

## Perennial Production in Europe: An Overview

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### INTRODUCTION

The popularity of herbaceous perennials has affected all parts of the ornamental plant industry in the U.S. While perennials were formerly produced only by a small group of specialty growers, today bedding plant and even “woody” nurseries are propagating and growing herbaceous perennials. While domestic production has increased, growers and retailers in the U.S. still depend on seeds, plants, and ideas imported from Europe.

### NETHERLANDS

When we think of perennials from Europe, most people think of bulbs from the Netherlands. Even though bulbs still constitute a huge Dutch export market, perennial production, particularly for the export market, is increasing. Much of this increase is being shipped to the U.S. Even though we are producing more and more perennials in this country, the demand still outpaces the supply.

Much of Holland is below sea level. Large parts of the country are drained areas, called polders. Boskoop, located about 30 miles south west of Amsterdam is located in one of these polders and has been home to several thousand small, “traditional” Dutch nurseries. *The production areas surrounding Boskoop are characterized by small fields, usually a few acres in size, and are often surrounded by canals, so the water table is less than 3 ft below the surface. Although the peat soils are deep, sometimes as deep as 40 ft, they are not well adapted to heavy machinery, so most nurseries specialize in producing plants in small 9- and 11-cm pots which are shipped to local or regional markets. Production of bareroot plants is usually limited to specialty items that are produced in relatively low numbers. Due to space and soil limitations in the Boskoop area, production is shifting to the bulb-growing areas near Lisse, west of Amsterdam, where fields are larger and sandy-textured soils can support heavy harvesting machinery. In fact, several nurseries which formerly grew bulbs have recently shifted their entire production to growing bareroot perennials for export to the U.S.*

In order to ship bareroot plants into the U.S., they must be washed so that all soil is removed, then inspected for pests. To accomplish this the U.S.D.A. has found it more efficient to establish inspection stations in the Netherlands, rather than do all inspections at ports of entry into the U.S.

Not all plants produced in Holland can be shipped to the U.S. Several are on banned lists, while others are poorly adapted to the storage and other treatments required before they are shipped. For the majority, once plants are washed they are placed in storage for a short time, then they must be heat treated to kill pests, particularly root knot nematodes. Heat treatment is tricky because plants are placed in large cookers and heated nearly to the plant killing temperature in order to kill the offending pest. While many plants withstand these temperatures, others may be

killed in the process. The Dutch government, in cooperation with grower groups, has recently funded an experiment to evaluate the effects of temperature and heating time in relation to when plants are placed into storage. The preliminary field results that I saw clearly indicated that some plants are heat intolerant, especially when they have not been properly acclimated to storage conditions. Further, my personal observations of plants that have been shipped to the U.S. also indicated that, if heat is not closely controlled, plants can be severely damaged or killed outright.

Once plants have been lifted, they are washed, heat treated, and inspected before being put back into storage to await shipment to the U.S. The perennial shipping season begins in early January. Plants are placed in large containers where temperatures are regulated and recorded. Once they arrive at the U.S. port of entry, shipments are broken down and shipped either directly to growers or to distributor warehouses for shipment at times when they can be potted up directly and placed outside. Some air freight shipping continues well into the spring for specialty items or to make up for shortages.

The Dutch are aggressive traders, a survival mechanism. The country is about the size of Vermont, but has a population of more than 18 million. We depend on them for standard bareroot items as well as new perennials for introduction into the American market. The Dutch government works hand in hand with the growers to develop new plants and ways to produce them more efficiently. Dutch nurserymen travel extensively, especially to the U.S., both to sell their plants and to look for new ones. They participate in trade shows, garden shows like Floriade, and industry or government sponsored and maintained trial gardens.

## GERMANY

While the Dutch are the traders, Germany is the economic powerhouse of Europe. With an affluent population of about 80 million and a keen interest in gardening and their environment, Germans are great consumers of plants, especially perennials. Production from German nurseries is also in square 9- and 11-cm pots, but almost their entire production is sold domestically. In fact, the Dutch are such efficient shippers that if German nurseries want to ship plants to the U.S., they do so through the Dutch!!

Germany has had some outstanding plant breeders and many of our new introductions originate in Germany. For example, Georg Arends and astilbes, Ernst Pagels and salvias, Karl Foerster and grasses, Heinz Klose and peonies, to name just a few. In addition, the Jelitto and Benary seed companies produce much of the high-quality seed used in Europe as well as the U.S. Several modern U.S. gardening trends also originate in Germany; ornamental grasses, the use of water plants, and even the display of perennials is much more ecologically compatible than in American garden centers. In Germany, perennials are classified and displayed in groups according to the ecological niche they occupy in nature. Information like this might go a long way toward softening the shrill cries of the native plant advocates in this country. Indeed, many plants probably would not be "thugs" if they were planted in habitats that more closely matched their native ones.

German nurseries are as technologically advanced as they are neat. Only in Germany have I seen employees vacuuming up leaves that dropped into the pot. Reducing water contamination and pollution also receives a great deal of attention. Modern concepts of greenhouse recirculating irrigation systems and fertilizer



management are being applied to their outdoor perennial production. Further, German pot manufacturers are trying, with some success, to introduce paper pots to perennial growers. Soon, nurseries will be required by law to accept used plastic pots back to their nurseries. They would much prefer to plant the pot with the plant. Research has focused on developing fiber binding agents so pots will hold up long enough to produce the plant, yet will disintegrate when the pot is placed into the landscape.

## DENMARK

To the north and bordering on Germany is Denmark, where I had the privilege to live during the Winter of 1995-96. If the Dutch are noted for field-grown perennials, the Danes are known for their potted plants. Even though they grow relatively few taxa, they grow millions of them. Plants like *Asters*, *Penstemon*, *Gypsophila*, *Platycodon*, *Astilbe*, *Coreopsis*, *Armeria*, and *Lythrum* are just a few. However, the herbaceous perennial crop that they grow in the greatest numbers is *Campanula carpatica*, and the blue selections are especially popular. Campanulas are propagated in greenhouses by either seed or division, then potted into 11-cm pots and raised in outdoor nursery areas. They remain outdoors where they are naturally cooled. Then, beginning in late November, they are brought into the greenhouse, trimmed, and forced under HID lights. More than 5 million of these lovely perennials are produced each year, and the majority are sold in Germany.

Recently, two new fully double *Campanula carpatica* cultivars have been introduced in Denmark. Key to this introduction has been the cooperation between industry and government research scientists. For some time the nurseries Thorplund and Petersminde, leaders in *Campanula* production, had noticed that some *C. carpatica* were partly double. Armed with this information they went to the pot plant research station at Aarslev on the island of Fyn. Here plant breeder Kirsten Brandt and her colleagues developed two cultivars, one white and one blue, that were fully double. Since they require asexual propagation, crop production times are easier to predict and these plants can be more easily legally protected. Negotiations are presently under way to introduce these perennials into the American market.

In summary, Europeans continue to have a strong influence on the herbaceous perennial market in the U.S. While we benefit directly from imported plants, American nurserymen in increasing numbers are traveling to Europe to develop contacts, to observe new methods, and to find those new gems to bring back and enhance their inventories.