



Maine Tree Fruit Newsletter

Tuesday, March 2, 2021 Vol 28:3

Webinar Addendum

Recordings of the Maine Preseason Tree Fruit Webinars, as well as the other sessions of the New England winter webinar series are posted online at https://www.youtube.com/channel/UCKCU0_6fvuSPLtWvsmDhfwg/playlists

Videos more or less specific to cider apple production are at: <https://www.youtube.com/channel/UCWrmWfBqbcK8FgiVTuRT0Gw/videos>

In order to earn pesticide applicator recertification credits, you must pre-register and participate in the live webinars. That will include answering a couple of simple questions in the middle of the webinar to demonstrate that you are paying attention. (Don't sweat it, the questions will be easy.)

To pre-register go to <https://ag.umass.edu/fruit/news-events/new-england-winter-fruit-seminar-series>

more Webinar recordings

The Penn State Winter Fruit School sessions were quite interesting. The recordings are not online yet, but will be posted soon at <https://extension.psu.edu/winter-commercial-tree-fruit-school-part-i> and <https://extension.psu.edu/winter-commercial-tree-fruit-school-part-ii>

You can go to those sites and fill in your email address to receive notice when the recordings will be posted. The recordings do not qualify for pesticide application recertification credits. Here are the lists of talks for both sessions.

Part I

Invasive, Occasional, and Unexpected Fruit Pest Challenges - 9:00-9:30

A Review of the New Tree Fruit Rootstocks for Apples, Peaches, and Cherries - 9:30-10:00

Results from the REDpulse Defoliation Trial - 10:00-10:30

Importance of Nematode Management in the Age of Rapid Apple Decline - 10:45-11:15

The Potential of Using Robotic Systems on Crop Load Management for Apples - 11:15-11:45

Keeping Up on the Respirator Fit Test - 11:45-12:15

Part II

Best Management Practices for Pesticide Storage and Security - 9:00-9:30

New Technologies for Peach Production - 9:30-10:00

Pest Monitoring as a Way to Improve Management Practices - 10:00-10:30

How Should We Be Pruning & Training the New Rootstocks? - 10:30-11:00

Fungicide Update for Tree Fruit Diseases - 11:00-11:30

Consumer Reports pesticide article

The October 2020 issue of Consumer Reports (CR) featured “Produce Without Pesticides” on its cover. The article inside is titled “Stop Eating Pesticides.” It uses data from the USDA Pesticide Data Program, and as with the “Dirty Dozen” list, it used a methodology heavily weighted towards analytical detection at the expense of attention to the fundamental tenet of toxicology – the dose makes the poison.

The article uses a 5-category scale (Excellent – Very Good – Good – Fair – Poor), and a preface that “When deciding on the fruits and vegetables to buy, CR recommends those rated Excellent, Very Good, or Good.”

The recommended servings per day vary for each rating:

Excellent: More than 10

Very Good: 3 to 10

Good: 1 to 3

Fair: 0.5 to 1

Poor: Less than 0.5

The ratings for selected tree fruits are shown in this table.

	Serving size	Rating			
		U.S. grown, non-organic	Imported, non-organic	U.S. grown, organic	Imported, organic
Apples (fresh)	½ large apple	Fair	Good	Excellent	No data
Applesauce	1/3 cup	Very Good	Excellent	Excellent	No data
Pears	2/3 medium pear	Fair	Fair	Excellent	Excellent
Peaches (fresh)	2/3 medium peach	Poor	Poor	Very Good	No data
Plums (fresh)	2 small plums	Good	Good	No data	No data

Thus, for U.S. grown, non-organic apples, the recommendation is to eat no more than one quarter to half a large apple per day, whereas for U.S. grown organic apples, the allowance is for more than 5 large apples per day. While the article mentions some of the limitations in trying to translate detection of pesticide residue at extremely low levels into a meaningful risk assessment, those precautions did not prevent applying that methodology to make statements such as:

From the Consumer Reports article

“But for the 18 nonorganic fruits and vegetables with a Fair or Poor rating, CR’s experts say everyone, especially pregnant women, infants, and young children, should try to eat the organic versions. If you can’t find them at a price you can afford, choose a higher-rated similar alternative, such as broccoli instead of green beans. Still, if that’s not possible, occasionally eating a low-rated fruit or vegetable doesn’t pose a serious health risk.”

Checking the original source of the pesticide residue data, the USDA Pesticide Data Program annual reports, and other documents leads me to a much different conclusion. You are encouraged to use these links to form your own opinion.

The 8-page Consumer Reports article is online at <https://www.consumerreports.org/pesticides-in-food/stop-eating-pesticides/>.

Food Safety News provides a 2-page summary and a neutral perspective on the article at <https://www.foodsafetynews.com/2020/08/consumer-reports-takes-consumers-by-hand-on-fresh-produce-and-pesticides/>

For the best perspective on the pesticide residue data, go to the original source. The USDA Pesticide Data Program website (<https://www.ams.usda.gov/datasets/pdp>) has a factsheet (<https://www.ams.usda.gov/sites/default/files/media/PDP%20factsheet.pdf>) with this summary conclusion:

“The PDP data demonstrate that overall pesticide residues found on foods tested are at levels below the tolerances established by EPA and pose no safety concern. Based on the PDP data, consumers can feel confident about eating a diet that is rich in fresh fruits and vegetables.”

The chronic reference dose (RfD) is by definition at least 100X smaller (i.e. no more than 1% as high) than the No Observable Adverse Effects Level (NOAEL) by law. In addition, because of safety factors built into calculation of an RfD, and because there is an unknown additional dose level above the NOAEL at which harm would not have been detectable, the RfD can be, and often is, far less than 1% of an actual level of harm. This is compounded by the fact that almost without exception, residues if detected at all, are at a very small fraction of the Rfd.

The links and excerpts shown on the following pages present alternative expert opinions on the topic.

1) Dietary exposure to pesticide residues from commodities alleged to contain the highest contamination levels. Winter, C. K., & Katz, J. M. (2011). *Journal of toxicology*, 2011, 589674. <https://doi.org/10.1155/2011/589674>.

Excerpts

“It is concluded that

(1) exposures to the most commonly detected pesticides on the twelve commodities pose negligible risks to consumers,

(2) substitution of organic forms of the twelve commodities for conventional forms does not result in any appreciable reduction of consumer risks, and

(3) the methodology used by the environmental advocacy group to rank commodities with respect to pesticide risks lacks scientific credibility.”

The article below is about pesticide residues in the U.S. diet from a Food and Drug Administration Total Diet Study (TDS).

2) Chronic dietary exposure to pesticide residues in the United States. Winter, C.K. (2015). *Food Contamination* 2, 11. <https://doi.org/10.1186/s40550-015-0018-y>
<https://foodcontaminationjournal.biomedcentral.com/articles/10.1186/s40550-015-0018-y>

Excerpts

“The potential health risks posed by pesticide residues in foods can best be assessed by developing estimates of dietary exposure to pesticides and comparing exposure estimates to toxicological indicators of health concern such as the Chronic Reference Dose (RfD) or the analogous Acceptable Daily Intake (ADI). An accurate estimation of dietary pesticide exposure requires data on specific levels of pesticide residues detected (not just whether the residues were legal or violative) as well as estimations of consumption amounts of all foods for which residues are detected.

“Chronic dietary exposure to pesticides in the diet, according to results of the FDA’s 2004–2005 TDS, continue to be at levels far below those of health concern. Consumers should be encouraged to eat fruits, vegetables, and grains and should not fear the low levels of pesticide residues found in such foods.”

3) Council for Agricultural Science and Technology (CAST). (2019). Interpreting Pesticide Residues in Food. Issue Paper 66. CAST, Ames, Iowa. https://www.cast-science.org/wp-content/uploads/2019/10/CAST_IP66_Residues.pdf#page=4

Excerpts

“While it is reasonable for consumers to be concerned about the presence of pesticide residues in their foods, there is an absence of direct scientific or medical evidence demonstrating that pesticide residues in the U.S. food supply pose a health threat to consumers. This conclusion is based upon findings from risk assessment studies identifying large differences between the estimated pesticide exposure levels of consumers with the levels required to be of toxicological concern.”

“Before pesticides are allowed to be applied to crops that are produced domestically or imported from abroad, they must be registered for use by the EPA and all uses of pesticides are required to meet the “reasonable certainty of no harm” standard based upon anticipated consumer exposure and relation of such exposure to toxicologically significant levels. The ‘reasonable certainty of no harm’ standard considers aggregate (i.e., food, water, residential) and cumulative (i.e., combining effects of toxicologically similar pesticides) exposure and also considers the potential increased sensitivity of population subgroups such as infants and children and pregnant women.”

“Studies using this approach frequently demonstrate that such exposure is often more than one million times lower than levels that cause no effects in laboratory animals exposed to pesticides daily throughout their lifetimes. These levels are intentionally protective of public health and not predictive of human disease due to multiple levels of uncertainty factors employed by the regulatory agencies involved in food safety.”

“Crop protection chemicals and biological agents are an important part of what is required to limit pest damage. The EPA and other agencies intensively scrutinize those products for human and environmental safety. That regulatory oversight covers the tools used in both organic and conventional farming. As long as the regulation continues to be science-based, farmers will continue to have the tools they need to provide the food and feed crops on which we all depend.”

None of this should be interpreted as saying that pesticide residues on tree fruit are not a concern. A key objective of Integrated Pest Management is to minimize chemical control and support the use of biological, cultural, physical, and other methods to achieve pest management objectives in a manner that is consistent with and maximizes economic, environmental, and social goals. The point of this article is simply to bring science-based alternate perspectives to the Consumer Reports article. In a later article, I hope to present the details about the USDA Pesticide Data Program residue detections on apples.

This article reflects one person’s perspective (Koehler’s), and does not represent an official opinion of the University of Maine or of any other person working for the University of Maine.

Closing Words

There is no in-person Pre-Season meeting this year because of COVID. Plans are being made for an in-person Maine State Pomological Society Summer Meeting and Field Tour in July. Details will likely be discussed during the MSPS portion of the preseason Zoom webinar tomorrow Wednesday, March 3.

Prospects look excellent for resuming in-person preseason meeting next year. But Zoom meetings probably won't go away entirely once the pandemic emergency ends. Moreover, a new realm of virtual meetings appears to be emerging. Check out this article and 2-minute video (advertisement) about a new virtual meeting platform called Mesh.

"Microsoft Mesh feels like the virtual future of Microsoft Teams meetings"

<https://www.theverge.com/22308883/microsoft-mesh-virtual-reality-augmented-reality-hololens-vr-headsets-features>

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