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TO: COUNTY EXTENSION DIRECTORS AND AGENTS (VEGETABLE AND HORTICULTURE) AND OTHERS INTERESTED IN VEGETABLE CROPS IN FLORIDA

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VEGETARIAN NEWSLETTER 79-7

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NOTE: Anyone is free to use the information in this newsletter. Whenever possible please give credit to the authors.
A. Tomato Growers' Institute Plans for 1979

Plans have been finalized for the Annual Tomato Growers' Institute. It is set for Tuesday, September 18, 1979 and is to be held at 1303 17th Street (County Agent's Office) Palmetto, Florida. The program promises to be a good one. A detailed copy of the program will be mailed out soon. Please put this date on your calendar now and make definite plans to attend.

(Montelaro)

B. Vegetable Gardening Literature Available

1. The "Vegetable Gardening Guide" has been revised and is now available from Publications Distribution as Circular 104N, dated January 1979. Considerable up-dating has been given it, particularly in the Planting Guide section.

2. Circular 375, "Organic Vegetable Gardening", has also come off the press recently. It is a reprint with no changes. It is dated June 1979, and is available through normal channels.

3. VC-18, "Gardening Lots of Radishes" is a new Vegetable Crops Fact Sheet which each county may order, even though it was developed for the Duval "Gardening Lots" program.

4. VC-20, "Gardening Lots of Southern Peas" is another new illustrated fact sheet in the Gardening Lots series just now available for the first time.

(Stephens)

II. COMMERCIAL VEGETABLE PRODUCTION

A. Dixielee - A New Watermelon Variety from the University of Florida

Seed for a new watermelon variety will be available to growers in the Fall of this year for the 1980 season. The variety, named "Dixielee", resembles the old Dixie Queen in external appearance.

"Dixielee", according to its breeders, Dr. Crall and Dr. Elmstrom, possesses a high-type resistance to Fusarium wilt. In addition, the flesh is intensely red, very sweet and firm. The rind is thin, but very hard making it well adapted to shipping. Seeds are black, stippled and medium large in size.

Summary of a number of variety tests at Immokalee and Leesburg from 1975 to 1978 is presented in the following table.
On occasion, delayed fruit-set has been observed in Dixielee test plantings. In addition, a very small percentage of people eating Dixielee melons report detecting an off-flavor.

Seed of this variety has been released to commercial seedsmen and an ample supply should be available for the 1979-80 season. Until more is learned about Dixielee, growers are advised to plant it on a limited basis in the beginning.

Anyone wanting a copy of the release circular (S-263) can obtain one from this office.

(Montelaro)

B. Introducing New Practices in Vegetable Production

Long-term success in any vegetable operation is the result of efforts to continually improve and streamline production and marketing practices. To do this, a vegetable grower must take advantage of new developments as rapidly as possible. To search out and evaluate new developments related to vegetable production is a time consuming and never-ending task. Nevertheless, it must be done in order to remain competitive in a fast-changing business like vegetable production today.

Technology for improvements in crop production practices may come from a number of sources. These include experiment stations, manufacturers of pesticides, fertilizers and equipment, seed companies and other farming operations. In fact, vegetable growers may be "swamped" with so-called ideas on how they can improve their operations quickly. Being overly eager to accept new ideas may be just as dangerous to the success of an operation as being overly slow to make any changes.

A vegetable grower should, first of all, try to keep abreast of new developments in all areas affecting his operation. Secondly, all developments should be studied carefully to determine whether or not they might be of value. Last is the most important consideration -- and this is -- how to proceed. The best advice is expeditiously, but cautiously. Except in an extreme emergency situation, any new practice should be tried on a limited basis only in the beginning. This, in itself, can save vegetable growers money by not wasting materials or equipment which may not produce the results promised. Not only can new practices be wasteful of resources and costly in some cases, but they may reduce yield and/or quality of a crop.
Once a grower is convinced that a new practice offers potential of being worthwhile, it should be included on a small scale in one or more plantings of a crop. The "treatment area" should be properly labelled for easy identification. Throughout the growing period, the test should be studied carefully to determine any differences -- good or bad.

Most importantly, the "test" should receive special attention at harvest. Careful records of yield, quality, appearance, etc. are needed if a good determination of the practice is to be made. One aspect that is often overlooked is marketability of the crop. This, too, should be determined.

Only when the vegetable grower is convinced that a new practice is definitely worthwhile should it be incorporated into an operation as a standard practice. Even then it should be continually studied to determine adaptability to a wide range of conditions.

The advice to proceed carefully with the use of new technology applies to all aspects of vegetable production. A little care and thought in this matter can be of great benefit to growers by avoiding crop losses and wasting resources.

(Montelaro)

C. Weed Species Shifts and Herbicides

Weed populations often shift toward resistant species when preemergence herbicides are applied routinely or exclusively to control weeds in many vegetable crops. Numerous examples throughout the world can be cited where nutseed populations increased dramatically following application of many pre-emergence herbicides. At Tifton, yellow nutseed infestations increased when a single preemergence herbicide was applied routinely in a year-round cropping sequence involving four vegetable crops. In North Florida, resistant weeds such as sicklepod or cocklebur tend to predominate, whereas galinsoga or Parthenium resist suppression from routine herbicide use in Dade County. Even the use of full-bed mulch can cause weed shifts by controlling most weed growth under the plastic except nutseed which pierces and grows in almost a monoculture through the mulch.

Resistant weeds and crops often depend on similar mechanisms for herbicide tolerance. These mechanisms include:

- Differential placement in time and space.
- Anatomical differences between species.
- Differential susceptibility at different stages of crop and weed growth.
- Physical and/or biochemical differences in tolerance such as differential absorption, translocation, metabolism, or adsorption and accumulation at inactive sites within the plant.

Recent evidence also suggests that some herbicides, especially the photosynthetic inhibitors such as atrazine, may control only susceptible biotypes within a single species. Resistant biotypes of common lambsquarter, redroot pigweed,
common groundsel, common ragweed, wild turnip, and late-flowering goosefoot have been identified. Susceptible biotypes bind the photosynthetic inhibitor herbicide near photosystem II in the Hill reaction, whereas resistant plants seem to contain a minor protein alteration which reduces herbicide binding. The resistant biotypes have exhibited recessive traits within the weed community. In addition, genetic differences have been observed for metribuzin tolerance in tomato, potato, Southern pea, carrot and corn, and atrazine tolerance in cucumber.

In summary, vegetable growers can evaluate weed populations by observing weed densities and noting infestations on a field map. With occasional observations and a point of reference, growers can determine the extent that cultural practices and cropping sequences affect weed infestations. Then, specific weed management strategies, crop rotations, and competitive cropping systems can be employed to shift weed and pest populations toward manageable communities. The next article will present weed and pest management ideas for possible inclusion in existing vegetable production systems.

(William)

III. HARVESTING AND HANDLING

A. Vegetables For The Foodservice Market

One of the changes in attitude toward food in America should be good news for Florida vegetable growers as the popularity of fresh vegetables continues to increase. Institutions magazine published a Menu Census in April 1979, which surveys trends in food preferences in away-from-home eating. Targeting the consuming public's food preferences is not an easy task with double-digit inflation and clamoring for "health" foods. But freshness of ingredients received a higher ranking than price of the meal. Last year the meal price received the highest customer interest score.

In many foodservice operations a vegetable course is taking the place of the traditional appetizer, and the most frequently found vegetable course is the salad bar. The salad bar ranks as one of the greatest success stories in the history of the foodservice industry. Consumption at salad bars has quadrupled in the last 5 years as consumer demand increased. A Gallup Survey by Foodservice Marketing showed that 46% of the persons interviewed cited a salad bar as one of the features they most wanted in a restaurant. One half of the people in a recent National Restaurant Association consumer attitude survey revealed that a salad bar was an important consideration in choosing a restaurant.

Major types of foodservice operations and the percentages with salad bars as indicated in the 1979 Menu Census are: full service restaurants 33%, fast-food restaurants 24%, hotels and motels 53%, employee feeding 62%, health care 29%, schools 35% and universities 87%.

Salad bars were introduced at a good time when customers were seeking greater value and choice, the food operators needed to minimize energy and labor costs. The size of salad bars and number of items available for specific meals have almost unlimited variation and the range is not limited by printed menus. Vegetable and fruit salads, seasoning materials, and whole or sectioned fresh fruits and vegetables are familiar items. Operators often have choices between fresh and processed
sources with lower costs and less preparation labor for the processed foods. However, customers know the difference between fresh and processed produce, and with the top-ranking interest in freshness, satisfaction is probably more important than lower cost.

Successful salad bars can be attributed to a number of reasons: it may represent an extra value for those who are health or nutrition enthusiasts, for those looking for a way to express themselves or those who just want something different. These customers may be vegetarians, dieters, or big eaters, and both women and men enjoy salad bars at all seasons of the year.

Advantages of salad bars include:

1. For the grower - increased marketing opportunities.
2. For the foodservice operator - increase in patrons, saving in energy due to little or no cooking of many items, advance preparation and reduced labor from customers providing their table service.
3. For the customer - greater control of what they eat and how it is prepared, greater choice of food items and portion size, convenience of self-service and reduction in delay before beginning their meal.

Selection, handling, and preparation of vegetables:

1. Supplies and prices of fresh vegetables may change rapidly and influence long-range menu planning.
2. Foodservice operators should become familiar with more and different vegetables in order to make salad bar substitutions. Although green salads usually have lettuce, they do not require iceberg lettuce, since other lettuce, endive, spinach, escarole, etc. may be substituted or mixed with the iceberg lettuce.
3. Seasonal availability and supplies from local vs. distant growers should be considered for maximum freshness.
4. Proper refrigeration and storage environment must be provided for each salad bar item.
5. Increased availability of pre-prepared vegetables that are ready-to-serve or cook would increase the use of fresh vegetables according to a 1973 survey by the Florida Department of Agriculture and Consumer Services. Some Florida growers have facilities for preparing shredded lettuce, onions, cabbage, carrots and mixed salad. Others can provide stick celery, snapped beans, shelled peas or uniform sized potatoes for baking.

Generally speaking, tourism in Florida has not emphasized foodservice as much as other attractions. With the large acreage of vegetables grown in the state during the fall, winter and spring seasons, unlimited supplies for in-state consumption should be available. With improved communication between selling brokers and foodservice operators, all segments of the industry should benefit from vegetable sales for away-from-home eating.

(Showalter)
IV. VEGETABLE GARDENING

A. Food Gardening - An $11 Billion "Non-Industry"

The current (1978) national retail value of all home food gardens (fruits and vegetables) in the U.S. is $11 billion from a yield of 16 billion pounds, according to the National Association for Gardening. Thus, the scope of home food gardening is enormous, even when compared to U.S. vegetable and fruit industry production. However, economists generally do not recognize gardening as a major national industry.

Precise data on the total value of garden produce is difficult if not impossible to obtain due to the fact that gardening is such a private endeavor. Produce is grown at home and consumed at home, with no sales records available for monitoring. County agricultural agents can only guess at the number of gardens growing in any given county. That is why public opinion polls have been conducted and used extensively by various organizations for this purpose.

"Gardens For All", otherwise known as the "National Association for Gardening", has utilized the Gallup Poll every year since 1973 as a basis for keeping tabs on gardening statistics. These surveys have provided a great deal of information about what, how, and why people garden, problems encountered, information sources relied on for help, and product, book, and equipment needs for home gardeners.

Here are some of the key findings of the 1978 study as reported by the National Association for Gardening. Many of these findings have direct application to Florida, since gardening in this state is so great due to climate and retirement population.

In 1978, there were 31 million family groups from coast to coast who grew at least some of their own fruits and vegetables in backyard or community gardens. This represented about 41% of the total U.S. households, a decline from a high of 49% gardening households back in 1975.

There appears to be a slight trend toward a subtle weakening of the mid-seventies fervor for home gardening. Those households without gardens were up from 51% in 1975 to 59% in 1978; those with sufficient land but no garden increased from 19% to 25% between 1975 and 1978; and those who don't have land, but said they would garden if they did, went down from 20 percent in 1975 to 15 percent of households in 1978.

There is no single socio-economic group in the population that dominates the ranks of gardeners. Found in almost equal proportions are young and old, rich and poor, black and white.

The average size of the family food garden was 620 square feet, or about 25 ft. times 25 ft., in 1978, with larger and more productive gardens anticipated in 1979.

Most popular vegetable grown is tomato, followed by beans, onions, and lettuce.
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About as many home gardeners rely on organic growing methods (no synthetic chemical fertilizer or pesticides) as conventional gardening. Food preservation is a big part of the home gardening scene. About three out of four gardening families "put up" (preserve) at least some of the produce they grow.

Community gardening attracts nearly two million people, primarily in the cities and suburbs.

First year gardeners are motivated to have a garden primarily for economic reasons (to save on food bills), while experienced gardeners are more likely to appreciate the mental and physical benefits.

Related is the fact that home vegetable gardeners are more inclined to experiment with self-sufficient living than are non-gardeners. Gardeners also tend to be more energy-conscious, according to "Gardens For All", than non-gardeners.

What is to be garnered from all this is that home vegetable gardening in aggregate is big business. The economic value is not easy to substantiate, but if we may rely on polls, home food production amounts to $11 billion a year, not counting business generated by the endeavor is quite impressive for a "non-industry".

(Stephens)

B. Know Your Vegetables - Calabaza

Calabaza is a name commonly given to any one of several of the many strains of pumpkins and squashes grown in the tropics. However, in Florida calabaza refers to the Cuban pumpkin (Cucurbita moschata Duch. ex Lam.), also called Cuban squash. In 1977 there were about 1,300 acres of calabaza grown in Dade County.

Calabaza grows on a very long vining plant similar to other winter type squashes. Leaves are mottled greyish-green in color. Fruits are variable in size, shape and color due to crossing and strain selection. The most usual form of fruit is one weighing about 5 to 7 pounds, round but flattened a bit on top and bottom. Its colors are mottled grey and buff-cream. The light-yellow colored interior is firm, meaty, and relatively thin due to a fairly large central cavity. Like all moschatas, the seeds are rather small for squash, with the dried matted pulpy fibers at the seed edges giving the seeds a somewhat ragged appearance.

Calabaza tolerates hot weather conditions as well or better than other members of the cucurbit family. It is a tender crop easily injured by frost and freezes. It should be planted early in the spring as soon as the danger of frost is past. In frost free areas of the state, calabaza may be planted from August through March.
Calabaza is started from seed, which is often saved from the fruits of a preceding crop. Since plants tend to be excessively vining, rows should be spaced 6 to 9 feet apart, with plants spaced four feet apart, resulting in a need for a considerable amount of space to grow calabaza.

Cultural practices such as fertilization, liming, and soil preparation are similar to those for other more common kinds of squashes for a given area. Due to the wide plant spacing, gardeners would be advised to place a gallon or two of well-rotted compost or animal manure under each planting site before seeding. Mix the organics well with the soil.

It is particularly advisable for those gardeners wishing to grow calabaza under the unique alkaline soil conditions of Dade County to obtain growing instructions from the Dade County Extension Service. The crop is not without pest problems. Foliage disease is one of the most serious.

About three months are required from seeding to harvest of the calabaza fruits. Like other cucurbits, bees are needed to transfer pollen from the male to the female flowers of calabaza. Reports indicate an average yield of 3 tons per acre in Dade County in 1977.

As the name implies, most calabazas in Florida are grown by Latins living in South Florida. This group also uses most of what is grown there, cooking the storage type squash in a variety of ways according to Latin recipes. Like other winter squashes, calabaza keeps well for several weeks if stored in a dry, reasonably cool situation.

Seeds of calabaza are seldom found in seed company catalogs. A gardener wishing to try a few hills probably should try to obtain a calabaza in a south Florida market, then save the seeds. Of course, considerable variation in plant characteristics from these seeds should be expected.

(Stephens)