

Organophosphorus Pesticide Air Monitoring Project

Preliminary Results
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Background

- ✓ **DOH contract with UW**
 - Measure air concentrations of OP pesticides in Washington agricultural regions
- ✓ **Phase 1: March-April 2008**
 - North central region
 - Yakima Valley region
- ✓ **Phase 2: June-July 2008**
 - Yakima Valley region

Sampling Plan

✓ Receptor sites

- o 24-hour samples at 3 sites per region
- o Sampling station <100 meters from orchard

✓ Ambient sites

- o 24-hour samples at 1 site per region
- o Sampling station >500 meters from orchard

✓ Perimeter sites

- o 8-hour, 12-hour, 24-hour samples at 1 site per region
- o Samples collected before/during/after airblast application (4 days total)
- o 8 sampling stations around perimeter of orchard

Results

✓ Chlorpyrifos and chlorpyrifos-oxon

- o Substantial amount of oxygen analog in samples
- o Follow-up studies demonstrate that oxygen analog can be formed as part of sampling process
- o Unclear if chlorpyrifos-oxon was an air contaminant
- o Total chlorpyrifos = chlorpyrifos + oxygen analog

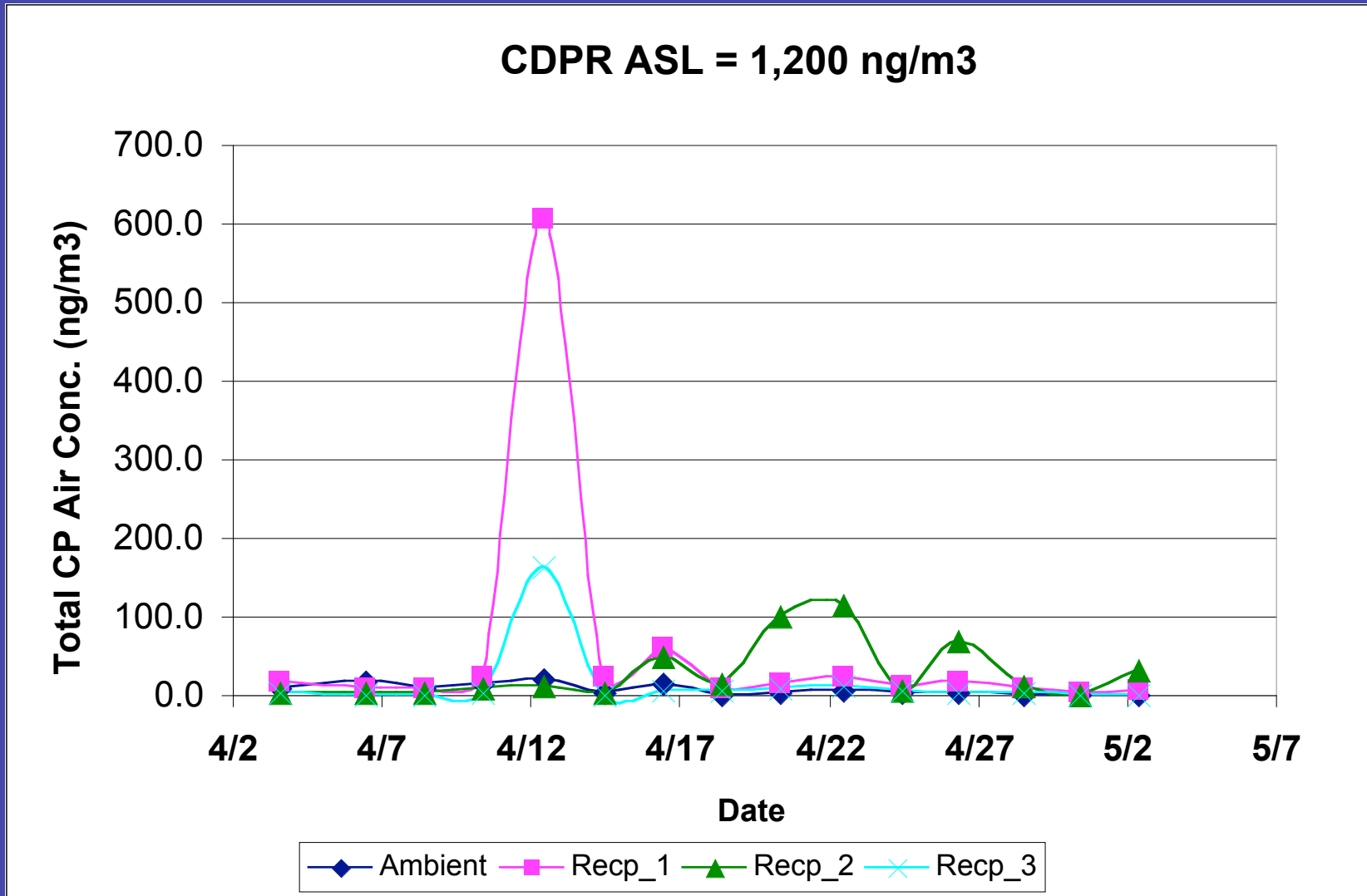
✓ Azinphos-methyl and azinphos-methyl oxon

- o Small amount of oxygen analog in samples
- o Total azinphos-methyl = azinphos-methyl + oxygen analog

North Central Receptor/Ambient Sites

Chlorpyrifos concentrations (ng/m³)

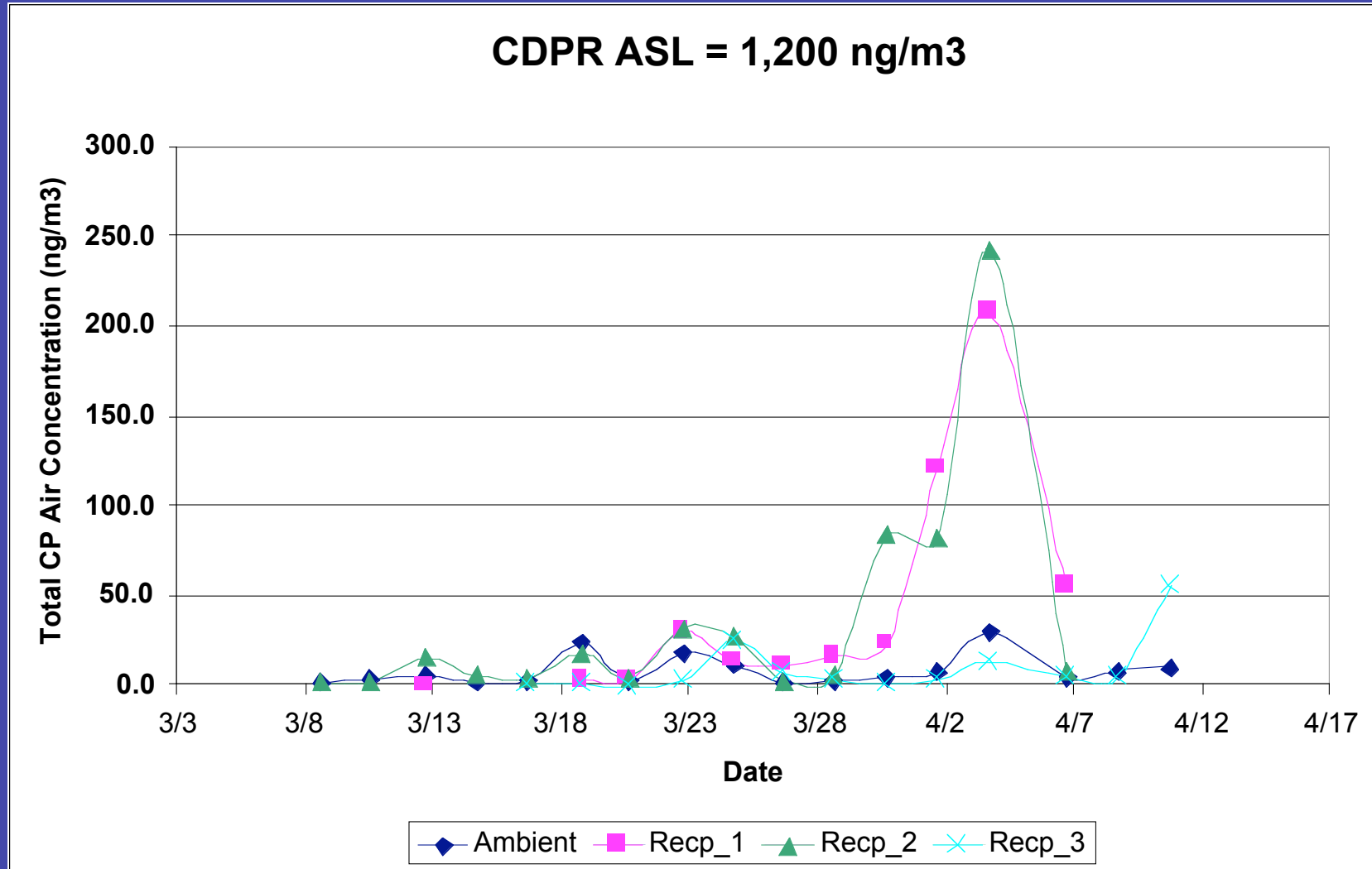
Compared to CDPR acute screening level



Yakima Valley Receptor/Ambient Sites

Chlorpyrifos concentrations (ng/m³)

Compared to CDPR acute screening level

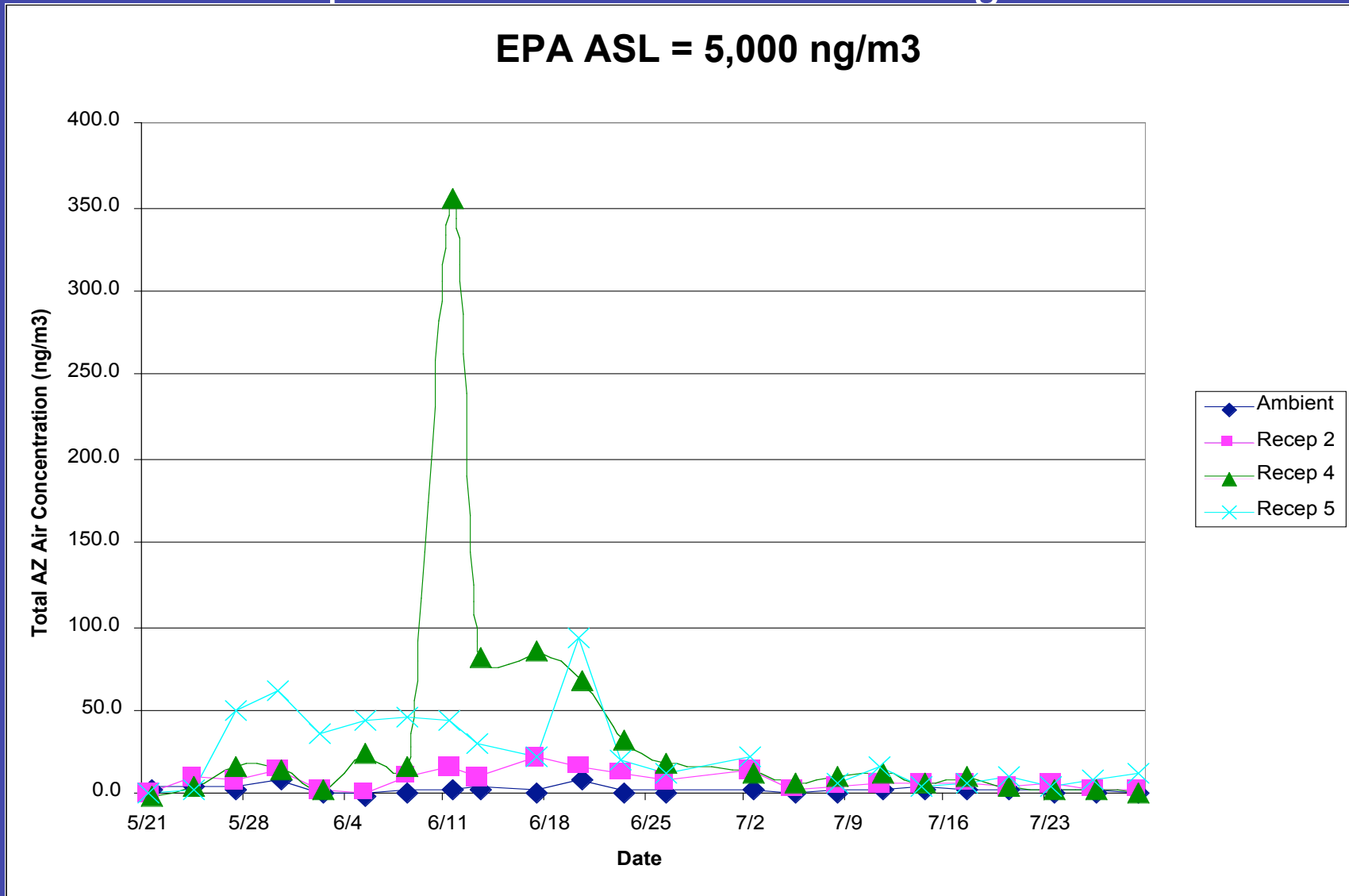


Yakima Valley Receptor/Ambient Sites

Azinphosmethyl concentrations (ng/m³)

Compared to EPA acute screening level

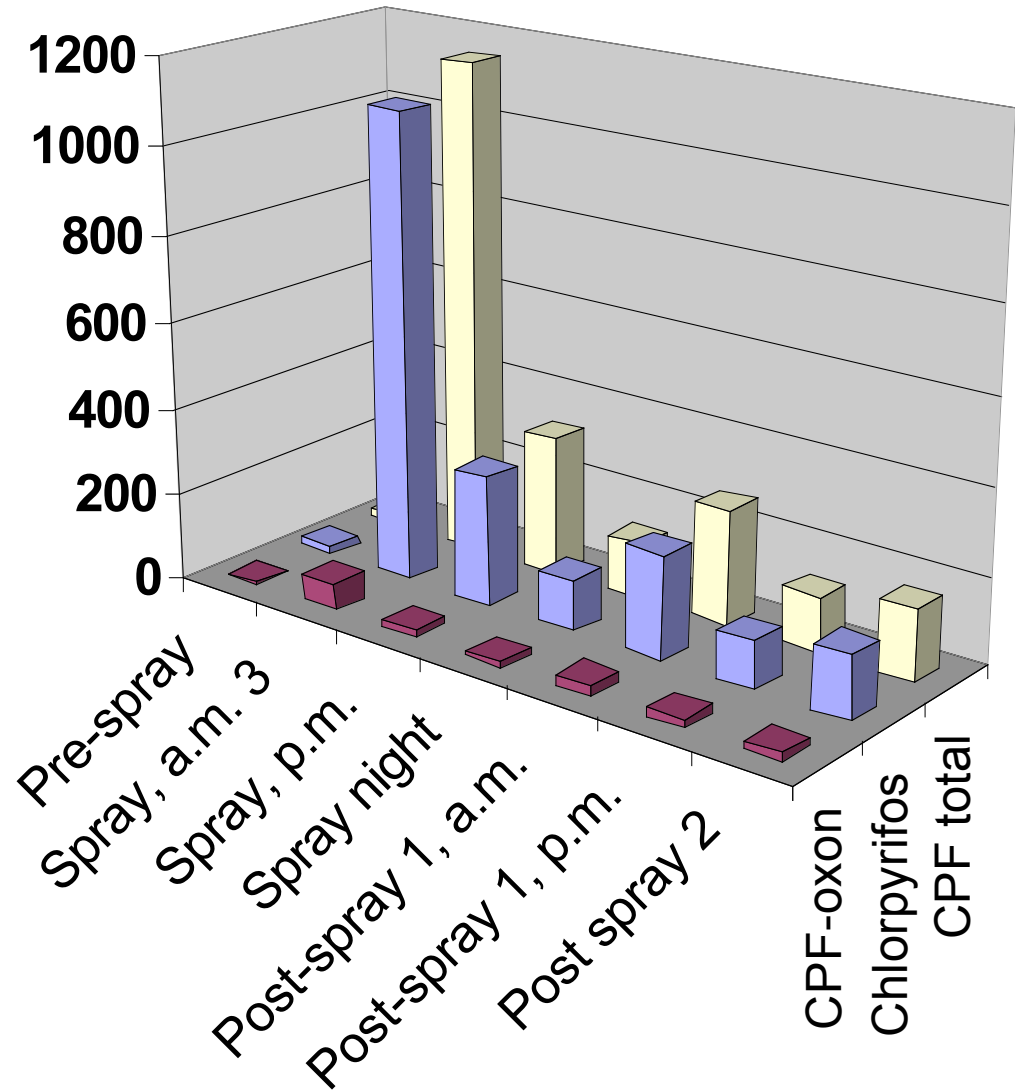
EPA ASL = 5,000 ng/m³



North Central Perimeter: Phase 1

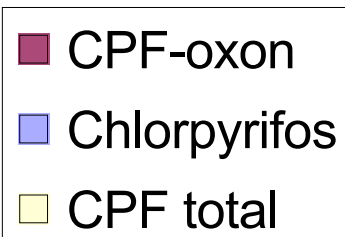
**CDPR ASL =
1,200 ng/m³**

- CPF-oxon
- Chlorpyrifos
- CPF total



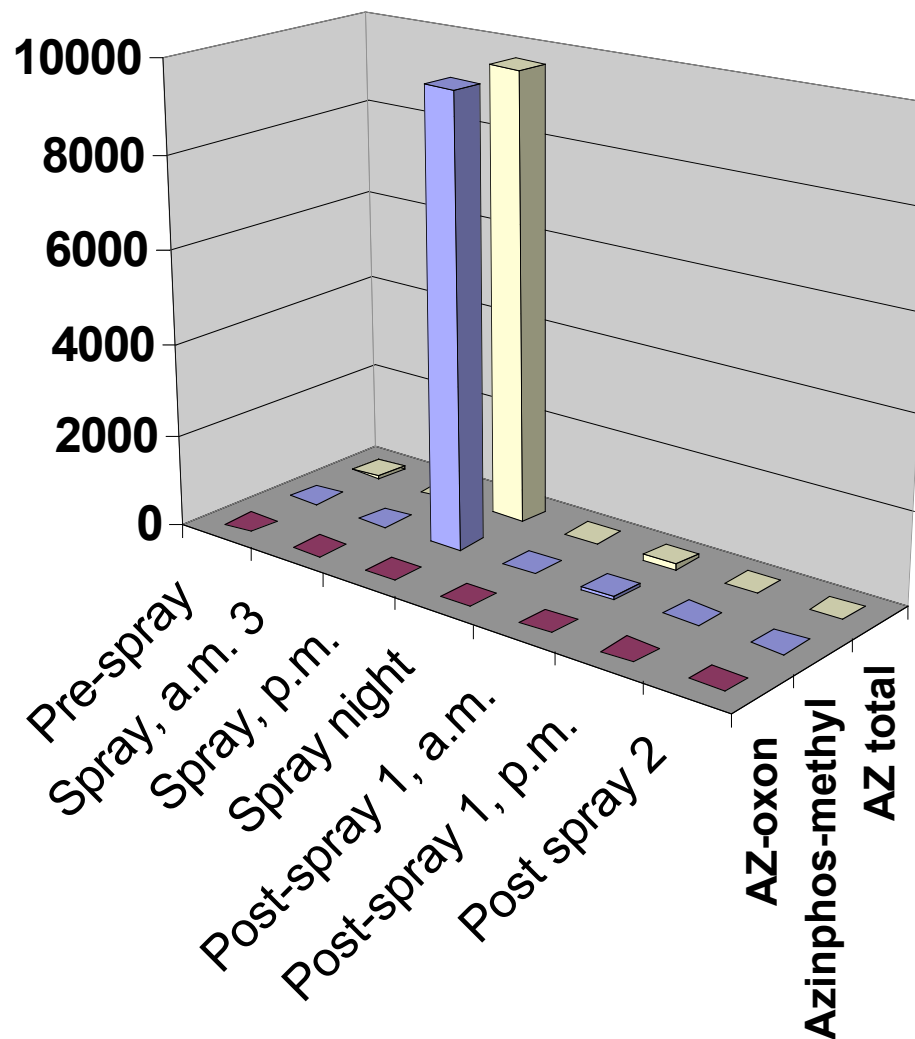
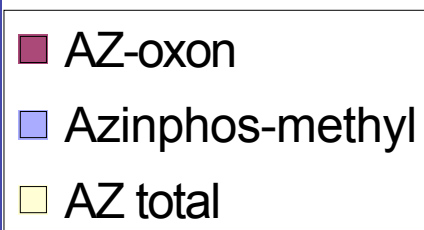
Yakima Valley Perimeter: Phase 1

**CDPR ASL =
1,200 ng/m³**



Yakima Valley Perimeter: Phase 2

EPA ASL =
5,000 ng/m³
CDPR ASL =
101,000 ng/m³



Summary

- ✓ **None of the 24-hour samples exceeded the California DPR or USEPA screening levels**
 - Max 24-hour chlorpyrifos level was 607 ng/m³ compared to an acute screening level of 1,200 ng/m³
 - Max 24-hour azinphos-methyl level was 356 ng/m³ compared to CA acute screening level of 101,000 ng/m³ or USEPA screening level of 5,000 ng/m³
- ✓ **One azinphos-methyl perimeter sample exceeded EPA but not CA acute screening level**
 - 8-hour sample not comparable to 24-hour screening levels
 - Average over 24 hours less than EPA screening level