $\mathrm{O}-\mathrm{P}=$ orange-pink, and $\mathrm{O}-\mathrm{R}=$ orange-red; $\mathrm{LP}=$ light pink, $\mathrm{MP}=$ medium pink, PB $=$ pink blend, and $\mathrm{DP}=$ deep pink; $\mathrm{DR}=$ dark red, $\mathrm{MR}=$ medium red, and $\mathrm{RB}=$ red blend; and $\mathrm{M}=$ mauve and mauve blend.

The American Rose Society's National Rose Ratings (1) are given when available. The author's evaluation ratings (based on the National Rose Rating system) of the roses are given in the same table column for comparison. Site-influenced plant expressions may easily affect the rating. The beauty and performance scales are presented as they registered with the visual acumen of the author.
Modern roses that were All-American Rose Selections Winners are so designated by an asterisk in front of the cultivar name.

The degrees of fragrance are presented as they
registered with the olfactory sensitivity of the author. Designations for aroma are listed as $f=$ slight fragrance, $\mathrm{ff}=$ moderate fragrance, and $\mathrm{fff}=$ strong fragrance.

The susceptibility of cultivars to blackspot disease caused by Marssonina rosae (Lib.) Died. is presented as the approximate percentage of plant leaves affected: $0=$ no blackspot symptoms, $1=1-15 \%$ of plant leaves affected, $2=16-25 \%, 3=26-40 \%$, and $4=$ over $40 \%$ of plant leaves affected. When information was not available in the resource information searched, the symbol, -, was used. The symbol, ?f, was used when data for fragrance were not determined by the author. The symbol, ?, was used when other data were not determined.

Generally, there were four replications of each cultivar of the modern roses. Some cultivars had 10 replications because of available plants and space. There was only one plant of each heritage rose due to plant size, space limitation and cost.

Ratings of rose cultivars were made at different seasons of the year and over an unspecified number of years.

## Literature Cited

1. Handbook for Selecting Roses. 1992. The American Rose Society. P.O. Box 30000. Shreveport, LA 71130-0030.
2. Modern Roses 9. 1986. The American Rose Society. P.O. Box 30000. Shreveport, LA 71130-0030.

Table 1. Evaluation of 185 cultivars of modern roses at the MAFES Disease Research Rose Garden.

| Variety | - | Class ${ }^{\text {a }}$ | Color ${ }^{\text {b }}$ | Petal count | B.S. rating ${ }^{\text {c }}$ | Garden rating ${ }^{\text {d }}$ |  | General Comments ${ }^{\text {e }}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |  | RRS | JAS |  |
| Alabama |  | HT | PB | 25 | 3.0 | 7.3 | 7.6 | ff, great buds, nice flowers, nice color, sparse, died |
| Alec's Red |  | HT | MR | 45 | 2.5 | 7.5 | 8.0 | fff, great buds, great flowers, nice color, productive, vigorous, hardy, heat sensitive flowers |
| *Amber Queen |  | F | AB | 40 | 2.5 | 7.5 | 7.5 | ?fg, nice buds, nice flowers, great color, productive, died |
| American Pride |  | HT | DR | 33 | 3.0 | 6.5 | 6.5 | ?f, nice buds, fair flowers, sparse, vigorous, discarded |
| American Spirit |  | HT | MR | 30 | 3.0 | 7.4 | 7.0 | f , small flowers, lacks form, sparse, good repeat, vigorous, mildews |
| Americana |  | HT | MR | 28 | 3.0 | 6.4 | 6.6 | ff, nice bud, fair flowers, productive, fair repeat, vigorous |
| *Angel Face |  | F | M | 30 | 3.0 | 8.2 | 8.1 | fff, nice buds, great flowers, great color, productive, good repeat, hardy, heat sensitive flowers, very nice plant |
| Anna Pavlova |  | HT | LP | _h | 2.5 | - | 7.7 | ff, nice buds, great flowers, nice color, productive, heat sensitive flowers |
| Antiqua |  | HT | ${ }^{\text {AB }}$ | 40 | 3.0 | 6.6 | 6.4 | f, nice buds, nice flowers, nice color, productive, nonhardy plant |
| *Apricot Nectar |  | F | AB | 70 | 3.0 | 8.0 | 7.6 | ff, flowers are soon ragged, nice color, slow repeat, vigorous, hardy, heat sensitive flowers |
| Arkansas |  | HT | O-R | 48 | 2.5 | 6.7 | 7.1 | ff, great buds, nice flowers, nice color, good repeat, long stems, vigorous, hardy |
| Asso di Cuori |  | HT | DR | 30 | 2.0 | 7.6 | 7.6 | ff, nice buds, nice flowers, nice color, productive, vigorous |
| Baby Talk |  | F | MP | 26 | 2.5 | 7.5 | 7.2 | ff, great buds, nice flowers, nice color, productive, weak plant, died |
| Bambey |  | HT | MR | 60 | 2.5 | - | 7.4 | ff, nice flowers, nice color, slow productivity, long stem, vigorous |
| Betty Prior |  | F | MP | 5 | 2.0 | 8.0 | 8.0 | ff, great flowers, nice color, productive, good repeat, vigorous, hardy, heat tolerant flowers, very nice plants |
| Bienvenu |  | GR | OB | 70 | 2.5 | - | 6.9 | fff, nice buds, flowers lose form, sparse, weak stems, vigorous, hardy |

Table 1. continued

| Variety | Class ${ }^{\text {a }}$ | Color ${ }^{\text {b }}$ | Petal count | B.S. rating ${ }^{\text {c }}$ | Garden rating ${ }^{\text {d }}$ |  | General Comments ${ }^{\text {e }}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  | RRS | JAS |  |
| Big Apple | HT | MR | 40 | 3.0 | 6.5 | 6.3 | ff, large flowers, poor production, poor repeat, poor performance, non-vigorous, heat sensitive flowers |
| *Bing Crosby | HT | OB | 45 | 3.0 | 6.5 | 6.5 | f, nice buds, nice flowers, poor production, non-vigorous, heat sensitive flowers |
| Blue Heaven | HT | M | - | 3.0 | 6.5 | 6.5 | fff, nice buds, nice color, poor production, non vigorous, heat sensitive flowers |
| Blue Moon | HT | M | 40 | 2.5 | 6.9 | 7.2 | fff, great buds, nice flowers, sparse, vigorous, heat sensitive flowers |
| Blue Nile | HT | M | 28 | 3.0 | 7.1 | 6.8 | fff, nice flowers, nice color, fair repeat, vigorous, hardy, heat sensitive flowers |
| Blue Skies | HT | M | 30 | 2.0 | 6.5 | 6.0 | ff, nice buds, poor development, poor productivity, heat sensitive, some died, others discarded |
| Bobby Charlton | HT | PB | 38 | - | 7.0 | ? | ff, nice buds, nice flowers, poor productivity, non-vigorous, died |
| *Brandy | HT | AB | 28 | 3.0 | 7.1 | 7.4 | f, great buds and flowers, fair production, fair repeat, vigorous, fair hardiness, heat sensitive flowers |
| Bride's Dream | HT | LP | 32 | 2.5 | 7.7 | 8.2 | f, great buds and flowers, productive, long stems, vigorous, very nice plant |
| *Broadway | HT | YB | 35 | 2.5 | 7.1 | 7.0 | ff, nice buds, flowers soon ragged, fair repeat, hardy, heat sensitive flowers |
| Burgund | HT | DR | 30 | 2.5 | - | 6.7 | fff, nice buds, nice color, fair productivity, good vigor |
| *Camelot | GR | O-P | 48 | 3.5 | 7.5 | 7.7 | ff, good flowers, productive, fair repeat, vigorous, hardy, heat sensitive flowers |
| Canadian White Star | HT | W | 43 | 2.5 | 6.5 | 5.9 | f , small buds and flowers, sparse, unimpressive, fair repeat, vigorous |
| Captain Harry Stebbins | HT | DP | 43 | 2.5 | 8.0 | 7.7 | fff, nice buds and flowers, productive, good repeat, vigorous, hardy |

Table 1. continued

| Variety | Class ${ }^{\text {a }}$ | Color ${ }^{\text {b }}$ | Petal count | $\underset{\text { rating }}{\text { B.S. }}$ | Garden rating ${ }^{\text {d }}$ |  | General Comments ${ }^{\text {e }}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  | RRS | JAS |  |
| Caramel Creme | HT | MY | 30 | 2.5 | 6.3 | 6.3 | ?f, nice buds, great color, fair flowers, weak necks, short stems, slow repeat, not hardy |
| Carrousel | GR | MR | 20 | 3.0 | 7.0 | 7.2 | ff, good flowers, productive, fair repeat, vigorous, hardy, heat sensitive flowers |
| Celebrity | HT | DY | 30-35 | 2.5 | 7.4 | 7.5 | ff, nice buds, opens fast, nice color, fades, fair productivity, vigorous |
| Century Two | HT | MP | - | 3.0 | 8.3 | 8.0 | ff, great buds, nice blooms, great color, sparse, vigorous |
| Chablis | HT | W | $40+$ | 3.0 | 7.1 | 7.0 | f, nice buds, high center, large flowers, weak color, fair stems, weak necks, vigorous |
| *Charisma | F | RB | 40 | 4.0 | 7.6 | 6.7 | f, nice buds, fair flowers, productive, vigorous, heat sensitive flowers |
| Cheshire Life | HT | OB | 36 | 2.0 | - | 6.8 | f, fair blooms;' sparse, poor repeat, hardy, heat sensitive flowers |
| Chicago Peace | HT | PB | 50-60 | 3.0 | 8.2 | 8.0 | f, great buds and flowers, fair productivity and repeat, vigorous, hardy, heat sensitive flowers |
| *Christian Dior | HT | MR | 55 | 2.0 | 7.0 | 7.0 | f, nice buds and flowers, sparse, slow repeat, vigorous, hardy |
| *Chrysler Imperial | HT | DR | 45 | 2.0 | 8.5 | 8.0 | fff, great buds and flowers, fair productivity, vigorous, nonhardy plant |
| City of Leeds | F | PB | 19 | 2.0 | 7.5 | 7.0 | f, great buds, productive, unimpressive otherwise, vigorous |
| *Command Performance | HT | OP | 20 | 2.0 | 7.1 | 7.2 | ff, nice buds, fair flowers and productivity, vigorous, hardy |
| Confidence | HT | PB | 34 | 2.5 | 7.6 | 7.5 | ff, nice buds, fair productivity, vigorous, died |
| Coral Destiny | HT | MP | 35 | 3.0 | - | 7.5 | ff, nice buds and flowers, sparse, vigorous, hardy, heat sensitive flowers |
| Corpus Christi | HT | DR | 35 | 3.0 | 7.3 | 7.3 | ?f, nice buds, fair blooms, poor form, sparse, slow repeat, heat sensitive flowers |

Table 1. continued

| Variety | Class ${ }^{\text {a }}$ | Color ${ }^{\text {b }}$ | Petal count | $\underset{\text { Bating }}{\text { B.S. }}$ | Garden rating ${ }^{\text {d }}$ |  | General Comments ${ }^{\text {e }}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  | RRS | JAS |  |
| Cynthia | HT | DP | 35 | 2.5 | 7.0 | 7.8 | ff, great buds and flowers, productive, good repeat, vigorous, hardy, heat sensitive flowers |
| Dainty Bess | HT | LP | 5 | 2.0 | 8.8 | 8.8 | ff, great flowers, productive, good repeat, hardy, very nice plant |
| Deep Secret | HT | DR | 40 | 2.0 | 7.5 | 7.3 | ff, nice buds, good flowers, fair productivity, good repeat, vigorous, hardy, heat sensitive flowers |
| Die Welt | HT | OB | 25 | 2.5 | 6.8 | 6.2 | f, nice buds and flowers, sparse, poor repeat, vigorous, hardy, heat sensitive flowers |
| Dolly Parton | HT | O-R | 35 | 2.5 | 7.2 | 7.0 | fff, great buds, nice flowers, fair productivity, weak necks, poor vigor, mildews |
| *Double Delight | HT | RB | 40 | 2.5 | 8.8 | 9.0 | ff, great buds and flowers, good productivity and repeat, vigorous, hardy, very nice plant |
| Double Talk | F | RB | 48 | 2.5 | 7.6 | 7.3 | f , nice buds, small flowers, productive, slow repeat, hardy |
| Dublin | HT | MR | 35 | 3.0 | 7.4 | 7.2 | ff, nice buds, nice color, sparse, slow repeat |
| *Duet | HT | MP | 30 | 2.0 | 7.9 | 7.6 | f , great buds and flowers, productive, good repeat, vigorous |
| *Electron | HT | DP | 32 | 3.0 | 7.9 | 7.8 | fff, great buds and flowers, productive, good repeat, long stems, vigorous, hardy, heat sensitive flowers, very nice plant |
| Elina | HT | LY | 35 | 2.0 | 8.2 | 8.5 | ff, great buds and flowers, productive, long stems, good repeat, vigorous, hardy, very nice plants |
| *Europeana | F | DR | - | 2.5 | 9.0 | 8.5 | f, great buds, nice flowers, productive, fair repeat, vigorous, hardy |
| Eutin | F | DR | - | 2.5 | 6.7 | 6.4 | f, nice buds and flowers, productive, fair repeat, vigorous, hardy |
| Evening Star | F | W | 36 | 2.5 | 8.1 | 8.0 | ff, great buds, nice flowers, productive, good repeat, vigorous, nonhardy plant, heat sensitive flowers |

Table 1. continued

| Variety | - | Class ${ }^{\text {a }}$ | Color ${ }^{\text {b }}$ | Petal count | B.S. rating ${ }^{\text {c }}$ | Garden rating ${ }^{\text {d }}$ |  | General Comments ${ }^{\text {e }}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |  | RRS | JAS |  |
| Eyepaint |  | F | RB | 5-6 | 1.5 | 8.0 | 7.8 | f, nice buds, attractive flowers, fair productivity, good repeat, vigorous, "leggy" plant |
| Fascination |  | HT | O-P | 55 | 3.0 | 7.0 | 6.8 | f , nice buds and color, fair flowers, fair productivity and repeat, heat sensitive flowers, may "ball" in cool weather |
| *First Edition |  | $F$ | O-P | 28 | 2.5 | 8.5 | 7.6 | f, nice buds, poor productivity, fair repeat, poor growth, heat sensitive flowers |
| *First Prize |  | HT | PB | 30 | 2.0 | 8.9 | 8.3 | ff, great buds, nice flowers, fair productivity, slow repeat, heat sensitive flowers |
| *Floradora |  | F | O-R | 25 | 2.5 | 6.7 | 6.5 | f, great buds, nice flowers, great color, fair productivity, died |
| Folklore |  | HT | OB | 44 | 2.0 | 8.5 | 8.5 | fff, great buds and flowers, productive, good repeat, hardy, very nice plant |
| Fragrant Cloud |  | HT | O-R | 28 | 2.0 | 8.0 | 8.0 | fff, great buds, nice flowers, productive,vigorous, heat sensitive flowers |
| *French Lace |  | F | W | 30 | 2.0 | 7.6 | 7.4 | ff, great buds, nice flowers, sparse, good repeat, poor growth, nonhardy |
| *Friendship |  | HT | DP | 28 | 2.0 | 7.0 | 7.0 | fff, nice buds and flowers, sparse, slow repeat, poor growth |
| Funkuhr |  | HT | YB | 35 | 3.0 | 7.3 | - 7.6 | ?f, great buds and flowers, poor growth, died |
| *Garden Party |  | HT | W | 28 | 3.0 | 8.5 | 8.5 | ff, great buds and flowers, productive, fair repeat, vigorous, hardy, very nice plant |
| *Gene Boerner | , | F | MP | 35 | 2.0 | 8.6 | 8.0 | f , good buds and flowers, fair productivity and repeat, vigorous, hardy |
| Ginger |  | F | O-R | 28 | 3.0 | 7.8 | 7.8 | ff, great bud and flowers, productive, good repeat, vigorous, hardy |
| Gingersnap |  | F | OB | 35 | 3.0 | 7.7 | 7.0 | f , great buds and flowers, did not adapt, died |
| Gitte |  | HT | AB | 33 | 3.0 | 7.5 | 7.2 | ff, nice buds and flowers, poor productivity, slow repeat, poor growth |

Table 1. continued

| Variety | Class ${ }^{\text {a }}$ | Color ${ }^{\text {b }}$ | Petal count | $\begin{aligned} & \text { B.S. } \\ & \text { rating }{ }^{\text {c }} \end{aligned}$ | Garden rating ${ }^{\text {d }}$ |  | General Comments ${ }^{\text {e }}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  | RRS | JAS |  |
| Gold Medal | GR | MY | 38 | 3.0 | 8.0 | 8.2 | f , great buds and flowers, fair productivity and repeat, good growth, hardy, heat sensitive flowers |
| Graceland | HT | MY | 30-35 | 3.0 | 7.4 | 7.0 | f, nice bud, poor flowers, weak productivity, weak stems, discarded |
| *Granada | HT | RB | 23 | 2.0 | 8.4 | 8.5 | ff, great buds, nice flowers, productive, good repeat, vigorous, hardy, heat sensitive flowers, very nice plant |
| Grand Masterpiece | HT | DR | - | 2.0 | 7.0 | 6.7 | f, great buds, nice flowers, very few flowers on long canes, poor repeat, hardy, discarded |
| Half Time | HT | RB | 40 | 2.5 | 6.5 | 6.5 | ff, nice buds and flowers, sparse, slow repeat, lacks vigor, not adapted |
| Happy Talk | F | MR | 35 | 2.5 | 7.5 | 7.8 | f, great buds, nice flowers, very productive, fast repeat, vigorous, hardy, heat sensitive flowers |
| Houston | HT | DY | 38 | 2.5 | 6.0 | ? | ff, nice buds and flowers, poor productivity, poor growth, died |
| Iceberg | F | W | 30 | 3.0 | 8.7 | 8.7 | f, great flowers, productive, good repeat, vigorous, hardy, very nice plant |
| *Impatient | F | O-R | 35 | 3.0 | 7.8 | 8.0 | f, nice flowers, great color, productive, good repeat, vigorous, hardy, heat sensitive flowers, very nice plant |
| Ingrid Bergman | HT | DR | 35 | 2.5 | 7.4 | 7.7 | f, great buds, flowers and color, productive, good repeat, fair growth, hardy |
| *Intrigue | F | M | 20 | 2.5 | 7.1 | 6.3 | ff, nice flowers, great color, sparse, poor vigor, heat sensitive flowers |
| Ivory Tower | HT | W | 35 | 2.5 | 7.5 | 7.8 | ff, great buds and flowers, productive, good repeat, vigorous, hardy, heat sensitive flowers, nice plant |
| Jadis | HT | MP | - | 3.0 | 7.0 | 7.3 | fff, nice buds and flowers, long stems, sparse, slow repeat, vigorous |
| John Waterer | HT | DR | 44 | 2.5 | 7.5 | 7.3 | ff, nice buds, great color, sparse, slow recycle, slow grower, hardy |

Table 1. continued

| Variety | - | Class ${ }^{\text {a }}$ | Color ${ }^{\text {b }}$ | Petal count | $\begin{gathered} \text { B.S. } \\ \text { rating } \end{gathered}$ | Garden rating ${ }^{\text {d }}$ |  | General Comments ${ }^{\text {e }}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |  | RRS | JAS |  |
| Just Joey |  | HT | AB | 30 | 3.0 | 8.0 | 7.8 | ff, great buds, flowers and color, sparse, fair recycle, nonhardy plant |
| Keepsake |  | HT | PB | 40 | 3.0 | 7.5 | 7.5 | ff, great buds, flowers and color, poor productivity and repeat, poor growth, did not adapt, died |
| Kings Ransom |  | HT | DY | 38 | 2.5 | 6.5 | 6.5 | ff, great buds and color, sparse, slow repeat, vigorous, hardy, discarded |
| Kölner Karneval |  | HT | M | 40 | 2.5 | 6.4 | 6.7 | fff, great buds, flowers and color, sparse, slow repeat, hardy, heat sensitive flowers |
| Kordes Perfecta |  | HT | PB | 68 | 2.5 | 6.5 | 6.0 | f, flowers open poorly, sparse, slow repeat, slow grower, discarded |
| Lady Rose |  | HT | O-P | 34 | 2.5 | 7.9 | 7.7 | fff, great buds, nice flowers, productive, slow repeat, slow grower, hardy |
| Lady X |  | HT | M | 36 | 2.5 | 8.3 | 8.3 | ff, great buds and flowers, sparse, slow repeat, vigorous, hardy, heat sensitive flowers |
| Las Vegas |  | HT | OB | 26 | 2.0 | 7.5 | 7.7 | f, nice buds and flowers, great color, sparse, slow repeat, nonhardy |
| Lemon Sherbert |  | HT | LY | 35 | 2.5 | 7.9 | 7.5 | f, nice buds and flowers, sparse, poor repeat, vigorous, hardy |
| Lemon Spice |  | HT | LY | - | 2.5 | 6.7 | 6.7 | fff, nice buds, fair flowers, sparse, slow repeat, vigorous |
| Little Darling |  | F | YB | 27 | 2.5 | 9.0 | 8.0 | f, nice small flowers, productive, good repeat, vigorous, hardy |
| Liverpool Echo |  | F | O-P | 23 | 2.0 | 8.0 | 7.5 | f, great buds, flowers unimpressive, sparse, slow repeat, small plant, discarded |
| *Love |  | GR | RB | 35 | 2.5 | 7.1 | 6.9 | ?f, nice buds and color, flowers open poorly, productive, slow repeat, hardy |
| Lover's Meeting |  | HT | OB | 25 | 2.0 | 7.2 | 7.5 | ff, great buds and color, productive, good repeat, vigorous, hardy, nice plant |
| Macarom |  | HT | MY | 26-40 | 3.0 | - | 7.3 | fff, nice buds, fair flowers, sparse, poor repeat, vigorous, hardy |
| Maria Stern |  | HT | OB | 43 | 2.5 | 7.8 | 7.5 | ff, nice color, sparse, slow repeat, vigorous, hardy |

continued

Table 1. continued

| Variety | Class ${ }^{\text {a }}$ | Color ${ }^{\text {b }}$ | Petal count | $\begin{aligned} & \text { B.S. } \\ & \text { rating } \end{aligned}$ | Garden rating ${ }^{\text {d }}$ |  | General Comments ${ }^{\text {e }}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  | RRS | JAS |  |
| Marijke Koopman | HT | MP | 25 | 2.5 | 7.8 | 7.8 | ff, great buds, flowers and color, productive, good repeat, long stems, vigorous, hardy, very nice plant |
| *Medallion | HT | AB | 65 | 3.0 | 7.1 | 7.5 | ff, great buds and flower color, productive, fair repeat, vigorous, hardy, heat sensitive flowers |
| *Mikado | HT | RB | 25 | 3.0 | 7.6 | 7.5 | ff, great buds and flower color, sparse, slow repeat, short stems, did not adapt, died |
| Milestone | HT | RB | $40+$ | 2.5 | 7.9 | 7.8 | f, great buds and color, nice flower, sparse, fair repeat, fair vigor, fair hardiness |
| Minuette | F | RB | 29 | 2.5 | - | ? | ?f, nice flowers, sparse, poor repeat, poor growth, weak, died |
| Miss All American Beauty | HT | DP | 55 | 2.5 | 8.3 | 8.5 | ff, great buds and flowers, productive, good repeat, vigorous, hardy, very nice plant |
| Miss Liberte | HT | OB | 35 | 3.0 | - | 7.0 | ?f, nice buds, small flowers, open quickly, sparse, fair repeat, hardy |
| *Mister Lincoln | HT | DR | 35 | 2.5 | 8.9 | 8.0 | fff, great buds, nice flowers and color, fair productivity, slow repeat, long stems, vigorous, hardy, heat sensitive flowers |
| *Mon-Cheri | HT | RB | 38 | 2.5 | 7.6 | 7.8 | f , great buds and flower color, sparse, fair repeat, long stems, vigorous, heat sensitive flowers |
| Montezuma | GR | O-P | 36 | 2.5 | 7.0 | 7.0 | ff, nice buds and flowers, sparse, poor repeat, vigorous, nonhardy, heat sensitive flowers |
| Nantucket | HT | AB | 37-44 | 2.5 | 8.2 | 8.0 | f, nice buds, flower color fades, sparse, fair repeat, vigorous, hardy |
| Nearly Wild | F | MP | 5 | 2.0 | 6.7 | 6.7 | f, nice flowers, productive, good repeat, vigorous, hardy |
| *New Year | GR | OB | 20 | 3.0 | 7.7 | 7.5 | ff, nice color, small flowers, productive, poor growth, hardy, heat sensitive flowers, died |
| Oklahoma | HT | DR | 48 | 2.0 | 6.0 | 6.0 | fff, great buds, fair flowers, productive, fair repeat, weak necks, vigorous, heat sensitive flowers |

Table 1. continued

| Variety | Class ${ }^{\text {a }}$ | Color ${ }^{\text {b }}$ | Petal count | $\begin{aligned} & \text { B.S. } \\ & \text { rating } \end{aligned}$ | Garden rating ${ }^{\text {d }}$ |  | General Comments ${ }^{\text {e }}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  | RRS | JAS |  |
| Old Smoothie | HT | MR | 40 | 2.5 | 7.1 | 6.9 | f, nice buds, poor productivity, poor repeat, thin plant, long stems, vigorous, hardy |
| *Olympiad | HT | MR | 35 | 2.5 | 8.3 | 7.9 | f, great buds, nice flowers, sparse, slow repeat, vigorous, hardy |
| *Oregold | HT | DY | - | 3.0 | 7.3 | 7.3 | f , great buds, nice flowers, sparse, slow repeat, long stems, vigorous, discarded |
| Orient Express | HT | O-R | 40 | 2.5 | - | 7.2 | fff, great buds, nice flower color, flowers appear quartered at times, fair productivity and repeat, vigorous, died |
| *Paradise | HT | M | 28 | 2.5 | 8.6 | 8.6 | ff, great buds, flowers and color, fair productivity, good repeat, vigorous, hardy, heat sensitive flowers, very nice plant |
| *Pascali | HT | W | 30 | 3.0 | 8.5 | 8.2 | f, great buds, nice flowers, productive, slow repeat, long stems, vigorous, hardy |
| *Peace | HT | YB | 43 | 3.0 | 8.7 | 8.0 | f , great buds and flowers, sparse, fair repeat, died |
| *Perfume Delight | HT | MP | 35-38 | 3.0 | 7.5 | 7.8 | fff, great buds and flowers, productive, fair repeat, vigorous, hardy |
| Pillow Talk | F | M | 28 | 2.5 | 7.1 | 7.1 | ff, great buds and flower color, productive, fair repeat, slow grower, hardy |
| *Pink Parfait | GR | PB | 23 | 2.5 | 8.6 | 8.0 | f, nice flowers, sparse, fair repeat, did not adapt, died |
| Pink Peace | HT | MP | 58 | 2.5 | 7.3 | 7.6 | fff, great buds and flowers, sparse, fair repeat, vigorous, hardy |
| *Pleasure | F | MP | 27-33 | 2.5 | 7.9 | 8.2 | ff, great buds, flowers and color, productive, good repeat, vigorous, hardy, very nice plant |
| Polarstern | HT | W | 35 | 3.0 | 7.7 | 7.9 | ?f, great buds, small flowers, sparse, slow repeat, long stems, vigorous, hardy, heat sensitive flowers |
| *Portrait | HT | PB | - | 3.0 | 7.0 | 7.0 | ff, nice buds, fair flowers, fair productivity, slow repeat, not adapted |

Table 1. continued

| Variety | Class ${ }^{\text {a }}$ | Color ${ }^{\text {b }}$ | Petal count | $\begin{aligned} & \text { B.S. } \\ & \text { rating } \end{aligned}$ | Garden rating ${ }^{\text {d }}$ |  | General Comments ${ }^{\text {e }}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  | RRS | JAS |  |
| Precious Platinum | HT | MR | 60 | 3.0 | 7.9 | 7.4 | f, ragged flowers, sparse, good repeat, heat sensitive flowers, discarded |
| *Prima Donna | GR | DP | 27 | 3.0 | 7.7 | 7.8 | f, nice buds, small flowers, great color, sparse, fair repeat, weak stems, mildew, heat sensitive flowers |
| Princess Alice | F | MY | 24 | 2.5 | - | 8.0 | f, great buds and flower color, productive, fair repeat, vigorous, hardy, very nice plant |
| Princesse de Monaco | HT | PB | 35 | 2.5 | 7.2 | 7.0 | fff, great flowers, very short stems, fair productivity, fair repeat, leaves "cup" naturally, mildew, heat sensitive flowers |
| Pristine | HT | w | 28 | 3.0 | 8.7 | 8.2 | f , great buds and flowers, sparse, poor repeat, long stems, hardy, heat sensitive flowers |
| Promise | HT | LP | 35 | 3.5 | 5.8 | 6.3 | f, nice buds and flowers, fair productivity and repeat, vigorous, hardy, heat sensitive flowers |
| Proud Land | HT | DR | 60 | 2.0 | 7.1 | 8.0 | fff, great buds and flowers, productive, good repeat, long stems, vigorous, hardy, very good |
| *Queen Elizabeth | GR | MP | 38 | 2.5 | 9.2 | 8.2 | ff, great buds, nice flowers, productive, fair repeat, vigorous, hardy, heat sensitive flowers |
| Quinella | HT | OB | 35 | 3.0 | - | 7.8 | ?f, great buds and flower color, good productivity and repeat, vigorous, heat sensitive flowers, died. Not registered with IRAR |
| Razzle Dazzle | F | RB | 25 | 3.0 | 7.1 | 7.7 | f, great buds and flower color, productive, good repeat, small bush, discarded |
| Red Lion | HT | MR | 38 | 2.5 | 7.1 | 6.9 | f, nice buds and flowers, poor productivity and repeat, vigorous, hardy |
| Red Masterpiece | HT | DR | - | 2.5 | 6.4 | 6.2 | fff, nice buds, fair productivity and repeat, vigorous, discarded |
| *Royal Highness | HT | LP | 43 | 3.0 | 8.3 | 8.0 | fff, great buds and flowers, fair productivity and repeat, vigorous, hardy |

Table 1. continued

| Variety | - | Class ${ }^{\text {a }}$ | Color ${ }^{\text {b }}$ | Petal count | $\begin{aligned} & \text { B.S. } \\ & \text { rating } \end{aligned}$ | Garden rating ${ }^{\text {d }}$ |  | General Comments ${ }^{\text {e }}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |  | RRS | JAS |  |
| Samantha |  | HT | MR | - | 2.5 | - | 7.0 | f , nice buds, nice flower color, sparse, slow repeat, hardy |
| Search For Life |  | HT | MR | 26-40 | 2.5 | - | 6.8 | f , flowers vary with individual plants, fair productivity and repeat, vigorous, hardy |
| *Seashell |  | HT | O-P | 48 | 3.0 | 7.3 | 7.3 | f, great buds, great flower color, fair productivity and repeat, heat sensitive leaves, died |
| Selfridges |  | HT | DY | 35 | 2.5 | 6.9 | 5.8 | ?f, small flowers at stem ends, very long stems, sparse, slow repeat, unimpressive, discarded |
| *Sheer Bliss |  | HT | W | 35 | 3.0 | 7.6 | 7.2 | f , great buds, great flowers, very sparse, fair repeat, hardy, heat sensitive flowers, discarded |
| *Showbiz |  | F | MR | 20 | 4.0 | 7.9 | 8.3 | ?f, great buds, great flowers and color, high productivity, repeats well, vigorous, hardy, much blackspot, very nice plant |
| *Shreveport |  | GR | OB | $50+$ | 3.0 | 7.3 | 7.0 | ?f, small flowers, sparse, slow repeat, fair vigor, died |
| Silver Spoon |  | HT | . M | 35 | 2.5 | 6.5 | 6.2 | ?f, great buds, nice flowers, great color, sparse, slow repeat, weak necks, long stems, vigorous |
| Silver Star |  | HT | M | - | 2.5 | 6.1 | 6.0 | ff, nice buds and flowers, fair productivity, slow repeat, slow growth, not well adapted |
| Simplicity |  | F | MP | 18 | 2.5 | 8.0 | 7.8 | f, nice flowers, productive, fair repeat, slow growth, hardy |
| Smooth Talk |  | F | W | 28 | 2.5 | 7.8 | 7.8 | f , great flower show, good productivity, good repeat, slow growth, hardy |
| Smooth Velvet |  | HT | DR | 42 | 2.5 | 7.0 | 6.8 | f, nice buds, few flowers, sparse, "leggy; vigorous, hardy |
| Snowfire |  | HT | RB | - | 3.0 | 5.0 | 5.0 | f, great color, sparse, slow repeat, many large thorns, discarded |
| Sonia |  | GR | PB | 30 | 2.5 | 8.0 | 7.8 | fff, nice buds, nice flowers, fair productivity, fair repeat, short stem, heat sensitive flowers |
| South Seas |  | HT | O-P | 48 | 3.0 | 7.2 | 7.0 | ff, nice buds, nice flowers, fair productivity, fair repeat, vigorous, heat sensitive flowers |

Table 1. continued

| Variety | Class ${ }^{\text {a }}$ | Color ${ }^{\text {b }}$ | Petal count | B.S. ratinge | Garden rating ${ }^{\text {d }}$ |  | General Comments ${ }^{\text {e }}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  | RRS | JAS |  |
| Spanish Sun | F | DY | - | 3.0 | 6.3 | 6.5 | f , nice color, productive, fair repeat, vigorous, hardy, heat sensitive flowers |
| Stephen's Big Purple | HT | M | 35 | 2.5 | 7.1 | 8.2 | fff, great color, nice flowers, productive, good repeat, vigorous, hardy, very nice plant |
| Suffolk | HT | W | 40 | 2.5 | 7.4 | 7.5 | f , great flowers, sparse, repeats well, poor vigor, not well adapted |
| Summer Dream | HT | AB | 30 | 2.0 | 7.6 | 7.2 | f, nice color, fair productivity, poor repeat, short stems, hardy, heat sensitive flowers |
| Summer Sunshine | HT | DY | 25 | 3.0 | 6.9 | 6.5 | f, great buds, nice flower color, poor productivity, poor repeat, vigorous, nonhardy |
| *Sun Flare | F | MY | 30 | 2.5 | 7.7 | 7.4 | ff, nice color, fair productivity, fair repeat, poor vigor, hardy |
| Sunbright | HT | MY | 28 | 3.0 | 7.4 | 7.4 | f , nice color, productive, good repeat, good vigor, nonhardy |
| *Sundowner | GR | $A B$ | 35 | 3.0 | 6.8 | 6.5 | fff, great buds, fair productivity, fair repeat, good vigor |
| Sunsprite | F | DY | 28 | 2.5 | 8.8 | 7.8 | ff, nice color, poor flower form, productive, good repeat, vigorous, hardy |
| *Sutter's Gold | HT | OB | 33 | 3.0 | 6.5 | 6.5 | fff, nice buds, nice flowers, fair productivity, fair repeat, discarded |
| Swarthmore | HT | PB | 50 | 3.0 | 8.3 | 8.3 | f, great buds, great flowers, fair productivity, fair repeat, vigorous, mildews, heat sensitive flowers |
| *Sweet Surrender | HT | MP | 40 | 2.5 | 6.9 | 7.1 | fff, nice flowers, flat opened, productive, good repeat, weak necks, hardy |
| *Tiffany | HT | PB | 28 | 3.0 | 8.4 | 8.6 | ff, great buds, great flowers and color, productive, good repeat, long stems, vigorous, hardy, heat sensitive flowers, very nice plant |
| *Touch of Class | HT | O-P | 33 | 3.5 | 8.3 | 7.8 | f, great buds, sparse, slow repeat, vigorous, hardy, mildews, well adapted |
| *Tournament of Roses | GR | MP | 50-57 | 3.0 | 7.9 | 8.0 | ?f, nice flowers, good productivity, hardy |

Table 1. continued

| Variety | Class ${ }^{\text {a }}$ | Color ${ }^{\text {b }}$ | Petal count | B.S. rating ${ }^{\text {c }}$ | Garden rating ${ }^{\text {d }}$ |  | General Comments ${ }^{\text {e }}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  | RRS | JAS |  |
| *Tropicana | HT | O-R | 33 | 3.0 | 8.3 | 7.5 | ff, nice flowers, sparse, slow repeat, died out, heat sensitive flowers |
| Tuxedo | HT | DR | - | 3.0 | 7.4 | 7.4 | ?f, great buds, small flowers, productive, good repeat, vigorous, thin plant |
| Uncle Joe | HT | DR | 60 | 2.0 | 7.7 | 7.5 | f, great buds, tight flowers "ball", fair productivity, fair repeat, long stems, heat sensitive flowers |
| Viva | F | DR | 32 | 2.5 | 7.4 | 7.4 | f, nice flowers, good productivity, good repeat, vigorous, heat sensitive flowers |
| *Voodoo | HT | OB | 35 | 3.5 | 7.8 | 7.5 | ff, great buds, flowers degrade quickly, vigorous, hardy, heat sensitive flowers |
| Whiskey Mac | HT | YB | 30 | 3.0 | 6.2 | 6.2 | ff, nice buds, great flower color, fair productivity, good repeat, poor vigor, dies out, heat sensitive flowers |
| White Delight | HT | W | 40-48 | 2.5 | 7.7 | 8.0 | ff, nice buds, nice flowers, great productivity, good repeat, vigorous, hardy |
| *White Lightnin' | GR | W | 30 | 2.5 | 7.2 | 7.0 | ff, small flowers, fair productivity, fair repeat, poor vigor, nonhardy, not adapted |
| White Masterpiece | HT | W | 30 | 3.0 | 7.1 | 7.0 | f, nice flowers, fair productivity, fair repeat, poor vigor, nonhardy, dies |
| *Yankee Doodle | HT | YB | 75 | 3.0 | 7.0 | 7.3 | f, great buds, nice flowers and flower color, productive, good repeat, vigorous |

${ }^{\text {a }}$ Classification of roses: $\mathrm{F}=$ Floribunda, $\mathrm{GR}=$ Grandiflora, and $H T=$ Hybrid Tea.
${ }^{\mathrm{b}}$ American Rose Society Color Classification: $\mathrm{W}=$ white, near white and white blend, LY = light yellow, MY $=$ medium yellow, $\mathrm{DY}=$ deep yellow, $\mathrm{YB}=$ yellow blend, $\mathrm{AB}=$ apricot and apricot blend, $\mathrm{OB}=$ orange and orange blend, $\mathrm{O}-\mathrm{P}=$ orange-pink, $\mathrm{O}-\mathrm{R}=$ orange-red, $\mathrm{LP}=$ light pink, $\mathrm{MP}=$ medium pink, $\mathrm{PB}=$ pink blend, $\mathrm{DP}=$ deep pink, $\mathrm{DR}=$ dark red, $\mathrm{MR}=$ medium red, $\mathrm{RB}=$ red blend, and $\mathrm{M}=$ mauve and mauve blend.
${ }^{c} 0=$ no blackspot symptoms, $1=1-15 \%$ of plant leaves affected, $2=16-25 \%, 3=26-40 \%$, and $4=0$ ver $40 \%$ of plant leaves affected.
${ }^{\mathrm{d}}$ National Rose Ratings (NRR): $10=$ perfect, $9.0-9.9=$ outstanding, $8.0-8.9=$ excellent, $7.0-7.9=$ good, 6.0-6.9 $=$ fair, and 5.9 and lower $=$ of questionable value. JAS rating $=$ researcher's evaluation of the plant at this site.
${ }^{e}{ }_{f}=$ slight fragrance, $\mathrm{ff}=$ moderate fragrance, and $\mathrm{fff}=$ strong fragrance.
$\mathrm{f} *=$ All-America Rose Selections Winner.
g ? and $? \mathrm{f}=$ value was not determined.
${ }^{\mathrm{h}}$ information not available.

Table 2. Evaluation of 121 cultivars of heritage roses at the MAFES Disease Research Rose Garden.


Table 2. continued

| Class | Cultivar | Garden rating ${ }^{\text {b }}$ |  |  | Height ${ }^{\text {c }}$ feet | Blackspot ${ }^{\text {d }}$ | Comments ${ }^{\text {e }}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Color ${ }^{\text {a }}$ | NRR | JAS |  |  |  |
| Bourbon | Souv. de la Malmaison | LP | 8.2 | 7.8 | 3.0 | 1.5 | fff, large flowers cupped then flat and quartered, winter killed, mildews |
| Bourbon | Zephirine Drouhin | MP | 7.8 | 8.5 | 4.5 | 3.0 | ff, great flowers, great productivity, hardy |
| Centifolia | Bullata | MP | 7.4 | 6.7 | 3.5 | 4.0 | ff, sparse bloom, thin plant, hardy, unimpressive |
| Centifolia | Burgundian Rose | PB | - | 8.0 | 3.0 | 2.0 | fff, great flowers, died |
| Centifolia | Fantin Latour | LP | 7.6 | 7.8 | 4.0 | 3.5 | fff, great flowers, productive, great plant, lax canes, hardy, mildews |
| Centifolia | Paul Ricault | MP | - | 7.2 | 4.0 | 2.0 | fff, nice flat flowers, productive, arched canes, hardy |
| Centifolia | Petite de Hollande | MP | 8.5 | ? ${ }^{\text {g }}$ | 4.0 | 2.0 | ff, small scattered flowers, hardy |
| Centifolia | Prolifera de Redoute | MP | 6.7 | 7.3 | 4.5 | 2.5 | fff, nice flowers, productive, thin plant, arched canes, hardy |
| Centifolia | Robert le Diable | M | - | 7.5 | 3.0 | 4.0 | fff, great flowers, productive, laxspreading canes, hardy |
| Centifolia | Rose de Meaux | MP | 8.3 | 7.5 | 3.0 | 1.0 | f, small flowers, poor bloom, sparse, upright, discarded |
| Centifolia | Rose des Pientres | MP | 7.1 | 6.7 | 4.0 | 2.0 | fff, sparse thin plant, arched canes, died |
| Centifolia | The Bishop | M | - | 8.5 | 5.0 | 2.5 | fff, excellent flowers, good productivity, hardy, mildews |
| Centifolia | Tour de Malakoff | M | 7.8 | 6.7 | 3.0 | 3.0 | fff, ragged bloom, sparse poor plant, weak-arched canes, heavy mildew, discarded |
| China | Comtesse du Cayla | OB | - | 6.5 | 3.0 | 1.0 | ff, short lived flowers, sparse, unimpressive, non-hardy |
| China | Cramoisi Superieur | MR | - | 6.5 | 3.0 | 1.0 | ff, nice flowers productive, weak plant, hardy |

Table 2. continued

| Class | Cultivar | Garden rating ${ }^{\text {b }}$ |  |  | Height ${ }^{\text {c }}$ feet | Blackspot ${ }^{\text {d }}$ | Comments ${ }^{\text {e }}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Color ${ }^{\text {a }}$ | NRR | JAS |  |  |  |
| China | Gloire des Rosomanes | MR | - | 5.5 | 4.5 | 3.0 | ff, loose flowers, sparse, upright, hardy |
| China | Hermosa | LP | 7.5 | 6.7 | 4.0 | 2.0 | f , nice flowers, weak necks, productive, upright, hardy |
| China | Le Vésuve | PB | - | ? | 3.0 | 2.0 | ff, loose flowers, upright, hardy |
| China | Louis Philippe | RB | 8.0 | 8.0 | 4.0 | 2.0 | fff, nice flowers, productive upright, hardy |
| China | Old Blush | MP | 7.9 | 8.0 | 3.5 | 2.0 | f, nice flowers, weak necks, heavy productivity, good repeat, hardy |
| Damask | Autumn Damask | MP | - | 7.2 | 2.5 | 3.0 | fff, good flowers, fair productivity, thin plant, lax arched canes |
| Damask | Bella Donna | LP | - | 8.0 | 3.0 | 3.0 | fff, nice flowers, productive, thin plant, hardy, mildews |
| Damask | Gloire de Guilan | LP | 6.5 | 6.5 | 4.0 | 3.0 | fff, few blooms, thin plant, hardy |
| Damask | Ispahan | MP | - | 7.5 | 3.0 | 3.0 | fff, great buds, nice flowers, good productivity, upright plant, arching canes, hardy, mildews |
| Damask | Kazanlik | DP | 7.8 | 8.0 | 5.0 | 3.0 | fff, nice flowers, productive, hardy, mildews |
| Damask | La Ville de Bruxelles | DP | - | 7.5 | 4.0 | 2.0 | fff, great flowers, fair productivity |
| Damask | Leda | W | 8.0 | 8.5 | 4.0 | 2.0 | fff, nice flowers, productive, thin plant, hardy, mildews |
| Damask | Mme. Hardy | W | 8.8 | 8.8 | 3.0 | 3.0 | ff, great flowers, fair productivity, hardy, mildews |
| Damask | Mme. Zöetmans | W | - | 8.2 | 2.5 | 1.5 | fff, great flowers, good productivity, weak stems, hardy |
| Damask | Marie Louise | MP | 8.0 | 7.2 | 3.5 | 3.0 | fff, nice flowers, fair productivity, hardy |

Table 2. continued

| Class | Cultivar | Garden rating ${ }^{\text {b }}$ |  |  | Height ${ }^{c}$ feet | Blackspot ${ }^{\text {d }}$ | d Comments ${ }^{\text {e }}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Color ${ }^{\text {a }}$ | NRR | JAS |  |  |  |
| Damask | Rose de Rescht | DP | 8.6 | 8.5 | 3.0 | 3.0 | f, great flowers, good productivity, died and was replaced with same |
| Damask | York and Lancaster | PB | 8.1 | 6.7 | 4.0 | 4.0 | ff, fair flowers, poor production, thin plant, died |
| Eglanteria | Hebe's Lip | W | 7.1 | 7.6 | 4.0 | 2.5 | fff, nice flowers, productive, mildews, died |
| Gallica | Agathe Incarnata | MP | - | 7.7 | 4.0 | 3.0 | fff, nice flowers, productive, thin plant |
| Gallica | Apothecary's Rose | DP | 9.2 | 8.5 | 3.0 | 2.0 | fff, nice flowers, fair productivity, thin, mildews |
| Gallica | Assemblage des Beautés | DR | - | 7.0 | 2.5 | 2.5 | ff, great flowers, medium production, hardy |
| Gallica | Belle de Cércy | M | 7.5 | 7.4 | 4.0 | 2.0 | fff, nice flowers, productive lax canes, hardy, severe mildew |
| Gallica | Belle Isis | LP | 7.2 | 7.0 | 3.0 | 2.5 | fff, nice flowers, fair production, hardy, mildews |
| Gallica | Camaieux | M | 7.5 | 7.5 | 3.0 | 2.5 | fff, nice flowers, productive, hardy, mildews |
| Gallica | Cardinal de Richelieu | M | 7.0 | 7.3 | 4.5 | 3.0 | fff, great flowers, good production, lax canes, hardy |
| Gallica | Charles de Mills | M | 8.5 | 9.0 | 4.0 | 2.0 | f, great flowers productive, died out twice |
| Gallica | Cramoisi Picoté | RB | - | 7.3 | 2.5 | 2.5 | f, great flowers, small flowers, productive, hardy |
| Gallica | D' Aguesseau | MR | - | 7.4 | 2.5 | 2.0 | fff, great flowers, sparse, hardy |
| Gallica | Duc de Guiche | M | 7.6 | 7.5 | 3.0 | 2.0 | ff, great flowers, medium productivity |
| Gallica | Duchesse de Montebello | LP | - | 7.0 | 3.0 | 2.5 | fff, productive, lax long canes, hardy |
| Gallica | La Belle Sultane | DR | 7.8 | 8.5 | 3.0 | 2.0 | fff, nice flowers, great color, productive, arch ing canes, hardy mildews |

Table 2. continued

| Class | Garden rating ${ }^{\text {b }}$ Height ${ }^{\text {c }}$ |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Cultivar | Color ${ }^{\text {a }}$ | NRR | JAS | feet | Blackspot | d Comments ${ }^{\text {d }}$ |
| Gallica | President de Sèze | M | 5.6 | 6.3 | 3.0 | 2.5 | fff, nice flowers, long bloom period, productive, lax canes, hardy, mildews |
| Gallica | Rosa Mundi | PB | 9.1 | 9.0 | 3.0 | 2.5 | ff, nice flowers, productive, lax canes, thin plant, hardy |
| Gallica | Rose des Maures | DR | - | 7.7 | 4.0 | 2.5 | ff, nice flowers, good productivity, hardy |
| Gallica | Superb Tuscan | M | 8.0 | 7.8 | 4.0 | 2.5 | ff, great flowers, fair production, lax canes, upright plant, hardy |
| Gallica | Surpass Tout | M | - | 6.7 | 3.0 | 2.5 | ff, nice flowers, fair productivity, leggy plant, hardy, mildews |
| Gallica | Tricolore de Flandre | PB | 8.8 | 8.3 | 3.0 | 2.5 | fff, nice flowers, small flowers, fair produc tivity, lax canes, vigorous |
| Gallica | Tuscany | M | 8.3 | 8.0 | 3.5 | 2.5 | ff, nice flowers, great color, sparse, hardy |
| Hybrid Bourbon | Coup d' Hébé | DP | - | 7.5 | 3.0 | 2.5 | fff, great flowers and color, good productivity, weak stems, hardy |
| Hybrid China | Juno | LP | 6.8 | 6.3 | 4.0 | 3.0 | fff, poor plant, sparse production, weak necks, thin plant, unimpressive |
| Hybrid <br> Perpetual | Baronne Prévost | MP | 7.5 | 8.0 | 4.0 | 3.0 | ff, great flowers, good productivity, arched canes, thin-upright plant, hardy |
| Hybrid <br> Perpetual | Ferdinand Pichard | RB | 7.7 | - | 4.0 | 2.5 | ff, great flowers, fair productivity and repeat, vigorous hardy |
| Hybrid <br> Perpetual | Général Jacqueminot | RB | 6.7 | 6.8 | 4.5 | 2.5 | fff, great flowers, productive, lax canes, thin plant, hardy |
| Hybrid <br> Perpetual | Gloire de Ducher | DR | - | 7.2 | 3.0 | 2.5 | ff, fair flowers, sparse, weak necks, lax canes, thin plant |

Table 2. continued

| Class | Garden rating ${ }^{\text {b }}$ |  |  |  | Height ${ }^{\text {c }}$ feet | Blackspot ${ }^{\text {d }}$ | d Comments ${ }^{\text {e }}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Cultivar | Color ${ }^{\text {a }}$ | NRR | JAS |  |  |  |
| Hybrid Perpetual | La Reine | MP | - | 7.3 | 3.0 | 3.0 | fff, fair flowers, productive, weak necks, thin plant, nonhardy |
| Hybrid <br> Perpetual | Mme. Victor Verdier | MR | - | 8.0 | 3.0 | 2.0 | fff, very nice flowers and color, sparse, thin plant, hardy |
| Hybrid Perpetual | Paul Neyron | MP | 7.9 | 7.8 | 2.5 | 2.5 | f, great flowers, productive, thinupright plant, nonhardy |
| Hybrid Perpetual | Reine des Violettes | M | 7.1 | 7.4 | 3.0 | 2.5 | fff, great flowers, productive, lax canes, thin plant, hardy |
| Hybrid Perpetual | Souv. du Docteur Jamain | DR | - | 7.5 | 3.0 | 2.5 | fff, nice flowers productive, thinupright, nonhardy |
| Hybrid <br> Rugosa | Belle Poitevine | MP | 7.5 | 6.8 | 3.0 | 2.0 | fff, fair flowers, large, sparse, hardy |
| Hybrid <br> Rugosa | Charles Albanel | MR | - | 6.7 | 2.5 | 2.5 | ff, sparse, newly planted |
| Hybrid <br> Rugosa | Jens Munk | MP | - | 7.0 | 4.0 | 0.0 | ff, fair flowers, productive, upright, newly planted |
| Hybrid Rugosa | Martin Frobisher | LP | - | 7.3 | 4.5 | 2.5 | ff, nice flowers good productivity, hardy |
| Hybrid Rugosa | Sarah Van Fleet | MP | 6.5 | 6.5 | 6.0 | 2.5 | fff, nice flowers, productive, good repeat, reliable, hardy |
| Hybrid Spinossisima | Stanwell Perpetual | W | 8.0 | 7.3 | 3.0 | 2.5 | fff, great flowers, fair productivity, sprawls, poor growth, died |
| Kordesii | Dortmund | MR | 9.1 | 9.0 | 8.0 | 0.0 | ?f, great flowers, productive, good repeat, vigorous, hardy |
| Kordesii | John Cabot | MR | 7.0 | 8.2 | 4.0 | 1.0 | ff, great flowers, great productivity, vigorous, hardy |
| Miscellaneous OGR | Empress Josephine | MP | 7.6 | 7.0 | 4.0 | 1.0 | f, unimpressive, thin plant, nonhardy |
| Miscellaneous OGR | Fortune's Double Yellow | YB | 7.6 | 7.1 | 5.0 | 1.0 | f, nice flowers, good productivity, hardy |

Table 2. continued

| Class | Cultivar | Garden rating ${ }^{\text {b }}$ |  |  | Height ${ }^{c}$ feet | Blackspot ${ }^{\text {d }}$ | Comments ${ }^{\text {e }}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Color ${ }^{\text {a }}$ | NRR | JAS |  |  |  |
| Moss | Alfred de Dalmas | LP | 7.1 | 7.0 | 2.5 | 2.0 | f, nice flowers, poor productivity, thin plant, hardy |
| Moss | Capitaine John Ingram | M | - | ? | 3.0 | 2.0 | ff, nice flowers, productive, attractive red moss, vigorous, hardy, new to garden |
| Moss | Celina | M | 8.3 | 7.5 | 3.5 | 2.5 | ff, nice flowers, fair productivity |
| Moss | Comtesse de Murinais | w | 7.6 | 7.0 | 4.5 | 3.0 | fff, unimpressive, sparse productivity, thin-erect plant |
| Moss | Crested Moss | MP | 8.7 | 7.5 | 3.0 | 2.5 | fff, unimpressive, poor productivity, thin upright plant |
| Moss | Deuil de Paul Fontaine | M | 6.0 | 6.4 | 2.5 | 2.0 | f, nice flowers, sparse, thin plant, hardy, some mildew |
| Moss | Général Kléber | MP | 8.3 | 7.0 | 4.5 | 3.0 | fff, sparse, thin plant, hardy |
| Moss | Gloire des Mousseuses | MP | 7.6 | 7.5 | 5.0 | 2.5 | fff, nice flowers, sparse, unimpressive plant, weak canes, thin plant |
| Moss | Maréchal Davoust | MP | - | 6.5 | 3.0 | 2.5 | fff, nice flowers, productive, lax canes, thin plant |
| Moss | Salet | MP | 8.3 | 6.5 | 3.0 | 3.0 | fff, nice flowers, sparse, weak plant, thin-upright, mildews |
| Moss | William Lobb | M | 8.4 | 8.0 | 5.0 | 2.5 | fff, great flowers, good productivity, lax canes, thin plant, hardy |
| Noisette | Aimée Vibert | W | - | 7.0 | 3.0 | 2.0 | f, nice flowers, productive, nonhardy |
| Noisette | Crépuscule | AB | - | 8.0 | 3.5 | ? | f, nice flowers, good productivity, weak necks, suffered some winter injury |
| Noisette | Fellenberg | MR | - | 8.0 | 4.0 | 2.5 | f, nice flowers, good productivity, very nice plant, hardy |

Table 2. continued

| Class | Garden rating ${ }^{\text {b }} \mathbf{H}$ |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Cultivar | Color ${ }^{\text {a }}$ | NRR | JAS | feet | Blackspot ${ }^{\text {d }}$ | ${ }^{\text {d }}$ Comments ${ }^{\text {e }}$ |
| Noisette | Maréchal Niel | MY | 7.8 | 6.0 | 2.5 | ? | ff, poor flower quality, weak necks, nonhardy, died |
| Portland | Blanc de Vibert | W | - | 7.0 | 3.0 | 2.5 | fff, fair flowers, fair productivity, upright plant |
| Portland | Comte de Chambord | PB | 7.0 | 6.9 | 3.0 | 3.0 | fff, unimpressive, thin plant, hardy, slightmildew |
| Portland | Rose du Roi | MR | 7.0 | 7.1 | 2.0 | 2.0 | ff, great flowers, good repeat, vigorous |
| Rambler | American Pillar | PB | - | 7.3 | 10.0 | ? | ?f, nice flowers, productive, vigorous, hardy, heavy mildew |
| Shrub | Malaguena | MP | - | 7.7 | 2.5 | ? | fff, great flowers, died |
| Shrub | Paulii Rosea | PB | 8.3 | ? | 3.0 | 1.5 | ff, sparse, long-lax canes, died |
| Species | R. banksiae banksiae | W | 9.0 | 7.9 | 10.0 | 0.0 | ?f, nice flowers, fair production, vigorous, hardy |
| Species | R. banksiae lutea | LY | 9.0 | 9.2 | 12.0 | 0.0 | ?f, great flowers, very productive, vigorous, froze out, replanted |
| Species | R. eglanteria | LP | 7.7 | 7.4 | 8.0 | 0.0 | ?f, nice flowers, mildews |
| Species | R. foetida bicolor | RB | 8.1 | 7.8 | 4.0 | 4.0 | ?f, nice flowers, fair productivity, thin scraggly plant, hardy |
| Species | R. forrestiana | DP | - | 7.0 | 5.5 | 0.0 | ff, nice flowers, sparse, discarded |
| Species | R. glauca | MP | 8.8 | 7.8 | 3.0 | 0.0 | ff, nice flowers, sparse, thin plant |
| Species | R. hugonis | MY | 9.1 | 8.9 | 4.0 | 0.0 | ff, great flowers, good productivity, vigorous, hardy |
| Species | R. macrophylla doncasterii | DP | - | 5.5 | 4.0 | ? | ?f, nice flowers, sparse, discarded |
| Species | R. palustris | MP | - | 8.2 | 6.0 | ? | f, nice flowers, productive, vigorous, hardy |
| Species | R. roxburghii | MP | - | 7.5 | 6.0 | 0.0 | f, great flowers, productive, vigorous, hardy |

Table 2. continued

| Class | Cultivar | Garden rating ${ }^{\text {b }}$ |  |  | Height ${ }^{c}$ feet | Blackspot ${ }^{\text {d }}$ | ${ }^{\text {d }}$ Comments ${ }^{\text {e }}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Color ${ }^{\text {a }}$ | NRR | JAS |  |  |  |
| Species | R. sericea pteracantha | W | - | 7.3 | 3.0 | 0.0 | ?f, nice 4-petal flowers, fair productivity, winged thorns, not well adapted |
| Tea | Safrano | AB | 7.2 | 6.8 | 4.5 | 3.0 | f, fair flowers, upright plant, nonhardy |
| Tea | Sombrueil | W | 8.5 | 8.1 | 4.5 | 2.0 | fff, great flowers, productive, nonhardy |

${ }^{a}$ American Rose Society (ARS) Color Classification: $\mathrm{W}=$ white, near white and white blend, ly = light yellow, $\mathrm{MY}=$ medium yellow, $\mathrm{YB}=$ yellow blend, $\mathrm{AB}=$ apricot and apricot blend, $\mathrm{OB}=$ orange and orange blend, $\mathrm{LP}=$ light pink, $\mathrm{MP}=$ medium pink, $\mathrm{PB}=$ pink blend, $\mathrm{DP}=$ deep pink, $\mathrm{MR}=$ medium red, $\mathrm{DR}=$ dark red, $\mathrm{RB}=$ red blend, and $\mathrm{M}=$ mauve and mauve blend.
${ }^{\mathrm{b}}$ National Rose Ratings (NRR). $10=$ perfect, $9.0-9.9=$ outstanding, $8.0-8.9=$ excellent, $7.0-7.9=$ good, 6.0-6.9 = fair, and 5.9 and lower $=$ of questionable value. JAS rating $=$ researchers' evaluation of the plant at this site.
${ }^{\text {cheight of plant in garden at the time information was taken. }}$
$\mathrm{d}_{0}=$ no blackspot symptoms, $1=1-15 \%$ of plant leaves affected, $2=16-25 \%$ of plant leaves affected, $3=26-40 \%$ of plant leaves affected, and $4=$ over $40 \%$ of plant leaves affected.
${ }^{\text {ef }}=$ slight fragrance, $\mathrm{ff}=$ moderate fragrance, and $\mathrm{fff}=$ strong fragrance.
${ }^{f}$ Information not available
g ? and $\mathrm{ff}=$ value was not determined

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