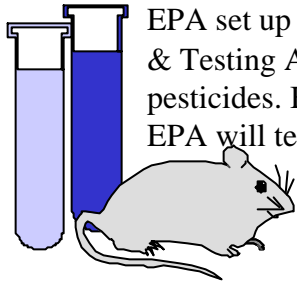
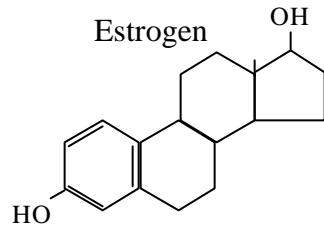


ENDOCRINE DISRUPTORS

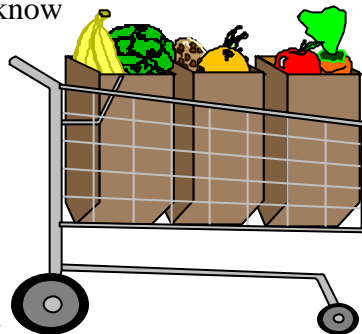
A number of health problems, including reproductive problems, developmental abnormalities, immune suppression, and cancer in wildlife & humans have been attributed to endocrine (hormone) disruption by pesticides and other chemicals. FQPA requires that ALL pesticides be screened for hormone disrupting effects.



EPA set up EDSTAC, the Endocrine Disrupter Screening & Testing Advisory Committee, to develop a plan for testing pesticides. Based on EDSTAC's 1998 recommendations, EPA will test for estrogenic (female), androgenic (male), and thyroid hormonal effects. These are important and well-studied hormones, and testing methods already exist.

CONSUMER BROCHURE

FQPA also addresses consumer right-to-know about pesticide residues in food. FQPA mandated that EPA create a brochure about pesticide risks and benefits, and how to remove pesticide residues from food. The brochure is geared for display in the produce sections of grocery stores, although stores are not actually required to display it. The brochure was published in February 1999.



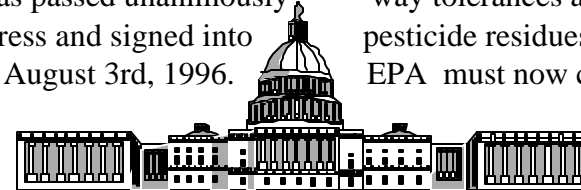
Prepared by Christina DiFonzo
Michigan State University
Pesticide Education Program
in the Center for Integrated Crops Systems

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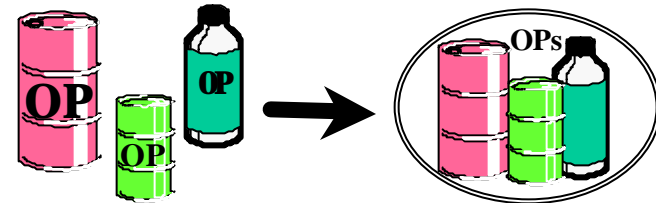
FOOD QUALITY PROTECTION ACT - Year in Review -



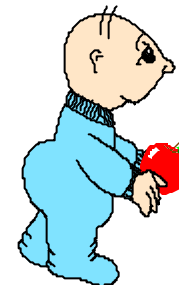
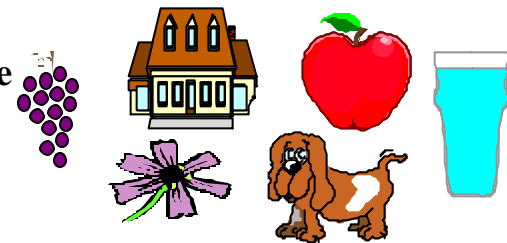
Food Quality Protection Act, FQPA significantly changes the way tolerances are set for pesticide residues in food. EPA must now consider: "FQPA", was passed unanimously by Congress and signed into law on August 3rd, 1996.



the **common mechanism of toxicity** of pesticides which affect people in the same way, for example, organophosphate insecticides;



aggregate exposure to pesticides from both dietary AND residential sources;

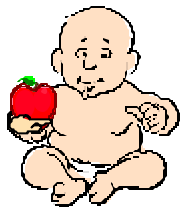


and the potential effect of pesticides on **children**.

In 1998, EPA and USDA set up the Tolerance Reassessment Advisory Committee, “TRAC”, to make implementation of FQPA more fair and open. As a result of TRAC, EPA and USDA developed 9 talking points, science issues that must be resolved to implement FQPA...

the NINE SCIENCE ISSUES

10x Safety factor



Under FQPA, an additional safety factor can be added to tolerances to account for children’s exposure and “completeness” of registrant data.

ISSUE: Need a consistent policy for applying the safety factor. When is data complete?

Monte Carlo Analysis



FQPA risk assessments require a mathematical model to estimate exposure. *Monte Carlo analysis* uses probability and is more refined and accurate than previous models.

ISSUES: It can be expensive and slow. The model is only as good as the data going in, and in some cases the data is not accurate.

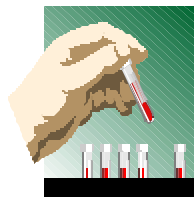
Common mechanism of toxicity



Pesticides with a common mechanism of toxicity must be grouped when setting tolerances.

ISSUE: What pesticides will be grouped? How stringent will mechanism of toxicity be applied? How will mechanism of toxicity be used in cumulative risk assessment?

Assessing OP toxicity



To compare OPs, EPA must use a standard “toxicological endpoint”, cholinesterase inhibition.

ISSUE: There are several ways to measure cholinesterase levels (plasma, membrane, etc); the results may differ by method.

Dietary exposure



All pesticide exposures via food will now be considered when setting a tolerance.

ISSUES: Residue data are available for some foods but not others. Also need good data on typical diets of various groups of people.

Drinking water exposure



Pesticide exposure via drinking water will now be considered when setting tolerances.

ISSUES: Lack of good water monitoring data. Need for something better than a “farm pond” model to estimate pesticide exposure in drinking water.

Residential exposure



Residential exposures (indoor, garden, lawn, pet) will now be considered when setting tolerances.

ISSUE: Lack of good data on residential residue levels for some pesticides, and lack of standard methods to obtain this data.

Aggregate exposure



Once dietary, drinking water, & residential exposures to a pesticide are known, these data must be used to estimate aggregate exposure.

ISSUE: How do you “put it all together” to do an aggregate risk assessment for representative groups of people over a lifetime (70 years of exposure)?

Non-detectable residues



Residue tests of food, water, & non-food items often detect no pesticide residue.

ISSUE: Is the residue really “zero” or simply below the detection limit of the test? Should EPA use “0” or some other value in its risk assessments?