

PRODUCTION OF "SIX-WEEK ROSES" IN ROCKWOOL

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Abstract. Miniature roses and most floribunda roses may be produced in six weeks, from cutting until flowering. Three one-internode cuttings are planted directly in a block of rockwool and are put under intermittent mist with bottom heat. The cuttings are treated with growth substance, 500 ppm IBA, and are fertilized right from planting. After 10 to 12 days the cuttings have formed roots, and the mist is gradually removed. After three weeks the cuttings are spaced on benches or beds with sub-irrigation. No pruning is made and, after three weeks in glasshouse, the plants are ready to be sold.

INTRODUCTION

In Denmark the method of propagation of roses by cuttings is well known to most nurserymen. For several reasons, though, this method has not gained a good foothold. Some of the reasons are. the method does not fit in with the running of the nurseries. The nurseries do not have the glasshouse facilities needed. The nurserymen tried to make a traditional rose by propagation by cutting, a rose equalling a budded rose with its demands for quality, but there was a lack of experimental results to tell the nurserymen about methods of production, selection of cultivars and, not in the least, the growth and development of these roses in the consumers' gardens

Roses propagated by cuttings are excellent for container growing, which makes it possible to sell the roses when flowering. To many rose producers it means a new form of selling, which again entails gross production, especially of six-week roses. We have chosen to name roses that can be produced in six weeks — "six-week roses" These roses should not be compared with budded roses. It is a new product, which the consumer may place in the house for some time and then plant in the garden or where he wishes. If the buyer plants this rose in his garden, he may notice that after some time it will appear like a budded rose of the same variety, only that it does not give rootstock suckers.

MATERIALS AND METHODS

All sorts of miniature and most floribunda roses are types well suited for "six-week roses." Tall floribunda varieties and hybrid tea are less suited, being too tall and vigorous. Furthermore, these types require seven to eight weeks, some even more, from cutting to

flowering. Moreover, yellow varieties, with *R. foetida* inheritance, are unsuccessful on their own roots, as their rooting ability is poor and their growth is usually poor also.

“Six-week roses” may be produced throughout the year, except for the coldest and darkest period. This product will be in demand all year, but the month of May will, of course, show the biggest sale. In order to have “six-week roses” ready for sale in the beginning of May, the production must start at the end of March.

In order to have cutting material at this time of year, the mother-plants have to be started in the glasshouse at the beginning of February. The mother-plants should not be given too high a temperature from the beginning. The temperature in the glasshouse is not critical. At a low temperature it will, of course, take longer time before the cuttings can be taken. From a big mother-plant we can get a hundred or more cuttings per plant of miniature roses.

We can use sales plants as mother-plants by starting them in the glasshouse at the beginning of February, as previously mentioned. After five to six weeks we can take cuttings from the plants. A rose which has been cut down will need five weeks to beginning of flowering, dependent on the temperature. Thus we can get excellent sales plants about the first of May from the plants which have been cut down. From a sales plant, originating from three cuttings in one container, we get 15 to 20 cuttings, i.e. about 500 cuttings per square meter of the miniature roses.

The Cuttings. We use softwood, one-node, cuttings. Various types of cuttings for propagation of roses are, among other things, described by Margaret E. Marston (5).

The length of the cuttings varies with the internode length, as we are cutting 0.5 cm over the leaf-bud. To ensure a safe and uniform rooting we use a rooting substance, IBA at a concentration of 500 ppm. The base of the cuttings is dipped 1 cm in the substance after the quick-dip method (4).

Combined Rooting and Growing Substrates and Containers. At the Experiment Station at Hornum we have been working on rooting and growing substrates for container growing of plants. We have endeavoured to find a good inert substrate, and we have succeeded in making the insulation material, rockwool, into a container substrate, meeting most of the requirements we have for a growth substrate (1, 3).

For a short term culture as roses, the rockwool block has no obvious advantages to a good peat moss, except for its cheapness and its labour saving, as we save the filling of the containers. The rockwool block used for six-week roses is 7.5 x 7.5 x 6.5 cm covered with plastic foil on the four sides, uncovered top and bottom. The block is thus growth substrate and container in one, and ready to be planted. It is easy to plant the cuttings in the block, which gives a good support to the cuttings. The block costs nearly the same as an equal-sized plastic container.

The rockwool blocks are placed on the propagation bench under intermittent mist with bottom heat, with a layer of 1 to 2 cm sand for drainage. The blocks are watered with 0.1 per cent Hornum mineral nutrition mixture (2). Three cuttings are placed in each block, and in the course of 10 to 12 days the cuttings will have rooted. Until rooting, the plants are watered daily with 0.05 per cent nutrient solution. After rooting the concentration should be increased to 0.1 per cent, and the mist is gradually removed.

After three weeks the plants are spaced. To get a quality product, the plants should not be placed too close, 15 to 20 cm, according to the size of the cultivar. Nutrient solution (0.1 per cent) should be added each time water is needed. When using mother material of good quality, we have no special problems with fungal diseases, but precaution should be taken to avoid a build-up of mites.

Six weeks after planting the cutting, the roses begin to flower, and the plants are ready for sale. The last days before despatch we must try to harden the roses, as they are often exposed to severe conditions during distribution. Normally, the plants will be sufficiently hardened for planting in the open, if the weather conditions are not too unfavourable for the plants.

DISCUSSION

Our investigations regarding production of "six-week roses" in rockwool have not yet been finished. Above is given an example of how to make a nursery product in six weeks. The method described may be adapted to the production facilities of various nurseries; for instance the propagation process itself may take place under plastic cover (instead of intermittent mist), various growth substrates and containers may be used.

A short termed culture will, in most cases, be the most profitable. The basis for a short-term culture of roses is: good cutting material, optimal growing conditions, no replanting, no pruning.

The results obtained so far have given more than 95 percent rooting and bursting, with a very uniform product as a result. The methods are so promising, that everything points in the direction of an increasing production of this new product in future.

LITERATURE CITED¹

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 5. Marston, M. E. 1972. Recent progress in rose propagation. *J. Royal Hort. Soc.* 97:121-126.
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¹**Editorial Note:** References 1, 2 and 3 above refer to 4-page advisory leaflets without English summaries. Reference 4 — “Experiments with the propagation of polyantha and hybrid tea roses by softwood cuttings” has a 1¼ page English summary; the address of the Research Station is Statens Planteavlkontor, Rolighedsvej 26, 1958 Copenhagen V, Denmark.