Note: Some of the information provided on products/pesticide use below, is from other states and thus the products may have no current Hawaii registration. Always read the label before making any product/pesticide applications. Due to environmental effects the effectiveness of particular products may also vary across locations. Also note that recommendations developed for northern climates may not be directly applicable to Hawaii.

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ATTENTION LIVESTOCK PRODUCERS
LIVESTOCK COMPENSATION PROGRAM (LCP)
APPLICATION DEADLINE – DECEMBER, 13, 2002
The USDA, Farm Service Agency has announced a deadline of December 13, 2002 for eligible livestock owners to apply for Livestock Compensation Program (LCP) benefits. The LCP provides drought disaster assistance in the form of monetary relief benefits to eligible livestock ranchers in counties that have received primary disaster designation due to drought in 2001 and/or 2002. Number, type, and weight of eligible livestock will determine the amount of assistance. The following are livestock eligible for LCP beef and dairy cattle, buffalo and beefalo (when maintained on the same basis as beef cattle), goats, and sheep.

Interested livestock producers with operational headquarters located in the State of Hawaii should contact the USDA Service Center or County FSA Office in the county where the livestock operation's headquarters are located. County FSA Offices in Hawaii are located at the addresses below:

Honolulu County FSA Office      Hawaii County FSA Office
Phone:  (808) 483-8600            Phone:  (808) 933-8381
Fax:   (808) 483-8615              Fax: (808) 933-8345

Kauai County FSA Office       Maui County FSA Office
Phone:  (808) 245-9014        Phone: (808) 244-3100
Fax:  (808) 246-4639           Fax: (808) 244-7005

The United States Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, gender, religion, age, disability, political beliefs, sexual orientation and marital or family status. (Not all prohibited bases apply to all programs). Persons with disabilities who require an alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's, TARGET Center at (202) 720-2600 (voice and TDD). To file a complaint of discrimination, write USDA, Director, Office of Civil Rights, Room 326-W, Whitten Building, 14th and Independence Avenue, SW, Washington, D.C. 20250-9410 or call (202) 720-5964 (voice or TDD). USDA is an equal opportunity provider and employer. Special accommodations will be made, upon request, for individuals with disabilities, vision impairment, or hearing impairment. If accommodations are required, please contact the County FSA Office to be visited above.

1.0 Organic Flowers are here
Organic Flowers Are Coming

Earlier this year the United States Department of Agriculture (USDA) published rules that defined what could be labeled as "organic". As of Oct. 21st, organic producers and handlers have to be certified by USDA-accredited agents. Although the organic food market is relatively small, it has grown by 20% per year for at least the last 5 years.

This month organically grown roses will be hitting the market. Organic Bouquet in Novato, Calif., will market the organic roses, which will be grown in California, Oregon, Ecuador and other countries. Twenty different rose varieties will be offered at prices competitive with non-organic roses. In January they will begin selling organic tulips at natural food stores nationwide.

Hawaii's flower growers can get ahead of the game by beginning to experiment with organic methods with some of our tropical crops. The USDA certification is only required for those who sell more than $5,000 worth of products. So you can start off small without going through all the paperwork until you are ready to go full scale. What an idea!

(Ed Mersino, Ka Lono Pua, "The Flower News" Vol. IX No. 4, November 2002, Univ. Hawaii-Manoa, Cooperative Extension Service Oahu County)

2.0 Cost-share program for Organic Certification

NATIONAL ORGANIC CERTIFICATION COST SHARE PROGRAM

According to the November 1, 2002 federal register, "The Agriculture Marketing Service (AMS) has allocated $5 million to the National Organic Certification Cost Share Program. This program provides financial assistance to organic crop or livestock producers and handlers "to become certified under the National Organic Standards program." The money will be available to "all interested states" but states must apply before the December 31, 2002 deadline to become eligible. Once eligible states can allocate up to $500 (or 75% of costs) to their individual producers to offset costs of certification. Contact your state agriculture department today and make sure they are beginning the application process. States wanting to participate should contact Robert Pooler, Marketing Specialist - National Organic Program to obtain necessary applications and information. He can be reached at (202)
3.0 Agrimek Sect. 18 reg in basil for Hawaii

Message from Dr. John McHugh:

The "Hawaii Farm Bureau Federation has worked with HDOA Pesticides Branch to obtain a Section 18, Specific Exemption, for the use of Agrimek 0.15 EC on basil in Hawaii to control leafminer. The licensing period is September 3, 2002 to July 15, 2003. The contact registration specialist at HDOA for growers who want to participate in the Section 18 is Lance Kobashigawa at 973-9415." (John McHugh, e-mail Nov. 1, 2002).

4.0 Resistance to pyrethroids in onions

**Texas onion industry seeks answers to increasing resistance to pyrethroids**

Scientists are trying to determine the extent of resistance that pests are developing to synthetic pyrethroids in onion fields throughout the Texas Rio Grande Valley. Growers are reporting a decline in mortality rates of onion thrips treated with Warrior and Ammo, both synthetic pyrethroids, says Dr. T-X Liu, a vegetable integrated pest management entomologist at the Texas A&M Agricultural Research and Extension Center at Weslaco.

Liu currently recommends growers apply Lannate (methomyl), a carbamate insecticide, to control thrips. Several other products are being tested for their effectiveness.

"For now, we're relying on only one product, Lannate, to control both western flower thrips and the synthetic pyrethroid-resistant onion thrips," says Dr. Juan Ancisco, a Texas cooperative IPM Extension agent in Edinburg. "But having only one effective product is not good."
Liu says tests on thrips from the La Feria area treated with pyrethroids showed a 20 percent mortality rate, compared to a 50 percent to 70 percent mortality rate the pyrethroids provided last year. Western flower thrips collected from the Alamo area showed similar resistance to pyrethroids.

Onion thrips and western flower thrips are the area's main onion pests. They feed on onion leaves, which reduces the size and value of onion bulbs.
(The Grower Mag, June/July 2002, Pg. 12)

5.0 Why Fungicides Fail

Fungicides are an essential part of many vegetable disease management programs. These crop protectants are not “magic bullets” and their use should not be looked upon as the sole disease management tactic for any vegetable crop.

Using fungicides as part of an integrated disease management program, along with varietal resistance and cultural practices that favor plant growth and development, will give the best results. Several factors must be considered when deciding which fungicide to use and when to use it.

**Fungicide Type** - There are two broad categories of fungicides: protectant and curative. The most common are protectant fungicides that must be applied before the plant is infected. These fungicides are effective only where they are applied, so good coverage is essential. Commonly used protectant fungicides for vegetables are Bravo (chlorothalonil, Syngenta) and mancozeb.

Curative fungicides can stop a disease even after it has begun, although there is usually a window of several days after infection when a disease can be cured. These fungicides stop pathogens from growing in the plant tissues, and/or inhibit the pathogen from reproducing.

Most curative fungicides are systemic, meaning they can move through the plant from the point they are applied. Ridomil Gold (mefenoxam, Syngenta) is an example of a curative fungicide. Some of the newer fungicides, such as the strobilurins, e.g. Flint (trifloxystrobin, Bayer) and
Quadris (azoxystrobin, Syngenta), are protectants but also have the local systemic activity.

**Timing Of Application** - When to apply fungicides depends on the biology of the pathogen, the weather, the rate of growth of the crop and the manufacturer’s suggested application interval. For example, late blight of tomatoes can expand from a small number of plants to a full-blown epidemic in a few days if weather conditions are right (cool and wet). Other diseases, such as early blight, progress more slowly, allowing a little less vigilance in fungicide application. Most pathogens have distinct temperature and moisture optima, so knowing what these are will help with the timing of applications.

Fungicide Failure - A common cause of fungicide failure is using the wrong one. No fungicide is effective against all plant pathogens. None work on viruses and phytoplasmas, and only a few inhibit bacterial diseases.

For example, Ridomil Gold is active against diseases caused by Pythium and Phytophthora, and against white rust and the downy mildews, but is ineffective against fungi in other genera such as Rhizoctonia and Sclerotinia. Protectant fungicides generally have broader activity than curative systemic fungicides, which usually have a more specific mode of action.

Diseases caused by bacteria are problematic and, to date, only copper compounds and the plant activator Actigard (Syngenta) have shown the ability to reduce the severity of bacterial diseases.

**Application Methods and Rates** - When applying fungicides, the objective is to maximize coverage and minimize drift. There are many nozzles and sprayers available, and nozzle pressure, tractor speed, and spray volume can all be adjusted for each formulation and crop.

Fungicides may fail if they are washed off the plant’s leaves, therefore many manufacturers recommend the use of spreader/stickers to increase both coverage and rain fastness. Dosage also is critical for disease control.

Overuse or improper use can lead to fungicide failure and resistance to pathogens. For example, Ridomil no longer controls late blight of
tomatoes because resistance to the product has developed worldwide over the past decade.

Resistance tends to develop faster in pathogens that reproduce and spread quickly, such as bacteria and airborne spore forming fungi including those causing rust and powdery mildew. Resistance also is more likely to develop with fungicides that have a very targeted mode of action. The strobilurin fungicides, including Quadris and Flint, are in this category and resistance management strategies are included on the labels to assure that the fungicides are used properly. These strategies primarily consist of limits on the total number of applications that can be made, and alternation with fungicides with a different mode of action.

When fungicides are used properly, they are valuable disease management tools. However, proper use requires a good understanding not only of the positive characteristics of particular fungicides, but also of their limitation.

By Sally Miller, Richard Derksen, and Richard Riedel
American Vegetable Grower
September 2002
(Gene McAvoy, ed., SOUTH FLORIDA VEGETABLE PEST AND DISEASE, HOTLINE, October 2, 2002).

6.0 Anthracnose in Strawberry (N. Carolina)

Anthracnose management - these guidelines were provided by Drs. Bob Milholland and Charles Averre to County Agents with strawberry programs on 16-Oct-02:

Strawberry anthracnose has been a serious problem in N.C. for over 25 years and has caused serious losses for berry growers. The disease can be managed by following well established and universally accepted PRINCIPLES* of Integrated Pest Management (IPM). Because of the recent outbreaks of anthracnose and grower concerns, a review of some basic principles of plant disease management is appropriate.

* START THE CROP WITH ANTHRACNOSE-FREE PLANTS.
* HEALTHY APPEARING PLANTS CAN CARRY THE ANTHRACNOSE PATHOGEN.

* DO NOT INFECT CLEAN STOCKS WITH CONTAMINATED PLANTS.

* DO NOT CONTAMINATE CLEAN STOCKS WITH SOILED BOXES, TOOLS, ETC.

* CONTROLLING ANTHRACNOSE IN THE FIELD IS DIFFICULT OR NOT EFFECTIVE.

* USE CERTIFIED PLANTS.

In addition to strawberry anthracnose, there are other serious diseases than can be introduced into N.C. with contaminated planting stocks, e.g. red stele, Phytophthora, viruses, nematodes and others.


**7.0 Intrepid and Avaunt on lettuce, cabbage (AZ)**

**UPDATE OF NEW INSECTICIDES FOR LETTUCE AND COLE CROPS.**

Intrepid* 2F (methoxyfenozide) insecticide is now available for use in leafy vegetables and cole crops. It is an insect growth regulator (IGR) that accelerates molting. The IGR has good residual activity on cabbage looper and beet armyworm at appropriate rates. A "new" EPA Label for Avaunt* WG (indoxacarb) insecticide with a higher use rate range of 3.5 to 6.0 oz/A (0.065 to 0.11 lb a.i./A) for head and leaf lettuces has been approved. Avaunt is also effective against beet armyworm and cabbage looper. Both products are considered reduced-risk insecticides and have excellent fits in our lettuce and cole crop IPM programs. Small plot field tests were conducted to compare Intrepid and Avaunt with Success* and Proclaim*. The results showed that in general, Intrepid, Avaunt, Success, and Proclaim provided the same level of beet armyworm and cabbage looper control at 5 and 8 DAT. By 12 DAT, residual activity of all the compounds declined. Research by J. Palumbo, UA Research Entomologist, in Yuma, AZ. (Kai Umeda, Univ. Arizona CES Maricopa County VEGETABLES NEWSLETTER, vol IX, issue no. 11, November 8, 2002)
UPDATE OF NEW INSECTICIDES FOR LETTUCE AND COLE CROPS.
Intrepid* 2F (methoxyfenozide) insecticide is now available for use in leafy vegetables and cole crops. Be sure to have in possession during application, the DowAgroSciences supplemental label that allows use of the Rohm and Haas Intrepid 2F labeled with the EPA registration number 707-277.
(Kai Umeda, e-mail, Nov. 8, 2002).

8.0 Mites in eggplant and pepper (Florida)

Reports from Immokalee indicate that broadmites continue to be a problem in pepper and eggplant but appear to be under control in most locations. Broadmites are also being detected in basil. Growers and scouts in Palm Beach and Homestead also report the occurrence of broad mites on eggplant, pepper and basil.

Dr Phil Stansly notes that the symptoms of broad mite in eggplant are not as severe as in pepper, and it is easy to overlook an infestation until it becomes quite generalized. Growers are advised to be on the lookout for leaf distortion in developing leaves and scout for mites in whorls and on young fruit. Broad mites are white or cream colored and quite small, requiring a hand lens for positive ID. Males can often be seen carrying females on their backs. Eggs are about 1/4 the size of adults, round with a characteristic faceted opalescence. There are few products labeled for mite control in eggplant, and only one (sulfur), that is selective for mites. Kelthane (dicofol) and Agri-Mek are additional options available on pepper. Paired applications 4 to 5 days apart should be made to assure control of late-hatching nymphs.

A few red spider mites have been noted in Palm Beach on eggplant. These are largely confined to field margins and areas adjacent to ditch banks. Respondents note good control with back-to-back applications of a tank mix of Agrimek and Trilogy. (Steve McAvoy, ed., SOUTH FLORIDA VEGETABLE PEST AND DISEASE HOTLINE, October 16, 2002)

9.0 Actiguard for bacterial spot in Pepper

Around southwest Florida, bacterial spot is spreading both in tomato and pepper. Incidence and severity is directly related to rainfall totals.
Some fields around Immokalee have received nearly 30 inches of rain in the past six weeks while other fields a few miles away have had only 5 -6 inches during the same period.

In some fields, where infections came in early and rainfall has been high, bacteria is rampant in some tomato plantings with infection at moderate levels reaching high into the canopy. Some of these older tomato fields have lesions on fruit and first pick will have some rough fruit. In general, bacterial spot is much more widespread on tomato than on pepper and plum type tomatoes have higher incidence of infection than do rounds.

On the east Coast, reports indicate that bacterial leaf spot is present on pepper but that the incidence is low and occurrence spotty. Bacterial spot is more widespread in tomato. Incidence and severity remain low to moderate.

Some growers are reporting seeing significant levels of bacterial leaf spot control with Actigard. Actigard is not a fungicide, but a plant activator. In some cases, researchers and growers have noted some impact on yield with the use of this product. In other trials, tomato yields are improved due to better disease control, grade and pack out.

Since Actigard received a federal registration in August 2000, Syngenta has been able to conduct several large, commercial trials with Actigard to further develop best use guidelines in tomatoes. Syngenta is continuing to evaluate the performance of Actigard in commercial production situations and encourages growers to experiment with the use of the product for bacterial disease control on tomatoes for themselves. At present, the following guidelines are suggested to optimize the performance of Actigard.

Actigard Best Use Practices:
Apply Actigard at a rate of 0.75 oz/100 gal water. (Not per acre)
Begin the season using low water volumes. (30 - 50 gpa)
Initiate the first Actigard application before disease appears but not before 7 days after transplanting.

Allow plants to recover from transplant shock prior to the first application of Actigard.

Applications of a copper fungicide/bactericide may be needed between transplanting and the first Actigard application if disease is present.
Apply Actigard on a 7-day schedule.

Do not apply Actigard to plants that are stressed due to drought, excessive moisture, cold weather, herbicide injury, etc.

Do not apply Actigard when nighttime temperatures are below 55°F. Do not apply Actigard on less than a 7-day interval. Do not exceed 6 Actigard applications per season. Allow 14 days between the last Actigard application and harvest.

(Steve McAvoy, ed., SOUTH FLORIDA VEGETABLE PEST AND DISEASE HOTLINE, October 16, 2002)

10.0 Spray application survey from New York State

Of the 112 respondents who apply pesticides, 90% use a boom sprayer, 37% use a hand-operated sprayer, and 30% use an air-blast sprayer. Other sprayers are used by fewer than 10% of you. All except eight of you are using some type of engineering controls. The most popular are hydraulic boom folding (54%), enclosed tractor or cab (51%), mounted hand-wash water supply (47%), low-drift nozzles (45%), multiple nozzle bodies (39%), and container rinse system (38%).

The engineering controls most interested in are direct pesticide injection (43%), closed transfer system (37%), tank rinse system (37%), and pulley/ cable boom folding (37%). Those who responded are least likely to purchase air-assisted boom folding (43%) and pulley/ cable boom folding (37%).

Only three of you indicated that you are not using any engineering controls and have no interest in acquiring any. (New York State Vegetable Growers Association News - January-February 2002).

11.0 Biotech Moratorium announced by Pharmaceuticals

-- U.S. and Canadian Firms Adopt Moratorium on Crops Bioengineered to Make Drugs, Chemicals

Responding to growing concerns that drugs or chemicals made in genetically engineered crops will taint the food supply, the North
American biotechnology industry is adopting a broad moratorium on planting certain types of crops in major food-producing regions. The precautionary ban is intended to prevent the spread of exotic genes, through pollen transfer via wind or insects, into nearby field crops used for food or animal feed. The most immediate impact of the geographic ban, which goes beyond any proposed government regulation, will be to bar companies from growing certain types of transgenic corn in the midwestern U.S., or transgenic rape plants (from which canola oil is made) in the Canadian prairie, "though the ban could eventually apply to numerous crops and regions" (Washington Post, October 22). Made public by the Washington, DC-based Biotechnology Industry Organization (BIO), the policy has been endorsed by a dozen U.S. and Canadian companies that are using gene-splicing techniques to develop a variety of crops containing pharmaceuticals, medically important proteins, or industrial compounds. The industry hopes to avert any food contamination episode that resembles the StarLink 'debacle' two years ago, in which a corn variety genetically engineered to resist insects, and approved only as animal feed, ended up in taco shells and other foods. Recalling the tainted products cost U.S. food companies hundreds of millions of dollars, according to the Post article. A related news story from Reuters (October 23) is online at www.planetark.org; BIO's directive is available at www.bio.org/pmp/geoest.asp.

(Alternative Agriculture News, Volume 20, Number 11 (November 2002)

12.0 Procure fungicide on melons

Multiple Registrations for Procure Fungicide

Procure 50WS fungicide, a product of Crompton/Uniroyal Chemical, has received multiple new crop registrations for cucurbits, cherries and strawberries.

Procure 50WS is a broad-spectrum foliar fungicide previously labeled to control diseases like powdery mildew on grapes, and powdery mildew and scab on pome fruits. The new cucurbits label is for control of powdery mildew on cucumbers, gherkins, gourds (edible), muskmelons (cantaloupes, honeydews, Persian melons and others), pumpkins, squash (summer and winter) and watermelons. Procure is also now labeled for control of powdery mildew in strawberries and sweet and
tart cherries. The cherries label also includes application for control of blossom blight, fruit rot, and leaf spot.

The active ingredient in Procure is triflumizole, the only fungicide currently approved for protection of cucurbits, cherries, strawberries, grapes, and pome fruits based on imidazole chemistry. Triflumizole is effective in inhibiting ergosterol biosynthesis in fungi. Many of the higher fungi, like the powdery mildews, must synthesize ergosterol as a stabilizer for the membranes that make up their cell walls.

Other features of Procure include: Group E classification (evidence of noncarcinogenicity in humans); trainfast in one hour; minimal personal protective equipment (PPE consists of long-sleeved shirt and long pants, chemical-resistant gloves, shoes plus socks.); 12-Hour Restricted Entry Interval and short pre-harvest intervals. Procure 50WS is a wettable powder packaged in water soluble pouches. It is compatible with commonly used pesticides registered for use on the recommended crops in an IPM strategy. The new registrations are pending in New York, California, and Florida. For more information, contact Crompton Corporation at (203) 573-3787; or visit www.cromptoncorp.com.

(Fruit Grower News, Aug. 2002, pg. 15)

13.0 Leafminer control update (Florida)

Leafminers

Reports from Homestead indicate leafminer populations are starting to buildup to levels that warrant control. Scouts indicate that populations are particularly high in some older bean fields and expect that these will begin to move into other crops as harvesting begins over the next week or two.

Around Palm Beach, leafminers numbers in eggplant and tomatoes have reached threshold levels in a several places and growers are beginning to spray. Reports indicate good control on tomato where Platinum had been applied.

Leafminer populations are increasing around southwest Florida although most reports indicate that populations
remain below actionable levels. Reports indicate that Spintor has been applied to a few fields east of Immokalee for leafminer control.

With the on-set of cooler weather across the peninsula, growers across the state can expect to see an increase in leafminer pressure. Leafminers attack many crops but are particularly damaging on celery, crucifers, cucurbits, okra, potato and tomato. Florida growers report that leafminers are the second most important tomato insect pest especially in south and central production areas. Leafminers are present for much of the year in Florida. In south Florida, populations peak between October and March while in central Florida they are a problem in both spring and fall.

The two major species of leafminer that cause problems in vegetables in Florida are the vegetable leafminer (L. sativae) and most commonly (Liriomyza trifolii) - sometimes referred to as the celery leafminer or American sepentine leafminer. The adults are small yellow and black flies about the size of a gnat. The female punctures or "stipples" the leaves with her ovipositor to lay eggs in the leaf tissue or to feed on sap.

Leafminer damage is easily recognized by the irregular serpentine mines in leaves, which are caused by feeding larvae. Heavy leaf mining damage can reduce photosynthesis and cause leaf desiccation and abscission. The yellow maggots with black, sickle-shaped mouthparts feed on the mesophyll or chlorophyll tissue between upper and lower leaf surface leaving a winding trail or pattern through the leaf. The tunnel is clear with the exception of a trail of black fecal material left behind as the maggot feeds.

There are three larval stages. Each larval instar is completed in 2 - 3 days. The maggots feed approximately 7 days growing to about 1/10 to inch in length prior to exiting the leaf to pupate on the ground or mulch under infested plants.

Leafminer injury is readily visible to the grower but healthy plants can tolerate considerable damage without excessive loss of vigor and yield. The Florida Tomato Scouting Guide sets action thresholds at 0.7 larva per plant for young plants with less than 2 true leaves and 0.7 larva per 3 terminal leaflets for larger plants. Heavily damaged leaves will often drop, due in part to entry of pathogenic organisms into old mines.
An integrated pest management program that stresses conservation of natural enemies is the primary tactic for the successful control of leafminer. Chemical control is difficult due to the feeding habits inside the leaf of the host plant. Insecticides that specifically target the leafminer are recommended as use of broad-spectrum materials may decimate beneficial insects including those that attack leafminer. This often results in a larger leafminer problem if the pesticide reduces field densities of leafminer parasites.

Fortunately, populations are usually prevented from reaching truly damaging levels by a number of parasites that attack leafminers. Several parasites for this insect have been recorded in Florida, but parasitic wasps such as Opius, Diglyphus are most common. Wasp larvae develop on or in the leafminer larva or pupa. The host ceases to feed and the parasitoid egg or larva is visible through the leaf epidermis using a hand lens against strong light. In scouting fields, growers should be careful to note the number of parasitized mines before deciding to apply insecticides.

Due to its feeding habit, this pest is resistant to many insecticides. Cyromazine (Trigard) alternated with abamectin (Agrimek) are effective against leafminer in tomato. Both of these products have limited crop registrations and must not be used on unregistered crops. Spinosad (Spintor) has also given good results and is labeled on a wide range of crops. Some other materials that may be used to conserve beneficials include azadirachtin and insecticidal oils. Both products are approved for use by organic growers.

Field sanitation is an important control tactic that is overlooked. When crops are not present in the fields, leafminers can survive on a variety of broad-leaf weeds. These plants serve as reservoirs for the pest. (Gene McAvoy, ed., SOUTH FLORIDA VEGETABLE PEST AND DISEASE HOTLINE, Oct. 30, 2002).

14.0 Pyrethroid resistance on onion thrips in Texas

Texas onion industry seeks answers to increasing resistance to pyrethroids
Scientists are trying to determine the extent of resistance that pests are developing to synthetic pyrethroids in onion fields throughout the Texas Rio Grande Valley. Growers are reporting a decline in mortality rates of onion thrips treated with Warrior and Ammo, both synthetic pyrethroids, says Dr. T-X Liu, a vegetable integrated pest management entomologist at the Texas A&M Agricultural Research and Extension Center at Weslaco.

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Onion thrips and western flower thrips are the area's main onion pests. They feed on onion leaves, which reduces the size and value of onion bulbs. (The Grower Magazine, June/July 2002, Pg. 12)

15.0 Sweet corn weed control

Weed Management In Sweet Corn

Information in this article is excerpted from the article Weed Management in Sweet Corn in 2002 by R.R. Bellinder and A.J. Miller from Cornell University.

Weed control is an annual problem that must be dealt with aggressively. Left uncontrolled, weeds will reduce sweet corn yields 100%. Corn germinates and emerges slowly compared to weeds and is initially a poor competitor. Giving the crop an advantage early in the season may mean that less weed management is required later in the season.
The following is a list of general strategies that enhance weed control in sweet corn as well as other crops.

- **Crop rotation** which is necessary to prevent a buildup of crop-specific diseases and insects.

- **Cultivation** which is most successful if weeds are still very small, in the cotyledon to 2 true leaf stage.

- **Field cleanup** which is an important part of agricultural "housekeeping."

- **Herbicides** of which the most commonly used in corn are Atrazine, Basagran, Dual Magnum and Lasso.

- Preventing herbicide resistance by using them only when necessary, rotating crops and herbicide families, using mechanical weed control, monitoring fields to see what weeds are escaping the management program and cleaning equipment between fields.

- **Weather woes** which is one of the most unpredictable components of crop production in the Northeastern United States. Too little rain prevents herbicide activation and weeds emerge through an herbicide treated surface.

Some new herbicides for sweet corn include Prowl which is now registered for all sweet corn varieties, not just those grown for processing. Serious injury will occur if corn is planted too shallow. Also, Accent is still labeled for only a few processing sweet corn varieties. Additions to the label have not yet been announced.

(From Vegetable Update, Oswego, Onondaga and Cayuga Counties, March 2002 & New York State Vegetable Grower News – May/June 2002, pg. 7)

**16.0 Spray efficiency checklist**

Spray Efficiency Checklist
Attention to a few basic principles will help improve the efficiency of spray applications.

- Scout regularly. The earlier you diagnose a problem, the easier it will be to correct.

- Learn about the disease or pest you detect, especially its life cycle so that your sprays are correctly timed.

- Check the labels of the materials you plan to use to make sure that they are, in fact, registered and effective against the problem in question.

- Apply pesticides early in the morning, after sundown or on cloudy days to reduce chance of phytotoxicity.

- Do not apply sprays in extreme wind or heat conditions. Remember also that no wind can cause temperature inversions that will "lift" the sprays and promote drift.

- Make sure that the crops have been properly irrigated and show no signs of moisture stress before you spray them.

- Spray carefully to cover undersides of leaves - while trying to reduce run-off to a minimum.

- Do not split you applications at one-half strength. This may work for growth regulators, but for other pesticides.

- Drenches should be applied so that the entire growing mix is saturated, while keeping run-off to a minimum.

- Do not drench plants that have recently been irrigated, as the soil will not absorb the product.

- Fill your sprayer half-full of water; add the surfactant and then the chemicals. Have the agitator running and add any sticker or acidifiers last. Top off the tank with water being careful not to overspill.

- Check you water pH. If too alkaline, add acid or buffering agent to the level for the chemicals used.
Read labels to check for problem tank mixes and approved spray adjuvants.

Do not use wettable powder (WP) if it fails to break up and suspend properly in the water. Do not use an emulsifiable concentrate (EC) if it fails to form a "milky" emulsion in the water.

Use a spreader-sticker only if it is allowed by the label(s) of the pesticides you are mixing and only when it will promote good coverage.

Spreader stickers are dangerous in hot weather.

Keep detailed records and index them by pest and disease as well as by crop to properly document successful tank mixes and methods. This can save your future crops.

And finally: READ THE LABEL CAREFULLY. Remember: "The Label is the Law!"

From SPRAY TIPS http://www.spraytec.com
October 15, 2000
Vol. 3 Issue 11

(Steve McAvoy, ed., SOUTH FLORIDA VEGETABLE PEST AND DISEASE HOTLINE, October 16, 2002)

17.0 A Horse-Pack Sprayer for remote areas

PACK ANIMAL SPRAYER For instances of pesticide application in rough terrain that precludes aerial, vehicular, or person-carried sprayers, a unique "Horse Pack Sprayer" might be the answer. The HP30 offered by a U.S. firm comprises two durable, lightweight plastic tanks fitted with hardware enabling them to hang on each side of a pack animal (horse, donkey, burro). In addition to large filler openings on top of each tank, the underside of one tank houses a medium-pressure pump powered by a 12-volt, deep cycle, gel cell battery that permits 72 hours of continuous operation before needing a recharge. The system is designed to siphon water from most sources thus necessitating only
having to carry the needed pesticide supply. An adjustable spray nozzle, hose, and fittings are included.

*--> Pioneer West Inc., 64088 McDonald Lane, La Grande, OR 97850 USA.
E-mail: <pioneerwest@eoni.com>. Phone: 1-541-663-9378.
Web: http://www.pioneerwestinc.com
(IPMnet NEWS, November 2002, Issue 107)

18.0 Fruit Corner: Biocure a New Biofungicide

New Protective Coat Ahead for Fresh Produce

Tomorrow’s apples—and oranges or other fruits, too—might be better protected from rot-causing microbes, thanks to findings from ARS researchers and their industry co-investigators. Scientists at the ARS Appalachian Fruit Research Station, Kearneysville, W.Va., have now won a patent for their novel combination of a hardworking yeast called Candida saitoana and an enzyme known as lysozyme. [Photo: Apples being examined to evaluate the effectiveness of biological treatments for postharvest decay control.]

The dynamic duo fights existing colonies of rot organisms on the skin or peel of apples, oranges, and other fresh produce and also helps protect against new attacks, the researchers have found. C. saitoana is harmless to humans and occurs naturally on many kinds of produce. The lysozyme enzyme that the scientists paired with this yeast is from chicken eggs.

Scientists with Micro Flo Company, Memphis Tenn., intend to employ the yeast and enzyme in a powerful new biofungicide that they plan to market under the name “Biocure.”

For more information, contact Charles L. Wilson, (304) 725-3451, USDA-ARS Appalachian Fruit Research Station, Kearneysville, WV (USDA Food and Nutrition Research Briefs, Oct. 2002).

19.0 Food Composition Database on the WEB
Food Composition Database Updated
America’s most authoritative source of information about the vitamins, minerals, and other nutrients in some 6,000 familiar foods is now better than ever. ARS’ Nutrient Data Laboratory has updated the database, which describes up to 117 nutrient categories for each food item. New data for ground beef, breakfast cereals, and sweets are among the updates to the compendium.

Called SR15—short for the USDA National Nutrient Database for Standard Reference, Release 15—the database is today’s version of the nutrient composition publications that began decades ago as Handbook 8. ARS’ National Agricultural Library in Beltsville, Md., hosts the site on the World Wide Web that contains the update. It’s located at:


For more information, contact David B. Haytowitz, (301) 504-0714, USDA-ARS Beltsville Human Nutrition Research Center, Beltsville, MD (USDA Food and Nutrition Research Briefs, Oct. 2002).

20.0 Food Irradiation Websites
Educate and Irradiate

With all the talk of food irradiation in the news these days, those on the front lines might need some good sources of information.

Food irradiation information from FSIS
http://www.fsis.usda.gov/oa/topics/irrmenu.htm

Food irradiation information from FDA
http://vm.cfsan.fda.gov/~dms/opa-bckg.html

The CDC food irradiation page presents information in an easy-to-read question and answer format.
http://www.cdc.gov/ncidod/dbmd/diseaseinfo/foodirradiation.htm

The Center for Consumer Research at UC Davis includes sections on Who Recommends Food Irradiation? Who Opposes Food Irradiation and Why?, and Myths About Food Irradiation.
http://ccr.ucdavis.edu/irr/index.shtml
Iowa State University's Food Irradiation site contains a glossary of food irradiation terms and a history of food irradiation.
http://www.extension.iastate.edu/foodsafety/rad/irradhome.html

These and more links to backgrounders, fact sheets, and brochures on food irradiation from government, academia and industry are on the USDA/FDA Foodborne Illness Education Information Center Web site at:

For more food safety information, visit the USDA/FDA Foodborne Illness Education Information Center's Web site at:
http://www.nal.usda.gov/foodborne/

21.0 Used Machinery? Classified ads from Florida

Florida Market Bulletin Classified ad at
http://www.fl-ag.com/fmb/fmbads.htm

Also: Used Fruit and Veg Packing Machinery - call Steve at 336-287-3957 or email jsm@rjia.net

22.0 Organic Veg Short-course in NY

ORGANIC VEGETABLE PRODUCTION SHORT COURSE, Jan. 14-16, 2003

The New York State IPM program is offering a 3-day series of workshops in Geneva, NY on Jan. 14 (soil and nutrient management) Jan. 15 (weed management) and Jan.16, 2003, (insect and disease management). The program is intended for commercial vegetable growers who are currently growing organically as well as those contemplating organic vegetable production. A combination of university and farmer speakers will be featured. This series is sponsored by a grant from the Northeast Sustainable Agriculture and Education Program, so registration is only $10.00 per day. Overnight lodging costs in Geneva are reasonable. Attendance is limited to 75 people so register early.

For more information and registration material contact: Abby Seaman at 315-787-2422 or ajs32@cornell.edu.
23.0 Upcoming Events

**Arizona Annual Desert Workshop**

**ANNUAL DESERT CROPS WORKSHOP.** Plan to attend the workshop featuring University of Arizona and California and USDA researchers on DECEMBER 4, WEDNESDAY at the Yuma Convention Center beginning at 8 AM. RSVP to this office or Yuma County Cooperative Extension at 928-726-3904 ASAP. The program for the morning workshop is at: http://ag.arizona.edu/crops/counties/all/meetings/vegwkshp120402.html.

**American Farmland Trust (AFT)** is now accepting registrations for our upcoming national conference, which will be held March 10-12, 2003, at the Asilomar Conference Center on the Monterey Peninsula in Pacific Grove, California. Entitled Farming on the Edge: Finding the Balance, this conference will explore how communities can support agriculture while addressing complex growth and environmental priorities. The goals of the conference are to share new information and offer proven tools, techniques and successful strategies to keep land in agricultural production, manage growth, address environmental concerns and strengthen agriculture.

The conference is targeted to agricultural and natural resource professionals, concerned citizens, environmentalists, farmers and ranchers, farmland protection program managers, land trust staff and volunteers, public officials and policymakers, planners, researchers and educators.

More information is available on our Web site at www.farmland.org or by calling Doris Mittasch at (413) 586-9330. Please note early registration rates are in effect until November 22, 2002.

**HIGH TUNNELS - ESSENTIAL EQUIPMENT FOR THE MARKET GARDENER**

A Workshop for Beginning and Experienced Growers Held in Conjunction with the Great Plains Regional Vegetable Conference Ramada Inn, St. Joseph, Missouri, January 9, 2003
High tunnels, also known as hoop houses, are inexpensive walk-in plastic tunnels that provide a protected environment for crop production throughout the year. Market gardeners throughout the Central Plains are adding high tunnels to their operations to extend their production season and to produce high quality vegetables, fruits and flowers, protected from the extremes of our continental climate. This one-day workshop will provide prospective and experienced high tunnel users with essential information for getting started and profitably using high tunnels.

**Featuring guest speakers:**

Eliot Coleman, noted organic market gardener and author with "Practical Considerations For Profitable High Tunnel Operations Experiences From The Backside Of The Maine Calendar."

Steve Upson, horticulture consultant, the Noble Foundation, Ardmore, Okla.- "Experiences With Growing High Value Crops In High Tunnels In The Southern Great Plains."

John Biernbaum, Professor of Horticulture, Michigan State University, with "Organic Production Of Green Leafy Vegetables In Michigan."

Also including a panel discussion on high tunnel construction, management and production issues for the Heartland, featuring researchers and grower cooperators on a regional USDA research and extension project.

Cost of workshop, including lunch and breaks: $50
To register, or for more information, contact
Christy Dipman, Kansas State University
Tel: 785-532-6173
E-mail: cdipman@oznet.ksu.edu

**THE GREAT PLAINS VEGETABLE CONFERENCE AND TRADE SHOW**
Ramada Inn, St. Joseph, Missouri
January 10 and 11, 2003

The Great Plains Vegetable Conference serves an audience of vegetable growers and market gardeners. Extension specialists, growers and
industry representatives provide up to date information on major market gardening themes in 4 concurrent sessions during this 2-day conference. Specific sessions will be held on tomatoes, asparagus, pumpkin weed control, sweet corn, flowers, marketing, beginning farmer, varieties, high tunnels, and much more. The Trade Show will feature 35 to 40 vendors. A grower round table discussion will be held Friday night.

This year's conference will be preceded by a one-day workshop on high tunnels.

**Special guest speakers and their topics this year include:**

- Eliot Coleman, Four Season Farm, Maine - Successful organic market gardening; appropriate tools for the gardener;
- Vicki Stamback, Stillwater, Oklahoma - Specialty cut flowers, successful and profitable basics; know what you're growing and why; marketing local products;
- Steve Groff, Cedar Meadow Farm, Pennsylvania - No-till tomatoes, sweet corn, and especially pumpkins; use of cover crops;
- Carl Cantaluppi, North Carolina State Univ. - Forcing asparagus for the early market; starting a wholesale produce auction; caging tomatoes;
- Pat & Jan Garrity, Garritys' Gardens, South Dakota - Entertainment farming in a rural setting;
- Richard Bonanno, Bonanno Farms, Massachusetts - Weed management; bedding plants; farming 40 miles from the heart of Boston;
- Ray & Michelle Christenson, Iowa - Profitable green bean production(mechanical harvesting to retail);
- Bill Shoemaker, University of Illinois Extension Specialist - Pumpkin weed control; sweetcorn fertilizer;
- John Biernbaum, Michigan State University - Principles and Practices of Organic Farming;
- Several growers on an 'adding value' panel.

Full program and registration details available at the end of November. For more information, contact Christy Dipman, Kansas State University Tel: 785-532-6173 E-mail: cdipman@oznet.ksu.edu