Blueprint for major labor saving

by Vic Ball

The subject of our November foray into cost-efficient production will be cut roses, and the best way, we feel, to get into the "state of the art," is to talk about an efficient, modern grower. Four Seasons Roses, for instance.

Four Seasons—the Roberts

To us, it was a fascinating show.

Located at Litchfield, IL (south of Springfield), it's not a large operation. Only 45,000 square feet. But Jim and Susan Roberts are doing it all just about right:

- A serious dedication to quality—confirmed by comments from several of their retail shop customers.
- About as mechanized as roses can be today.
- Specialized—it's all roses!
- Four Seasons' rose production is sold through their own wholesale outlet in combination with a full range of other cuts.
- Price—"A chunk above our competitors." And, they get it—because of quality, honest grading. Said one retailer, "I pay more, but I know there will be 25 good roses in the pack."

Where it all comes from tells you a lot about the Roberts. Jim "apprenticed" as a rose grower at Elliots, in Madbury, NH, under Jim Colprit. About 1974, he and Susan bought a then-deteriorated range of old, "Pana" rose glass. Rose sales totaled about $100,000 that year. By 1982, sales totalled more than $425,000. Sales per square foot of bench space for 1982 were over $16. For wholesale roses in Illinois!!! How all this was accomplished is really our subject today.

The structures are all old steel-frame glass houses. Early in the game, Jim removed the old bars, put up new 34″ spaced bars, and then glazed with 34″ × 36″ glass. Lots more precious winter light, and a lot less fuel waste. The glass is all tempered, so, "You can walk on it."

Irrigation is all done by nozzles set just inside the side boards. And the whole range can be (and is) irrigated from a central control panel. "You get to know which beds to water when." Feeding is done through the same nozzles. Says Jim, "Lots of rose benches are automatic, but they can't be controlled by a central panel. Believe it or not."

Atmospheric control for all heating, cooling, and humidity is again automatic. This time, Wadsworth Control, George Dean. Heat is distributed by hot water unit heaters. The two gas-fired boilers are turned on and off as needed, again, automatically. Boiler efficiency, by the way, is 84%.

Humidity is notoriously critical for roses. A moist atmosphere by late afternoon followed by sudden cooling as the sun sets, can spell moisture on foliage—and such joys as botrytis and black spot. The answer at Four Seasons: a humidistat programmed to apply heat and air when humidity reaches troublesome levels. "Heat and air" means unit heaters go on, with low-speed, short-time fan operation. Out goes humidity.

Mechanical grading and sorting of roses according to stem length, has for years been a laborious and costly job. Today, this can be done by mechanical graders, and many growers have them. No big news here—except that, like the Vanderlugts in pot mums in Toronto, Jim raised the money, and has a grader on the job.

The attendant simply feeds stems in one at a time into the individual troughs. Mechanical fingers measure stem length, and drop the stems into a trough below—into piles of 18″/22″, 22″/26″, etc. If a stem has a crooked, or bad base, it can be inserted in such a way that the bad part will be cut off, and the rose then graded accordingly.

Cost: "around $10,000." Payoff is "one year maximum—with the grader we just do a better job all over. Especially during busy periods, it saves a lot of labor."

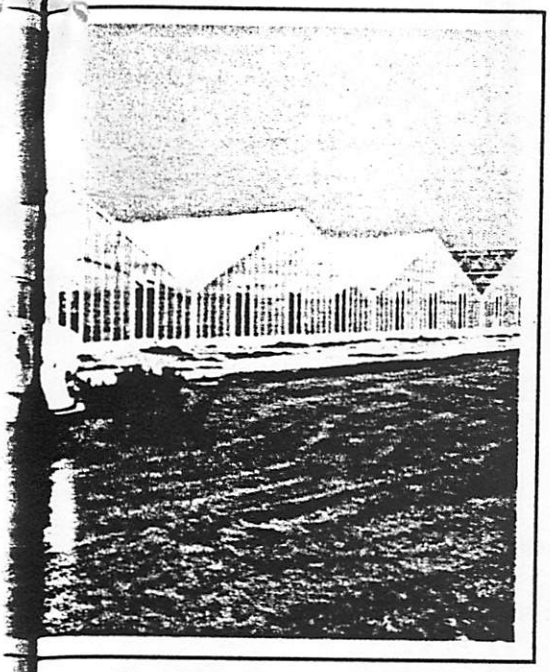
Stem stripper/bunch tier is, again, not new, but it's in place and being used. A tier, with an elastic cord holds a 4″ band of waterproof, heavy paper around the base of the bunch so you can grab the bunch without grabbing thorns. It also ties the top "roll" together. Makes a fine pack.

The carnation counter is another handy labor-saver. The operator lays the stems into a 12″ × 12″ box, and, as the stems are set inside, they pass in front of an electric eye which counts them off up to 25. When there are 25 inside, a light goes off, the counter "beeps," and the operator can bunch the carnations.

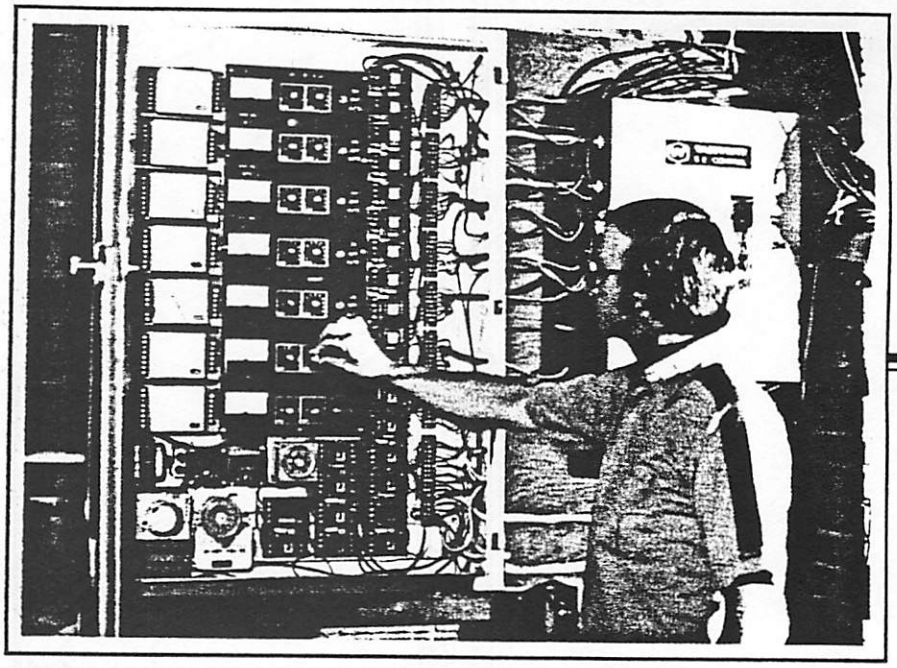
And a computer, of course! You see an IBM, Model 51-20. Its tasks include accounts receivable, accounts payable, payroll, general ledger—all off-the-shelf software. The interesting additional application: perpetual inventory of most cut flower items. Like Christmas roses. "Can you supply 500 reds, and 100 whites for Christmas?" we asked.

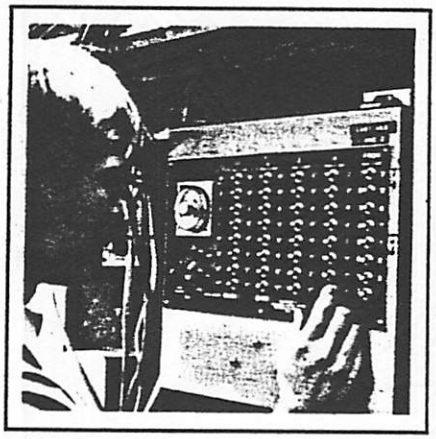
"Just a second, please . . . " (Jim checked the computer). "Yes, we have them."

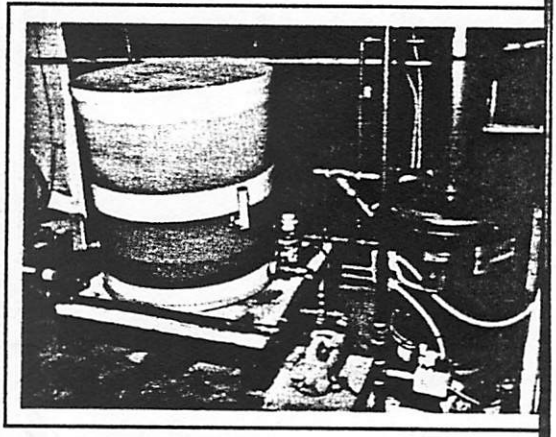
Jim and Susan are moving toward a bigger computer and more new software. The perpetual inventory is a locally-produced (St. Louis area) program and costs around $2,000. Goal: a more



Above left: Looking across the gable end of Four Seasons Roses—plus that Mercedes truck (refrigerated). So important in delivering roses.







Above right: Typical automatic control of boilers, unit heaters, fans, pads, and so forth. This time, it's Wadsworth. Bottom left: The entire range can be irrigated from this control panel—but, of course, the man on the job (Bill Eskes) had better be close to those benches to see where water is needed.

Bottom right: Two of the large tanks shown, are used to mix the preservative solution for all cut flowers at Four Seasons. Certainly including standard mums, pomps, carnations, etc. On the right, is a hot water tank to provide 110° water.

complete analysis of sales trends per item and per variety as a guide to efficient buying. The object is to reduce inventory losses.

After-harvest care—critical

To deliver a fresh quality rose to the lucky consumer demands: (1) top growing, (2) "everything right" post-harvest care, and (3) integrity by all concerned on supplying only fresh roses. We've talked about the first of these. Now comes #2—care after harvest. And, again, good equipment to minimize labor.

At the bench: As the crew brings the fresh cuts from each bench to the center walk, stems immediately go into preservative solution, now at room temperature. As soon as the load accumulates, it's wheeled into the grading room and immediately into a 33° to 35° refrigerator. Not 38° to 40°! Water is cold now—and, again, the roses are in a flower preservative solution. Jim uses Florever for preservative. Source: Smithers-Oasis (216) 655-2923. Another good preservative: Floralife (800) 323-3689. And there are others.

Grading is done later in the day, or the next morning. After the flowers are graded, they are wrapped and bunched. In fact, Jim feels that a night in the refrigerator really helps flower stems take up water and that "it will not subtract from overall life span." From now till they hit the retail shop, always keep them in preservative solution, and always as near 33° to 35° as possible. In the cooler, in the trucks, etc. For further care by the retailer, Jim recommends, immediately upon arrival, cutting ½" off the stems and putting the stems into 110° water—again, with preservative. Soon afterwards (a couple of hours), put them into a 33° to 35° refrigerator until needed. "A good rose should last five to six days in the home with good care."

Jim's suggestion: "Especially for weddings and funerals, where flowers will be enjoyed immediately or for a short time, let the flowers open a bit. The rose reaches its peak of show and beauty at the partially opened stage—petals turned back a bit.

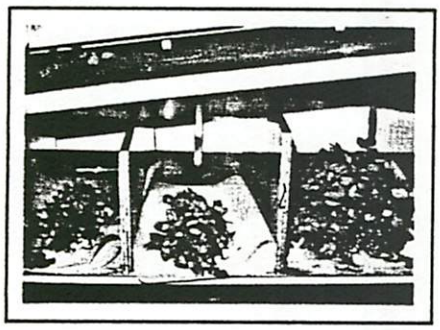
Should stems be cut under water? There seems much controversy. We suggest you listen to Jim Krone, able Roses, Inc., executive secretary (517) 339-9544. Or have a chat with "everyone knows Al" Felly, Madison, WI (800) 356-8018. Or Dominic Durkin, post-harvest researcher at Rutgers (201) 932-9049, or listen to the practical guy on the job (Jim Roberts). "Cutting under water doesn't seem to make much difference. And it would be darn near impossible on millions of stems."

Northern roses—a new way

Here's an exciting new potential! Well-grown, and well-presented to the retail shop, northern roses today can be profitable—our feeling. The past several years we're seeing some more of Jim Roberts' type operations.

But, honestly, northern roses simply

This gadget will count out 25 stems of carnations for you. You just slip them by the electric eye, and a light tells you when you hit 25. With the counter, Sue Roberts.



The grader drops the roses into several stem length grades—bottom of stems together.

are not exploding.

And imports are.

Here's a way that just might make the northern rose rise again! Jim Roberts sketches his new plan out in terms of his own 45,000 square feet.

"First we will put in the new Olimex *double* heat sheet. It's the old heat sheet, gutter to gutter at sundown—done a different way. Now, it's two sheets, not one. And, it's extended lengthwise in the house 2′ to 3′ below the roof. Normally, it spreads out into 16′ lengths from truss to truss. Extension and retraction is fully mechanized." By the way, it will also provide partial light reduction in summer. Cost is around $2 per square foot of ground covered. Labor and material.

Fuel economy: In northern areas applied to a "normal" glass roof—like Four Seasons—the claim is 50% to 60% savings. We're inclined to believe it. Note, by the way, there is almost no reduction of precious winter light.

Per Bob Euser, US Olimex distributor, "Most Dutch greenhouses today are already equipped with this new double heat sheet."*

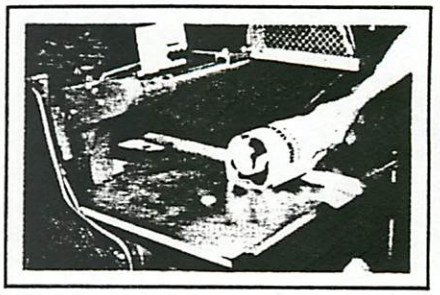
*Bob Euser (303) 237-0273.

Are you ready for part two?

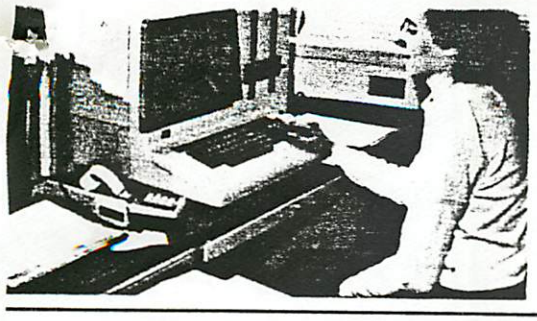
It's HID light!

Jim's plan: to put 400 units, 400 watts each, across his 45,000 square foot range. Cost is roughly $4 per square foot of ground covered.

Production: 50% more winter/spring yield, and clearly better quality for the key winter markets. Like Christmas, Valentine's Day, and Easter. Jim thinks at least 50% more dollars per square foot per year. By the way, Jim also makes the point that he expects to get at least six years rather than five out of his bushes—which he points out

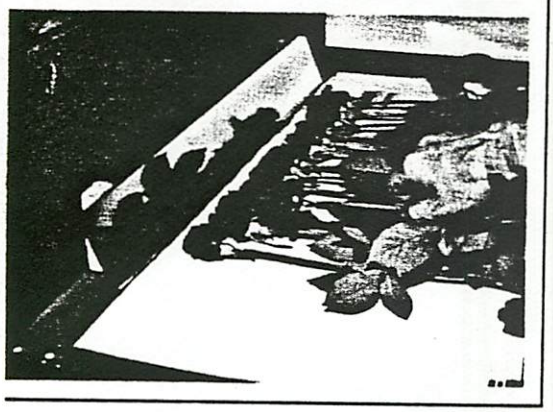


This gadget puts an elastic cord around the wrap of roses, and ties the knot. Same for the waterproof band put around the end of the bunch. Note the company name on the wrap.



Above: Computers are part of mechanization, too. Here's the IBM Model 51-20 used at Four Seasons. The operator is Carol Kessinger.

Below: The end result—a fine row of Samanthas.



happens already in Colorado because of higher light.

Energy costs: Because the HID units generate a lot of heat, and because the new double heat sheets retain heat so very well, Jim forecasts that his total fuel and electric bill (including the HID light) will be no more than it is today. The electric bill will be higher, the gas bill lower—total cost, the same.

One point here which probably would apply to other areas: The local power company has major unused generating capacity during winter months. And, in Jim's case, they are talking quite a favorable rate. Basic to that "equal energy cost" outlined above. In fact, Jim talks $4,000 a month electric bill for the 400 units during the heavy winter months.

Operating profit is forecast as a striking increase on his roses given this new approach. If it proves out, it could well bring back the northern rose range. In a major way. For one thing, northern growers have a major saving in freight over the west coast, and certainly over imports. In many cases, they offer the consumer "one more day of joy from your Illinois-grown roses." What a punchline for an ad!

Canada has already moved heavily into HID—without the double heat sheets. J.R. Johnson Supply, St. Paul, MN, already has two acres of HID lights in place, still adding to it.

What would be the bottom line of the effect on California roses? 60% of US roses are California-grown today. Fuel is not cheap there either—especially for northern California. And winter light is low—especially northern California.

The key problem to making all this happen is high interest, and getting the major funding needed to pay for it all. Jim forecasts a total investment of roughly $300,000 to convert his 45,000 square feet both to double heat sheet, and 400 HID lights—ready to go, and all mechanized!!! On the good side: interest is moving downward. And there are again, agencies like Farm Credit, PCA (Production Credit Association), and the SBA which can offer help to the grower.

And lastly, a whole lot of tax incentives. Even for the first year, a grower can recover up to 30% of his costs this way. That's under favorable conditions. See "Viewpoint," on page 8.