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## Carnation Growing in Finland

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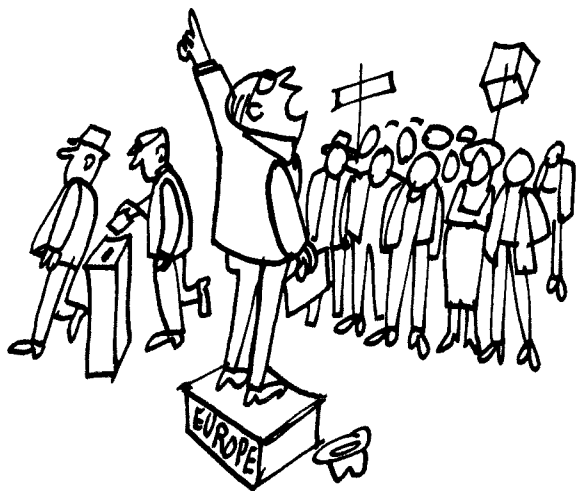
Finland, along with Norway and Sweden, comprise the northernmost commercial flower growing area in the world. Helsinki, on the south coast of Finland, is about the same latitude as Anchorage, Alaska.

There are about 150 acres of glass in Finland for all crops including cucumbers and tomatoes. Most of this glass has been built since World War II, with about half of it put up in the past five years. Most greenhouse businesses are small, ranging from 5000 to 25,000 sq. ft. Around 25 to 30 acres of the glass area produces carnations. Finland produces about 20 million carnation blooms each year. Carnation growers and most other glasshouses are located along the south coastal area.

Finnish flower growers are protected by high tariffs so relatively high prices for flowers are the rule. They produce mostly for home consumption, exporting some carnations to Moscow, where practically no greenhouse flowers are grown. The Finns have four months of good market in the fall to Christmas, and three months or more of good prices from March to June 1. August is also a good marketing period most years. The big problem for carnation growers is to come in with crops in both good marketing periods.

Flower growing has terrific disadvantages this far north, especially during the winter months. Days are only four or five hours long and overcast days seem more like twilight. This low light and extremely short days make timing of carnations difficult. Summer days are extra long, hence growth is very fast from May to September. As an example, the return from an October crop is not until the following July. A cutting planted February 1, and pinched once will bloom as soon as a 4-inch break left below a flower cut on October 1.

Bengt Gripenberg, one of Finland's leading carnation growers, does considerable experimentation in his modern range at Gripans, Ingå. The chart shows data which he collected by tagging and measuring breaks at various times of the year. Note that when the following were observed and



Carnation Timing Data From Finland

Date of observation	Time of flowering			
	Bud diameter	Bud diameter	Shoot length	Shoot length
	1/2 inch	3/16 inch	12 inches	6 inches
Jan. 1	Apr. 10	May 3	June 16	June 24
Jan. 15	Apr. 14	May 3	June 16	June 25
Feb. 1	Apr. 16	May 6	June 16	June 25
Feb. 15	Apr. 18	May 9	June 18	June 26
Mar. 1	Apr. 22	May 12	June 18	June 26
Mar. 15	Apr. 26	May 15	June 18	June 28
Apr. 1	May 6	May 28	June 20	June 28
Apr. 15	May 16	May 30	June 20	June 30
May 1	May 30	June 6	July 5	July 12
May 15	June 5	June 15	July 15	Aug. 12
June 1	June 17	June 30	July 30	Aug. 24
June 15	July 2	July 10	Aug. 12	Sept. 5
July 1	July 17	July 27	Aug. 30	Oct. 15
July 15	Aug. 1	Aug. 10	Sept. 15	Jan. 10
Aug. 1	Aug. 22	Sept. 1	Nov. 20	Mar. 25
Aug. 15	Sept. 5	Sept. 20	Dec. 25	May 15
Sept. 1	Oct. 10	Nov. 20	Jan. 10	May 30
Sept. 15	Oct. 22	Jan. 15	May 10	June 15
Oct. 1	Dec. 4	Mar. 20	May 15	June 15
Oct. 15	Feb. 28	Apr. 2	June 2	June 18
Nov. 1	Mar. 10	Apr. 18	June 3	June 18
Nov. 15	Mar. 22	Apr. 24	June 13	June 20
Dec. 1	Apr. 1	May 2	June 15	June 20
Dec. 15	Apr. 4	May 3	June 16	June 22

Source- CARNATION NEWS, Pub. by K. Stormly Hansen, Copenhagen.

tagged on June 15: a bud  $\frac{1}{2}$  inch in diameter flowered July 2; a bud  $\frac{3}{16}$  inch in diameter flowered July 10; a shoot 12 inches long (no bud visible) flowered August 12; and a shoot 6 inches long flowered on September 5. This particular observation illustrates the fast growth in summer. Note also the extremely slow growth in winter brought out by observations made after mid-September. A shoot 6 inches long tagged any time from September 15 to April 15 will flower the last two weeks in June. A bud with  $\frac{3}{16}$  inch diameter requires 25 days to flower after June 15, and 170 days to flower from October 1.

Gripenberg has also tried all sorts of spacing experiments. In his tests he has planted 30, 45, 60, 75, and 90 plants per square meter (1 m<sup>2</sup> is approximately 10 sq. ft.). The normal spacing used on his place is 5 to 7 plants per ft<sup>2</sup>.

Some flowering of unpinched cuttings is being tried with the usual planting

density of 100/m<sup>2</sup>, or 10/ft<sup>2</sup>. Cuttings planted December 26, grown unpinched, flowered June 10-15, with high quality flowers. There has been a great difference in the performance of several Sim sports, however. Derby Sim, a strong growing red, seems well adapted to this method of growing. Such a planting density and schedule will pay off handsomely, if the flowers hit a high market, as is sometimes the case in Finland and Sweden. In order to grow these plants on for a second crop, the number of breaks must be reduced as unpinched plants break heavily.

In carrying plants into the second year, some growers cut the plants back to a high level in order to time crops for the good fall market. Most growers cut flowers on through the summer using some thinning either by cutting out parts of plants or by removal of every third row. In cutting back plants, May 10 has been found to be the best date. May 20 is too late to cut back and get a fall return. Everything that will flower in May is left, while the rest of the plant is cut back.

Soil heating has been used freely and to advantage on cucumbers in Finland. Both electric cable and hot water circulated through polyethylene pipes are being tried by Gripenberg on his carnations. He believes that soil heating gives him better yields and helps the quality and stem strength especially in late winter and early spring.

The soils seen most in greenhouses were sandy silts containing little clay. Boron hunger on carnations was not uncom-

mon. Virus or other scorch symptoms or fleckings were common also. The long days and high amount of summer light seem to accent these foliage symptoms.

Finland did not start with the European Common Market countries, but will probably join with Scandanavia and the rest of the Outer Seven in order to protect their markets. Tariffs on flowers are not likely to be changed by any of the European Countries for a good many years, however.