

Low Pesticide Residues on Produce - Summary of Data for Calendar Year 1998

Residues exceeding the tolerance were found in 0.15 percent of the samples tested during 1998. A total of 8,500 samples were collected and analyzed in 1998: fruit and vegetables- 7,017; milk-595; soybeans-590 (crop year-1997) and high fructose corn syrup (HFCS)-298. Residues of DDT and its metabolites were detected primarily in spinach, dieldrin in fresh and frozen winter squash, and heptachlor epoxide primarily in frozen winter squash. These residues were due to environmental contamination and not as a result of prohibited crop application. About 61 percent of the fruit and vegetable samples, 15 percent of the milk, and 51 percent of the soybean samples tested had at least one pesticide residue. Postharvest applications accounted for 19 percent of the residue detections in fresh and processed fruit and vegetables. There were 87 different pesticide residues detected in fruit and vegetables, 5 in milk, 11 in soybeans, and none in HFCS.

Approximately 84 percent of samples tested were domestic, 11 percent imported, 4.5 percent of mixed national origin, and less than 0.5 percent of unknown origin. Residues with no tolerance were found in 3.7 percent of the samples. All were in fruit and vegetables, except for 6 milk and 2 soybean samples. Residues of pesticides, when found on the tested foods, were generally below tolerance levels. This is to be expected because of the dissipation of residues between the farm and marketplace, and washing prior to testing.

Information:

AMS has published pesticide residue summaries for 1991 through 1998. Electronic copies of published annual summaries and condensed database files can be found at the PDP Internet web site address:

<http://www.ams.usda.gov/science/pdp>.

Controlling Transplant Growth through Water Deficit Stress,

By A. Liptay, P. Sikkema, and W. Fonteno. 1998. HortTech 8(4) pp 540-543. adapted by R. Precheur

The overall objective of water management in transplant production is to modulate growth in order that seedlings withstand the physical conditions in which they are transplanted and after establishment undertake a rapid and sustained rate of new root and shoot growth. Stress tolerance is necessary in seedlings to withstand adverse weather conditions such as excessive wind and sand blasting after the seedlings are transplanted in the field. Reducing water can result in hardened or stress tolerant seedlings. This stress tolerance is important for holding transplants when field establishment cannot be done immediately for a high percentage survival in the field and a more rapid rate of establishment. The goal in transplant

production is to achieve an optimal seedling size with the appropriate level of stress tolerance to withstand environmental stresses. Research with many crops has shown that seedling growth control for transplant production in greenhouses can be achieved by regulating the amount of water available to the plants.

Factors Influencing Irrigation Scheduling

1) Crop Stage.

Different water management strategies are needed during different stages of crop growth. From seeding to emergence of the first true leaves, most plugs need to be at or near medium saturation. High moisture levels are not recommended at this stage. As the transplant matures, levels are decreased to help harden off the plant to increase tolerance to drought stress conditions.

There are no hard and fast rules on how much water to apply since watering amounts and frequency will depend on media, cell size, ventilation and solar radiation. The severity of the restriction is critical. A desirable level will result in stocky stress resistant seedlings, able to withstand transplanting outdoors.

2) Drying the Medium.

Overwatering transplants is the most common problem (Styer and Koranski). Commercial transplant producers are reportedly concerned about keeping the time between irrigations to less than 24 hours to 48 hours. A rapid drying time allows the replenishment of air in the root zone and more application of nutrients if necessary. Control of plant growth in containers can be accomplished by keeping plants dry. Unfortunately, dry growing has not been well defined. If water restriction is too severe, seedlings die or are overhardened, slowing new shoot and root growth. Reduced watering should not result in severe wilting of young seedlings.

3). Volume Applied/Leaching.

The volume of water applied can have a large effect on fertilizer retention in the root medium. A small amount of leaching can remove soluble fertilizer from the medium and alter the water soluble fertilizer requirement. Lower fertilizer concentrations applied with no leaching can lead to the same nutrient concentration in the root zone as higher fertilizer concentrations applied with leaching. Preliminary research on tomato transplants (R. Garton, P. Sikkema and E. Tomecek) indicates that transplant quality can be improved applying higher concentrations of fertilizer less frequently (pulse feeding). Pulse-fed plants tend to have thicker stems and a heavier transplant weight while being approximately the same in height.

Summary:

Water thoroughly to ensure the entire plug is moistened. If the plug is not watered thoroughly, root growth will be confined to the top of the plug.

Allow plugs to dry down between waterings but don't let transplants wilt excessively.

Less frequent applications of higher fertilizer concentrations may improve transplant quality.

Increasing the volume of fertilizer solution applied per tray results in an increase in height, stem diameter and plant weight. Applying too much fertilizer solution results in soft, tall poor quality transplants.

Growers should determine how much fertilizer solution is being applied per tray. Volumes greater than 500 ml (17 oz) per tray are excessive and will result in soft transplants if applied on a daily basis.(R. Garton, P. Sikkema and E. Tomecek. Plug Tomato Transplant Production 94-061).

Pre-Plant Conditioning.

The PRE-plant conditioning period involves holding the plants outside for 5 to 7 days prior to planting. This allows the plants to be acclimated to outside conditions while still in the tray. Plants which are hardened off in this manner often have improved field performance as compared to those directly from the greenhouse. This method of hardening transplants requires extra labor and close monitoring by the grower. Growers who are not prepared to put in this additional management should not attempt it.(R. Garton, P. Sikkema and E. Tomecek. Plug Tomato Transplant Production 94-061).

Trapping corn earworm and European corn borer in sweet corn and pepper management

C. Welty

Before the onslaught of summer pests, vegetable growers might find that now is a good time to buy traps or a fresh supply of lures. Pheromone traps can be used to monitor the adult form of several important caterpillar pests. The lure used is a synthetic imitation of the female moth's sex attractant, which is highly attractive to male moths of the same species. The traps are not used to control the pest, just to monitor the adult stage to help make decisions about controlling the larval stage that is found several weeks after the adults were caught.

The most useful trap for sweet corn growers is the corn earworm trap. Corn earworm usually is a major problem on sweet corn in late August and September. It is migratory so it can show up earlier in some years than in others. The trap is very effective for keeping track of whether or not this pest is active and is most useful in making decisions on corn in the silking stages, during the 3 weeks before harvest (more detail on p. 217 of our 2000 Ohio Veg Production Guide). Corn earworm also attacks peppers but usually not until September and October when there is no longer fresh corn available.

The most useful trap for pepper growers is the European corn borer trap. Because corn borer lives in Ohio year round, we always know approximately when it will be active but the traps help to determine this more exactly. Traps are most useful in deciding when to start and stop the regular spray schedule, which is usually needed from late July until early September. The European corn borer trap is also useful to sweet corn growers, especially during the times that corn earworm is not active.

Sources of traps and lures:

Great Lakes IPM

10220 Church Road NE,

Vestaburg MI 48891;

phone 517-268-5693 or 517-268-5911;

fax 517-268-5311;
e-mail: glimpm@nethawk.com
Gempler's
P.O. Box 270,
Belleville WI 53508;
phone 800-382-8473;
fax 800-551-1128;
internet www.gemplers.com
Salem Fruit Growers Cooperative Association
P.O. Box 3,
12093 Lisbon Rd.
Greenford OH 44422;
phone: 216-533-3328 or 800-423-3609;
fax:216-533-0736.

Trap specifications:

For either pest, I recommend that you specify the 'Heliothis' trap made by Scentry; which is a large white plastic-mesh material in a cone shape with a cylinder top. Cost is about \$45-65 per trap; trap is re-useable for at least several years. Optional to buy a spare top, cost about \$17-24.

Lure specifications

: For either pest, I recommend that you specify 'Hercon Luretape' lures made by Hercon. Each lure is flat, about 1-inch square. Cost is about \$16 for a packet of 10 lures for either corn earworm or European corn borer. For European corn borer, Ohio growers should be sure to specify the 'Iowa' type lure (not the New York type lure). Change lure every 2 weeks; 10 lures thus adequate for a 20-week season (early May to mid-September).

Crop Reports

Hal Kneen

Southeast:

The spring planting season is moving along. Sweet corn planted under clear plastic in late March is two- three inches tall. Traditionally planted sweet corn in Reedsville, Ohio is at the spike stage, just emerging from the ground.

Cabbage is growing rapidly with the sunshine and rainfall. Fertilizer sidedressing occurred within the past two weeks. Expecting cabbage for Memorial Day.

Tomato beds are being prepared for planting later this month. Several growers use black plastic mulch, trickle irrigation and fumigation. Traditionists are planning to plant without plastic but are planning to set up irrigation systems especially trickle tape in anticipation of dry weather.

Tomato and pepper transplants are increasing in stem caliper in preparation of being transplanted outdoors in the next week to ten days. Peppers will be transplanted last. Hot house tomatoes coming along within a few weeks. Some green fruit is already at three inch caliper.

The 7 Day Outlook*

AKRON-CANTON

DAY DATE| FRI 21| SAT 22| SUN 23| MON 24| TUE 25| WED 26|

TEMP

MIN/MAX| 45 52| 39 54| 40 62| 41 65| 47 72| 53 76|

WIND | 11 13| 7 10| 6 9| 5 7| 6 8| 6 8|

PREC

PROB 24| 100 | 48 | 27 | 24 | 31 | 36 |

CLEVELAND

DAY DATE| FRI 21| SAT 22| SUN 23| MON 24| TUE 25| WED 26|

TEMP

MIN/MAX| 44 50| 39 55| 40 59| 42 64| 46 70| 52 75|

WIND | 9 9| 6 7| 4 7| 4 7| 5 7| 5 8|

PREC

PROB 24| 100 | 43 | 26 | 23 | 31 | 35 |

COLUMBUS

DAY DATE| FRI 21| SAT 22| SUN 23| MON 24| TUE 25| WED 26|

TEMP

MIN/MAX| 48 54| 40 58| 42 62| 44 70| 48 74| 53 77|

WIND | 8 10| 5 7| 4 7| 3 6| 4 6| 4 7|

PREC

PROB 24| 100 | 38 | 22 | 24 | 29 | 33 |

CINCINNATI

DAY DATE| FRI 21| SAT 22| SUN 23| MON 24| TUE 25| WED 26|

TEMP

MIN/MAX| 47 57| 42 60| 44 64| 47 70| 52 74| 54 79|

WIND | 12 12| 8 9| 6 9| 5 9| 7 8| 7 9|

PREC

PROB 24| 95 | 25 | 17 | 24 | 29 | 33 |

DAYTON

DAY DATE| FRI 21| SAT 22| SUN 23| MON 24| TUE 25| WED 26|

TEMP

MIN/MAX| 45 52| 39 57| 43 62| 45 70| 51 72| 54 76|

WIND | 10 12| 6 10| 5 7| 4 6| 5 7| 5 7|

PREC

PROB 24| 98 | 28 | 19 | 24 | 29 | 33 |

TOLEDO

DAY DATE| FRI 21| SAT 22| SUN 23| MON 24| TUE 25| WED 26|
TEMP
MIN/MAX| 43 54| 39 60| 40 63| 42 67| 46 73| 52 74|
WIND | 15 13| 8 9| 3 8| 4 8| 6 9| 4 9|
PREC
PROB 24| 96 | 28 | 22 | 24 | 30 | 34 |

YOUNGSTOWN

DAY DATE| FRI 21| SAT 22| SUN 23| MON 24| TUE 25| WED 26|
TEMP
MIN/MAX| 46 52| 37 54| 39 60| 39 65| 44 72| 49 76|
WIND | 9 11| 6 8| 6 8| 6 7| 6 8| 5 7|
PREC
PROB 24| 100 | 52 | 29 | 24 | 31 | 35 |

* LEGEND:

TEMP MIN/MAX - forecasted minimum and maximum temperature
for time periods midnight to noon and noon to midnight.
WIND - MEAN WIND SPEED(KTS) FOR TIME PERIODS periods
midnight to noon and noon to midnight.
PREC. PROB. 24 - probability of precipitation for the 24
hour period

What's New At The VegNet Web Site

Pumpkin Production Chart

Originally available only in the print version of the 2000 Ohio Vegetable Production Guide, this WEB version can be found in "The Pumpkin Patch" The chart is a quick guide and timeline to key factors necessary for a successful pumpkin crop.

Another NEW! VegWeb Fact Sheet.

Table on Susceptibility of sweet corn hybrids to Stewart's Bacterial Wilt as rated by Jerald Pataky (Univ. of Illinois). Adapted by Dr. Celeste Welty, Extension Entomology, OSU Columbus. This table was published in last week's VegNet Newsletter. A WEB edition is now available from the VegNet homepage. More information on Stewart's wilt and its history in Ohio will be available soon. Vegetable Faculty WEB Pages.

Dr Matt Kleinhenz has recently posted his faculty webpage. At the site you can find his research projects, results and review his presentations made this past winter. A link from VegNet will be provided soon. To visit Matt's homepage, go to:
<http://www.oardc.ohio-state.edu/kleinhenz/>

From Dr. Brent Rowell, Univ of KY,
email: browell@ca.uky.edu

Our new KY Vegetable Recommendations book is on the web now. A print version is also available. The introductory section on marketing might be of interest to southern OH tobacco growers.

<http://www.ca.uky.edu/agc/pubs/id/id36/id36.htm>

The marketing section is also available as a separate publication.

<http://www.ca.uky.edu/agc/pubs/id/id134/id134.htm>

Visit: "The Library, Online Edition of the 2000 OH Vegetable Production Guide, NOW AVAILABLE.

The OH Vegetables Production Guide ranks #22 in top downloads from OSU Extension Ohioline with over 1,000 downloads. Most of the new features are available in the online edition including the New Insecticide Efficacy tables. The new Pumpkin Production Chart is not there but I hope to have it posted soon in "The Pumpkin Patch" section of the VegNet website.

NEW! VegWeb Fact Sheets.

This new feature offers some valuable information on certain aspects of vegetable production that you can print out directly in your home or office. The first two are by Dr. Mac Riedel, OSU Plant Pathology, and are available from the VegNet homepage.

Fungicides Labeled for Pumpkins

Confused by the many new fungicides now available for pumpkins. Check out this fact sheet to see how to use these fungicides.

Fungicide Activity For Control of Tomato Diseases Which fungicide is best for a particular tomato disease.

Available from the Vegetable Crops Homepage, [Click Here!](#)

The 1999 Pumpkin Review and Slide Show.

Yield Data plus pictures of pumpkin cultivars from this year's trials. Also, see pumpkin varieties rated for powdery mildew resistance. There are many new and interesting pumpkin varieties in all size categories.

Visit: 'The Pumpkin Patch' for pictures and yield data.

The 1999 Green Pepper Evaluation and Slide Show.

Yield Data Slide Show From The Muck Crops Branch at Celeryville,

From The Enterprise Center

Comparison of Disease Control on Fresh Tomatoes using TOMCAST and SKYBIT to Time Fungicide Applications.

Evaluation of Watermelon Cultivars for Southern Ohio, 1999

1999 Ornamental Corn Evaluation

Evaluation of Eastern Style Muskmelons for Southern Ohio, 1999

[Link To Research Summaries From The Enterprise Center at Piketon.](#)

[Return to Vegetable Crops Homepage | Ohio State University Extension](#)

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Where trade names are used, no discrimination is intended and no endorsement by Ohio State University Extension is implied. Although every attempt is made to produce information that is complete, timely and accurate, the pesticide user bears the responsibility of consulting the pesticide label and adhering to those directions.

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