

Vegetable Crops Update

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RESEARCH AND INDUSTRY NEWS

Sweetpotato whitefly control with Detergents

Ninety percent control of the sweetpotato whitefly (SPWF) was obtained with detergent treatments in SW Florida. This occurred with thorough coverage in the underside of the leaves with 1% solutions of household detergents or insecticidal soap on cucumber, zucchini, tomato, eggplant, and poinsettia. In similar trials control of the SPWF and reduced dissemination of the Tomato Geminivirus (transmitted by the SPWF) occurred when household detergents or insecticidal soap (0.25%) applications were made twice a week. Control was also obtained when weekly detergent (0.25%) applications were alternated with JMS Stylet oil (0.75%) applications. Detergent concentrations above 1% resulted in foliar injury and reduced early tomato growth. Detergent foliar applications to control SPWF should therefore be conducted with caution to minimize foliar injury, and to maximize thorough coverage (Citrus and Veg. Mag. Oct. 1991).

SPW Control Strategies

How are Florida vegetable growers coping? At Regency Farms, in the Immokalee area, tomato fields are scouted up to 3 times per week; field borders are treated with herbicides to eliminate wild hosts; and for other general practices they are careful to pay attention to "minor details." Chemical treatments are rotated between classes, including pounce, dimethoate, Monitor, and Thiodan. Their pest management objective is to achieve zero populations up to 6-8 weeks after planting (Am. Veg. Grower, Nov. 1991).

Other SPW factoids

Some control is achieved with combinations of endosulfan, dimethoate and some pyrethroids and by rotating endosulfan, fenvalerate, and chlorpyrifos, but the whitefly has the ability to develop resistance to chemicals.

Airboom type sprayers appear to have an advantage over more traditional high pressure type sprayers for SPW control.

Can sustain flight for 2.5 hours, travelling up to 6 miles in one morning.

Levels can reach 3,000 eggs per square inch.

Planning for 1992 outbreaks: grower groups should get together to develop management practices, destroying weed hosts, and coordinated use of chemicals (Packer, Nov. 9, 1991).

Tolerance in Pepper to Western Flower Thrips

Western Flower thrips causes serious losses to many vegetable crops, and due to its widespread resistance to several pesticides, the available management tools for its control are limited. Damage symptoms include deformed leaf growth, chlorosis, and a shortening of the internodes. Selection trials in Charleston, South Carolina found resistance, and only mild symptoms from feeding in the following commercial pepper cultivars: 'Keystone Resistant Giant', 'Yolo Wonder L', 'Mississippi Nemaheart', 'Sweet Banana', and 'California Wonder'. These cultivars may be useful as a management

tool in a greenhouse pepper production program (Fery and Schalk, HortScience 26:1073(1991)).

Calcium Nutrition and Tipburn in Lettuce

Calcium nitrate (100 mg Ca/l) circulation at night reduced incidence of tipburn disorder in butterhead lettuce cv. Gloria using the hydroponic nutrient film technique (Cresswell, J. Pl. Nutr. 14:913[1991]).

Greenhouse Tomato Production Costs

Spring yields for greenhouse tomatoes in New Jersey are 14 lbs/plant at a cost of production of 84 cents/lb. Average tomato prices were \$1.17 per pound in 1989.

Herb Hydroponic Production

Basil and Peppermint showed (Table 1, below) potential for growth under the nutrient film technique hydroponic production system in Quebec. Nutrient and pH manipulation may increase the productivity of the other herbs tested (Wees and Stewart, Soilless Cult., 2,61(1986)).

Table 1. Productivity of herbs grown in the NFT system.

| Herb | foliage wt. _____ g/plant MT/Ha | | days to harvest |
|------------|------------------------------------|----|-----------------|
| basil | 132 | 88 | 53 |
| parsley | 24 | 16 | 62 |
| thyme | 9 | 6 | 68 |
| oregano | 24 | 16 | 74 |
| peppermint | 62 | 28 | 54 |
| watercress | 7 | 3 | 44 |

Table 2. Nutrient solution used in Herb experiment (ppm)

| | | | |
|---------|-----|----|------|
| N | 180 | Fe | 3.0 |
| P | 48 | Mn | 0.50 |
| Sulfate | 117 | Cu | 0.05 |
| K | 210 | B | 0.15 |
| Ca | 100 | Zn | 0.10 |
| Mg | 8 | Mo | 0.10 |
| Na | 3.6 | Cl | 0.04 |

Population Explosion, myth or reality? World Population density Stats based on available agricultural land (inhabitants per km² of agricultural land):

| |
|-------------------|
| Asia= 422 |
| England= 315 |
| China= 273 |
| Europe= 213 |
| Africa= 80 |
| Latin America= 58 |
| North America= 55 |

(Nature, 353,596(1991)).

Green manure for root knot nematodes

Washington State potato growers have lost three soil fumigants since 1977, and one of the two remaining ones has recently been banned in California. As an alternative to pesticides, rapeseed and Sudan grass, when incorporated into the soil, gave similar control to root knot nematodes compared to the fumigant Mocap. Important factors for control may include rapeseed and sudan grass varieties used, and time of incorporation into the soil (Packer Oct. 26, 1991).

Food Irradiation Factoids

Double shelf-life of strawberries, reduces mold in mushrooms, kills fruit flies in tropical items.

Used to overcome storage and shelf life problems, substituting in cases for fumigants which have been banned by EPA.

Approved in 36 countries for 49 different foods.

Used in 20 countries.

More than 9000 articles published since 1955 on irradiation research.

FDA has approved it on several foods.

According to Christine Bruhn, UC Davis, research shows consumers will buy irradiated produce, when advantages are emphasized (Packer, Nov. 2, 1991).

Starter fertilizers on bulb onions

Phosphate of ammonia was injected below onion seeds at sowing time as a starter solution in a well fertilized sandy loam. The starter solution fastened seedling shoot growth by an estimated rate of 3 days and resulted in a 1-2.5 days in advanced crop maturity compared to controls. Yields, however were not affected by the starter solution. Similarly, seed priming improved initial crop establishment but had no effects on final yields. Both starter solutions and seed priming techniques may thus be useful in soils where the seedlings are exposed to environmental stress in the early growth stages (Brewster et al., J. Hort. Sci. 66:551[1991]).

Need for a Statewide Vegetable Crops Association

There isn't one yet in existence, but many think that the creation of a statewide vegetable crops association is long overdue. The main argument against its formation is the great diversity in the local vegetable crops industry. But in the fast-moving lane of the fresh-produce business, with the greater market sophistication, greater competitiveness and unending emphasis on increased product quality, it will become harder and harder for a state vegetable industry to survive without a unified voice, and without strong coordinated marketing activities. Quality has become the name of the game, and states all over the country are scratching for a competitive edge in the market place by raising the popularity of home-grown vegetables in their states ("Minnesota Grown," "Michigan Naturally," "Connecticut Grown," "Jersey Fresh," "Pick Tennessee," "Always buy Colorado," to name a few). Hawaii, however, has the advantage of having an exotic tropical touch for the tourist market, and local produce is preferred for its rich quality and for its freshness.

But marketing is not everything. Growers also need a voice in the legislature, and growers also have a myriad of challenges, including important environmental regulations and pest control issues, which may radically change the way we presently cultivate our crops. A

well organized and tightly knit industry association will be better prepared to adapt to changes, confront and challenge new issues as they arise, based on coordination, communication, and the pooled expertise of all its participants. So why not? It is time to pool together and create the **Hawaiian Vegetable Crops Association**.

Favorite Herbs and Specialties in the Fresh Produce Market

Popular Specialties

1. jicama
2. dried tomatoes
3. elephant garlic
4. squash
5. fresh herbs
6. shallots
7. pearl onions
8. fresh chili peppers
9. black-eyed peas
10. oriental stir fry vegetables

Popular Herbs

1. basil
2. thyme
3. cilantro
4. rosemary
5. parsley
6. mint
7. tarragon
8. dill
9. oregano
10. chives
11. sage

(Packer, July 20, 1991; Cal. Agr. Feb. 91).

RESOURCES

Alternative Seed Sources:

Specialty Potatoes (organically grown):
Ronniger's Seed Potatoes
Star Rt.
Moyie Springs, ID 83845

Open-Pollinated Vegetables, and herb seeds:
Redwood City Seed Co.
Box 361
Red Wood City, CA 94064

Elite sweet potato true-seed germplasm available
For a source of a geographically diverse sweet potato germplasm, true-seed developed from polycrosses, contact Dr. Romeo T. Opeña, AVRDC, POB 205, Taipei 10099. A six-page technical guide entitled "Handling and Selecting Improved Clones from True Seed Populations of Sweet Potato" is sent along with the seed.

Hector Valenzuela, Ph.D.
Vegetable Crops Extension Specialist

UPCOMING EVENTS

Bacterial Wilt Symposium. 28-30 Oct., 1992.
For Information contact: Dr. Glen Hartman,
AVRDC, POB 205, Taipei 10099.

**International Symposium on Cultivar
Improvement of Horticultural Crops.**
September 6-10, 1993, Beijing, China. To be
included in announcement mailing list
contact: Inst. Veg. and Flowers, Chinese
Academy of Ag. Sci. 30, Baishiquiao Rd,
Beijing 100081, China