Need for Modernization – Protection of Agricultural Markets

Pesticide Impurities in EPA Registered Pesticides
PR Notice 96-8

Rose Kachadoorian
Oregon Department of Agriculture (ODA)

2018 Association of American Pesticide Control Officials (AAPCO) Spring Conference
Washington D.C. Area
March 5, 2018
Oregon has mandated crop testing program on one crop. Though laboratory analysis, occasionally there are the detection of pesticides (including RUPs), that are of concern. These instances are flagged, and forwarded to ODA for investigation. Sometimes the grower is adamant that he or she did not use the pesticide detected. Because of an initiation allegation of product contamination, ODA started sampling unopened pesticide products.

Why the Interest?

Why would the issue of pesticide contaminates in pesticide products, and a 22 year-old PR Notice draw the attention of a SLA?

- Oregon has mandated crop testing program on one crop.
- Though laboratory analysis, occasionally there are the detection of pesticides (including RUPs), that are of concern.
- These instances are flagged, and forwarded to ODA for investigation. Sometimes the grower is adamant that he or she did not use the pesticide detected.
- Because of an initiation allegation of product contamination, ODA started sampling unopened pesticide products.
Levels of various pesticides found in unopened containers of Pesticide AZ* in Oregon.

<table>
<thead>
<tr>
<th>Formulated Product Sample #</th>
<th>Pesticides (ppm)</th>
<th>Permethrin</th>
<th>Bifenthrin</th>
<th>Cyfluthrin</th>
<th>Chlorpyrifos</th>
</tr>
</thead>
<tbody>
<tr>
<td>NUF - 1</td>
<td></td>
<td>2.8</td>
<td>1.1</td>
<td>0.42</td>
<td>0.15</td>
</tr>
<tr>
<td>NUF - 2</td>
<td></td>
<td>200</td>
<td>0.37</td>
<td>0.088</td>
<td>0.51</td>
</tr>
<tr>
<td>NUF - 3</td>
<td></td>
<td>25</td>
<td>1.1</td>
<td>&lt; 0.10</td>
<td>2.0</td>
</tr>
<tr>
<td>NUF - 4</td>
<td></td>
<td>1.0</td>
<td>0.27</td>
<td>&lt; 0.10</td>
<td>&lt; 0.040</td>
</tr>
<tr>
<td>Ag Crop Tested</td>
<td></td>
<td>0.2 - 0.60 **</td>
<td>0.21 - 0.48 ***</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

** Note - tolerance on pome is 0.05 ppm

*** Note tolerance on grapes is 0.20 ppm

* Four different lot numbers
Issue - Statement of Policy Regarding Toxicologically Significant Levels of Pesticide Active Ingredients

- Because of a 1996 policy (PR Notice 96-8), cross-contamination of active ingredients in pesticide products by contaminants, that are also pesticide active ingredients, is allowed up to a certain level (three scenario exclusions).

- A number of end points were considered. "In most cases phytotoxicity to target plants was the most sensitive endpoint and, therefore the limiting factor ...”

Prior to the policy:

Any level of an impurity that is also an active ingredient in another pesticide was considered “toxicologically significant” and had to be reported to EPA. No quantitative criteria.

PR Notice 96-8 provided further interpretation of:
- 40 CFR 158.167 [currently §158.340], “Discussion of formation of impurities”
- 40 CFR 158.175 [currently §158.350], “Certified limits”.
A contaminant is defined as an active ingredient that is not on the product's CSF, or listed in the discussion of impurities.

Toxicologically Significant Levels of Contaminants

<table>
<thead>
<tr>
<th>Category</th>
<th>Type of Contaminant</th>
<th>Type of Pesticide that is Contaminated</th>
<th>Toxicologically Significant Level (ppm)*</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Insecticide, fungicide, molluscide or nematicide in ...</td>
<td>Any insecticide, fungicide, molluscide, nematicide, herbicide, plant growth regulator, defoliant or desiccant.</td>
<td>1000</td>
</tr>
<tr>
<td>2</td>
<td>Herbicide, plant growth regulator, defoliant or desiccant in ...</td>
<td><em>Any pesticide where the contaminant is accepted for use on all sites for which the product is labeled.</em></td>
<td>1000</td>
</tr>
</tbody>
</table>

* The concentration is determined in ppm based on the ratio of the weight of the contaminant to the weight of the formulated product.
ODA is questioning, and now other states are questioning, whether it isn’t potentially problematic when:

- Products contain a declared a.i. with a short half-life (and therefore have a short PHI), but are contaminated with a.i.’s with long half-lives.
  - Esp. if multiple applications are allowed close to harvest.

**Have times changed since 1996?**

Is there a lot more testing of food/feed products for pesticides?
- In the US?
- Third party certifiers?
- By import/export companies?
- By other countries?

Increased analytical capabilities?

PR Notice 96-8 was pre-National Organic Program.
Issues

Market Barriers

- Despite the levels of the contaminant pesticides all being well below the EPA definition of toxicologically significant levels provided in PR Notice 96-8.
  - The levels of contaminants in a tested crop could possibly exceed the established tolerance levels, resulting in economic hardship for growers and other small businesses.
  - May not be any tolerances, including indirect or inadvertent tolerances.
Issues

Consumer Confidence and Truth in Labeling

- Pesticide AZ is a product that can be used under the National Organic Program. OMRI listed.
- There is a lack of awareness that “organic pesticides” and “organic crops” may potentially contain undeclared conventional pesticides such as, permethrin, bifenthrin, chlorpyrifos, etc.

Tested organically grown crops may potentially be rejected by buyers, resulting in economic hardship.
Issues

Herbicide-Resistant Crops

- The number of crops bred to be resistant to over-the-top herbicide use has proliferated since 1996, many are GE crops.

- The levels of herbicide contaminants allowable in herbicide products may no longer meet EPA's risk-based standard.

- ODA is not aware of any verified instances of damage or illegal residues, but many people are aware of allegations that have been made regarding this topic.
Exclusions

EPA expand its exclusion* list in PR 96-8 to include:

- Products labeled or approved for use in organic production.
- Herbicide products labeled for use on herbicide-resistant crops which provide over-the-top use directions.

Any level of contaminant is considered potentially toxicologically significant: rodenticides; microbial and biochemical pesticides that are manufactured in fermenters; and PIPS.
EPA stated in PR Notice 96-8 that they considered unreasonable adverse effects and reviewed the risks for several endpoints, including adulterated food.

- EPA re-review the endpoints, particularly the potential adverse effects if food should become adulterated.

- Category 2* has the criterion: “the contaminant needs to be accepted for use on all sites for which the product is labeled”.

  This criterion needs to be expanded to all categories.

* Table: “Toxicologically Significant Levels of Contaminants"
Proposed Remedies - Modernization

Review

- EPA conduct a comprehensive review of its interpretation of the term "toxicologically significant", & incorporate further refinements based on current:
  - Analytical methods (levels of quantification),
  - Pesticide residue tolerance levels, and
  - Agricultural trade practices.

- Require additional studies from registrants with products that have short preharvest intervals on any crops.

- Review how registrants are implementing PR Notice 96-8.
Activities

• In December 2017, the Oregon Department of Agriculture gave a presentation, and submitted an Issue Paper to SFIREG*.

• The SFIREG Committee voted on December 5, 2017 to send the issue to the working committee POM** for the April 2018 meeting.

• POM will work with EPA and others on the issue.

* State FIFRA Issues Research and Evaluation Group (SFIREG)

** Pesticide Operations and Management (POM) Working Committee
Thank you

Rose Kachadoorian
rkachadoorian@oda.state.or.us

Oregon Department of Agriculture