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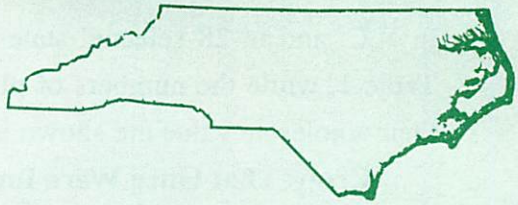


1988 North Carolina Floriculture Statistics: A Floriculturist's Delight, An Economist's Nightmare?

Roy A. Larson

I have been studying the USDA 1988 Statistical Summary for Floriculture Crops and there are things reported for North Carolina which make little sense to me. I'm not totally surprised at that revelation, but I am still puzzled.

First of all, I know that too few growers in N.C. participate in the survey. There are two primary reasons for this. The first reason is that the census takers do not have the names and addresses of all commercial greenhouse operators in the state. It is hard for the most conscientious growers to fill in forms if they don't get them. The second reason is that some companies which do get the survey forms would never stake their existence on the data they send in. Perhaps they don't see the importance of the information, or they are hesitant to send in some statistics which they would consider to be confidential.

County agents in N.C. also compile production data, and a comparison of the information from the two sources would cause one to think that the data were for different states in different decades. For example, county agents estimated that we had 146,716,000 square feet of production area in 1988. The USDA survey added up the glass, fiberglass, and film plastic square footage, and the sum was 9,779,000 square feet. A 14-fold difference in production area estimates has to make the most gullible individual frown in disbelief. The county agents estimated total sales from greenhouse production to be $109,597,000, while the USDA figure is $49,756,000. The discrepancy has dropped from 14-fold to slightly more than 2-fold, but such inaccuracies cannot give one much confidence in statistical data.

Ted Bilderback, extension specialist for nursery crops, has similar reservations about figures compiled for N.C. nurseries.

However, the data from the Statistical Survey is the only information we have in great detail. The 1988 economic status of floriculture crops

in N.C. and in 28 selected states is shown in Table 1, while the numbers of plants sold and their wholesale value are shown in Table 2.

Crops That Once Were Important

It is with nostalgia and sadness that I write about some crops which once dominated the N.C. floricultural scene, but then dwindled almost to extinction. The crops disappeared because imports made domestic production unprofitable, or a new generation of owners just didn't want the hassle of production, labor management, and marketing. In no instance was it because the flowers being shipped in were of superior quality to what North Carolina growers were producing.

Carnations: North Carolina seemed to be a logical site for the production of this prominent cut flower, particularly at the higher elevations in the western part of the state where cool night temperatures so often prevailed. Some northern growers migrated to N.C., to take advantage of the climate, lower land values, and often lower production costs. Now you would be as likely to see a kangaroo jumping among the rhododendrons in the Smokies as you would be to see carnation plants. Only 5 states listed statistics for carnations in 1988, and almost 80% of the total wholesale value for standard carnations is credited to California. Carnation ranges which I visited in Denver, Colorado 21 years ago were either gone or filled with potted plants when I was in Denver a month ago, so N.C. is surely not the only victim of imported carnations.

Cut chrysanthemums: There was a time when it was almost difficult to find a commercial range in N.C. which did not have some benches

of cut chrysanthemums. Ranges best known for potted plant production still had cut mums to offer florists as they called upon the shops each week. We also had specialists who only grew cut mums. Carolina Wholesale Florists in Sanford was world-renowned for its hydroponics operation. Sunshine Gardens of North Carolina in Pittsboro with its 31 acres of production area shipped chrysanthemums by bus to just about every major city east of the Mississippi River. They grew just about every variety the mum propagators had. I remember going to the New York City flower market with John Carroll of Raleigh, Hugh Smith of Cornelius, and William Clegg from Pittsboro, and listening to the reprimand William got from a wholesaler there because Sunshine Gardens had shipped 6 bunches of Cherry Chip spray mums to market and every florist in that huge city yearned for that color, and only about 24 stems were available. Sally Mac Greenhouses in Monroe had some very high quality mums in their prestigious operation, and Helms and Cox Greenhouses in the same town did not have to take a back seat to anyone in their production of spray mums. These 2 firms are still producing cut chrysanthemums,

though their colleagues in other areas are disappearing or have already disappeared. Ray Eller in Norlina produced standard mums which would have captured blue ribbons in any flower show. Ray has retired, but the firm is still operating. Doc Oliver grew cut mums along with orchids and potted plants in Pine Level, and the demand was such that he opened a second range in Selma which Steve Creech managed and now owns. Steve has gone to potted plants completely and Mike Renfro at Cyn-Mar Greenhouses puts most of his emphasis on potted plants. Hardins in Liberty still grow cut mums for their wholesale and retail business.

Space does not allow further elaboration on cut mum production in N.C., but many fine commercial growers got their initiation into floriculture through cut mum production. It gave them an insight into the scientific culture of a complex crop, and mastery of that crop gave them confidence to grow other crops, which they have done successfully.

Gladiolus: Florida has long reigned supreme in gladiolus production but there was a time when Alabama and North Carolina fought for second place. We had growers who knew how to produce the crop, though their approach to marketing wasn't always as professional or successful. Two growers from Castle Hayne might each send a truck to Boston, each only half-filled with hampers of glads. Sharing a truck was not to their liking. When they finally decided to change to a more cooperative attitude, gladiolus production had already started to decline.

Sandy soil, suitable climate, and a market for

gladiolus have not vanished, and perhaps the day will come when people will get sufficiently motivated to start production once again. The bulkiness of gladiolus and the need to ship the spikes upright make foreign competition less promising or economical than it has been for carnations, chrysanthemums, and now roses.

Roses: Once again, we have the climate and the expertise to produce high quality roses but costs of producing roses in the state make competition with imported roses difficult. We still have growers who are successfully growing this elegant flower — Ron Spanbauer in Horse Shoe only grows roses, and participants in the regional Roses, Inc. meeting were impressed with what they saw when they toured his range. Fred Henderson's roses have long beautified the environment of the N. C. Commercial Flower Growers' Association short courses in Raleigh. Salisbury has long been the site of a successful rose operation, and Dave Webber in Tabor City has proven that high quality roses can be produced in the eastern part of the state.

Roses, Inc. has worked hard to counter imports, but florists generally are loyal first to price, so increased production, increased yields

or some other avenue of improvement are the only means to compete. Roses, Inc. does have an active research foundation, giving financial assistance to researchers who are working on experiments designed to improve the status of domestically grown roses. The public information is not confined to the U.S., however, a situation we will always face at Land Grant universities.

Crops That Still Are Important

Snapdragons: I have yet to see snapdragons shipped into the state which could compare in quality with those grown locally. Any ethylene exposure will cause the florets to "shatter", attempts to ship the stems horizontally will end up with tip curvature, so the crops produced close to the market have a couple of big advantages over the snapdragons which must travel fairly long distances.

The absence or lack of gladiolus has caused florists to seek other spike flowers. Snapdragons and stock are two to consider, and snapdragons are usually more readily available. The proper choice of varieties for different times of the year is a prime requirement for successful snapdragon production. We have growers and sales representatives for distributors who have that knowledge.

Bedding plants (flowers): Based on wholesale value this is the biggest source of income to N.C. flower growers. Almost 7 million dollars worth of bedding plants were sold (wholesale) in 1988. The value per square foot of production area was $3.44 for N.C. growers, compared to a national average of $2.87 (Table 3). Growers in Tennessee, Georgia, and Virginia averaged $2.35, $3.73, and $3.74, respectively. There were 129 N.C. bedding plant growers responding to the census survey.

Hanging baskets (flowering): Hanging baskets (flowering) production was reported by 87 growers in N.C., with a total wholesale value of $5,444,000. The return per square foot is not given, as square footage means little when much of the crop is grown up in the air.

I don't know which flowering hanging baskets are most popular but I do see many poinsettias, geraniums, and fuchsias. One's imagination can run wild when it comes to plant selection. A trip to Disney World is worthwhile, just to see their array of plant material. Callaway Gardens in Pine Mountain, Georgia also has a nice collection.

Poinsettias: Perhaps no crop attracts as much attention as the poinsettia, rather surprising when one considers that it is a "seasonal" crop. It is seasonal to the customer at least, but growers who get in cuttings for stock plants in April but don't finish the crop until mid-December might challenge that "seasonal" label.

This is one crop which I am very certain is not

properly counted in N.C. You wouldn't have to visit many ranges to see 2,000,000 plants (the number of plants reported sold wholesale in N.C. in 1988 was 1,934,000), and you would still have a large number of greenhouses yet to visit, all dominated by poinsettias.

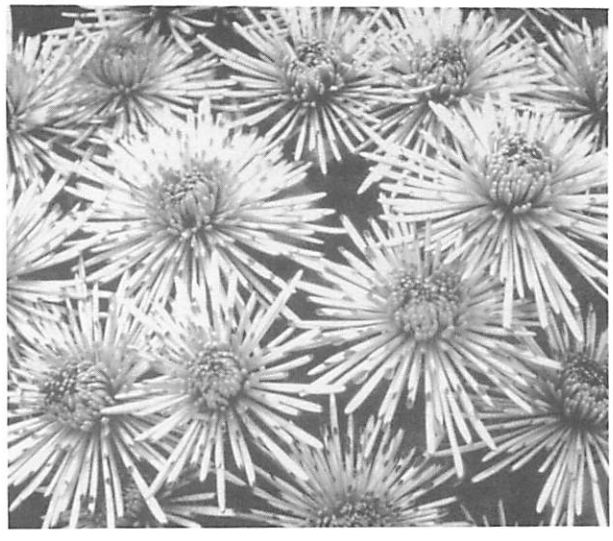
I think N.C. poinsettia growers are intimidated by the large numbers of plants grown by a few very large establishments. Rumors start floating around that some large grower is going to sell pinched poinsettia plants in 6" pots for $1.85 and that gets other growers pricing their plants in a negative fashion. Poinsettias once were very profitable, but a $1.74 value/square foot puts it second from the bottom in N.C. The only crop which has a lower value is the garden chrysanthemum and they are often grown outdoors with no heating costs. The average value/square foot for 28 states for poinsettias was $2.49 in 1988. Georgia received $2.33 per square foot, Tennessee growers averaged $2.99, while Virginia growers realized a $2.69 return/square foot. Our costs cannot be that much lower than theirs, so the plants really should not go for so much less money.

North Carolina growers could use some sage advice from economists on the marketing of poinsettias.

Potted chrysanthemums: We rank sixth in the nation in pot mum production. It is good to have a crop which can bring in a weekly income and keep a work force active. There are times, such as a couple of months in the summer, when pot mum sales slow down, but then one can also encounter weeks when there is not a mature pot mum to be found in a greenhouse.

I think most N.C. pot mum growers produce very high quality plants. Our climate is very satisfactory, and growers have the necessary expertise to match that high light intensity. The $5.58 dollar value/square foot also is a desirable feature.

Flower colors and forms give customers a nice selection from which to choose. Yoders have some very interesting data on page 14 of their 1989-90 catalog, such as that 40% of the pot mums sold have yellow flowers, and that the decorative form of flowers accounts for 59-72% of those grown, with daisies a distant second and anemones a weak third.



Pot size is another variable, and customers can purchase pot mums in 4" pots and up to 10" baskets. I think a real super product for the "carriage" trade is the one where several cuttings are planted in a large bulb pan. The end result is a very impressive plant. The price tag has to be high but there are customers who want to buy something truly outstanding, both in size and beauty.

Hanging baskets (foliage): I have been in greenhouses in the state where I thought there were enough hanging baskets with Boston ferns in them to fill the needs of the whole southeast, only to be told those plants would all be gone and a new batch would take their place. I have been in greenhouses in the state where there were so many hanging baskets suspended from the greenhouse framework that one inch of snow would be "the straw to break the camel's back", and it was. There is a demand for high quality hanging baskets filled with foliage plants, and N.C. growers know how to supply that demand.

I think an exciting activity for growers is finding new plant material for their baskets. Another exciting activity is obtaining foliage plants from firms involved in tissue culture propagation. Students in HS 442 at N.C. State University last spring used plantlets from two companies, and the growth was phenomenal. The limitations of container size are really demonstrated with tissue culture plants, as plants placed in 6" pots will be much smaller than those planted in 10" hanging baskets, though the plantlets were the same size at time of transplanting.

Seedling geraniums: North Carolina ranks second in wholesale value, but seventh in the number of units sold. Our dollar value of $10.67/square foot actually seems unrealistic, when Michigan growers rank second but with only $4.67, and the 28-state average is $2.93. Tennessee growers averaged $2.26, those in Georgia had a value of $2.51, and Virginia growers averaged $2.05. The perplexing puzzle will not be solved by me, but someone should be able to explain it.

Potted foliage: We are close enough to Florida, with access to good interstate highways, for North Carolina growers to easily obtain large quantities of foliage plants. Greenhouse operators either send their own trucks to Florida to get their material, or they have regular shipments delivered to them. Over the years I have watched with amusement as young people in a family operation were at first so excited about going to Apopka to get foliage plants, but after a few trips the excitement changed to drudgery. Cost analysis should enable a grower to decide which way is best.

Potted geraniums (cuttings): Each year the demand for geraniums seems to get greater, as does the assortment of geraniums which are available. Over 1 1/2 million plants were sold in 1988, for 2.6 million dollars. Perhaps no crop is priced in such a variable way. This problem is not confined to N.C.

Other flowering potted plants: One could fill a whole page with names of plants which could be placed in this category. Hopefully some of the plant species will break loose from this broad category and stand alone as a crop. Hydrangeas once were listed separately, but now they have

been placed in this group. That change might change again. The loss of the major propagator on the East coast changed the crop quite drastically, as the source of plants shifted almost 3000 miles. Hydrangea plants now are generally shorter, with less need for growth regulators. I don't think the plants are quite as spectacular as Rose Supreme could be, but sepal color is better on the varieties which replaced the vigorously growing Rose Supreme.

Gloxinias suffered a bad image problem the last 2 or 3 years, as their susceptibility to Tomato Spotted Wilt Virus made gloxinias about as popular as Typhoid Mary. Propagators have done their utmost to avoid the disease problem. A pet stephanotis plant, or a double-flowered impatiens stock plant, kept over the years, is a more likely source of the virus. Controlling western flower thrips and getting rid of potential sources of TSWV would be a better idea than eliminating gloxinias from a product mix.

New Guinea impatiens probably got off to a wrong start in floriculture when word went out that the plants could take full sun. That statement was correct, if you stood there with a garden hose. It is a versatile crop, as it can be attractive in an array of pot sizes. Reports of our results with the Kientzler varieties will be published in a future issue of the Bulletin.

North Carolina growers surely shouldn't lack for information about Spring-flowering bulbs, or bulbous plants of any sort, with A. A. De Hertogh doing so much research with them. The popularity of specific bulb crops goes up and down, but the popularity of bulb crops in general continues to increase. Tulips, hyacinths, and daffodils would still be the Big Three, but freesias, calla lilies, and amaryllis are moving upward as more knowledge is gained about them. Gus will be discussing new ideas in bulb production at the short course, to be held in Raleigh September 24-26, and that would be a good time to get the latest information.

This section could go on and on. I think this is a very exciting part of floriculture, and I'm glad more people in the U.S. are showing interest. We are still far behind the flower industries in Denmark and The Netherlands.

Bedding plants (vegetables, flats): Tomatoes and peppers generally end up winning the popularity contests among bedding plant growers, based on ease of culture and sales. Gardening as a hobby also is increasing in the state, so an increased demand for vegetable bedding plants is not surprising. N.C. vegetable growers also are buying more of their transplants from within

the state.

According to the USDA survey there is a greater return per square foot with vegetable bedding plants than for those grown for their flowers. That statistic is not good for the ego of a conscientious floriculturist.

African violets: North Carolina ranks very high in African violet production. This crop is quite suitable for mass production and for mass market sales. Like its gesneriad relative, the gloxinia, its reputation has been tarnished because of Tomato Spotted Wilt Virus, and at times some large quantities of plants have been discarded.

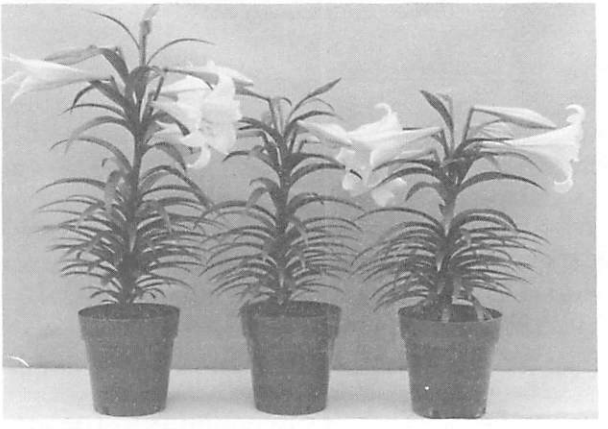
The return per square foot is $6.01, making it the second highest in the state. The 28-state average is not far behind, at $5.88.

Potted hardy/garden mums: This crop was not prominent at all in N.C. floriculture when I came here in 1961 and that surprised me. I was accustomed to seeing large numbers of garden mums in Minnesota and upstate New York landscapes. Explanations were given to me for the lack of garden mums in North Carolina gardens but the reasons seemed weak and debatable. Now garden mums give growers some income in the fall, and landscapers and home gardeners are delighted.

A major problem with garden mums is trying to keep plants vegetative, to get some plant size. You can plant pot mums and garden mums at the same time, and have to apply growth regulators to control the height of the pot mums, while the garden mums are often too short, and small in diameter. Garden mums are in the 6- to 7-week response groups, which accounts for their tendency to initiate buds so readily, while most pot mums are around 9 weeks and are easier to keep vegetative.

An excellent reference on garden mums is the Yoder Garden Mum Cultural Manual. It is only 9 pages long, but is filled with information which a garden mum grower needs.

Easter lilies: The number of Easter lilies sold each year in the state seems to remain quite stable. A grower or two quits, and a couple of others take their place. Then those who quit realize that growing Easter lilies is "in their blood", and that the crop really can be quite profitable ($4.19 return/square foot). Georgia Easter lily growers must really be doing something right because they reported a square foot return of $5.86. Tennessee growers had a value of $4.39, while Virginia growers showed a $4.04 return.



Other lily crops such as the Midcentury and Asiatic hybrids, and Sans Souci and Star Gazer, are gaining in popularity. The flowers are often spectacular, but the pollen can be a real nuisance. Flowers of some of the varieties also have more fragrance than most people care to endure.

Hybrid lilies are very versatile, being satisfactory both as cut and potted plants. Jim Weaver,

when he was manager of the Fallon's greenhouses in Raleigh, was one of the first to grow hybrid lilies and he considered them to be the best money makers, on a square foot basis, of all the crops he grew.

I think Easter lilies perform in the garden year after year better than the hybrid lilies do. Plant height of Easter lilies will be more in bounds, the stems are erect, and the pure white flowers fit into any landscape plan.

Florist azalea: I might be biased about azaleas but I do regard them as perhaps the most elegant of all potted crops. I'm pleased to see it back in the census survey. Azaleas are not cheap to grow, so florist shops continue to be the major sales outlet. Some mass market stores have expressed interest in obtaining azaleas in small containers, potentially increasing the number of people who get to enjoy the beauty of this crop in their homes.

We are continuing our search for better chemical pinching agents, and we keep looking for the EPA label clearance for gibberellic acid to break flower bud dormancy. Current methods of pinching and breaking dormancy are major causes for the expense of azaleas.

The public is changing its attitude about flower colors. Red once dominated the market,

with no other colors even close in popularity. Now only 35% of production might be red, with pink, white and variegated flowers increasing. Interior decorators have used colors which clash with red, while more pastel colors blend in very nicely.

So this is a view of North Carolina floriculture for 1988. Hopefully more growers will participate in the survey in the future, so we can get an even better idea as to the value of the crops. We don't want to brag, and we surely don't want to apologize about our data. We just want to be accurate.

Economic Status of Floriculture Crops in North Carolina and in 28 selected states, 1988 summary

Number of growers and amount of growing area				
		North Carolina	28 states	N.C. ranking
Number of growers		193	8,901	14th
Growing area (square feet)				
Glass		621,000	79,534,000	21st
Fiberglass		634,000	111,914,000	19th
Film plastic		8,524,000	214,271,000	8th
	Total	9,779,000	405,719,000	9th

Total wholesale value of reported floricultural crops (x 1000 dollars)

North Carolina	28 states	N.C. ranking
$49,756,000	$2,237,497,000	10th

Data compiled by the National Agricultural Statistics Service, USDA, Washington, D.C.

Number of units sold and wholesale value of floriculture crops for North Carolina and selected states (1988 summary).

	Number of plants sold (x 1000)			Wholesale value (x 1000 dollars)		
	North Carolina	U.S.	N.C. ranking	North Carolina	U.S.	N.C. ranking
African violets	1,674	23,530	5th	1,389	25,202	6th
Potted chrysanthemums	1,465	32,133	8th	4,758	93,727	6th
Florist azaleas	110	8,584	12th	722	37,542	13th
Easter lilies	204	7,633	11th	745	29,385	12th
Other lilies	10	1,198	10th	45	4,066	10th
Poinsettias	1,934	41,154	9th	5,178	147,031	11th
Other flowering pot plants	846	61,295	17th	2,046	157,278	16th
Potted foliage	--	--	--	3,495	401,714	6th
Foliage hanging baskets	934	20,215	4th	4,212	75,253	4th
Bedding plants, flowers (flats)	1,317	55,969	9th	6,927	320,679	11th
Bedding plants, vegetables (flats)	247	8,545	11th	1,425	50,974	12th
Potted hardy/garden mums	750	20,204	12th	1,233	29,604	9th
Potted geraniums (cuttings)	1,545	55,108	14th	2,642	71,119	12th
Potted geraniums (seed)	1,802	40,609	7th	3,810	34,571	2nd
Flowering hanging baskets	1,218	14,673	4th	5,444	76,980	5th
Cut flowers						
Carnations, standard					42,410	
Carnations, miniature					20,002	
Chrysanthemum, standard					14,213	
Chrysanthemum, pompon					37,642	
Gladioli					33,932	
Roses, hybrid tea					151,590	
Roses, sweetheart					30,263	
Other cut flowers					122,427	

Average value/square foot for various floricultural crops in North Carolina and in 28 selected states, for 1988.

Crop	Dollar value/sq. foot	
	N.C.	28 states
African violets	6.01	5.88
Potted chrysanthemums	5.58	4.80
Florist azaleas	5.87	4.47
Easter lilies	4.19	4.68
Other lilies	5.63	5.31
Poinsettias	1.74	2.49
Other flowering pot plants	4.08	3.75
Potted foliage	3.28	1.81
Foliage hanging baskets		
Bedding plants, flowers	3.44	2.87
Bedding plants, vegetables	4.17	3.39
Potted hardy/garden mums	1.50	1.56
Potted geraniums (cuttings)	3.28	2.98
Potted geraniums (seed)	10.67	2.93
Flowering hanging baskets		
Cut flowers:		
Carnations, standard		2.60
Carnations,, miniature		2.44
Chrysanthemums, standard		1.45
Chrysanthemums, pompon		1.48
Gladioli		$5,458/Acre
Roses, hybrid tea		4.66
Roses, sweetheart		4.37
Other cut flowers		0.37