UNIVERSITY OF FLORIDA

Cooperative Extension Service

Institute of Food and Agricultural Sciences

# VEGETARIAN

## A Vegetable Crops Extension Publication

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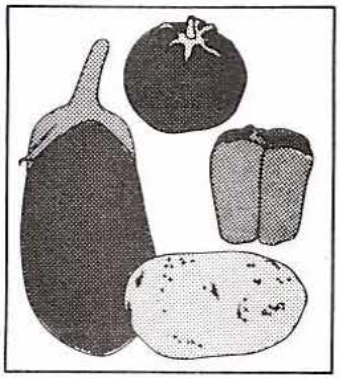

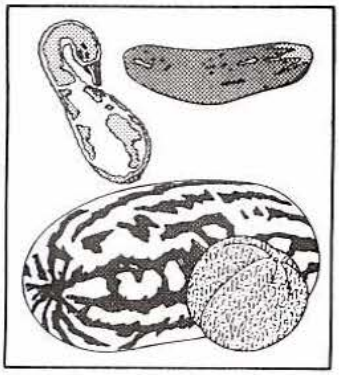

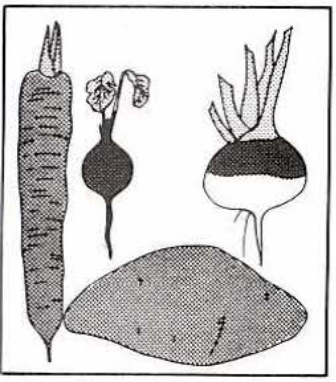

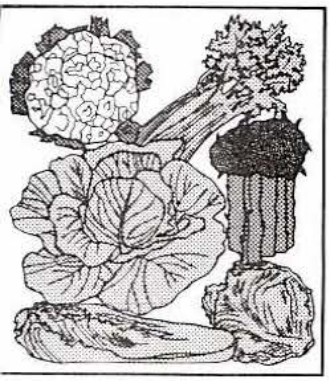

**Vegetarian 94-3** **March 15, 1994**

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## I. NOTES OF INTEREST

### A. Vegetable Crops Calendar.

April 14, 1994, Thursday. Vegetable Field Day at 1:00 PM, Yelvington Research Farm. Featuring potatoes, cabbage, onions, nematode control, varieties, fertilization, tour of plots. Contact Dale Hensel (904-692-1792).

May 26, 1994. Organic Gardening Field Day, 10 A.M. - 12 Noon, Fifield Hall, U.F., Gainesville. Contact Jim Stephens (904-392-2134 ext. 209).

## II. COMMERCIAL VEGETABLES

### A. Catfacing in Tomatoes and Gibberellic Acid (GA).

Last spring after the "Storm of the Century" many pepper growers, nervous about slow plant recovery, tried to "jump start" their peppers (and in some cases tomatoes) with applications of gibberellic acid. GA's (there are over 60 of them!) are naturally occurring plant hormones that promote cell elongation. GA has also been shown to promote seed germination, flowering, and bud break in various species.

While GA has been labelled on artichokes, celery, melons, cucumbers, seed potatoes, and spinach, Abbott Laboratories has recently labelled their GA product called ProGibb ($GA_3$) on pepper. The pepper label calls for a 1-2 gram active ingredient (a.i.) application, about 2 weeks after transplanting to promote early growth, and on small fruit to increase fruit set and size.

H.C. Wien and A.D. Turner of Cornell University, have found that catfacing in tomato which is generally caused by cool weather can be induced by foliar sprays of $GA_3$ (HortScience, 29:36-37, 1994). These researchers have been using $GA_3$ as a screening tool to identify cultivar susceptibility to catfacing. They found that 22 µM applied twice at 1-week intervals to 5 week-old tomato seedlings increased catfacing and accentuated cultivar differences to catfacing.

Wien and Turner found that catfacing frequency was significantly ($P<0.001$) increased with $GA_3$ application in both years and there was more catfacing in 1991 than in 1990. Saito and Ito (J. Jpn. Soc. Hort. Sci. 40:128-138, 1971) found the optimum temperature for catfacing was 46.4F. Wien and Turner believe that minimum temperatures in the 14 days after transplanting were closer to 46F in 1991 than in 1990.

Wien and Turner conclude "the results of these experiments indicate that $GA_3$ foliar sprays can serve as a convenient screening tool to identify genotypes strongly susceptible or resistant to catfacing".

Some of the data taken from Wien and Turner's paper is presented in Table 1 below. The varieties listed in this table represent those grown in Florida. Growers should be forewarned about off label applications of GA on seedling tomatoes particularly in the spring when catfacing may be a problem.

Table 1. Catfacing incidence (mean ± standard error) in 14 fresh-market tomato cultivars grown in 1990 and 1991 as influenced by foliar sprays of 22 μM $GA_3$ at transplanting.

| | Catfacing (%)[z] | | | | |
|---|---|---|---|---|---|
| Cultivar | Untreated | $GA_3$ | Untreated | $GA_3$ | |
| | 1990 | 1990 | 1991 | 1991 | Avg. |
| Olympic | 21 ± 4 | 53 ± 6 | 35 ± 2 | 56 ± 5 | 38 |
| Colonial | 23 ± 6 | 36 ± 4 | 27 ± 4 | 38 ± 1 | 31 |
| Mt. Spring | 26 ± 7 | 35 ± 4 | 20 ± 4 | 46 ± 2 | 30 |
| Sunbeam | 13 ± 3 | 24 ± 5 | 30 ± 4 | 36 ± 8 | 24 |
| Mean | 18 | 38 | 28 | 48 | |

(Vavrina, Vegetarian 94-03)

## III. PESTICIDE UPDATE

### A. Gramoxone Extra on Eggplant.

Gramoxone Extra (Paraquat) has just received supplemental labelling for use as a directed shielded application to row middles after crop establishment. Previously Gramoxone Extra only had labelling for a preplant or preemergence application.

The supplemental labelling is for applications of 1.6 pints (0.5 lb ai) applied by ground with precision directed spray application equipment adjusted to prevent spray contact with crop plants. Do not exceed 30 psi nozzle pressure. More than 3 applications per season is restricted. Other precautions, restrictions and comments on the supplemental labelling and the label must be followed.

(Stall, Vegetarian 94-03)

## IV. VEGETABLE GARDENING

### A. Japanese Ring Method for Tomatoes in the Garden.

As I visit gardens throughout the state of Florida I am always encountering a variety of interesting, innovative techniques for growing the gardener's favorite vegetable - tomato. Recently I described two of these techniques: a) "canned tomatoes", whereby the plant is grown in a can (actually a 5-gallon bucket) filled with sawdust, and b) the "tomato mound", on which a plant is grown using cow-manure and/or yard waste compost.

Now I wish to revisit two other methods that give good success to many gardeners.

1. Japanese tomato ring - to prepare your tomato ring, you will need the following supplies:

a) A piece of wire fence (hog or poultry type 5 feet high by 15 feet long.

b) At least 2 pounds of all-purpose garden fertilizer (or you may substitute 10 pounds of chicken (or animal) manure.

c) One-to-two wheelbarrow loads of good, clean garden soil.

d) Tomato transplants (your choice).

Procedure: Choose a sunny location, and break up the soil to a depth of 6 inches. Lime it if the pH is low, according to soil-test results/directions. Fashion the wire into a circle, then place the wire circle in the center of the prepared ground. Place a 12 inch layer of compost or rotted leaves in the bottom of the wire ring. Add a 6 inch layer of soil onto the compost. Now scatter 1 pound of fertilizer (or 5 pounds of manure) on top of the soil. Add a second layer of compost or rotted leaves, followed by a second layer of soil. Then dump on another pound of fertilizer (or 5 pounds of manure). Lightly scratch this into the soil surface, then form a saucer shape to the pile for catching rainfall. Be sure to water the pile thoroughly.

Wait one week, then plant your tomatoes. Set three or four plants spaced equally around the outside perimeter of the wire ring, water and fertilize lightly to start them growing.

As the young plants grow, they will develop roots in the composted soil inside the ring. Top growth will be rapid from that point on, so be prepared to tie the stems to the wire for support. After 1 month, apply 2 more pounds of fertilizer inside the ring and water into the composted soil.

There can be several variations to the procedures described, especially in the kinds and amounts of organic soil amendments and fertilizer placed inside the ring.

Caged tomatoes: This method differs from the above in that the plants are placed inside the ring (cage) instead of outside the ring. Fertilize the soil inside the ring using a combination of organic amendment and fertilizer, but at a rate much reduced from the Japanese ring method. Two shovelfuls of manure and compost, fortified with 1/2 cup of 6-6-6 fertilizer, is about right for each cage. Add another 1/2 cup after 30 days.

Animal wire may be used, but the mesh-holes must be big enough for the gardener to reach in and remove a large-sized tomato fruit. Six-inch squares are suggested. Concrete reinforcing wire may be used, and there are brands of cages specially retailed for this purpose.

To make your own cage, fashion it cylindrical in shape, 3 1/2 - 5 feet tall, and 18-24 inches in diameter. Unrolled, about 5-6 feet of mesh wire is needed for one cage. Snip off the bottom rungs so that the vertical wires can be pushed into the ground for anchoring purposes.

Set tomato plants 3 feet apart in the row, then place the cage over and around each plant while it is small. As the plant grows upward through the cage, its leaves and stems protrude sufficiently through the mesh so that pruning and tying is usually not required.

I have seen cages made large enough to fit over a tomato plant growing in a 5-gallon bucket, and I have seen the cages anchored into the soil within the bucket.

As a final note of interest, there is yet another similar method to be tried, which will be saved for discussion at a later date. Called "ring culture" it is described as the old English method of growing in the "round", and adapted for U.S. greenhouse production (first reported in the American Vegetable Grower, March 1965).

(Stephens, Vegetarian 94-03)

Prepared by Extension Vegetable Crops Specialists

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