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I. NOTES OF INTEREST

A. Strawberry Field Day

The Agricultural Research Center at Dover, Florida has scheduled a Strawberry Field Day for Wednesday afternoon, February 2, 1983. All interested persons are invited to attend. A copy of the program follows.

PROGRAM

Moderator: Bob Wilder, Extension Agent I, Hillsborough County

PM
2:15 Assembly and Registration
2:40 Dr. W. E. Waters, Welcome
2:45 Mrs. A. J. Overman - Nematode Research
3:00 Mr. J. W. Prevatt - Strawberry Production Costs
3:15 Dr. J. F. Price - Insects on Strawberries
3:30 Dr. J. P. Gilreath - Weed Control for Strawberries
3:45 Dr. S. P. Kovach - Water Management in Strawberries
4:00 Dr. C. M. Howard - Strawberry Varieties and Diseases
4:15 Dr. E. E. Albregts - Strawberry Nutrition and Culture
4:30 Tour of Strawberry Research Plots

(SHERMAN)

B. Vegetable Crops Calendar

February 2 Strawberry Field Day, Dover ARC, 2:15 pm

February 9-10 Florida Seedsmen's Conference, Hilton Inn, Gainesville, 1 pm

(MAYNARD)

II. PESTICIDE UPDATE

A. Section 18 for Methamidophos on Chinese Cabbage, Escarole, Endive and Parsley

A specific exemption under the provisions of Section 18, FIFRA amended has been granted for the use of methamidophos (Monitor) to control aphids, lepidopterous larvae, and leafminers on escarole, endive, parsley and Chinese cabbage in Orange, Lake, and Palm Beach Counties.
Monitor may be applied at a maximum rate of 0.75 lb a.i. per acre, per application. A maximum of 2.0 lb a.i. per acre, per season may be applied.

A 21-day pre-harvest interval (PHI) will be observed for Chinese cabbage and a 28-day PHI for escarole, endive and parsley.

This specific exemption expires June 1, 1983.

B. Crises Exemption for Use of Trigard 75WP (Cyanazine)

On December 10, 1982, Commissioner of Agriculture, Doyle Conner, authorized a crisis exemption to use Trigard 75WP (cyonazine) on Florida celery and lettuce to control leafminers.

The crisis exemption has been extended till such time that a Section 18 specific exemption is acted upon.

(STALL)

III. COMMERCIAL VEGETABLE PRODUCTION

A. Trouble Shooting Vegetable Crop Nutritional Disorders

Diagnosis of crop disorders, pest damage, and environmental problems is an important part of the field life of the vegetable grower, Extension agent, and commercial field person. The diagnostic process actually begins with the first contact of the grower relating the problem to the person asked to help with the disorder. The grower usually provides a fairly good description of the problem and a rather definite idea as to whether the problem is due to an organism (disease, insect, nematode), climate (temperature, wind, rain) seed or variety, or a cultural mishap.

Sometimes careful questioning over the telephone can pinpoint the problem but quite often a field visit is required. The experienced consultant usually spends most of the early part of the field visit observing, listening, questioning, and making field notes. A careful record of fertilizer, irrigation, and cultural practices is usually very helpful.

The first step is to categorize the problem: Is it typical of a foliar or root disease, insect or nematode damage, unusual weather conditions? Is the disorder limited to a few rows, spotty areas or the entire field? For this brief article let us assume that the problem is related to fertilizer use or misuse,
The following symptom outline may be of help in assessing the disorder. The determination of the problem in a short season vegetable may be of value only for the next crop, but in a long season crop such as tomatoes or watermelon, early detection of a nutrient shortage or excess can be corrected in time to assist the current crop.

1. Symptoms characteristic of high or excess soluble salts* in the soil solution:
   - Delayed germination
   - Erratic growth of seedlings
   - Lesions of stem at soil line
   - Fall-over of seedling
   - Marginal leaf scorch
   - Root die-back
   - Poor germination
   - Root discoloration
   - Yellowing of leaves

* A field test with a portable soluble salt meter or a laboratory test of the soil helps to verify this suspected disorder.

2. Symptoms characteristic of a deficiency or excess of a specific nutrient:
   A. Leaves and Stem Symptoms
      1. Seed leaves malformed: Low Mn
      2. Seed leaves drop prematurely: Low P, Mn; Excess N
      3. Seed leaves necrotic: Low Ca
      4. Seedlings stunted, erratic growth: Low N, P, Ca, Mg; Excess Ammonium
      5. Leaves smaller than usual: Low Mn, (Severe Mg); Excess Cu, Mn
      6. Leaves chlorotic, mainly between veins, veins remain green: Low Fe small veins yellow, large veins remain green, Low Mn, Zn, Mo
      7. Leaves chlorotic, mainly between veins, veins yellow: Low N, Mg
      8. Youngest leaves yellow or mottled: Low Ca, S, Fe, Mn, B
      9. Oldest leaves yellow or mottled: Low N, P, K, Mg, Mo
     10. Youngest leaves have dead spots: Low Ca, Mn, B, Cu, Zn
     11. Oldest leaves have dead spots: Low P, K, Mg, Mn; Excess K
     12. Leaves distorted, twisted: Low S, B, Cu; Excess B
     13. Terminal die-back: Low Ca, P, Cu
     14. Leaves wilt: Low B, Cu
     15. Leaf veins discolored: Low N (Pink), P (Purple), S (Reddish)
     16. Premature leaf fall: Low N, Mn; Excess B
     17. Leaves cup upward: Low Mg; Excess Mg
     18. Leaves cup downward: Low K, Ca
     19. Plants stunted: Low N, P, K, S, Fe, Cu
     20. Plants erect and stiff: Low P, Excess K
     21. Plants spindly and soft: Low S, Excess N
22. Stem brittle: Low Ca, Mg
23. Stem lesions, external: Excess Ammonium
14. Stem internal tissue discolored: Low Ca, Blackheart of Celery, Cavity Spot of Carrot

B. Root, Flower and Fruit Symptoms

1. Root development retarded: Low P, Ca, Fe
2. Roots die prematurely: Low B
3. Roots discolored: Low Ca, brown tip; Low P, light brown; Excess Cu, dark brown; Excess K, dark brown; Excess N, light brown
4. Roots stubby: Low Zn, Low Ca, many short branches; Excess Cu, Mg
5. Roots long, slender: Low P, N, thin light brown; Excess Ca, Mg
6. Flowers small pale in color: Low N, Mg
7. Flowering delayed: Low N, Excess N
8. Premature flower fall: Low N, B, Cu
9. Fruit small, lowered yield: Low N, K, Ca
10. Fruit color altered: Low K (tomato, pepper)
11. Fruit shape altered: Low P (peppers elongated); Excess K, N; (catface tomatoes N and pollination)
12. Fruit blossom-end flattened dark and leathery: Low Ca (Blossom-end rot tomato, pepper, and watermelon)

3. Symptoms characteristic of imbalance of nutrients

A. Internal tissue breakdown of eggplant believed to be related to low Ca high B imbalance.

B. Graywall of tomato believed to be related to high N low K imbalance (and bacteria are also involved in this complex disorder).

In many instances a laboratory analysis of the soil and/or plant tissue is needed to confirm a suspected nutritional disorder. In some states quick tissue tests are used, but these methods should be corrected with laboratory findings to insure reliability.

(MARLOWE)

IV. HOME VEGETABLE GARDENING

A. Know Your Minor Vegetables - Garden Nasturtium

Garden nasturtium is a showy, attractive flowering plant which is commonly grown in Florida gardens as an ornamental. However, it may be included in gardens for use as a vegetable, since its leaves, flowers, and seed pods are edible.
Nasturtium goes by other names such as Indian cress, Mexican cress, and Peruvian cress. There are two species, the most common being *Tropaeolum majus* L., called large or tall nasturtium, and stortioner. The other is dwarf or bush nasturtium (*Tropaeolum minus* L.). These should not be confused with the genus *Nasturtium*, which is watercress.

Nasturtium originated in South America and is grown worldwide. It does very well in Florida as a spring, summer, and fall annual.

The plant is a succulent, climbing annual, with round smooth pea-green leaves attached in the center by a round petiole. Leaves range from 2 to 5 inches in diameter. It produces numerous five-petaled orange colored flowers. These develop into seed berries (pods) that are globular, ridged, and about 1/3 inch in diameter.

**Use**

The leaves are peppery flavored like cress and are used in salads and as a garnish. Likewise, the colorful flowers are used for the same purposes. The green berries are made into pickles, supposedly being equal to or superior to capers for such use.

**Culture**

Plant seeds from spring through fall throughout Florida, and winter in South Florida. Nasturtium is easy to grow. The seeds are sown about 1/2 - 1 inch deep, spaced 2-3 inches apart. When the plants are about 6 inches tall, it is best to place a stake or trellis near them for trellising. It is not necessary to stake or trellis the dwarf type.

There are few pests to bother the plants. Pods develop about 4 months after seeding.

The plants respond to the same general soil preparation, liming, fertilization, watering, sun-exposure, and cultural practices as for most garden vegetables.

(STEPHENS)

### B. 4-H and FFA Horticulture Identification and Judging Contest

The Florida State Fair Authority will again sponsor a 4-H and FFA Horticulture Identification and Judging Contest at the State Fair grounds in Tampa. The contest will be held on Saturday, February 12, 1983. Registration will begin at 8:30 a.m. and the contest will start at 9:00 a.m.
This event will include two divisions: FFA & 4-H. Contestants from both organizations will view the classes together, but tabulations and awards will be handled separately.

A list of plant materials for the contest is being sent to every extension office, in the 4-H newsletters. Note the addition of vegetables to this contest. Any plant part may be used if it is identifiable. There will be 4 classes to judge: 2 vegetables, 1 ornamental, 1 flower and foliage.

If there are any questions, contact me or Dr. Robert Black, Ornamental Horticulture Department, 392-1834.

(McDONALD)

Prepared by Extension Vegetable Crops Specialists

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