1.0 Sclerotinia On Veggies (Florida)

Sclerotinia

Around southwest Florida, growers and scouts have noted the occurrence of white mold in tomato and pepper.

Sclerotina has also been noted on pepper in Palm Beach production areas.

The fungus, *Sclerotinia sclerotiorum*, is responsible for a number of vegetable diseases. Sclerotinia is particularly damaging in bean, lettuce, potato, and tomato. Common names for Sclerotinia diseases in Florida are white mold (beans), drop (lettuce), stem rot (potato and tomato), and nesting (post-harvest disease of bean).

Sclerotinia is a fungus that prefers cool, moist weather, causing diseases of great intensity when temperatures range from 60 - 70°F (15 - 21°C). High humidity with dew formation supports the spread and increases the severity of infections.

A good indicator of Sclerotinia disease is the presence of small, black sclerotia (resting structures) of the fungus. Sclerotia vary in size and shape. Sclerotia can form on the surface of plant parts as well as inside the stems of tomato and potato. The sclerotia enable the fungus to survive from season to season and are the source of inoculum to infect crops. Recycled irrigation water may move sclerotia to fields where sclerotia are not present.
Another common indicator of Sclerotinia diseases is the presence of white, cottony-like mycelium of the fungus when weather conditions are cool and moist.

Symptoms of Sclerotinia vary between crops. White mold in beans usually appears after flowering. The disease often appears in leaf axils and advances into the stem, producing water-soaked spots that increase in size, girdling the stem, and killing it above the point of infection. The disease can also enter the plant through leaves or pods that touch the soil where sclerotia or infected plant parts act as inoculum.

In tomato and potato, infection typically starts at flowering. Water-soaked spots are usually the first symptom, which is followed by invasion of the stem, girdling, and death of the upper part of the stem that turns a light gray. As with bean, the disease can also begin where the plant contacts the soil or infected plant debris. Large portions of the field may become diseased, producing large, circular, areas of dead plants. The black sclerotia formed by the fungus are often found inside infected stems.

In beans, Tupsin M 85, Rovral 50 WP or 4 F and Benlate 50 WP applied at bloom stage has been effective in controlling white mold. Rovral 50 WP or 4 F has been used with good results in lettuce. For potato, Rovral 50 WP or 4 F and Botran 75 W are recommended for Sclerotinia control while in tomato Benlate 50 W and Quadris 2.08 FL has given good results.

(Gene McAvoy, SOUTH FLORIDA VEGETABLE PEST AND DISEASE HOTLINE, January 3, 2003)

2.0 TSWV- Expands its Damage

STORY LEAD: Tomato Foe Attacks Other Crops, Too

Tomato spotted wilt virus (TSWV) is estimated to cause more than $1 billion in damage to crops throughout the world annually.

As its name implies, TSWV was originally observed in tomatoes. But in recent years, there have been reports of a sharp increase in TSWV attacking not only tomatoes, but also peppers and peanuts, particularly in Florida, Georgia and North Carolina. Last year Virginia saw a tremendous increase in TSWV problems in potatoes.

In May 2002, Agricultural Research Service plant pathologist Scott T. Adkins, in conjunction with the University of Florida (UF), began to study crop damage caused by this virus in the tomato production areas of northwest Florida, just west of Tallahassee. He and his team observed, in adjacent tomato and pepper fields, a high percentage of infected tomato plants, but a low percentage of infected pepper plants.

Adkins took TSWV samplings from tomato and pepper plants back for analysis by scientists in ARS’ Subtropical Plant Pathology Research Unit at Ft. Pierce, Fla. He is trying to see if one host (tomato) is affecting the ability of TSWV to infect the other host (pepper) and vice versa.

The virus can turn leaves brown, purple or bronze and frequently kills the plants’ stem tips. It can also cause brown or yellow spots and rings on tomatoes and other produce, making them unappealing to consumers and therefore unmarketable.

TSWV is transmitted from plant to plant almost exclusively by several species of thrips. The western flower thrips (Frankliniella occidentalis) and the tobacco thrips (F. fusca) are major vector species in Florida, although F. bispinosa may also be a locally important vector.

Adkins is working closely with UF plant pathologist Tim Momol, who is located at the North Florida Research and Education Center in Quincy. Southeastern produce growers are showing great interest in their work.

Adkins hopes to characterize the diversity of the virus across the wide range of host plants TSWV infects, not only in the region, but also throughout the United States. Once this is determined, he can use the information to develop improved virus management strategies and crop cultivars that will resist infection.

ARS is the U.S. Department of Agriculture’s principal scientific research agency.
3.0 TSWV- Cultural Management Tips

CULTURAL PRACTICES WHICH ARE USEFUL IN THE MANAGEMENT OF TOMATO SPOTTED WILT DISEASE

PRE-CROP PHASE PRACTICES
- Crop rotation with non-susceptible crops to reduce build up of TSWV source-plants.
- Crop placement in relation to TSWV source-plants. Avoid planting TSWV susceptible crops in adjacent plots:
- Management of TSWV hosts by controlling alternate TSWV and thrips hosts.

CROP PHASE PRACTICES
- Use of TSWV free seedlings.
- Insecticide applications to propagated seedlings and field plantings. None of registered insecticides can control or prevent epidemics.
- Reduced in-field cultivation practices to avoid inducing thrips movement from infected sources.

POST-HARVEST PHASE PRACTICES
- Fallow (3-4 weeks) field areas immediately after high incidence of TSW disease. This practice allows thrips to emerge and disperse out of the field. Soil fumigation with VAPAM or TELONE immediately after harvesting. This practice eliminates thrips from crop debris.

(Dr. Ronald Mau and Dr. John Cho, 1994, Hawaii Institute of Tropical Agriculture and Human Resources, University of Hawaii at Manoa)

4.0 Food Safety Programs Importance

Relevance of Food Safety Programs

The need for a food safety initiative has been promoted for several reasons. Foremost is the globalization of our food supply along with consumer demand for a wide variety of fresh fruits and vegetables all year round. Additional pressure for a high level of microbial food safety comes from the fresh cut industry, which offers an array of ready-to-eat, pre-cut salads, fruits (notably melons) and vegetables. Along with these consumer trends, changes in U.S. demographics also play a role. As the baby boomers get older, more people are elderly and may have compromised immune systems or chronic diseases. Consequently, more people are especially susceptible to food-borne illnesses.

With these consumer trends, unfortunately, has come a nationwide increase in produce-related food borne illnesses. The following figures come from Food Safety Begins on the Farm: A Grower's Guide, published by Cornell University as part of a national effort to develop Good Agricultural Practices (GAP’s), jointly sponsored by the Cooperative State Research, Education and Extension Service, the U.S. Department of Agriculture and the U.S. Food and Drug Administration (this GAP task force includes representatives from the University of Florida and Georgia). Between 1970 and 1997 per capita consumption of fruits in the U.S. went up 24%, from 577 to 718 pounds. With this increase, however, the number of outbreaks of food related illnesses has steadily risen. Between 1996 and 2000, 113 outbreaks with 3,805 individual cases associated with produce were reported to the Food and Drug Administration.

In these outbreaks, bacterial human pathogens outnumbered other types of pathogens as the disease-causing agents. The most common of these bacterial pathogens are Salmonella spp. and E. coli O157:H7, which accounted for over 75% of produce-related outbreaks between 1988 and 1998. These bacteria belong to groups that have both human and animal reservoirs, and are also associated with fecal contamination. These facts help explain why food safety experts place great emphasis on worker health, safety and hygiene and on the management of animals, manure and other biosolids in and around farms where fruits and vegetables are grown. In fact, a farm's
management of toilet facilities, hand washing stations and the cleanliness of the audit. For produce run through a packinghouse or hydro-cooler, the same issues can be even more important!

But there is important good news. The latest round of testing by the Food and Drug Administration shows that 98.4% of the samples are free of microbial contamination from eight commodities. Out of 687 samples, 11 tested positive for Salmonella and Shigella. A 1999 survey of imported produce showed 94% to be free of pathogens. (Information excerpted from the Glades Crop Care website.)

(Gene McAvoy, SOUTH FLORIDA VEGETABLE PEST AND DISEASE HOTLINE, January 3, 2003)

5.0 Third Crop? (Definition)

THIRD CROP

Third Crop is a new concept being used by many farmers, environmental and farm organizations, universities, and government agencies, particularly in and around Minnesota. The concept is used as a term for value-added crops and services produced on the farm and has gained much attention from both farmers and researchers. Third crops could be new, specialty crops added to a rotation, but third crops also include practices and opportunities for increased agri-tourism, wildlife habitat, energy production, and a host of other practices that help diversify farms and landscapes, and produce environmental benefits otherwise difficult or costly to achieve.

(MARKET POWER: Buying for the Future - Vol. 6, Number 1 January 3, 2003)

6.0 From the Archives: Keep Sprayers Clean

Clean spray equipment important for pesticide management

It is important to make sure sprayers and other equipment used to apply pesticides are cleaned and ready for another season.

"Clean sprayers are key to proper pesticide management," said Joanne KickRaack, coordinator of the Pesticide Education Program, part of Ohio State University (OSU) Extension.

Clean sprayers reduce potential crop injury from residual pesticides left in the sprayer, she added.

Keeping sprayers clean also keeps them in top condition as pesticide residues can corrode equipment and clog nozzles, said Kick-Raack. She recommends cleaning sprayers immediately after each use and at the end of the spraying season. Sprayers should first be flushed and rinsed, inside and out, with water to prevent the accumulation of pesticides.

In addition to the first rinse with water, the sprayer may need to be flushed with a cleaning agent because some herbicide residues can ding to plastic tanks. Kick-Raack recommends the following guidelines taken from the Ohio State University Weed Control Guide for Ohio Field Crops:

- Partially fill the tank with water and add household ammonia (one gallon per 100 gallons of water) or a commercial tank cleaner. Complete filling the tank with water, then flush the cleaning solution through the boom, hoses and nozzles.

- Completely fill the tank with water again and allow it to agitate for at least 15 minutes before flushing the boom, hoses and nozzles and draining the tank.

- Finally, completely fill the tank with water again and flush the tank, boom and hoses for five minutes.

- Nozzles and screens can be cleaned separately and bare metal parts should be stored over the winter in oil.

"Clean the equipment on a pad or impermeable surface so you can recover the rinse water, which is also called rinsate," said Kick-Raack.
The rinsate legally can be used if it is labeled for the intended application crop and the amount of pesticide in the final mix doesn’t exceed label rates for that acreage, she said.

Ideally, a pesticide loading, mixing and cleaning area could be built to collect water runoff and avoid contamination, she said. Plans for building such an area are available from county offices of OSU Extension. If a cleaning area is unavailable, it may be easier to manage rinsates by taking clean water to the field and cleaning empty equipment at the application site.

"Clean sprayers in an area where there is little threat of runoff entering a waterway or well," Kick-Raack said.

Also avoid cleaning sprayers in the same field location multiple times. Over time, the surrounding area could become contaminated with pesticides.

"While cleaning the sprayer, be sure to wear personal protective clothing and equipment," Kick-Raack said. Cleaning still presents a risk of exposure to pesticides similar to other pesticide handling tasks. When cleaning a sprayer, wear the person protective equipment the pesticide label requires for handling jobs, plus a chemical-resistant apron.

For more information about cleaning sprayers and other pesticide application procedures, the Ohio State University Weed Control Guide for Ohio Field Crops and bulletin, 'Applying Pesticides Correctly,' are available at county offices of OSU Extension. The weed control guide is also available on OSU Extension’s Ohioline Web site at http://ohioline.ag.ohiostate.edu/b789/index.html.

(Fruit Grower News, April 2001, pg. 45).

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7.0 From the Archives: Adopt Better Spray Technology

Better spray technology can reduce pesticide application costs

By Andrew Landers
Cornell University

Farmers are under great pressure when applying pesticides, An increasing awareness of environmental pollution, along with concern about operator contamination, has resulted in increased legislation concerning pesticide use.

There are many new developments in spray technology that will help reduce the costs involved in applying pesticides. The main costs associated with pesticide application are the cost of pesticides, which continue to rise in many cases. Any technology that reduces the amount of product necessary to control a weed, insect or disease, or improves its effectiveness, is welcome. The other major costs are labor and timeliness. New technique discussions follow.

New nozzle selection technique

In 1999, a number of pesticide manufacturers are adopting the BCPC nozzle selection system and providing a pesticide label that states the spray classification needed for their product. Reference nozzles, tested in a laboratory using a laser analyzer, are then classified according to characteristics of the spray produced. Very fine, fine, medium, coarse and very coarse are the categories of spray. The label recommendation makes nozzle selection far easier for the sprayer operator. General guidelines are: fine classification for fungicides and insecticides, medium classification for herbicides and coarse classification for pre-emergent sprays.

However, weather conditions, particularly wind and its effect upon drift, must be taken into consideration. If the label or supplier makes no recommendation concerning nozzles or spray quality, then a reasoned choice of spray quality must be made, taking three matters into consideration target, product and the risk of drift.

New nozzle designs
Spray drift has long been a problem on many farms. Small droplets, less than 100 microns, drift in the air, whereas larger droplets, over 300 microns tend to bounce off leaves. A number of nozzle manufacturers offer low-drift nozzles to reduce drift.

Spraying Systems offer a preorifice flat fan, which reduces the internal operating Pressure of a standard tip, producing a coarser spray at pressures between 30-60psi. The Drift Guard reduces drift by 50%. The Turbo TeeJet contains a turbulence chamber to reduce drift by 50% at pressures between 15-90psi.

Air inclusion nozzles also reduce drift by allowing air to be incorporated into the liquid flow. The emitted spray contains large droplets filled with air bubbles and very few drift-prone nozzles. The droplets shatter on impact with a leaf, the air bubble absorbing the energy. Spraying Systems, Greenleaf Technologies, Lurmark and Lechler manufacture air inclusion nozzles.

**Shielded booms**

The use of shielded booms improves deposition, reduces drift and increases the window of Opportunity available for spraying. A finer spray can be used which will adhere better to the plant or insect, and current research is looking at using reduced rates of pesticides as a direct result of using shielded booms. Research at the Alberta Farm Machinery Research Center showed that a shield could reduce drift by 86% when using a medium spray at forward speeds in excess of 10 mph. Farmers must consider if the benefit of a shielded boom outweighs the cost. Research also shows that choosing a nozzle with a larger flow rate may be as effective at reducing drift as constructing a costly shield around a boom. Forward speed and droplet size must be considered before a decision is taken.

**Tank washing**

Sprayer tank washing has always taken a long time if the operator is careful about tank hygiene and meticulous about cleaning out the pipeline, filters and nozzles. The operator is at great risk during tank washing from splashes of pesticide residue. Commonly, washing out may be carried out during overtime periods at the end of the working day, resulting in extra labor costs and employee concern regarding leaving the work place as soon as possible.

The use of built-in tank washers reduces the amount of water required resulting in less rinsate to dispose of. The other major advantage, particularly when used in conjunction with a second tank of clean water, is that rinsing out can be done in the field without need to return to the filling area. Operator conation is minimized. can be easily fitted by farmers into the top of the sprayer tank. Plumbing of hoses is straightforward and the rinsing heads are relatively inexpensive to purchase.

**Direct injection crop sprayers**

A conventional crop sprayer is fitted with an injection system comprising one to four pumps that dispense pesticide at a known rate into the water stream within the sprayer pipeline. The sprayer's main tank holds clean water only. The pesticide is mixed with the water, either in a manifold or at the main water pump and the resultant mix flows to the booms and nozzles.

An electronic controller adjusts the pesticide injection pump according to changes in operating requirements, (e.g. changes in application rate and pesticide requirement). The major advantages of injection sprayers are the reduction in environmental pollution due to the elimination of tank and pipeline washing.

There is also less operator contamination, which occurs with conventional sprayers. Ideally, the pesticide would arrive at the farm in large returnable and refillable containers and be connected directly to the pesticide injection pumps. The resulting closed system reduces operator contamination.

The use of an electronic controller allows each pesticide pump to deliver a specific product. The injection pumps can be switched on/off, as and when required, to spray various patches of weeds/disease.

The dose rate of pesticide applied can be adjusted on the move, allowing a higher dose rate to be applied to a high infestation of weeds or disease and vice-versa. The future
A hand held data logger can be used with a position indicator so that weed or diseased patches can be identified and located for spot treatment. The data can be downloaded into an office computer so that an informed spray program may be devised.

"Smart card" and disc systems have been developed which allow information to be downloaded from the office computer into the sprayer controller. The card or discs contains information about weed and disease status and its position in the field. As the injection sprayer drives towards a patch of weeds or diseased area, the vehicle position indicator informs the sprayer controller and switches on a particular injection pump. A patch of weeds or disease can be spot treated with pesticide as the sprayer passes. As the weed infestation is passed, the sprayer can be switched off. Satellite positioning will indicate the grid reference. The "smart card" contains information on the level of infestation, allowing the pesticide to be applied at varying levels according to the degree of infestation.

(Reprinted from the 1999 Proceedings of the New York State Vegetable Conference.) (The Midwest vegetable Growers News, Sparta, Michigan, News/ Sept. 99, pg. 10)

8.0 Disease Incidence in Hydrocooled Tomatoes

Abstract : Tomatoes (breaker stage) hydrocooled with a cell suspension of Erwinia carotovora subsp. carotovora containing 50 to 200 mg of free chlorine per litre (ppm) (10 degree C pH 7) remained decay free during a 10-day storage at 20 degree C. Sporadic disease appeared during storage of tomatoes similarly cooled with chlorinated water containing spores of Rhizopus stolonifer. In contrast, when chlorine was omitted from the pathogen suspensions, 50 to 100% of the fruit became diseased. A laboratory-scale shower hydrocooler reduced fruit temperatures from 35 to 15 degree C within 13.3 min., whereas a flume cooler produced the same temperature reduction in 10.5 min. In both systems, tomatoes increased in weight during cooling, evidence for water uptake. Larger weight increases occurred among tomatoes cooled in the shower than in the flume. An upward instead of downward orientation of stem scars under the shower streams led to significantly larger weight increases, presumably because pores in the stem scar were continuously flooded with water. Tomatoes intermittently submerged in cold water (10 2-min. immersions followed by 30-s pauses) absorbed significantly less water than those continuously submerged for 20 min. Hydrocooling appears to be a viable method for rapid cooling of tomatoes. Technical refinements in the hydrocooling process that prevent continuous coverage of fruit surfaces by water should reduce water uptake and the associated risk of pathogen internalization. Maintenance of free chlorine at up to 200 ppm in the cooling water and prevention of direct water pressure on fruit should minimize decay risks. No evidence of phytotoxicity was observed among fruit infiltrated with 200 ppm of chlorine. These tomatoes ripened similarly to those that were not cooled or were cooled in tap water.

SISN=38111
Call Number : A:PS
Author : Vigneault, C.; Bartz, J.A.; Sargent, S.A.;
Title : Postharvest decay risk associated with hydrocooling tomatoes.
Language : En, Abst. in En,
Keywords : TOMATOES/ LYCOPERSICON ESCULENTUM/ CHLORINE/ PLANT DISEASE CONTROL/ PLANT DISEASES/ PLANT PATHOLOGY/ POSTHARVEST DECAY/ SODIUM HYPOCHLORITE/ STORAGE/ BACTERIAL SOFTROT/ SODIUM HYPOCHLORITE/ TEMPERATURE/

9.0 Bacterial Speck on Tomatoes

Bacterial Speck

Dr. Ken Pernezny, Plant Pathologist at the UF/IFAS Everglades Research and Education Center reports that he has been seeing significant levels of bacterial speck (not spot) in research plots in the Ft. Pierce area.

Ken notes that speck lesions on tomato fruit are quite distinct from those associated with bacterial spot. Fruit displays black specs with dark green haloes on immature fruit and black specs often associated with yellow haloes on red fruit. On the leaves, the symptoms are almost identical to bacterial spot. Ken indicates that this is the most significant outbreak of this disease that he has seen in a number of years. He reports as much as 50% culls from speck in control plots!
Control is as for bacterial spot. Dr Pernezny notes that copper may be more effective against speck than spot, because there has been less selection pressure for tolerance. (Gene McAvoy, SOUTH FLORIDA VEGETABLE PEST AND DISEASE HOTLINE, January 16, 2003)

10.0 Sclerotinia (Florida)

**Sclerotinia**

Around southwest Florida, growers and scouts have noted the occurrence of white mold in tomato and pepper.

Sclerotinia has also been noted on pepper in Palm Beach production areas.

Symptoms of Sclerotinia vary between crops. White mold in beans usually appears after flowering. The disease often appears in leaf axils and advances into the stem, producing water-soaked spots that increase in size, girdling the stem, and killing it above the point of infection. The disease can also enter the plant through leaves or pods that touch the soil where sclerotia or infected plant parts act as inoculum.

In tomato and potato, infection typically starts at flowering. Water-soaked spots are usually the first symptom, which is followed by invasion of the stem, girdling, and death of the upper part of the stem that turns a light gray. As with bean, the disease can also begin where the plant contacts the soil or infected plant debris. Large portions of the field may become diseased, producing large, circular, areas of dead plants. The black sclerotia formed by the fungus are often found inside infected stems.

A good indicator of Sclerotinia disease is the presence of small, black sclerotia (resting structures) of the fungus. Sclerotia vary in size and shape. Sclerotia can form on the surface of plant parts as well as inside the stems of tomato and potato. The sclerotia enable the fungus to survive from season to season and are the source of inoculum to infect crops. Recycled irrigation water may move sclerotia to fields where sclerotia are not present.

In beans, Topsin M 85, Rovral 50 WP or 4 F and Benlate 50 WP applied at bloom stage has been effective in controlling white mold. Rovral 50 WP or 4 F has been used with good results in lettuce. For potato, Rovral 50 WP or 4 F and Botran 75 W are recommended for Sclerotinia control. With the loss of Benlate, tomato producers don’t have good alternatives although Quadris may give some relief.

(Gene McAvoy, SOUTH FLORIDA VEGETABLE PEST AND DISEASE HOTLINE, January 16, 2003).

11.0 Actigard for Disease Control in Tomato

Abstract: Acibenzolar-S-methyl (CGA 245704 or Actigard 50WG) is a plant activator that induces systemic acquired resistance (SAR) in many different crops to a number of pathogens. Acibenzolar-S-methyl was evaluated for management of bacterial spot (Xanthomonas axonopodis pv. vesicatoria [X. vesicatoria]) and bacterial speck (Pseudomonas syringae pv. tomato) of tomato in 15 and 7 field experiments, respectively. Experiments were conducted over a 4-year (1996-99) period in Florida, Alabama, North Carolina and Ohio, USA, and Ontario, Canada using local production systems. Applied at 35 g a.i. ha-1, acibenzolar-S-methyl reduced foliar disease severity in 14 of the 15 bacterial spot and all 7 bacterial speck experiments. Disease control was similar or superior to that obtained using a standard copper bactericide program. Acibenzolar-S-methyl also reduced bacterial fruit spot and speck incidence. Tomato yield was not affected by using the plant activator in the field when complemented with fungicides to manage foliar fungal diseases, but tomato transplant dry weight was negatively impacted. X. axonopodis pv. vesicatoria population densities on greenhouse-grown tomato transplants were reduced by acibenzolar-S-methyl treatment. Bacterial speck and spot population densities on leaves of field-grown plants were not significantly affected. Acibenzolar-S-methyl can be integrated as a viable alternative to copper-based bactericides for field management of bacterial spot and speck, particularly where copper-resistant populations predominate.

SISN=38146
Call Number : A:PS
Author : Louws, F.J.; Wilson, M.; Campbell, H.L.; Cuppels, D.A.; Jones, J.B.; Shoemaker, P.B.; Sahin, F.; Miller, S.A.;
Title : Field control of bacterial spot and bacterial speck of tomato using a plant activator.
12.0 Insecticide Updates (Ohio)

Insect Management Update for Vegetable & Fruit Crops, 2002/2003 (Celeste Welty)

New products:

- Cruiser 5FS (thiamethoxam): commercial seed treatment for sweet corn, for systemic control of corn flea beetle; made by Syngenta, registered October 2002.

- Entrust 80WP (spinosad; same A.I. as in SpinTor): new formulation that meets requirements of national organic program; made by Dow AgroSciences, registered August 2002.

- Assail (acetamiprid), a neonicotinoid from Aventis/Bayer/Cerexagri. 70WP registered March 2002 for apple, pear to control aphids, leafminer, leafhoppers, codling moth, and psylla; and for tomato, pepper, eggplant, leafy veg., cole crops, collards, kale, mustard greens for aphid, whitefly, Colorado potato beetle control; 70WSP for grapes for leafhopper control (May ’02).

- Acramite 50WS (bifenazate), for spider mite control on apple, pear, plum, peach, grape, strawberry; made by Uniroyal/Crompton, registered February 2002.

- Courier Insect Growth Regulator 70WP (buprofezin), for use on lettuce, tomato, cucumber, melons, pumpkin, squash to control immature whiteflies; & Applaud 70WP Insect Growth Regulator (buprofezin), for use on grapes to control leafhopper nymphs, also whiteflies, mealybugs, scales; made by Nichino America, registered January 2002.

Registration expanded to additional crops:

- Esteem 35WP (pyriproxyfen), an insect growth regulator made by Valent, for scale and caterpillar control, new for stone fruit; registered November 2002.

- Intrepid 2F (methoxyfenozide), an insect growth regulator made by Dow, for caterpillar control, new for grapes, sweet corn, pepper, tomato, eggplant, cole crops, greens, leaf lettuce & other leafy veg.; registered on supplemental labels, September 2002. An improved version of Confirm (tebufenozide), registered since 1999 for cole crops, pepper, tomato, eggplant.

- SpinTor 2SC (spinosad), new for brambles, grapes, radish, turnip, carrot, herbs (Sept. 2002); blueberries, beets (Jan. 2002); strawberries (Sept. 2001); asparagus (July 2001); for control of caterpillars, dipteran leafminers, thrips, asparagus beetle; made by Dow.

- Baythroid 2EC (cyfluthrin), a pyrethroid made by Bayer; new for cole crops and mustard greens, leaf and head lettuce, dry and southern peas; registered September 2002.

- Avaunt 30DG (indoxacarb) for caterpillar control, new for Chinese cabbage (napa), potato, eggplant; made by DuPont, registered July 2002.

- Capture 2EC (bifenthrin), a pyrethroid made by FMC; new for caneberries (raspberries) for caterpillar and root weevil control; registered May 2002.

- Fulfill 50WDG ( pymetrozine) for aphid and whitefly control, new for cole crops, collards and other leafy brassica greens, leaf lettuce and other leafy vegetables; made by Syngenta, registered March 2002.

- Mustang 1.5EW (zeta-cypermethrin), a pyrethroid made by FMC, for beetle and caterpillar control, new for tomato, pepper, eggplant, beans, peas; registered January 2002.
• Surround (kaolin), new for bean, pea, potato, beet, radish, cole crops, collards, mustard greens, lettuce and other leafy vegetables; made by Englehard; registered March 2002. OMRI listed for organic farms.

• Provado 1.6F & Admire 2F (imidacloprid), new for beans for aphid and whitefly control; made by Bayer; registered June 2001.

• Agri-Mek 0.15EC (abamectin), new for grapes for mite control; made by Syngenta, registered March 2001.

Modified uses:
• Fulfill 50WDG (pymetrozine): pre-harvest interval shortened from 14 days to 0 days for cucurbits, tomato, pepper, eggplant.

Discontinued uses:
• Guthion (azinphosmethyl): cancelled on beans, broccoli, cabbage, cauliflower, celery, cukes, eggplant, melons, onions, peppers, spinach, tomatoes (Sept. 2002).

• Actara (thiamethoxam): to be cancelled on tomato, eggplant, cucurbits in USA; & apple in OH.

• Di-Syston 15G (disulfoton): cancelled on tomato; still ok for cole crops, pepper, potato.

• Monitor (methamidophos): cancelled on cole crops, now for use only on potato, fresh tomato.

Discontinued products:
• methoxychlor: tolerance revoked October 2002; products suspended from manufacture and sale since June 2000.

10/18/2002; rev. 1/31/03

13.0 The Imports Corner: Wine and Grapes

[Editor's note: The following factoids concerning wine imports into the US is a reminder to local ag industries for the need to remain competitive through increased quality, and lower production costs.]

"About a quarter of all wines sold in U.S. supermarkets are now imports, up from 15% in the early 1990s. In certain price categories -- such as the $7-to-$8-per-bottle segment -- imports account for about 40% of sales."

And...

"Australian vintners gave California labels the biggest competition, funneling 51% more wine into the U.S. in 2002 than during the previous year. And that trend is only going to accelerate, analysts say, as more Australian companies merge with California wineries or enter joint ventures with U.S. producers and distributors."
(Melinda Fulmer, Glut Puts Squeeze on Wine, Los Angeles Times, January 30, 2003)

14.0 From the Archives: Harvest and Storage of Pumpkins

Harvesting, curing and storage of winter squash and pumpkins

'Both squash and pumpkins should be well matured before harvest and storage, according to an article in a newsletter from Cornell Cooperative Extension of Oswego County.
For squash to be stored successfully, time of harvest is a major consideration. The fruit must be harvested before it is subjected to freezing temperatures. Even a slight amount of frost injury will allow decay organisms to gain entry to the fruit through the frost-damaged cells.

Although not as drastic a factor as freezing, chilling injury also will reduce the storage life of winter squash. Chilling injury can occur anytime that the temperature drops below 50°F, and may take place in the field and/or after harvest. The effects of the injury are cumulative; the degree of damage is dependent on both the temperature and length of exposure. For example, chilling injury will occur more rapidly at 35°F than at 45°F, and the damage will be greater after ten hours of chilling than after five hours.

Chilling injury may not be apparent until the fruit has been stored for a while. As is true with freezing injury, chilling injury weakens the skin and internal tissues of the fruit, making the tissue more susceptible to invasion by decay-causing bacteria and fungi. Butternut squash is especially sensitive to chilling injury.

Any dry place where the temperature, humidity and ventilation can be maintained is suitable for squash and pumpkin storage. They keep best when not piled on top of one another. If using pallet boxes, do not fill to capacity. This causes pressure bruising.

Special considerations for good quality in long term storage are:

1. It is important to follow a good fungicide program throughout the year until harvest to control black rot and scab as well as protect the vines from downy mildew and powdery mildew. A good disease control program can increase storage life by some 20-30%.

2. Harvest and store before chilling or freeze injury occurs. Chilling injury is accumulative. Fruit subjected to temperatures below 50°F for two weeks or more will break down rapidly.

3. Harvest fruit dry or use good ventilation or fans to dry quickly.

4. Handle carefully to minimize bruising and cuts.

5. Don’t pile deep.

6. Curing has been suggested as a way to improve quality and, storage life of some types of winter squash such as butternut. Jim Hicks, recently retired from the Fruit and Vegetable Science Department at Cornell, has found that holding butternut at 70°-75°F for one week is sufficient for curing. Air movement is the most important factor to dry wounds and improve storage quality. Ideally the squash or pumpkin should be harvested dry and warm, kept in a barn at about 70° with air movement for a week, then the temperature should be gradually lowered to 50°-55°F. Acorn squash should not be held at high temperatures.

7. Most desirable conditions for storage are 50°-55°F at a relative humidity at, 50%-70%, with good air circulation to maintain a uniform temperature and relative humidity throughout the storage.

Acorn squash can be stored from five to eight weeks at 50°F. At higher temperatures (50°680°F), acorn squash will lose its greenness, become undesirably yellow and acquire a stringiness of the flesh in five weeks. Hicks conducted some preliminary trials with acorn squash in controlled atmosphere storage which indicated a considerable increase in the storability of acorn squash.

Butternut squash can be stored at least two to three months at 50°F. Turban and Buttercup squash should keep at least three months. Hubbard squash can be stored for six months at 50°F and 70% relative humidity. Pumpkins such as Connecticut Field can be stored for two to three months at 50-55°F.

Apples and squash should never be stored in close proximity, or even in the same building. Apples generate ethylene gas, which speeds the ripening process of the squash fruit.


15.0 Irradiation Resources on WEB

"Selected Food Irradiation Educational Resources"
A new listing (January 2003) called "Selected Food Irradiation Educational Resources" lists available brochures, videos and curricula for teaching consumers about food irradiation. The list includes a literature review of articles discussing consumer acceptance of food irradiation, the effect of education on that attitude, and ways to market the process. You can find this resource list at:
http://peaches.nal.usda.gov/foodborne/fbindex/FoodIrradiation_Ed_Resources.asp
Visit the USDA/FDA Foodborne Illness Education Information Center's Website for more food safety information.
http://www.nal.usda.gov/foodborne/

16.0 Subscription Farming Workshops, Iowa

5 Day, Functional, Hands-on Community Supported Agriculture Workshop

Sunflower Fields CSA, a rural, multi-producer CSA located in northeastern Iowa, will host a 5 day intensive workshop for people who are interested in investigating and experiencing a Community Supported Agriculture operation. The workshop is designed for both those people who are determining if a CSA farm might be in their future and for those who are ready to begin their operation and would like to experience a working CSA farm first-hand. It will also offer valuable information for those who have recently begun their CSA operation and would like to benefit from new ideas and different approaches.

The workshop is based on hands-on experiences and includes a mix of discussion and information sessions, along with a healthy dose of real-time farm work. As a participant, you will be directly involved in the daily operation of Sunflower Fields CSA. During the course of the workshop, days will be spent in on-on-one contact with the CSA farmers, specialty producers and shareholders, who will offer functional information about their contributions to the CSA during information sessions and as you work side by side with them. You will also experience a basic premise within the concept of CSA - the connection that is built between buyers and growers - as you go on deliveries and meet shareholders at the farm.

Because of the small workshop size, we are able to let you help us determine the best dates for the workshop. We have identified 3 potential dates which are available for us and would ask that you contact us with your input. Please rank the 3 possible dates in the order you prefer - best to worst - and those which will not work for you. We will determine the actual date from these responses and we will contact everyone who has responded with the results. The date choices are as follows:

* Saturday, July 26 through Wednesday, July 30
* Saturday, August 2 through Wednesday, August 6
* Saturday, August 9 through Wednesday, August 13

We are able to host up to 10 people for the workshop. All meals are provided by Sunflower Fields CSA and housing is in a Bed and Breakfast nearby - actually on an operational dairy farm.

The costs for the workshop are $250 per person or $400 for 2 people working as farming associates within the same CSA. This include all meals, workshop materials and workshop sessions. Housing at the bed and breakfast is $40-$45 per room per night including breakfast if you desire. You may share the cost of your room if you wish to share the space with someone.

Please contact Michael or Solveig at Sunflower Fields CSA for more details and any questions you may have. Brochures will be available upon request and you may register at any time. Contact us via e-mail at sunspot@netins.net or telephone at 563.864.3847.

Sunflower Fields CSA is a collaborative of 10 small, human-scale northeast Iowa farms whose mission is to provide families within our local communities fresh, hand-tended products from our farms. Each of our farms is unique in character and in the products it produces, and collectively, we are able to offer a wide range of products for the shares which are delivered to these families. Started in 1997, Sunflower Fields CSA operates in a primarily rural setting and delivers all its shares and products within a 40 mile radius directly to shareholders’ doors. In addition to regular share deliveries, Sunflower Fields CSA offers a CSA Kids’ program called Rosie’s Growers,
operates an Additional Items Program in which shareholders can make purchases to augment their regular deliveries, and will begin operation of an on-farm processing facility in 2003.

Sunflower Fields CSA  
GROWN Locally, a community farming cooperative  
776 Old Stage Road  
Postville, IA 52162  
563.864.3847  
www.sunflowerfieldscsa.com  
www.grownlocally.com

17.0 Food Safety: A Training Manual for Trainers

"Improving the Quality and Safety of Fresh Fruit and Vegetables: A Training Manual for Trainers"

The objective of this manual is to provide uniform, broad-based scientific and practical information on the safe production, handling, storage, and transportation of fresh produce. It was developed by FDA's Joint Institute for Food Safety and Applied Nutrition (JIFSAN) and the University of Arkansas with a team of FAO (Food and Agriculture Organization of the United Nations) reviewers. The material is guidance and not regulation and should be applied as appropriate and feasible to individual fruit and vegetable operations. To access the document in PDF form in both English and Spanish go to: http://www.jifsan.umd.edu/GAPS_English/Introduction.pdf

18.0 Federal Register on the WEB

New Government Web Site Allows Easier Access to "Federal Register" Documents

The Bush Administration has created a new Web site that will make it easier for the public to locate and review documents published in the "Federal Register." Citizens will also be able to submit comments on Federal government proposed and final regulations that are open for comment. This initiative is part of the President's Management Agenda to make it easier for citizens and businesses to interact with the government. Access the new Web site at: http://www.regulations.gov