

## Nursery Production In Schleswig-Holstein, Northern Germany

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### INTRODUCTION

The history of hardy ornamental nursery stock production in Schleswig-Holstein goes back 200 years, when a local land owner, Casper Voght, invited James Booth, a Scotsman, to come and start a nursery north of Hamburg.

The area is now the largest for nursery stock production in Europe. Five hundred and fifty-three nurseries, covering a total of 4918 ha, are producing a wide range of forest liners, potted liners, fruit trees, trees, shrubs, conifers, understocks, and perennials. Most nurseries nowadays are located around the town of Pinneberg, 20 km north of Hamburg, the heart of the growing region. The average size of a nursery is about 10 ha. Nearly all of them are family owned.

The climate of the area is mild in winter and cool during the summer season, with a high humidity and quite a lot of natural rainfall. Temperatures can go down to -25C once in every 8 to 10 years but frost damage outside can occur up to the middle of May so plants up to about hardiness Zone 6 do well in this region. The soils are sandy with a high portion of organic matter (3% to 5%) and a pH around 5 to 5.5, which makes them very good for growing seedlings.

**Table 1.** Nursery production in Schleswig-Holstein in numbers.

	Schleswig-Holstein	Germany
Number of nurseries	553	4085
Total area	4918 ha	27134 ha
Ornamentals	2085 ha	13990 ha
Fruit trees	122 ha	1577 ha
Forest plants	1384 ha	4073 ha

### CROPPING PATTERNS

**Forestry Stock.** One of the most important products of the region is bareroot forest plants grown from seed of different German and international seed sources. Clonal selections of spruce and other species are available but not widely used yet. Since 1990 there has been a big change in production from conifers to broadleaf species. Before 1990 the production split was approximately 80% conifers — now it is 80% broadleaf. With this change new technology for seed treatment and storage, especially for beech and oak, was developed so that seedling production could be maintained even during poor seed-crop years.

Conifers are broadcast sown and transplanted the following year. Broadleaf species are mainly sown in rows with a distance of 25 cm between the rows, normally five rows in a bed. Summer transplanting is possible with conifers and broadleaf trees because of the humid climate. Nearly 100% of the production is shipped as bareroot material, sometimes in paper bags.

**Roses.** Roses continue to be propagated the traditional way by budding as a 2-year crop on a seed-grown understock. Selections of *Rosa canina*, such as 'Inermis', *R. multiflora* 'Koopmann 2', and — most commonly — *R. corymbifera* 'Laxa' are used to avoid suckering. Propagation by cuttings is becoming increasingly popular for groundcover roses. Bareroot accounts for 90% of rose production sold in the region.

**Understocks.** Clonal understocks, such as the Malling M types for apple, or 'Colt' and GISELA™ for cherries, are produced traditionally from stool layering but increasingly understocks are propagated by tissue culture. For other species, 1- or 2-year-old seedlings are used. Approximately 90% of total German production of rose understocks, nearly 28 million plants, are produced in the Pinneberg region annually.

**Liners.** Potted and bareroot liners are one of the specialities of the Pinneberg region. Hardwood cuttings are just planted in the field in spring without any further protection. Softwood cuttings are propagated during the growing season either under mist or fog systems. The standard pot size for liners is a 8- or 9-cm pot.

**Trees.** Shade, weeping, branched, flowering trees, and multiple-stemmed forms are grown from many species up to any size, but mainly 16 to 18, 18 to 20, 20 to 25, and 25 to 30 cm in calliper. Whips are bought in from other European countries, mainly the Netherlands.

**Shrubs.** Many species are grown as a 2-year crop, planted in spring, pruned sharply during the next winter season and grown on for another year. The result is a very well branched shrub with a nice root system.

**Container Plants.** Container production started about 30 years ago. Mainly 2-, 3-, 5-, and 7.5-litre plastic pots are being used. Plants are grown in peat, or in media which include other substances such as coir or bark, to reduce the amount of peat, together with controlled-release fertiliser. The whole range of ornamental plants, large ornamental landscape trees, and even forest plants are available for summer or spring and autumn shipping.

## WHOLESALING

Because of the wide range of plants produced in the area it is easy for wholesale growers to quickly put together complete orders. A modern computerised purchasing system was established for local growers in 1997. About 167 growers around Pinneberg are linked together by a computer system which holds information on stocks of all plant material that is available during the season and it is able to automatically handle stock control on the participating nurseries.

Plants produced by the nurseries in the area are sold all over Europe but the Scandinavian market is traditionally important. There is also a big exchange market between Pinneberg and the other major German growing regions of Weser-Ems and Rheinland; and also with Europe's other major nursery stock areas of Boskoop and Zundert in The Netherlands, Pistoia in Italy, and Angers in France.