NATION'S SWEETEST ONION

Walla Walla Sweet was judged to be the sweetest onion in a contest held in Walla Walla (135 points), Washington, on July 23. The California's Imperial Sweet came in second with 54, Georgia's Vidalia with 49, New Mexico's Carzalia with 41 and Texas 1015 SuperSweet with 29 points. Maui did not entry the contest due to wet weather. (Onion World, July/August 1989)

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TEMPERATURE STRESS AFFECTS FRUIT SET

BEANS have trouble setting fruits under hot and cold conditions above 90 degrees F or day temperatures in the 50's.

CUCUMBERS need to be pollinated by bees. Because bees activities are affected by temperature, bee hives should be place in the fields when the temperatures are abnormally cold or hot.

BELL PEPPERS flowers and flowers buds will not open at temperature over 90 degrees F, which delay fruiting so much that no yield is obtained. Some growers in New York sprinkle irrigate daily during hot spells to cool the plants and pull them through the stress period.

TOMATOES will lose flowers due to lack of set at temperature over 90 degrees F.

SUMMER SQUASH has separate male and female flowers. The female flower opens first during cool weather before the male, pollen producing flower. The lack of pollination of the female flower produces a small fruit with brown sunken discoloration of the blossom end. When the weather warms up, the male flowers open normally, thereby, normalizing the fertilization process to insure the production of normal fruits. (American Vegetable Growers, Western Edition, August 1989)

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SWEET POTATO WHITEFLY
Silverleaf of squash and irregular ripening of tomato had caused substantial economic losses in Florida. The causal agents of these two diseases are unknown. These diseases occurred when the population of the Sweet-potato Whitefly is very high.

**SILVER LEAF**

The Silverleaf symptoms appear first at the leaf veins, as opposed to the interveinal silvering which is common in many zucchine cultivars. The symptoms develop in the interveinal area so that the entire upper leaf surface is distinctively silver. The symptoms do not occur on the underside of the leaf.

The fruit symptoms are expressed in the light color of the fruits. Yellow summer squash is very pale-colored. Zucchine is light-green to yellowish green.

Silverleaf symptoms have been noted on all types of squash but have not been observed in muskmelon, cucumber and watermelon.

**TOMATO IRREGULAR RIPENING**

Fruits affected by the irregular ripening frequently lacking color in one or more areas. Color develops along locule septa and intermediate areas remain green or yellow. This pattern of ripening produces a star-burst appearance. With sufficient time, sometime two to four weeks, nearly normal external color develops on most fruit. When cut, internal flesh is white or yellow. Since matured green fruit appears normal, the first indication of irregular ripening occurs when the fruit is removed from the ripening room. Plant vigor and foliage appear normal, but occasionally may have virus-like symptoms. (Vegetable Crops Fact Sheet, VC-37, Florida Coop. Ext. Svc., IFAS, University of Florida.)

Symptoms of the irregular ripening of tomato appeared on the Big Island. Confirmation of this disease is being done by the Extension Plant Pathologist Specialist. As reported in the Maui Vegetable Notes (July 13, 1989), the Sweet-potato Whitefly is found on all of the major islands except Maui. This species of whitefly is known to be a vector of lettuce mosaic. There is a need to survey for this pest on Maui. Your concern needs to be expressed to the State Department of Agriculture.

A study in Canada shows that copper (Cu) applied as fertilizer can help control stem melanosis, a bacterial disease, and increase grain yield of wheat. (Better Crops/Summer 1989)
THE IMPORTANCE OF BALANCED PLANT NUTRITION

The capacity of plants to be protected from diseases is influenced by the health of the plant and its stage of phenological development. A severely nutrient stressed plant is often more susceptible to disease than one of a nutritional optimum; yet plants receiving a larger excess of a required mineral may become predisposed to disease. (Better Crop/Summer 1989)

The severity of most diseases can be reduced by proper nutrition. Potassium (K) as a fertilizer has been known to retard more plant diseases than any other substance. Together, phosphorus and K help develop strong mechanical tissues in contrast to the succulent tissue produced by high levels of Nitrogen (N). They promote thicker cuticles and cell walls making it difficult for fungi to penetrate plant cells. Thicker walls can limit fungal growth once inside the host.

Another way to reduce the severity of the disease is to reduce the availability of nutrients essential for the growth of the pathogen. Plants deficient in K will accumulate simple N compounds, like amide, and limit protein synthesis. Amides are good nutrient sources for invading pathogens. Balanced nutrition helps reduce disease proliferation by avoiding excesses of nutrients which may encourage the growth of the organism. (Fertilizes Can Reduce Plant Diseases, L.J. Piening, Better Crops/Summer 1989)

There is a lack of information on proper nutrition for vegetable crops produced in Hawaii. I would like to recommend that this area of research should be priority No. 1 in the industry analyses of vegetables.

AMA PANEL CONCLUDES ONLY TWO PESTICIDES CAUSE CANCER IN HUMANS

An American Medical Association Council on Scientific Affairs concluded that just two pesticide ingredients arsenic and vinyl chloride—have been proven to be human carcinogens (Aug. 19, Journal of the American Medical Association). Arsenic is used in some wood preservatives, and vinyl chloride once was used as an aerosol propellant. (The Pesticide Label, 1988.)
TOMATO: HANDLING SHELF-LIFE

Allowing fruit to drop into picking bins or on to graders is one source to shortening the shelf-life of the tomato. A round tomato falling 31 inches on to a hard surface will lose 40% of its shelf life. Beefsteak tomatoes are more resilient, but a loss of 20% would still result from the drop. (Greenhouse Grower, Nov. 1989.)

PROGRESS

Progress is the product of mankind's constant effort to improve - to excel. J. Fielding Reed (Better Crops, Fall 1989)

NEW INSECT PEST IN KULA - THE FRUIT PIERCING MOTH

Defoliation of the Wili Wili trees at the Kula Ag-park was noted during the past month. The defoliation was caused by the larvae of the Fruit Piercing moth, (Eudocima (Othresis) fullonia (Clerck)). The larvae are easy to identify. They have two conspicuous "eye" markings on the 2nd and 3rd abdominal segments. They are fairly large as worms are concerned and are typically black or brown.

The female has been reported to deposit up to 300 eggs at a time on the underside of the leaves. The adult moth, both male and female, is reported to attack a wide range of fruits such as papaya, guava, mango, banana and TOMATO. The adult, which is active during the night, lands on ripening fruit, pierces the skin with its proboscis and sucks out the juices. Fruit flesh damaged by this pest is reported to be soft and mushy while flesh damaged by fruit flies is far more liquid.

There are two parasites in Hawaii which feed on this pests: Trichogramma chilonis (Trichogrammatidae) and Euplectrus plathypenae (Eulophidae). Five predators and a fungus attacking Eudocima are recorded in the literature. (Hawaii Pest Report, State Dept of Ag., Jan-Dec 1985.)

Should you suspect that you are encountering damages on you crop caused by this pest, please call
me or the Division of Entomology, State Department of Agriculture.

NEW LABEL THAT LIST CROP GROUP

FMC Corporation will be coming out with a new label for Pounce 3.2 EC and 25 WP for cucurbits. All of the cucurbits will be listed on the label, including: bittermelon, togan (Chinese waxgourd), hyotan and see qua (edible gourds).

NEW EDITION OF PESTICIDE POISONING HANDBOOK AVAILABLE

The fourth edition of "Recognition and Management of Pesticide Poisonings" is available free by calling the National Pesticide Telecommunications Network at the toll free 24 hour phone 1-800-858-7378. The manual is designed to help professionals responsible for the health of persons exposed to pesticides to recognize and treat properly poisonings by these substances. If you wish to order over 20 copies, make your request in writing to: Jerry Bondel, 8556 Tyrolean Way, Springfield, VA 22143. (Kansas Pesticide Newsletter, July 23, 1989)

Could this a public service project for the Maui Farm Bureau?????

THE ENDANGERED SPECIES ACT OF 1973

Your pesticide label may advise you to get additional information (printed bulletins) from local government agencies before using pesticide in an area that might be inhabited by the endangered wildlife. As a result of the Endangered Species Act, YOU ARE LEGALLY OBLIGATED TO OBTAIN THIS ADDITIONAL INFORMATION AND FOLLOW ITS RULES IF APPLY TO YOU.

You can write or call Mr. Charlie Nagamine for the above at:
1800 East-West Rd., Henke 329 Honolulu, HI 96822
Phone: 948-6007
The world's largest source of agricultural information. A Current list of "quick bibliographies" which outlines general topics about which the library already has printed bibliographies, is available. You can obtain a copy of the list and instructions on obtaining a bibliography on a specific topic by writing to: NAL, USDA, Reference Section, Room 111, Beltsville, MD 20705.

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SOME DIAMONDBACK MOTHS DROP OF LEGS WHEN COME IN CONTACT WITH INSECTICIDES

The diamondback moth is a major pest of cabbages and watercress in Hawaii. Drs. Aubrey Moore and Bruce Es Tabshnik (CTAHR: Dept. of Entomology) found that up to 74% of adult diamondback moths dropped off 1 to 2 legs after part of their legs come in contact with insecticide residues. Little in-depth studies of how adult months react to insecticides have been conducted since it is the immature stages (caterpillars) which most often causes crop damage. Studying the reaction of the adult stage to insecticides may be important in better understanding insecticide resistance mechanisms and how to better manage the pest.

The leg dropping phenomenon was observed when adult moths came in contact with residues of fenvalerate (Pydrin), permethrin (Ambush, Pounce), diazinon, DDT, piperonyl butoxide, and nicotene but not when exposed to rotenone (an insecticide derived from a plant) aminohydrazone, and Avermectin B1 (Avid). Separation of the leg consistently occurred at the same point on the insect. The point of separation was always clean and showed no signs of tearing. The authors indicated that individuals which dropped off their legs when exposed to insecticide residues recovered more quickly from knockdown than moths which didn't drop their legs. Further research to investigate the hypothesis that the diamondback moth could reduce the concentration of insecticide in its body by dropping off its leg was planned. (Leg Autotomy of Adult Diamondback Moth (Lepidoptera: Plutellidae) in Response to Tarsal Contact with Insecticide Residues. Journal of Economic Entomology 82:381-384)