

## Residue testing explained

NEWARK, Del. — The amount of pesticide left on a target plant after application is the deposit. If the deposit remains on the target for a period of time after application, it becomes a residue. From the standpoint of pest control, a long-lasting residue is desirable. But this becomes a problem when crops are harvested for consumption. How is their safety ensured?

To make sure any residues which remain are well within safe limits, the Environmental Protection Agency, manufacturers and independent research contractors (including universities and private laboratories) conduct rigid tests on all pesticides which are intended for use on food crops, says University of Delaware extension entomologist Mark Graustein.

Individual pesticides are administered in decreasing doses to test animals until they have no measurable effect of any kind. "Residue equipment now is so sophisticated," he says, "that it can actually detect parts per billion and — in some cases — parts per trillion." The level at which no further effects can be measured (in terms of milligrams, kilograms or parts per million of test animal body weight) is called the No Observable Effect Level, or NOEL.

Once the NOEL is determined, it is divided by a safety factor. The magnitude of this factor depends on the pesticide's relative toxicity to human beings, Graustein says. It may be as low as 10 for compounds which affect test animals

and humans in a similar fashion, or as high as 2,000 for those which are particularly toxic to people. The value obtained by dividing the NOEL by the safety factor is then multiplied by 60 (since the average person weighs 60 kilograms or 132

pounds). This gives the safe amount of a particular pesticide that may be consumed each day.

Finally, says Graustein, the EPA determines what percentage of the average daily diet a given food might represent. The total of all residues, including those on foods having the same residues, cannot exceed the safe daily dose

for a given pesticide or for the combination of all pesticides.

"While this sounds ominous," the specialist says, "if you were to put the pesticides that do occur on your plate alongside your food, they'd amount to little more than a speck — about one-millionth of a gram at most. This is well below the danger level."

## York Dairy Days

YORK — The York County Extension Service will try something new this year by conducting two Dairy Days. The first will be on January 4th at the 4-H Center.

The new dairy program and how it will affect dairymen will be discussed by Jack Kirkland, Penn State University Milk Marketing Specialist.

"Computers: The Management Tool of the Future" will be the subject of a presentation by Jud Heinrichs, Penn State Extension dairy specialist.

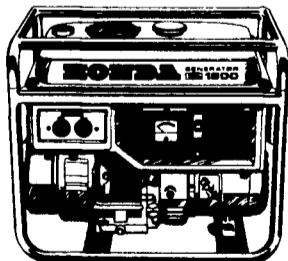
Shannon M. Neumann, York County Agent, will be presenting some information on calf and heifer management.

Registration is being requested by calling 717-757-9657.

On February 16th, York County will have another Dairy Day. It is in cooperation with Atlantic Breeders. The programs to be presented are on milk quality with Sid Barnard and nutrition with Dick Adams, both are dairy specialist with Penn State Extension. More information on the second Dairy Day will be available later.

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