

ROSE ROOTSTOCKS

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INTRODUCTION

The creation of the Research Centre for Ornamental Plants marked a new era in the history of cultivation of ornamental plants in Belgium. This Centre is an amalgamation of three experimental gardens: for Floriculture, Nursery Stock, and Cut Flowers. The Experimental Horticultural Station B.V.O., established at Wetteren (Ghent) in 1954, now also forms part of the Centre. The Research Centre for Ornamental Plants is situated in Destelbergen (Ghent), right at the heart of the ornamental plant-growing region. Both the amalgamation and the location of the Centre have enhanced its function as a research and information agency, improving the two-way flow of ideas.

On 1 October 1988, one year after building work began, the buildings and facilities of the Ornamental Plant Research Centre were ready for occupation. On 16 September 1989, the Research Centre was officially opened. The Ministry of Agriculture, the Flemish executive, and the Growers Association itself have all made a considerable contribution towards the completion of this project.

The non-profit association, East Flanders Business Information Service Horticultural Research Station (abbreviated to B.V.O.), has been operating in Wetteren since 1954. In the B.V.O.'s early days, it provided information and carried out research for a variety of sectors of horticulture. In the mid-1960s, the service began concentrating on the ornamental plant sector, with the emphasis on applied scientific research. Funds were received from the I.W.O.N.L. (Institute for the Promotion in Industry and Agriculture).

Research into general nursery stock, azaleas, and potplants was carried out at Wetteren. A director is responsible for the Centre's day-to-day management, ensuring that the administrative side functions properly; he also supervises the budget, the research programmes to be carried out, and the work of the Centre as a whole.

The work carried out in the Experimental Garden is jointly formulated and supervised by the Experimental Garden Manager. In the Research Station for Horticulture B.V.O., the Works Manager is responsible for the execution of the research programme and

coordinates the day-to-day work with an assistant. In the Costent-park cooperative, all work is done by paid staff and supervised by the Director of the PCS and the Manager of the Experimental Garden for Nursery Stock.

EXPERIMENTAL GARDEN FOR NURSERY STOCK

Our activities are: Container cultivation, container plants, wintering of container plants in small tunnels, and open-ground cultivation.

Each year, new rose cultivars are worked on different rose rootstocks and are assessed for compatibility and growing strength.

The grafting and inoculation demands a high professional capability. They both are very labour intensive activities. The following steps are necessary: preservation of rootstocks and grafting material, breeding, and after-care. This specialisation is of great importance. Breeding of cut- and bush roses is still very popular but even in this sector *in vitro* culture, and culture by cuttings are becoming more important. Nevertheless, much research still has to be done.

Experiment 1: Propagation by root cuttings of *Rosa nitida*.

Root cuttings were tried as a potential system for container production.

Rosa nitida is a low shrub (40 to 60 cm) with small oblong leaves and light pink flowers. It is suitable for hedges and gives a beautiful autumn colour. From a cross between *R. nitida* and *R. rugosa*, a strong grower, *R. × rugotida*, was developed. The leaves are like those of *R. rugosa* but a little smaller. The flowers are pink like those of *R. nitida*. The Darthuiser Nursery introduced in 1971 the 'Dart's Defender', a hybrid of *R. nitida* and *R. rugosa* 'Nansa'. It is a strong grower with purple-red, half-full flowers.

Culture Programme:

14/01/1986	Root cuttings in Jiffy 4's in a frost-free glasshouse.
27/02/1986	First new growth tips visible.
03/06/1986	Potting out in 3 litre bags and 1.6 litre pots (and pinched).
29/10/1986	Pots placed under plastic tunnels.

During production, a few pinches are necessary (the longest shoots were shortened). The growth in 3 litre bags is not significantly better than in 1.6 litre pots. To become a good saleable product, we have to pinch the plants at least one time in the second culture year.

24/02/1987 Pruning of *R. nitida* (second culture year) in pots under plastic.
 15/06/1987 Saleable flowering plants.

Experiment 2. Rootstocks and cultivars.

We are looking for an alternative to *Rosa corymbifera* 'Laxa' as a rootstock because of its susceptibility to nematode infestation.

These rootstock cultivars were used in replicates of 1,400 plants each:

Rosa canina 'Inermis'; *Rosa canina* 'Pfander'; *Rosa canina* 'Pollmer'; *Rosa canina* 'Smith's Ideal'; *Rosa canina* 'Superba'; and *Rosa corymbifera* 'Laxa'.

Plants were delivered on January 29, 1988, and stored at 2 °C until planting on April 27, 1988. Plants were harvested on November 11, 1989. Results are shown in Table 1.

Table 1. Numbers of harvested roses per rootstock and per cultivar in 1989. (second culture year); 1400 plants per rootstock cultivar.

Flowering Cultivar	Rootstock					Total
	<i>R.</i> <i>corymbifera</i>		<i>R.</i> <i>canina</i>			
	'Laxa'	'Inermis'	'Pfander'	'Pollmer'	'Inermis'	
New var. RVS (Euro 92)	72	70	69	62	64	337
New var. RVS 330 rose (Melflor)	74	70	60	56	57	317
'Melglory'	73	70	62	61	57	326
'Queen Elizabeth'	71	69	72	68	71	351
'Wettra'	72	71	64	60	64	331
'Nina Weibull'	79	68	65	67	69	348
'Nicky'	69	69	69	59	69	335
'Kanegem'	72	69	62	66	69	338
'Dame de Coeur'	83	79	73	71	65	371
'Sabine'	88	73	71	67	70	369
'Gravin d'Alcantara'	83	78	66	64	71	362
'Pierrot'	82	72	69	65	69	367
'Joro'	81	73	66	78	61	359
'Joro'	66	69	70	73	78	356
'Reina'	65	85	78	70	72	370
'Nina Weibull'	79	62	69	70	59	339
'Melglory'	77	74	68	69	73	361
'Melglory'	63	80	62	65	75	345
Total	1349	1301	1215	1194	1223	6282

Rosa corymbifera 'Laxa' produced the highest number of saleable roses, with a 96% take.

The experiment was repeated the following year including a new rootstock cultivar, *R.* 'Schmidt's Ideal'. This performed better than *R. corymbifera* 'Laxa' for that year as Table 2 shows.

Table 2. Number of harvested roses per rootstock and per cultivar in 1989 (second culture year). 1200 plants per rootstock cultivar

Flowering Cultivar	Rootstock						Total
	<i>R.</i> <i>corymbifera</i>	<i>R.</i> <i>Schmid's</i>	<i>R.</i> <i>canina.</i>				
	'Laxa'	'Ideal'	'Inernus'	Pfander'	'Pollmer'	'Superba'	
'Euro 92'	68	65	75	64	61	58	391
'Melflor'	78	83	71	72	45	58	407
'Nina Weibull'	60	69	60	63	37	54	343
'Wettra'	52	53	61	59	35	59	319
'Melglory'	42	45	50	51	35	46	269
'Nicky'	52	68	62	61	55	57	355
'Kangegem'	64	63	50	59	52	59	347
'Joro'	61	53	60	65	56	61	356
'Reina'	66	66	53	60	60	62	367
'Queen Elizabeth'	68	74	67	67	65	64	405
'Sabine'	61	64	52	69	67	65	378
'Dame de Coeur'	73	69	54	53	61	65	375
'Gravin d' Ale'	71	72	50	67	58	63	381
Rosa climbing 'Wettra'	66	67	78	59	71	67	408
	882	911	843	869	758	838	5101