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I. NOTES OF INTEREST

A. Vegetable Crops Calendar.

January 14, 1995. Suwannee Valley AREC Shortcourse and Trade Show. (Contact Bob Hochmuth)


II. COMMERCIAL VEGETABLES

A. Celery Yield and Stalk Size.

The Lake Apopka Hydrologic Unit Project (LAHUP) is a cooperative project supported by the USDA, Cooperative Extension Service of the University of Florida, Soil Conservation Service (SCS), and the Agricultural Stabilization and Conservation Service (ASCS). Each agency has a defined role to play in achieving the common objectives of addressing the farm nutrient and water management in the sensitive Lake Apopka drainage basin. The Extension Service is responsible for making fertilizer recommendations and helping farmers manage nutrients in the most efficient manner possible. Recommendations based upon soil test and verifying the recommendations with on-farm demonstration plots is Extension's major thrust. The SCS is providing conservation planning and technical assistance to help farmers meet water quality standards. The ASCS administers specific cost-sharing practices available through this project. This has been a long way around to get to the topic of celery yield results when grown on a Gator muck soil which tested very high on phosphorus (157+ ppm P), very high on potassium (133 ppm K), very high on magnesium (757+ ppm Mg), and had a pH 7.2 (4706+ ppm CA). The soil test results indicated no additional fertilizer would be needed. To verify the recommendation, 6 fertilizer treatments were applied broadcast on 25 January 1994 and a side-dress of N on 8 March 1994. Celery was transplanted 8 February 1994 and the randomized complete block experiment had 5 replications. Fertilizer sources were: N from ammonium nitrate (34%), P from triple superphosphate (TSP 46%), and K from muriate of potash (KCl 60%). N was the same over the entire field with 60 lb/acre being applied broadcast on 25 January and 60 lb on 8 March. All of the P and K were applied on 25 January. Fertilizer treatments and celery yield data by size of stalks are presented in Table 1.
Table 1. Celery yield and stalk size as influenced by various P and K rates when grown in a Gator muck testing very high for P and K, Zellwood 1994.

<table>
<thead>
<tr>
<th>Treat. No.</th>
<th>N²</th>
<th>P₂O₅</th>
<th>K₂O</th>
<th>% Rot</th>
<th>Small</th>
<th>Medium</th>
<th>Large</th>
<th>Total</th>
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<tr>
<td>1</td>
<td>60/60</td>
<td>0</td>
<td>300</td>
<td>3.6</td>
<td>131</td>
<td>420</td>
<td>ab</td>
<td>510</td>
</tr>
<tr>
<td>2</td>
<td>60/60</td>
<td>0</td>
<td>0</td>
<td>5.6</td>
<td>173</td>
<td>429 ab w</td>
<td>465</td>
<td>1067</td>
</tr>
<tr>
<td>3</td>
<td>60/60</td>
<td>60</td>
<td>300</td>
<td>18.7</td>
<td>132</td>
<td>299 b</td>
<td>509</td>
<td>940</td>
</tr>
<tr>
<td>4</td>
<td>60/60</td>
<td>120</td>
<td>300</td>
<td>11.9</td>
<td>171</td>
<td>381 ab</td>
<td>361</td>
<td>913</td>
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<tr>
<td>5</td>
<td>60/60</td>
<td>120</td>
<td>0</td>
<td>4.5</td>
<td>245</td>
<td>465 a</td>
<td>283</td>
<td>993</td>
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<td>6</td>
<td>60/60</td>
<td>120</td>
<td>150</td>
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<td>352</td>
<td>376 ab</td>
<td>519</td>
<td>1247</td>
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²Nitrate applied pre-plant at 60 lb/acre and side-dress 4 weeks later at 60 lb/acre.
³The percent of rotten stalks/plot.
²Small = 1.1-1.9, Medium = 2.0-2.3, and Large = 2.8-3.9 lb/stalk (none were between 2.4-2.7).

Due to a wetter year than normal and high disease pressure, there was more variability between plots than expected. Total yield ranged from 913 to 1247 60-lb crates per acre, but there was no significant difference in the yield according to a Duncan's Multiple Range Test at 0.05. The highest level of fertilizer gave the lowest yield with no clear trends related to the various P and K rates. Overall, on this one test, the soil test recommendation of no additional P and K resulted in as high or higher celery yield as additions of up to 120 lb/acre of P₂O₅ or 300 lb/acre of K₂O. The size of the celery stalk as with total yield did not appear to be influenced by additions of P and K when the pre-plant soil test indicated adequate P and K.

This is a brief summary of cooperative work by C. A. Neal, E. A. Hanlon, J. M. White, A. Ferrer, and S. Cox.

(J. M. White, Vegetarian 94-12)

III PESTICIDE UPDATE

A. Potential Third Party Dual Registration in Bell Pepper Row Middles.

At the request of several pepper growers in the Palm Beach area, Third Party Registrations, Inc. (TPR) will be working to obtain a Special Local Need (SLN) registration for the use of Dual (Metolachlor) to control weeds in bell pepper row middles.

TPR projects are grower initiated where those who participate benefit from TPR’s efforts. Through contracts and agreements based in Florida contract law, TPR indemnifies the basic registrant or manufacturer from crop loss and product performance liability. The manufacturer retains all environmental and other liabilities. In return, growers indemnify TPR from similar liabilities. TPR’s liability is limited to the cost of the purchase price of the pesticide. Financially, TPR operating expenses
include: EPA and FDACS registration fees, data generation, registration petition development costs, maintenance of labels and agreements, and a contingency legal fund in case of lawsuit. Each TPR project stands alone financially so that the costs for a project remain with only those participants.

Labels are limited to those who participate. The per acre charge will simply be the total amount of acres interested in using Dual divided by the operating expenses.

For information on this label contact Charles Matthews or Dan Botts at TPR, Inc. (407) 894-1351.

(Stall, Vegetarian 94-12)

IV. VEGETABLE GARDENING

A. Are Healthy Vegetables More Resistant?

Most of us in Extension have heard for years from gardeners who believe that "healthy plants are more resistant to pests than plants that are stressed", particularly from one nutrient deficiency or another. Maybe some of you have even taught this as a principle of pest management. However, is it always true?

Actually, it has been my observation that dark green, vigorously growing, succulent plants (vegetables) are just as prone to attack by insects as weaker plants. I believe the following summary of a paper given in HortScience (29(11):1326-1328, 1994) will substantiate this observation. It is entitled "Nitrogen Supply during Production of Tomato Transplants Affects Preference by Colorado Potato Beetle", by D. W. A. Hunt, et al.

In their study conducted in Ontario, the authors found that nitrogen fertilization significantly affected the Colorado potato beetle's preference for tomato seedling. In field tests, beetles were more abundant on seedlings containing higher N levels and in the use of products containing these triazines.

The ecological effects is not included as a trigger in the Special Review at this time.

For more information consult Federal Register/Vol 59, No 225/Wed, Nov 23, 1994 or contact the Pesticide information office at 904-392-4721.

(Stall, Vegetarian 94-12)
greenhouse, there was also a similar strong correlation between tomato seedling N concentration and the number of beetles. As expected, the seedlings receiving higher N levels were larger. However, when same-size plants were tested, beetles preferred those with higher concentrations of N. So the beetles were not attracted to plants because they were taller, but because they contained more nitrogen.

Further studies also showed that the beetles preferred tender, succulent tomato plants to those that were tougher due to acclimatization. Exposing tomato seedlings to cool outdoor conditions for 5 days was sufficient to increase stem stiffness to a point that beetle damage (preference) was greatly reduced.

It seems a logical conclusion from these studies that certain conditions that enhance succulence and rapid growth may actually contribute to a preference for those plants by feeding beetles, and conversely conditions that lead to stressed plants, such as low nitrogen and cool-temperature exposure, actually reduced the feeding damage due to the Colorado potato beetle. Therefore, perhaps we as Extension workers need to be careful about teaching that healthy plants are more pest resistant. Not always!

(Stephens, Vegetarian 94-12)
Prepared by Extension Vegetable Crops Specialists

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<tr>
<td>Chairman</td>
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<td>Mr. J. M. Stephens</td>
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<td>Dr. J. M. White</td>
</tr>
<tr>
<td>Professor</td>
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