Vegetarian 85-3
March 18, 1985

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I. NOTES OF INTEREST

A. New Publications


3. Strawberry Production In Florida, By E. E. Albregts and C. M. Howard. Agricultural Experiment Station Bulletin 841.


B. Vegetable Crops Calendar

April 18, 1985, 1:30-4:30 P.M. Central Florida R.E.C. Field Day, Sanford, FL.


II. PESTICIDE UPDATE

A. Small Plot Weed Control Demonstrations for County Agents

Small plot weed control demonstrations can be a very effective extension tool. The following material was distributed at the Vegetable Crops In-Service Training January 1985, at Homestead.

For those county agents who were not in attendance, this article should be a help in establishing small plot tests in a number of crops. A few of the reasons that county extension personnel may wish to establish small plot weed control experiments are:

1. Demonstrate new weed control methods, application techniques or herbicide to growers.

2. Establish efficacy of a herbicide program for specific weeds under local conditions.
3. Evaluate herbicide phytotoxicity on crops at different rates. This can demonstrate the need for precise calibration and application techniques.

4. Increase one's expertise in weed control, establish grower confidence in recommendations and increase general knowledge of weed science through exchange of the data collected.

The demonstration must include careful planning, execution and follow-up in order to assure success. This is no different from any extension program.

A CO₂ backpack sprayer provides constant pressure for herbicide applications. These units are lightweight, compact and have a minimum of moving parts. The choice of nozzles and accessories are very similar to large grower sprayers.

For single nozzle band application, an even-spray flat fan nozzle is preferred. For wider broadcast sprays, regular tapered-edge flat fan nozzles that provide for pattern overlap should be used. Depending on the gallons per acre to be applied, nozzles with flow rates between 0.2 and 0.4 gallons per minute are best. Calibrated 8003 (LF3-80) nozzles at 20-25 psi, travelling at 3 MPH will deliver approximately 20 GPA. Care must be taken to keep nozzle strainers and other parts clean and operable. The use of check-ball strainers will minimize nozzle dripping at the end of each sprayed plot.

There are many choices of boom designs and nozzle types. Consult the sprayer manufacturer and the catalogs of Spraying Systems Company and Delavan, Incorporated for additional information. The sprayer calibration should be checked each time it is used.

Calibration of Small Plot Sprayers

The performance of any pesticide depends on the correct amount of material uniformly applied over the plot area. There are three variables that influence calibration accuracy:

1. The ground speed of the sprayer
2. The nozzle flow rate
3. The effective spray swath per nozzle.

Of these three factors, the most important is maintaining a constant ground speed. Next check for uniformity and volume of flow from each nozzle across the boom. The spray swath has been set by accurate nozzle spacing and height.

Walking Speed

First check for uniformity of walking speed at 3 MPH. This is a comfortable and easy to maintain speed.
Since 3 MPH equals 4.4 feet/second, measure out a course of 44 feet and practice walking that distance in 10 seconds.

Nozzle Flow Rate

The nozzle flow rate may be determined by the same method as calibrating a large field sprayer. The 1/128th of an acre sprayer calibration method works well. Consult additional fact sheets for details on these methods. Always be sure that the variation in flow rate between nozzles does not exceed ±5%. The following chart has reduced the flow check time to 15 seconds and expresses the volumes required in milliliters. A 250 ml or 500 ml graduated cylinder works best for this procedure.

FLOW RATES FOR 3 MPH

Milliliters of Liquid to Collect From Each Nozzle in 15 Seconds

<table>
<thead>
<tr>
<th>Desired GPA</th>
<th>Nozzle Spacing</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>18-inch</td>
</tr>
<tr>
<td>10</td>
<td>86</td>
</tr>
<tr>
<td>15</td>
<td>129</td>
</tr>
<tr>
<td>20</td>
<td>172</td>
</tr>
<tr>
<td>25</td>
<td>215</td>
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<td>30</td>
<td>258</td>
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<tr>
<td>35</td>
<td>302</td>
</tr>
<tr>
<td>40</td>
<td>344</td>
</tr>
<tr>
<td>50</td>
<td>430</td>
</tr>
</tbody>
</table>

Herbicide Rate Calculations

With the sprayer and the operator calibrated, the amount of herbicide to be applied must be determined. The small amount of material required is usually measured in milliliters or grams. Even though slide rule rate calculators are available, some of the new chemistry requires that the amount needed for a given application be calculated for increased precision. The following equations are the easiest for small volume application.

Liquid Formulations

\[
\text{Rate desired lb/A ai} \times \frac{3785 \text{ ml/gallon}}{\text{Tbs/gallon ai}} = \frac{\text{ml of formulated product}}{\text{GPA applied}} \times \frac{1 \text{ gallon water}}{1 \text{ gallon water}}
\]

Example:

\[
\frac{2 \text{ lb/A Lasso}}{4 \text{ EC}} \times \frac{3785}{20 \text{ GPA}} = 94.6 \text{ ml Lasso 4 EC}/\text{1 gallon water}
\]
(Herbicide Rate Calculations continued)

Dry Formulations

Rate desired lb/A ai x 454 grams/lb = grams of wettable powder/
% active ingredient GPA applied 1 gallon water

Example:

2 lb/A Atrazine x \(\frac{454}{.80} \) = 56.75 grams Atrazine 80 WP/
20 GPA 1 gallon water

Note - be sure to put a decimal point in front of the % active
ingredient figure.

Multiply these answers times the volume desired if other than a
1-gallon mix is needed.

(Stall & Curry - Veg 3-85)

III. VEGETABLE GARDENING

A. Horticulture Contest - Tampa State Fair

A combined 4-H/FFA Horticulture Identification and Judging
Contest was held February 16 at the Tampa State Fair. Extension
Horticulture Specialists Bob Black-OH, Jim Ferguson-FC and Kathleen
Delate-VC set up the contest consisting of 30 specimens from each
category. The judging section included one category each from
vegetables and fruits and two from ornamentals.

35 teams of 120 FFA (from 14 different counties) members and 8
teams of 29 4-H'ers from 6 counties participated in the morning
contest. Awards were presented in the afternoon (trophies for the top
five teams and high individual in each group).

The following winners are congratulated for their efforts, along
with all participants and their teacher/leader coaches. Thanks is
extended to FFA personnel, Florida State Fair, Women's Garden Club and
Extension personnel and volunteers assisting with the contest.

<table>
<thead>
<tr>
<th>4-H Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>Placing</td>
</tr>
<tr>
<td>----------</td>
</tr>
<tr>
<td>1st</td>
</tr>
</tbody>
</table>
(4-H Category Continued)

<table>
<thead>
<tr>
<th>Placing</th>
<th>County</th>
<th>Names</th>
<th>Score (out of possible 330)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2nd</td>
<td>St. John's</td>
<td>Joe Burchfield, Dana Robinson, Jan Worthington, Jennifer Dingfelder</td>
<td>246</td>
</tr>
<tr>
<td>3rd</td>
<td>Sarasota</td>
<td>Sean York, Eric Hernandez, Sheri Troglen</td>
<td>224</td>
</tr>
<tr>
<td>4th</td>
<td>Osceola</td>
<td>Laura Lee Harrelson, Doris Carnes, Crysti Wood, Suzy Murphy</td>
<td>221</td>
</tr>
<tr>
<td>5th</td>
<td>Hillsborough</td>
<td>Robert Hart, David Jimenez, Suzy Hart</td>
<td>220</td>
</tr>
</tbody>
</table>

High Individual

<table>
<thead>
<tr>
<th>County</th>
<th>Score (out of possible 110)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Robert Hart/Hillsborough</td>
<td>95</td>
</tr>
</tbody>
</table>

FFA Category

<table>
<thead>
<tr>
<th>Placing</th>
<th>High Individual</th>
</tr>
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<tbody>
<tr>
<td>1st</td>
<td>Plant City Senior</td>
</tr>
<tr>
<td>2nd</td>
<td>Chamberlain</td>
</tr>
<tr>
<td>3rd</td>
<td>Countryside High School</td>
</tr>
<tr>
<td>4th</td>
<td>Dade City Senior</td>
</tr>
<tr>
<td>5th</td>
<td>Tarpon Springs Senior</td>
</tr>
<tr>
<td>High Individual</td>
<td>Richards-Brandon</td>
</tr>
</tbody>
</table>

(B. Vegetable Gardening Survey - Palm Beach County)

Palm Beach County Urban Horticulture Agent Gene Joyner asked homeowners who attended his recent fall gardening classes about their gardens. His survey sheds some interesting light on the subject of growing vegetables in an urban environment. Out of 400 surveys distributed, 39 percent or 155 surveys were returned. From these, he was able to tabulate the following information.

When reviewing these data, keep in mind that they do not necessarily represent all of the gardening public of that area, and certainly not the state. However, it is probable that most of the information would fit most urban situations in Florida.

Sex: 91 male   Age: 0 under 21; 19-21 to 30; 26-31 to 40; 60 female   41 to 50; 28 - 51 to 60; 41 over 60.
(Vegetable Gardening Survey Continued)

<table>
<thead>
<tr>
<th>Housing:</th>
<th>Urban (incorporated area)</th>
<th>Rural (unincorporated)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>94 - single family</td>
<td>29 - single lot</td>
</tr>
<tr>
<td></td>
<td>6 - condominium</td>
<td>18 - acreage</td>
</tr>
<tr>
<td></td>
<td>3 - apartment</td>
<td>3 - condo</td>
</tr>
<tr>
<td></td>
<td>1 - mobile home</td>
<td>3 - ranchette</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1 - mobile home</td>
</tr>
</tbody>
</table>

1. Is this your first time vegetable gardening? 46 yes; 106 no. If no, how many vegetable gardens in past 5 years?
   14-(1); 21-(2); 15-(3); 5-(4), and 34-(5).

2. Do you intend to grow any vegetables in containers this year?
   75 - yes; 71 - no.

3. What vegetables will you probably grow in containers?
   - 60 - tomatoes
   - 19 - peppers
   - 12 - herbs
   - 5 - onions
   - 5 - parsley
   - 4 - lettuce
   - 4 - radish
   - 3 - broccoli
   - 3 - tomatoes
   - 3 - peppers
   - 3 - herbs
   - 3 - onions
   - 3 - parsley
   - 3 - lettuce
   - 3 - radish
   - 3 - broccoli

4. What size garden will you have? Average size - 419 sq. ft. ranging from 2'x2' to 50'x75'. Note: average size U.S. garden is approx. 600 sq. ft.

5. Will you add soil amendments? 135 yes; 7 no. What will you use?
   - 78 - animal manure
   - 73 - peat moss
   - 71 - topsoil
   - 17 - compost
   - 13 - sawdust
   - 12 - grass clippings

6. Do you plan to pre-treat the soil for nematode control before planting?
   91 - yes; 30 - no.

7. Which of the following types of fertilizer will you use most in your garden?
   - 92 - dry (granular fertilizer)
   - 25 - liquid or soluble type
   - 11 - combination of both

8. Approximately what percent will be started by:
   - Seeds
     - 47 - (75-100%)
     - 38 - (50-70%)
     - 25 - (5-40%)
### Purchased Transplants

<table>
<thead>
<tr>
<th>Percentage</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>75-100%</td>
<td>38</td>
</tr>
<tr>
<td>50-70%</td>
<td>85</td>
</tr>
<tr>
<td>5-40%</td>
<td>45</td>
</tr>
</tbody>
</table>

9. List 12 favorite vegetables you usually buy seeds for in order of preference.

- Tomatoes: 55
- Bush beans: 54
- Lettuce: 48
- Cucumber: 46
- Pepper: 46
- Radish: 43
- Carrots: 42
- Squash: 31
- Peas: 19
- Radish: 43
- Carrots: 42

10. Transplants?

- Tomatoes: 100
- Peppers: 52
- Herbs: 18
- Eggplant: 17
- Cucumber: 46
- Pepper: 46
- Radish: 43
- Carrots: 42
- Squash: 31
- Cabbage: 16
- Onions: 15
- Broccoli: 13
- Collard: 11
- Strawberry: 11

11. What type of irrigation do you plan to use?

- Hand watering: 59
- Sprinkler: 45
- Hand and sprinkler: 19
- Drip: 9
- Hand and drip: 3

12. How will you use your produce?

- Fresh: 101
- Canned: 12
- Frozen: 39
- Dried: 5

13. Respondents: Persons will be fed produce

<table>
<thead>
<tr>
<th>Count</th>
<th>Said</th>
</tr>
</thead>
<tbody>
<tr>
<td>120</td>
<td>2</td>
</tr>
<tr>
<td>92</td>
<td>4</td>
</tr>
<tr>
<td>55</td>
<td>5</td>
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<td>10</td>
<td>10</td>
</tr>
<tr>
<td>5</td>
<td>1</td>
</tr>
</tbody>
</table>

14. Are you using any printed Extension vegetable gardening information?

- Yes: 62
- No: 71
15. Are you using any vegetable recipes offered by Extension?

Yes - 12
No - 119

Summary

Urban vegetable gardeners who attended this meeting in Palm Beach County appear to be mostly experienced male gardeners under 50 years of age living in single family dwellings. Gardens are small, many in containers, where primarily tomatoes are grown. Soils are amended, fumigated, fertilized with dry fertilizer, and irrigated by hand or sprinklers. Most vegetables are started from seeds, but many transplants mostly tomatoes and peppers are also purchased. Most produce is used fresh to feed at least two from the garden. Gardeners are split on their use of Extension gardening guides, and are not likely to use Extension recipes.

Thanks to Gene

Again, thanks to Gene Joyner, Extension Urban Horticulture agent in Palm Beach County for conducting this timely survey upon whose results this report is based.

(Stephens - Veg. 3-85)

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