2016 OISC Pesticide Drift Investigations – Study of a New Sampling Design

AAPCO Lab Committee Meeting
March 6-7, 2017
Target Field Swab, Veg, Soil

Swab-1, Veg-1, Soil-1
Swab-2, Veg-2, Soil-2
Swab-3, Veg-3, Soil-3
Swab-4, Veg-4, Soil-4

Control Samples?

Sampling

Wind
Background and Study Objectives

- Bottle neck = vegetation sample prep
- Swabs easy to analyze, much shorter turn around time than veg
- Do swab samples provide all necessary info for drift cases?
  - Yes: swabs will be analyzed and veg retained
  - No: analyze veg for additional data
- If swabs positive, do we still need to analyze veg?
2016 OISC Drift Case Investigations Summary

Triclopyr
Thiencarbazone-methyl
Tetraconazole
Tebuconazole
Sulfentrazone
Simazine
Saflufenacil
Pyraclostrobin
Propiconazole
Paraquat
Metolachlor
Metsulfuron-methyl
Glyphosate
Glufosinate

Metribuzin
Metalaxyl
Metconazole
Imidaclorpid
Imazethapyr
Imazapyr
2,4-D
_dicamba
Dimethenamid
Clethodim
Bifenthrin
Azoxystrobin
Atrazine
Acetochlor

102 cases total
# Drift Case Simazine

<table>
<thead>
<tr>
<th>Sample #</th>
<th>Sample Description</th>
<th>Sample Matrix</th>
<th>Amount Found</th>
</tr>
</thead>
<tbody>
<tr>
<td>2016 51 0038</td>
<td>SWAB TRIP BLANK</td>
<td>Swab</td>
<td>BDL</td>
</tr>
<tr>
<td>2016 51 0039</td>
<td>VEGETATION SWAB FROM TREE 90FT FROM FIELD</td>
<td>Swab</td>
<td>7.6 (ng/swab)</td>
</tr>
<tr>
<td>2016 51 0040</td>
<td>VEGETATION FROM TREE 90FT FROM FIELD</td>
<td>Vegetation</td>
<td>51.9 (ppb)</td>
</tr>
<tr>
<td>2016 51 0041</td>
<td>VEGETATION SWAB FROM TREE 60FT FROM FIELD</td>
<td>Swab</td>
<td>541.4 (ng/swab)</td>
</tr>
<tr>
<td>2016 51 0042</td>
<td>VEGETATION FROM TREE 60FT FROM FIELD</td>
<td>Vegetation</td>
<td>316.9 (ppb)</td>
</tr>
<tr>
<td>2016 51 0043</td>
<td>VEGETATION SWAB FROM PLANT 50FT FROM FIELD</td>
<td>Swab</td>
<td>33.0 (ng/swab)</td>
</tr>
<tr>
<td>2016 51 0044</td>
<td>VEGETATION FROM PLANT 50FT FROM FIELD</td>
<td>Vegetation</td>
<td>173.4 (ppb)</td>
</tr>
<tr>
<td>2016 51 0045</td>
<td>VEGETATION SWAB FROM TREE 30FT FROM FIELD</td>
<td>Swab</td>
<td>474.6 (ng/swab)</td>
</tr>
<tr>
<td>2016 51 0046</td>
<td>VEGETATION FROM TREE 30FT FROM FIELD</td>
<td>Vegetation</td>
<td>850.3 (ppb)</td>
</tr>
<tr>
<td>2016 51 0047</td>
<td>VEGETATION SWAB FROM TARGET FIELD 30FT INSIDE FIELD</td>
<td>Swab</td>
<td>3322.6 (ng/swab)</td>
</tr>
<tr>
<td>2016 51 0048</td>
<td>VEGETATION FROM TARGET FIELD 30FT INSIDE FIELD</td>
<td>Vegetation</td>
<td>27347.8 (ppb)</td>
</tr>
</tbody>
</table>
Simazine

ppb or ng/swab

SW4 | V4 | SW3 | V3 | SW2 | V2 | SW1 | V1 | SW0 | V0
--- | --- | --- | --- | --- | --- | --- | --- | --- | ---
90 ft | 90 ft | 60 ft | 60 ft | 50 ft | 50 ft | 30 ft | 30 ft | 0 ft | 0 ft
Azoxystrobin

ppb or ng/swab

SW4  V4  SW3  V3  SW2  V2  SW1  V1  SW0  V0

226 yds  183 yds  142 yds  125 yds  125 yds  0 ft  0 ft
Tebuconazole

ppb or ng/swab

Bee Hives

Target
2,4-D

ppb or ng/swab

SW1  V1  SW2  V2  SW3  V3  SW4  V4  SW0

141 ft  141 ft  108 ft  63 ft  30 ft  0 ft
Glufosinate

ppb or ng/swab

- SW3: Swab Ornamen tal BDL
- V3: Ornamental BQL
- SW2: Swab Cherry BDL
- V2: Cherry BQL
- SW1: Maple Swab BDL
- V1: Maple
- SW0: Special
- V0: Special
2016 OISC Drift Case Investigations Summary

1. Swab Positive, Veg Positive   43%

2. Swab Negative, Veg Positive   26%

3. Swab Negative, Veg Negative   30%

4. Swab Positive, Veg Negative   1%

![Pie chart indicating the distribution of case outcomes.](image-url)
Q: Why? Swab negative/Veg positive

1. Water soluble A.I. weather condition?

2. Systemic? A.I. absorbed/uptaken by plants

3. Time past between application and sampling?

4. Analytical capability, LODs

5. Other?