

Clematis Production In Poland

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INTRODUCTION

The first clematis species to be grown in Poland were *Clematis vitalba*, *C. recta*, and *C. alpina*, which are all Polish native plants. Other species and cultivars have been produced in Poland since the 19th century.

Two Polish breeders working since the mid 1960s, Wladyslaw Noll and Brother Stefan Franczak, have bred more than 50 valuable cultivars of clematis, of which more than 20 have gained wide recognition internationally (a list at the end of this paper details the most valuable of their cultivars).

Despite the international success of these plants, the clematis was never very popular in Poland and it was not widely grown commercially. By the late 1980s, less than 100,000 clematis were produced annually, and only some 20 or 30 cultivars grown.

With the political and economic changes that have taken place in Poland since the early 1990s, nursery production has developed dramatically, and clematis production has increased. Currently, more than 100 species and cultivars of clematis are grown commercially. Approximately 800,000 clematis plants are sold annually, of these about half are container grown and the rest are rooted cuttings for export. More than 60% of all Polish clematis are produced at the Clematis Container Nursery in Pruszkow, 20 km from Warsaw, the rest are produced by several nurseries scattered across Poland, growing between 5 and 15 thousand plants a year each.

MARKETING

Clematis Container Nursery has carried out a wide-scale promotion of these plants, including illustrated magazine articles, television show appearances, distribution of colourful catalogues, posters, and information leaflets, the aim being to make information available to garden lovers so that they will learn about the different kinds of clematis and the many ways to cultivate them. This has greatly increased the interest in these plants and people have begun to ask for particular cultivars.

The most popular sellers are the large-flowered clematis, which include both the standard type, for example: 'The President', 'Doctor Ruppel', 'Rouge Cardinal', 'Ernest Markham', 'Gipsy Queen', 'Marie Boisselot' (syn. 'Madame le Coultre'), and 'Jackmanii', as well as the Polish cultivars. But the so-called "botanical cultivars", with smaller flowers, are becoming increasingly popular, for example *C. alpina* 'Frances Ravis', 'Pamela Jackman', and 'Ruby'; and *C. macropetala* 'Jan Lindmark', and 'Markham's Pink'. All can withstand frost in the Polish climate just like the *C. viticella* and *C. texensis* cultivars. *Clematis montana* cultivars are also produced in Poland, but they can be raised only in regions with a temperate climate. In colder winters they freeze to the level of the snow and will not bloom the following spring.

Recently there has been increased interest in perennial clematis, for example *C. integrifolia* and cultivars, and *C. 'Arabella'* and 'Aljonushka'. These clematis, which are characterised by small flowers, make up approximately 10% of production in Poland.

PROPAGATION AND CULTIVATION

Only *C. vitalba* and, in some nurseries, *C. viticella*, *C. recta*, and *C. tangutica*, are propagated from seeds. The basic method of propagation for all species and cultivars in Poland is softwood cuttings. Grafting — the dominant method of production 30 years ago — is no longer used.

At the Clematis Container Nursery clematis cuttings are stuck from the beginning of May to the first half of August and placed in polytunnels for rooting. In May and the beginning of June the cuttings are taken from stock plants growing in tunnels, later, from plants growing outside.

Single-node cuttings, with the base treated with hormone rooting powder (0.1% NAA) are used. They are placed in plastic cases measuring 40 cm × 60 cm × 12 cm, filled with a mixture of peat moss and perlite (1 : 1, v/v) layered on the surface with a 2-mm layer of sand. Once they are watered, the cases with the cuttings are sealed with a milky plastic film wrap (0.02 mm thickness). When the cuttings root, they are hardened off with the film removed. The cuttings are kept in the tunnels until November, then removed, cleaned, graded, and tied up in bundles of 25. The bundles are gently sprinkled with moist peat moss, placed in plastic cases and put in a cold store at a temperature between +2C and -2C.

Potting begins in March. The stronger cuttings, which have the most (more than 3) or thickest roots are planted in 2-litre pots (14 cm). Weaker cuttings are planted in 0.5-litre pots (9 cm). The medium is mixed on the nursery and consists of peat moss, bark, styrofoam, and sand (5 : 3 : 1 : 1, by volume) with an added 2 kg of dolomitic limestone, 2 kg of chalk, and 2 kg of Osmocote 5-6M per m³. The 2-litre-potted plants are placed outside, with 90-cm bamboo canes. When newly grown shoots reach between 40 to 90 cm, they are cut at the second node. From the buds grow 2 or 3 shoots, which are tied 2 to 4 times to the cane, growing in the course of 6 weeks to the height of 90 cm. They are then ready for sale, with colour labels with the picture of the plant and the name of the cultivar, packaged into wooden cases of 25 plants (cases measure 40 cm × 60 cm × 25 cm). Approximately 60% of container-grown clematis are sold during summer and autumn. The rest of the plants are overwintered and sold in the spring.

Throughout the winter the majority of the plants are kept in double-skinned tunnels. Preparation for overwintering begins in November. Plants which will be overwintered in unheated tunnels receive a 2-cm mulch of pine bark sprinkled onto the surface of the growing medium in the containers. More sensitive cultivars are overwintered in tunnels heated by gas burners. These plants are not mulched. In the heated tunnels the temperature is maintained at a minimum -4C. Clematis which cannot be placed in the tunnels, because of lack of space, are overwintered outside on a well drained, sheltered field, with a 5-cm layer of pine bark mulch covering the containers.

Clematis in 0.5-litre containers are prepared in the same manner but using shorter bamboo canes, 40 cm long and sold packaged in plastic bags with large colourful tags, or in colourful cardboard packages, or as a set of 24 plants in 6 colours in one box.

Table 1. The most important recent Polish clematis cultivars.

- 'Niobe' (deep ruby red flowers)
- 'Général Sikorski' (blue flowers)
- 'Błękitny Anioł' (flowers light blue with very fine silky texture, ruffled sepals with curled edges, very freely blooming)
- 'Kardynał Wyszyński' (glowing crimson flowers, very freely blooming)
- 'Warszawska Nike' (flowers dark red velvet violet with gold stamens)
- 'Polish Spirit' (viticella group, velvety flowers, rich purple-blue, extremely freely blooming, nice, small, dark green leaves)
- 'Jan Paweł II' (flowers creamy white with pink trails, long blooming time, a strong growing cultivar)
- 'Fryderyk Chopin' (flowers steel blue with ruffled sepals)
- 'Kacper' (very large, intensive violet flowers)
- 'Monte Cassino' (wine red velvet flowers)
- 'Westerplatte' (rich red almost fluorescent flowers)
- 'Matka Urszula Ledochowska' (flowers pearly, bright, white with a translucent satin sheen on the surface, one of the earliest blooming cultivars)
- 'Emilia Plater' (a member of the viticella group, very healthy, strong growing and freely blooming)