http://ipm.osu.edu/fruit/index.html

THE OHIO STATE UNIVERSITY Newsletter Extension

Fruit ICM News

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Calendar

January 3-4, 2000: Kentucky State Horticultural Society/Kentucky Vegetable Growers Association Annual Meeting & Trade Show, Holiday Inn North, Lexington, KY. Program includes discussion on "How to Affect Hardiness and Bloom Date on Peaches". For more information contact John Strang, Dept. of Horticulture, U of KY (606) 257-9000.

January 13-14: Greenhouse Food Production Workshop, OARDC Fisher Auditorium, Wooster. Contact Mary Donnell, (419) 354-6916,

January 24-26: Indiana Horticultural Congress, Adam's Mark Hotel, Indianapolis, IN. Contact Jim Simon at (716) 494-1328 for more information.

January 28-30, Power Show Ohio, Ohio State Fairgrounds, Columbus, Ohio.

February 7-9: Pre-Conference Tours for the Ohio Fruit & Vegetable Growers Congress in conjunction with the North American Farmer's Direct Marketing Conference and Ohio Roadside Marketing Conference, Cincinnati, OH. For information contact Mike Pullins at (614) 249-2424.

February 10-12: Ohio Fruit & Vegetable Growers Congress, Cincinnati, OH. More details later.

American Fruit Grower
Highlights Rich Eshleman

The December 1999 issue of *American Fruit Grower* highlights an area fruit grower and friend to our IPM program. Rich Eshleman's interests, skills, and dedication are unique among apple growers. Many

of you will remember his demonstration on Do-It-Yourself Rootstocks at the 1999 Fruit Congress. Don't miss this interesting article about Rich.

Analysis of Pesticide Use in North Central Ohio Orchards 1999

Source: Ted W. Gastier, Ag Agent, Huron County, OSU

Background

Producers enrolled in the North Central Tree Fruit Integrated Pest Management (IPM) Program post spray records at a location accessible to the scout/technicians. This allows for the protection of those people, as well as providing a source of information for analysis of orchard pesticide use. This report will look at pesticide use on the basis of "dosage equivalents," "environmental impact quotients," and cost of materials.

Dosage equivalents are based on the application of labeled rates; one dosage equivalent is defined as one application of a pesticide at the recommended rate that is needed for control of a given pest. When the recommendation is a range, the midpoint is considered the dosage equivalent, or DE. Sixty-nine pesticides and formulations labeled for apples and peaches were included.

Environmental Impact Quotients (EIQ) are useful as a method to measure the environmental impact of pesticides. In most IPM programs, pesticides are chosen on the basis of their efficacy or cost rather than on their potential environmental impact. Cornell researchers have ranked pesticides by environmental impact, which was included as a chapter in the Encyclopedia of Environmental Analysis and Remediation, available from John Wiley & Sons, Inc. A condensed version, with a table including in alphabetical order over 200 pesticides, is available from this web site: http://aruba.nysaes.cornell.edu/ipmnet/ny/program_news/EIQ.html.

The values of individual effects of each pesticide (applicator, picker, consumer, groundwater, aquatic, bird, bee, beneficials), the major components of the calculations (farm worker, consumer, and ecological), and the average EIQ values are presented in the table.

The costs per dosage equivalent were calculated from the price list of a major orchard supplier in Ohio. A mid-season (July) payment date was selected.

Results and Comments

The pesticides were divided between fungicides (including bactericides), insecticides, and miticides with values for individual blocks of DE and season costs for 18 apple and 6 peach blocks. In apples, the dosage equivalents applied ranged between 7.56 to 20.72 and costs per acre between $118.91 and $365.02. The average DE was 16.26, which compares favorably with 17.06 in a New York study. The greatest variation between blocks was in the use of fungicides. A more normal expectation would be that fungicide DEs would match the sum of insecticide plus miticide DEs, rather than the roughly 2 to 1 ratio experienced in 1999. Growers had experienced heavy disease pressures (particularly apple scab) in the 1998 season, and some were reluctant to reduce protective sprays.

The dosage equivalents applied in the peach blocks ranged from 7.65 to 12.70 and costs per acre

between $124.14 and $254.32.

An examination of EIQs per dosage equivalents: the average was 1600 in the apple blocks and 1566 in the peach blocks. These are particularly high, as we would expect EIQs to be about 1000, according to the Cornell work. An explanation lies in the use of Ziram and Polyram for apples, and Ziram and sulfur for peaches. These are the EIQs per dosage equivalents for these and other fungicides:

Sulfur = 778
Ziram = 467
Polyram = 134
Captan = 86
Syllit = 68
Topsin M = 54
Nova = 4
Rubigan = 2

A better EIQ model was created for apples excluding Ziram and Polyram, resulting in an EIQ rating of 586, and actually reducing season cost by $10.50 per acre. For peaches, a better EIQ model without Ziram and sulfur yielded an EIQ rating of 595 at an additional cost of $5.20 per acre.

By using EIQ, IPM practitioners and growers can incorporate environmental effects, along with the efficacy and cost, into the pesticide decision-making process.

Apple Storage Concerns

We are continuing to receive scattered reports about problems with apples after they come out of regular storage. Mentioned have been cases thought to be bitter pit. Bitter pit can affect all apple cultivars and is influenced by climatic conditions and orchard practices. The main cause is thought to be a mineral imbalance in the apple flesh, with low levels of calcium in particular. Last summer's drought may have affected the uptake of calcium. Also noted has been internal breakdown in certain varieties not thought to be associated with bitter pit. Stay tuned for more.

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