



Newsletter Extension

Volume 3, No. 3
February 11, 1999

In This Issue:

[Calendar](#)
[National Environment Study Results](#)
[Sierra Club Endorses High-Yield Ag](#)
[Bramble Cold Injury](#)
[Periodical Cicadas](#)
[January Climatological Data](#)

Calendar

February 20-24: International Dwarf Fruit Tree Association Annual Conference, Hamilton, Ontario, Canada. For information call (570) 837-1551.

March 19: Raspberry School, Rosby's Berry Farm & Greenhouse, 50 E. Schaaf Rd., Brooklyn Hts., OH, 5:30 P.M. Millcreek Row Mulcher demonstration, herbicide application update with Dr. Richard Funt. Receive ½ hour of ODA pesticide credits. For more information and to RSVP call Charles Behnke at (440) 322-0127. \$5.00 registration per family payable at the door.

National Environment Study

Results Released

Source: Will Smith, Dept. of Entomology, Cornell University

Americans prefer state and local solutions to environmental problems over federal regulations, according to a recent National Environmental Survey. Released by the Competitive Enterprise Institute (CEI), the survey demonstrates that Americans are both pro-environment and against centralized federal regulations.

Some interesting survey findings are as follows:

- Approximately 70% believe that state or local government would do a better job at environmental protection than the federal government.
- 68% believe that state or local government should have primary responsibility for protecting water quality in rivers, lakes, and streams.
- 65% believe that state or local government should be most responsible for ensuring that communities are aware of the potential risks from industrial facilities.
- 63% support compensation of landowners for the costs of environmental regulations that restrict the use of their land.

Jonathan H. Adler, CEI senior director of environmental policy, commented that Americans are "suspicious of the extensive, command-and-control environmental bureaucracy headquartered in Washington, D.C. Indeed, most Americans are both pro-environment and anti-federal regulation." These survey findings are similar to those from the polling company's 1996 national survey on environmental policy.

Sierra Club Endorses High-Yield Ag

Carl Pope, Executive Director of the Sierra Club, recently announced an organization-wide endorsement of high-yield agriculture, including bio-engineered crops. Pope explained the apparent contradiction in viewpoint by saying that biotechnology will help save natural wildlife habitat and endangered wildlife species. Pope, responding to Dennis Avery's article, "Feeding Our Faces: Can Private Philanthropy Save the Planet Again?," wrote, "I strongly endorse (Avery's) call for a renewed commitment to governmental and philanthropic funding of agricultural research, including research into conventionally bred or bio-engineered new varieties of crops. A massive increase in such research is, as Avery argues, absolutely critical. Only then can the promise of high-tech breeding be combined with the social and environmental needs of the world."

Bramble Cold Injury

Contributed by Dr. Richard C. Funt, Horticulture & Crop Science, OSU. Source: Byers, 1997. 1997 NABGA Conf. Proceedings and Bramble Newsletter Vol. 14(4)

Cold winter temperatures can cause damage and result in reduced yields in brambles (raspberries and blackberries). Generally, bramble plants acclimate for the winter in late September to early December in Ohio. Acclimation can be noticed by reduced or no terminal growth, change in leaf color, and leaf drop. The 1998 season was warm with nearly every month recording above normal average daily temperatures. However, several cold days in November and relatively dry conditions allowed good acclimation for most brambles. If November 1998 had been warmer and wetter than average, berry yields for 1999 would have been reduced. The exception was Chester thornless, which stopped terminal growth but had green or slightly turning leaves in early December.

The retention of leaves indicates reduced bud survival. However, cold hardiness is complex, with different species and cultivars varying in their response to low temperatures, depending on location, exposure to cold, dry winds, fluctuating cold-to-warm temperatures, and prolonged wet soils or poor soil water drainage. Red raspberry plants are generally hardier than black raspberry. Early growth cessation in red raspberry plants is positively correlated with winter hardiness. However, a cultivar with a low chilling requirement may begin growing in late January when temperatures rise above 50 degrees F. Temperatures rising above 42 degrees F followed by a period of temperatures dropping below 20 degrees F for several hours can cause severe winter damage to canes. Cold hardiness is generally determined by cultivar, but can be enhanced by different methods of management, such as irrigation, soil fertility, and mulching.

Raspberry plants on raised beds suffer less winter injury than plants on flat beds. This can be an effect of higher soil air (less water) volume and an improved root environment. Fertigation during the growing season can be beneficial in that nitrogen can be increased in the leaf, and more effectively in primocanes, as compared to nitrogen broadcast as dry fertilizer over plants in early spring. Freeze tolerance is negatively correlated with cane growth and leaf nitrogen. With certain red raspberry cultivars winter dieback was greater as the number of canes (cane density) increased. Therefore, cane thinning can increase cold hardiness. In Ohio, straw mulch improved yields of certain thornless blackberries when mulch was applied around December 15 and removed in early March.

In Missouri, in a test with five black raspberry cultivars, Bristol was best for fluctuating seasonal temperatures. Jewel performed equal to Bristol. Similar observations have proven Bristol and Jewel to be preferred in Ohio. Researchers also indicate that control of the disease anthracnose is an important practice for cane survival.

Conclusions:

- Select a well-drained soil type; use raised beds.
- Select a site with wind breaks or establish wind breaks so that plants are not subjected to cold, dry winds.
- Select cold hardy cultivars and those which have shown resistance to fluctuating mid-winter temperatures.
- Maintain good cane density and vigorous, disease-free plants.
- Use irrigation and fertilizer wisely for primocane growth.

Periodical Cicadas

During her presentation at the Ohio Fruit and Vegetable Congress, Dr. Celeste Welty mentioned that portions of eastern Ohio will be facing the onslaught of Brood V of the periodical cicada this year. Periodical cicadas damage trees above and below ground. The most obvious harm is that caused by egg laying in small twigs. This damage causes twigs to split, wither, and die, causing a symptom called "flagging". Flagging is especially serious on young plants (four years or younger) because more of the branches are of the preferred size for oviposition, 1/4 to 1/2 inch in diameter. Large, established trees can withstand considerable flagging. Some of the more favored trees for oviposition include apple, peach, cherry, and pear. Vines and shrubs include raspberry and grape, as well as many ornamentals. Damage is also done by the nymphs that suck sap from roots. Prolonged feeding by nymphs on a tree's root system may reduce plant growth and fruit production.

Control Tactics

1. When a periodical cicada emergence is predicted, it may be best to postpone new orchard plantings until the following spring.
2. Trees in small orchards can be protected with nylon netting or cheesecloth during the egg laying period. The netting should have a mesh of no less than 1/4 inch and should be placed over the trees when the first male songs are heard. The netting should be tied to the trunk beneath the lower branches and can be removed after adult activity has ended.
3. Prune out and destroy young twigs that have been damaged by egg laying within a three week period after eggs are laid. This prevents newly emerged nymphs from reaching the ground.
4. Orchards near woods should be scouted every two to three days during the egg laying period to detect incoming females. Sprays may be necessary if egg laying activity is apparent. Insecticides labeled for use on cicadas include carbaryl (Sevin), chlorpyrifos (Dursban, Lorsban), esfenvalerate (Asana), and resmethrin. Orchards using methomyl (Lannate), oxamyl (Vydate) or permethrin (Pounce, Ambush) in a cover spray need not add a special cicada insecticide. Applications of Sevin or Vydate within 21 days after apple full bloom may cause thinning. The use of pyrethroids, Vydate, or Sevin is cautioned in orchards because of the subsequent problems with increased spider mite densities due to toxicity to predatory mites.

Predation

Adult periodical cicadas represent abundant, nontoxic, easily captured prey. They are consumed by various predators, including birds, mammals (squirrels, cats, and dogs), reptiles (turtles and snakes), and arthropods (cicada killer wasps and spiders).

Their perfect periodicity and overwhelming abundance suggests that periodical cicada populations likely satiate their predators above ground, limiting the need for predator avoidance behavior. Periodical cicadas can reproduce at the tremendous densities required to sustain their populations.

Although periodical cicadas have been labeled as "predator foolhardy," males produce a squawk call when alarmed, which does seem to repel avian predators.

Possibly the most important ecosystem function of periodical cicada emergence may be providing increased energy and nutrients to predators. The biomass represented by an emergence can be tremendous, and it benefits predator populations considerably.

Fungal Infection

The only synchronized natural enemy of the periodical cicada is the host-specific fungus *Massospora cicadina*. Infection takes place below ground, after infected nymphs hatch. Infected cicadas can invade new habitat, taking the fungus, which is extremely infective to other adults, with them. Fungal infection reduces the reproductive success of both males and females.

Random natural events, such as violent summer storms, also contribute to periodical cicada mortality.

Preliminary Monthly Climatological Data for Selected Ohio Locations, January 1999

| Weather Station Location | Monthly Prec. | Normal Monthly Prec. | Monthly Snowfall* | 1998-99 Season Snowfall | Average High | Normal High | Average Low | Normal Low | Mean Temp. | Normal Mean |
|--------------------------|---------------|----------------------|-------------------|-------------------------|--------------|-------------|-------------|------------|------------|-------------|
| Akron-Canton | 3.52 | 2.16 | 24.3 (3) | 28.2 | 35.5 | 32.6 | 18.6 | 16.9 | 27.0 | 24.8 |
| Cincinnati | 4.76 | 2.59 | 9.6 | 13.0 | 41.4 | 36.6 | 23.3 | 19.5 | 32.3 | 28.1 |
| Cleveland | 3.64 | 2.04 | 29.6 (2) | 36.6 | 35.0 | 31.9 | 19.2 | 17.6 | 27.1 | 24.7 |
| Columbus | 2.87 | 2.18 | 20.6 | 23.5 | 39.8 | 34.1 | 22.3 | 18.5 | 31.0 | 26.3 |
| Dayton | 3.93 | 2.13 | 17.4 | 19.0 | 37.4 | 34.1 | 20.2 | 17.9 | 28.8 | 26.0 |
| Elyria | 3.42 | 2.04 | - | - | 35.7 | 34.2 | 18.5 | 17.9 | 27.1 | 26.2 |
| Fremont | 2.22 | 1.79 | - | - | 33.2 | 32.0 | 11.7 | 16.1 | 22.5 | 24.0 |
| Mansfield | 3.73 | 1.98 | 22.0 (4) | 25.1 | 34.9 | 32.1 | 17.9 | 16.8 | 26.4 | 24.5 |
| Norwalk | 3.21 | 1.90 | - | - | 35.3 | 31.9 | 18.1 | 15.3 | 26.7 | 23.7 |
| Toledo | 3.15 | 1.75 | 22.1 (4) | 22.6 | 31.9 | 30.2 | 16.8 | 14.9 | 24.3 | 22.5 |
| Wooster | 2.78 | 1.95 | - | - | 37.1 | 34.9 | 19.4 | 18.5 | 27.5 | 26.6 |
| Youngstown | 4.59 | 2.13 | 36.4 (1) | 46.5 | 34.2 | 30.7 | 17.5 | 16.4 | 25.8 | 23.6 |

Temperatures in degrees F, Precipitation in inches

Records set: Mansfield: **1/5**, low -8; **1/22**, high 65; **1/27**, high 59.

Snowfall* (number) = rank of heaviest January snowfalls for that location

Table Created by Ted W. Gastier, OSU Extension from National Weather Service, OARDC and local data

The Ohio Fruit ICM News is edited by:

Ted W. Gastier
 Extension Agent, Agriculture
 Tree Fruit Team Coordinator
 Ohio State University Extension Huron County
 180 Milan Avenue
 Norwalk, OH 44857
 Phone: (419)668-8210
 FAX: (419)663-4233
 E-mail: gastier.1@osu.edu

Information presented above and where trade names are used, they are supplied with the understanding that 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 responsibility of consulting the pesticide label and adhering to those directions.

All educational programs conducted by Ohio State University Extension are available to clientele on a nondiscriminatory basis without regard to race, color, creed, religion, sexual orientation, national origin, gender, age, disability or Vietnam-era veteran status.

Issued in furtherance of Cooperative Extension work, Acts of May 8 and June 30, 1914, in cooperation with the U.S. Department of Agriculture, Keith L. Smith, Director, Ohio State University Extension.

TDD # 1 (800) 589-8292 (Ohio only) or (614) 292-1868

| [Back](#) |