Hardier Roses Are On Their Way

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Background and aims of our work

Early in the 1990's we started making crosses among various roses, including very hardy local forms found during a project (called KESKAS, a Finnish acronym indicating "hardy plants") to survey valuable woody ornamentals in Finnish parks and gardens. It was a matter of some pride that the KESKAS project revealed so many excellent yet tough plants, including several fine roses. On the other hand, Finland has long imported colourful and long-flowering Central European roses, which generally fail to survive our long, harsh winters. We realised that we could use the KESKAS roses in a hybridisation programme to diversify our range of hardy, ornamental roses.

The first generation of seedlings arising from crosses made during 1992-94 was not expected to produce recurrent flowering roses. Recurrent or repeat flowering in roses is apparently determined recessively, so that the gene for this character must be present in both parents for it to be expressed in any of the progeny. Once we had secured some first generation seedlings of hardy background and carrying the recurrence gene, we could make crosses aiming at long-flowering roses. This second cycle of hybridisation was made during 1999-2000. We were thus able to widen our goals to include long-flowering and hardy roses growing in various shapes and sizes, and performing well at least into central parts of Finland.

Cultivars released would be grown on their own roots. It is hoped that rose growing for garden and amenity use will be increasingly based on such roses, selected for their good adaptation to our climatic conditions. Our dependence upon tender, imported stocks would thereby be reduced. At the same time, Finnish cultivars may be suitable for other regions with harsh winters.

Breeding stocks and methods

We experimented with a very wide range of crosses, most of which did not even produce viable seed. Promising seedlings were obtained from the following varieties:

- Forms or hybrids of the burnet rose (Rosa pimpinellifolia, syn. R. spinosissima): "Hesperia", "Linnanmäki", 'Poppius', 'Red Nelly'/'Single Cherry'; subsequently "Ruskela".

- Forms or hybrids of R. rugosa: 'Hansa', 'Henry Hudson', 'Snow Pavement'; subsequently "Vuosaari".
- Roses in or close to the 'Francofurtana' (R. gallica x majalis?) group: 'Minette', "Olkkala", "Pikkala", 'Splendens'; subsequently "Schalin Kymppi".
- Canadian Kordesii hybrids: 'Henry Kelsey', 'John Davis', 'L83'

In an attempt to develop hardy yellow roses we have used as parents 'Frühlingsgold', "Hesperia", 'Leverkusen'; subsequently 'Aicha', but the resulting seedlings have proved tender or otherwise unsatisfactory.

The basic method we have used is traditional cross breeding. Good parents have to function well as mothers, giving reasonable quantities of viable seed, or as fathers producing viable pollen. The following examples illustrate how we choose parents with a view to combining their best characteristics:

To aim for a double-flowered, dark red burnet rose, we crossed the dark 'Red Nelly' with the double forms 'Poppius' and "Ruskela". The results will become apparent over the next few years.

To aim for a hardy "old rose", we crossed the somewhat tender 'Maiden's Blush' with the hardy "Olkkala". We have tentatively selected one seedling.

In order to combine a showy aspect, long flowering and winter hardiness in a single rose, we first had to incorporate the long flowering gene into both parents. We crossed recurrent Canadian cultivars with the hardiest 'Francofurtana' roses. This effort has given us a number of attractive seedlings which, although they are only once-flowering, must carry repeat-flowering genes. Having intercrossed the best first-generation seedlings, we should shortly be able to select from among the resulting families seedlings with the desired combination of characters.

Schedule for first generation seedlings:

1992-94	hundreds of combinations among some 50 parents
1994-95	5000 seedlings planted in the field for screening
1996-99	observations on 1) overwintering, 2) general impression of the plant, healthiness, growth habit, 3) general impression of flowering, colour, form, abundance, duration, 4) ease of propagation by cuttings
1998-99	selection of promising seedlings (about 30) and their propagation
2000-01	clonal trials established (Vihti, Tampere, Mikkeli and Ruukki)
2001-05	observations on clonal trials, selection and propagation of intended cultivars
2005-06	first cultivars to be released.

Further prospects

It will only become apparent over the next few years how successfully we have combined a good level of winter-hardiness and prolonged flowering in our most advanced seedlings. Our material is dominated by pink-flowered roses; this is the predominant flower colour of the genus. Some of our crosses are designed to produce white- or red-flowered, scented roses. We have found it difficult to devise parental combinations that could give hardy, repeat-flowering roses with yellow or orange flowers. Until we find suitable parental material, hardy climbers or ramblers remain something of a pipe-dream.

We have had some luck. Progenies from the Canadian Rugosa hybrid 'Henry Hudson' and the relatively hardy centifolia (?) "Pikkala" have produced compact, fertile seedlings with considerable promise for developing a race of hardy ground-cover roses. We hope to obtain bright red-flowered roses with showy hips from crosses of the type: R. Gallica hybr. 'Splendens' ('Alika' type) x R. x malyi 'Kempele'.

Contributors to the work

As well as the authors, several other people have greatly contributed to the work, notably Terttu Parkkari, Pirkko Kahila, Niina Matilainen, Marianna Soini, and Kati Nieminen, as well as many skillful field workers. The guidance and encouragement given by Veronica Sundman, Pentti Alanko, Max Hagman, Matti Kulju, Peter MA Tigerstedt and Henry Väre are much appreciated.

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