

Edited by Joe J. Hanan

research bulletin

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ANOTHER LOOK AT DUTCH GREENHOUSE PRODUCTION

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Most Dutch carnation growers are not unlike any good American producer; they worry about yield, timing, quality, the market price, and borrow from the bank. During the Third International Symposium on Carnations, held near Aalsmeer, Holland, in May, 1987, there were several opportunities to visit greenhouse operations of carnations, gerbera, peppers, geraniums, hybrid lilies, and a number of other crops. Visits made as part of the conference tours, and others in the five days following the meetings, are summarized.

Carnation Production

One of the most interesting carnation growers was Jack van Schie of Hartevelddaan. He had 87,000 ft² under glass (8700m²), half in slab rockwool and half still in soil. He grew only three standard and three spray cultivars. A computer operated the greenhouse, which included watering based on solar radiation (rockwool only), opening and closing of shade screens and vents, production records, CO₂ fertilization, and employee requirements by the month and production periods. His production of carnations, in white plastic wrapped 10 cm x 10 cm x 1 meter rockwool slabs, placed on a white film plastic covered ground area, was awesome.

This young Dutch carnation grower showed that he was aggressive and willing to try ideas. He had planted three Mediterranean spray carnation cultivars on 8 January 1986 and grew them at 17°C (63°F) night and day and, the first week of February, raised the temperature to 20°C (68°F) night and day. His carnations were ready to come into flower in late May and early June, when the price was high, instead of June and July, when most of the other growers start cutting.

Jack, when negotiating a loan with the bank, predicted he would make 20% profit and pay off his loan in one year. He only made 10% profit, but still expects to make 20% when he converts totally to rockwool. Even though he did not meet his expectations, he was able to build a new home next to the greenhouses.

His production for the two acres of greenhouse was 240 stems per square meter (24 per sq.ft.) of ground area in 1986. (On a 66% bench basis, this would have to equal about 32 stems per ft².)

The average price paid by the auction for all carnations in 1986 was about 15.5 U.S. cents, and Jack obtained an average price of 17.5 cents for all carnations sold from his range. His method of scheduling his production to obtain the best market prices was giving him the edge.

Jack said his cost of getting flowers to the auction was about 5 U.S. cents per sq.ft. of greenhouse, or perhaps 2% of his costs.

Some more points of interest:

Employees — 4-½ during the winter and 15 high school students during the summer

Soil Steaming — done with a vacuum system. Two 4-inch pvc drainage pipes were installed about 25 to 27 inches deep and 3.5 ft. apart. A plastic sheet is spread on top of the ground and steam introduced under it. A gasoline operated vacuum pump is attached to the underground pipes and left in operation for 6 hours. The vacuum pulls the steam injected under the plastic through the soil to the pipes. A drainage pipe was installed at 3 ft. deep to control sub soil water.

Harvesting Carnations — records showed that 100 carnations can be cut in 12 minutes and sleeved in packages of 20 in 6 to 13 minutes depending on the variety. The computer year is divided into 30 periods for labor. Harvest, disbud, and planting labor can be predicted and planned from previous years' records for any of the labor periods.

A second carnation grower provided more information regarding operations:

1. Only five varieties were grown, and they were mechanically bunched for sleeving.
2. The average production of spray carnations in Holland is 20 stems per sq.ft. of greenhouse (not bench). A house with 66% bench would have approximately 27 stems per ft².
3. The average price of a glasshouse structure in Holland is about \$3.25 per ft² (he did not indicate if this was a subsidized price).
4. Steam heating is about \$1.00 per ft², without boiler.

Geranium Production

The M.C.M. Enthoven Company of Poeldijk, Holland, grows geraniums. Peter Enthoven, the son, escorted me through 80,000 ft² glass range. (He also had a 330,000 ft² in another part of the country.) From August through May, they propagate and sell "millions" of cuttings. They root 80 cuttings in a flat and sell them for 16.5 to 25 U.S. cents, depending on the variety. A 4-inch paper pot is used for spring sales and sell wholesale at 50 U.S. cents. Their mix for both propagation and production was 5% Martha Washington, 25-30% Ivy types, and the remaining percentage, the standard pelargoniums.

The most striking observation at this facility was the lack of automation other than a flat filler. No moveable benches were employed; however, racks designed to transport orders could be easily rolled on and off trucks. Five people operated the 80,000 ft² facility during the slow time, and up to 35 were employed during the rush periods.

Gerbera Production

John Maat and his family operated 80,000 ft² of glass greenhouse on a little over 2 acres of land. All gerbera were grown in the ground at a density of 6.8 plants per 10 ft². Only 6 varieties were grown, and production ranged from 10 to 25 flowers per ft². The 10 stem bunches were sold through the auction for an average price of \$2.25 to \$4.50 U.S. per bunch, depending on the variety and season. His seconds were bunched and sold directly to small stores and street vendors.

Pepper Production

Red bell peppers are not an "in" vegetable crop in America and definitely not a greenhouse product. Jan Strik, of Honselersdyk, Holland, grows 29,000 pepper plants on rockwool slabs in a 11,000 m² (110,000 ft²) glasshouse range. White plastic is spread on the ground (just as they do for carnation production in rockwool), then he places the rockwool slabs, installs the drip irrigation system, covers the blocks with white plastic, cuts holes for the pepper plants, strings the plants, and then sits back and waits for the fruit to ripen. The following figures were obtained from Jan:

1. Total yield of 29,000 plants was 440,000 U.S. pounds for 1986.
2. Average 1986 price was 4.0 df/kilo (91 U.S. cents per pound).
3. In mid-May, he was obtaining 98 cents per pound.

Most of the 220 tons of red bell peppers were shipped to England and several European countries, and everything went through the auction. Jan and his father did most of the picking, and two people ran the grading machine and boxed them. It was interesting to learn that the peppers must be red to be marketable.

Miscellaneous Crop Observations

There is a proverb, "when in Rome, do as the Romans do," and, therefore, the adage was applied to Holland. When one rides a bicycle through the streets of the Westlands, he sees first-hand what is happening in the greenhouse industry and has immediate rapport with the growers.

One retired greenhouse owner continued to grow and harvest table grapes in a portion of his range and sold them through the auction. One grapevine was 77 years old. He leased the remaining portion of the range to a man that grew cut lilies, using a rotation plan.

Would you expect to see one or two acres of birds-of-paradise growing in Holland — they are there, along with all of the cut flowers and pot plants they commonly promote, plus a host of vegetables. Poorly managed greenhouses were observed, as were the new automated types you read about. Most glass houses had three things in common . . . they were naturally cooled, had moveable shade screens, and the roofs were whitewashed.

After touring Holland once again, I am more than ever convinced that "anything they can grow, we can grow better," but I am also sure the key to accomplishing such a task is to be able to market the products, and the present American marketing system is in need of an overhaul. Until some type of organizational system is accomplished, either regionally or nationally, the American grower in general will continue to flounder and not meet the imports head-on.

PROFESSIONAL MEETINGS

PLANT PROPAGATION
September 3, 1987, Thursday
and
PLANT GROWTH REGULATORS
October 1, 1987, Thursday

Adams County Fairgrounds
9755 Henderson Rd., Brighton

Dr. C.W. Lee

7 to 9 p.m.

Registration Fee: \$3.00



Figure 1. A range of cut hybrid lilies in a leased, older Poeldijk glasshouse. No shade cloth and little whitewash. No caging and only a narrow central walk. The grower expects to harvest a complete house at one cutting. Only the Dutch marketing system could handle such volume.



Figure 2. Rockwool slab grown peppers on white poly ground cover. Heating pipes on ground are used as rails for harvesting cart which, when filled, is dumped into a trailer at the main greenhouse aisle.

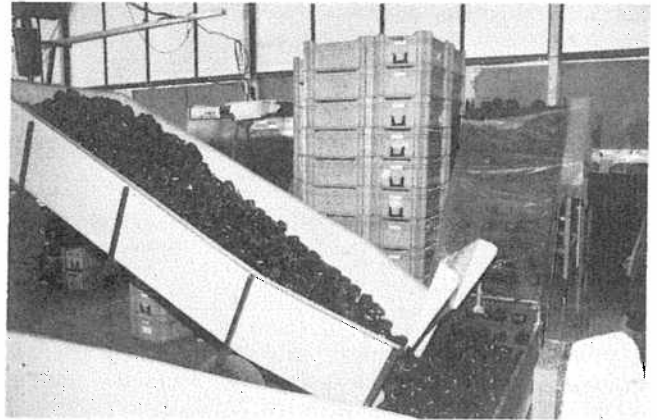


Figure 3. Trailer load of peppers being dumped onto a conveyor, which takes them to an automatic sorter and the packing area.



Figure 4. One has not been to Holland unless they have been to the Keukenhof Gardens. Their 70 acres of outdoor display gardens and approximately 3 acres of greenhouse displays are breathtaking. The European hybrid lily show (about 1 acre of greenhouse) was adjacent to this display of late flowering tulips. The gardens are only open from April through late May.