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## GROWERS CAN MEASURE IMPACT OF PESTICIDES

Geneva, NY—New York fruit and vegetable growers can now choose a pesticide and pesticide program that are the most sensitive to the environment.

Before the publication of a new *Food and Life Science Bulletin* at Cornell University's New York State Agricultural Experiment Station, growers had no easy way to identify and compare the ecological and human safety effects of the pesticides registered in this state. Now they can use "A Method to Measure the Environmental Impact of Pesticides," which lists a wide range of safety information about 120 materials. The bulletin also summarizes the overall impact of each material in an "environmental impact quotient" (EIQ) and explains how to calculate the total impact over a growing season.

Dr. Joseph Kovach of Cornell's Integrated Pest Management (IPM) program and other Cornell faculty began by compiling all available information from EPA registration files and from a pesticide database created by Cornell and several other universities. Then, the Cornell group designed a rating system for each material's short- and long-term toxicity on fish and wildlife, bees and beneficial organisms, groundwater, soil, farmworkers, and consumers. Three tables in the Bulletin offer ratings for every pesticide's effect on these and other categories. Materials are listed alphabetically and grouped together by class (fungicide, herbicide, or insecticide).

The most important aspect of Dr. Kovach's work was his development of a formula to combine and weigh all these components. The result is an overall EIQ rating for each pesticide listed. This number makes it easy for growers to learn the impact of any pesticides they are considering for use before those products are applied. A material with the lowest EIQ number is the material with the least intrinsic effect on the environment. Once growers know the EIQ value of any pesticides they are considering, their next step is to make field use calculations.

For instance, is it better to choose a pesticide with a high EIQ value that may be used only in small amounts only twice a year, or should a grower select a pesticide with a low EIQ value that may require large doses every few weeks? To reflect the different dosage levels and frequency of application, the Cornell Bulletin offers growers a simple calculation called the "EIQ field use rating." With the field rating formula, growers can rapidly estimate the impact of different pesticides over the course of the growing season. This final calculation is the true basis for comparing the environmental effect of various pesticides.

Seasonal calculations of pesticide impact also allow growers to compare the effect of different pesticide programs. The bulletin gives the example of three typical programs used for pest control when growing Red Delicious apples. The standard program with regular pesticide applications has an EIQ field use rating of 938. An integrated pest management (IPM) program with pest monitoring, bio control, and the use of individual pesticides with the lowest EIQ values has a total seasonal field use rating of 182. In contrast, an organic program that employed only naturally occurring pesticides had a rating of 1799, primarily because of the large quantities and frequent application of sulfur needed to control scab disease on this variety of apple. These somewhat unexpected results show how helpful the EIQ system can be to all ecologically-minded growers.

In the past, fruit and vegetable growers only had access to facts about the cost and efficacy of pesticides or pesticide programs in New York. Now these growers have a resource that enables them to reflect environmental concerns in their selection of pest control products and methods. By obtaining the recent *New York's Food and Life Sciences Bulletin*, growers can easily determine which materials will have the least impact on ecological and human health.

For a copy of the bulletin, write to the: Bulletin Room, NYSAES, Jordan Hall, Geneva, NY 14456. Please request *New York's Food and Life Sciences Bulletin Number 139*, "A Method to Measure the Environmental Impact of Pesticides."

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