

Neonicotinoid Insecticides and Water Quality

Excerpts from Presentation Originally Presented at
CAPCA Annual Conference October 16, 2017

Summary Slide

- **Effective, flexible** tools for Ag and Urban uses
- **Used EVERYwhere!**
- Non-Ag uses need evaluation
- Low GW detections
- **Widespread Surface Water detections**
- **Aquatic ecosystems are possibly at risk**
- Major Data/Info **gaps**
- Mitigation info gaps
- **Industry call to action**

Neonicotinoid Pesticides

- Acetamiprid
- Clothianidin
- Dinotefuran
- Imidacloprid
- Thiacloprid
- Thiamethoxam

Number of CA Registrations

462



Insects Controlled

Activity

- **MOA – binds to cell receptors**
- **Sensitivity varies by insects, product, and use**
- **Systemic**
- **Method of application**
- **Flexible use**

A.I.	#	Products Registered	Types of Formulas	Application Methods
Acetamiprid	36	Intruder, Assail, Anniston, Anarchy, Arvida, EndZone, F7180Fly Sticker, Ortho, Pristine brand, Transport Mikron, Tristar	Ag <ul style="list-style-type: none"> • Granule/Flake, • Suspension, • Liquid, • Suspension, • Concentrate, • Flowable 	<ul style="list-style-type: none"> • Ground Sprays, • Foliar Sprays • Aerial Sprays, • Chemigation, • Soil injection or shank, • Hard surface sprays • Non-soil injections • Baits, • Misters/Foggers, • Dusters, • Impregnated materials, • Prills, • Seed coatings, • Pet collars • Pet direct fur applications
Clothianidin	35	Belay, Poncho, Sepresto, Aloft, Arena, Bayer Advanced, Crossfire, Clutch, Darlex, Greenlight chinch bug, Maxforce, Nipsit, Pestqert, Vendetta	Seed treatment Non-crop/Urban <ul style="list-style-type: none"> • Granule/Flake, • Suspension, • Liquid, • Suspension, • Concentrate, • Flowable, • Impregnated material, • Ready-to-use liquids or solutions, • Liquid concentrate, • Pressurized liquid/Spray/Foggers, • Gels/Pastes/Creams, • Dust/Powder, • Flowable concentrate, • Pellets/Tablets/Cakes/Briquettes, • Wettable Powders 	
Dinotefuran	58	Scorpion, Alpine, Catego, First Shield, Hotshot, Musca-cide fly bait, Ortho, Safari, Simpleguard, Starbar, Transect, Vectra, Venom, Zylam		
Imidacloprid	301	Admire Pro, Alias, Macho, Montana, Nuprid, Macho ST, Andersons, Bayer Advanced, Bedlam, Bonide, Bioadvanced, Coretect, Dominion, Zep, Invict, Lada, Merit, Maxforce, Ortho, Pimeraone, Premise, Quali-Pro, Raid, Adonis, Tempriid, Advantix, Hartz, Petarmor, Sentry		
Thiacloprid	0			
Thiamethoxam	32	Actara, Agriflex, Centric, Durivo, Endigo, Platinum, Voliam Flexi, Cruiser, Agita. Agri-Flex, Caravan, Flagship, Meridian, Optigard, Raid, Rose Shield, Tandem		

Black = Ag/Crop, Green = Seed treatment, Red = Ag/Non-Crop/Urban

Neonicotinoid Uses

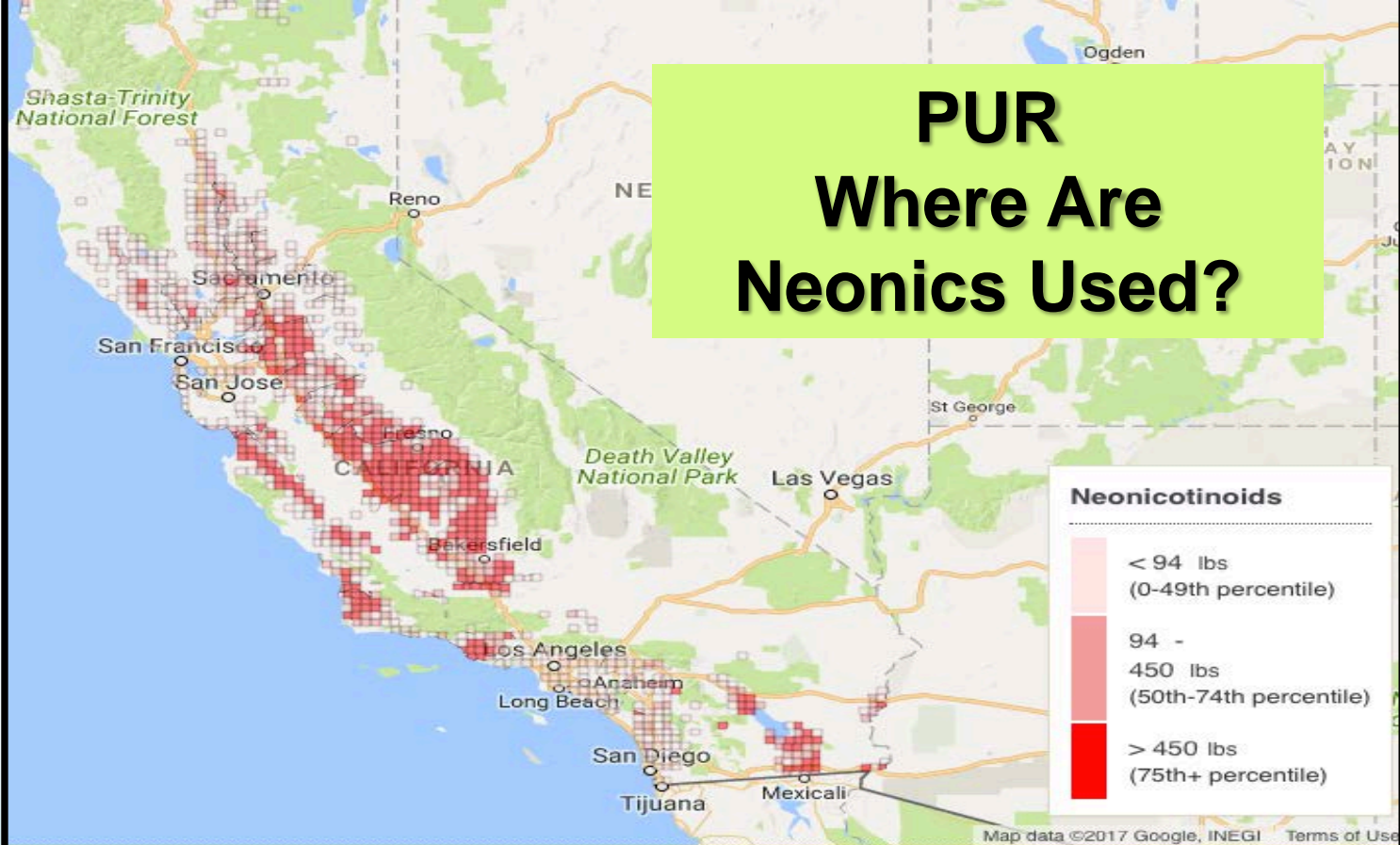
- **Ag Crop Protection:** *Different Commodities, Christmas trees plantings, Forest tree management, Seed treatment*
- **Turf:** *Fairways, Golf courses, Lawns, Sodfarms, Tennis courts*
- **Structural Pest Control:** *Baseboards, Building and structures, Cracks and crevices, Carpets, Door frames, Drainages, Garbage disposal units, Hard porous surfaces, Pre-paving areas, Private roads/walkways, Public buildings, Paved areas, , Wall void injections, Window frames and sills, Upholstery, Wood protection treatment*
- **Garden/Ornamental:** *Plants, Flowers, Shade trees, Shrub, Lawns, Conifers, Fruit trees, Nut trees, Evergreens, Vines, Greenhouses, Greenhouse plants grown in containers, Ground covers, Herbaceous flowers/plants/vines, Home garden crops, Home garden and yard, Houseplants, Interior scapes, Landscape maintenance, Non-flowering plants, Roses, Rhododendrons, Areas with few trees, Tree management*
- **Ag Non-Crop Uses:** *Animal husbandry premises, Barns, Barnyards, Dairies, Dairy farm milk handling areas, Farm/Ag Structures, Fencerows, Domestic animal pest control, , Uncultivated non-Ag areas*

Neonicotinoid Uses

- **Facilities/Sites:** *Aircraft, Automobiles, Bakeries, Bathroom premises, Boat premises, Bottling plants, Breweries, Buses, Candy plants, Canneries, Commercial Storage or Institution uses, Cheese processing facilities, Creameries, Distilleries, Eating establishments, Egg processing facilities, Feed mills, Feed stores, Feed/Food containers, Feed/Food storage areas, Fish and Seafood processing plants, Flour mills, Flour/Grain sites, Food markets/stores, Frozen food processing/handling facilities, Garbage dumps, Grain/Cereal/Flour bins and storage, Hatcheries, Hospitals, Household/Domestic dwellings, Human sites, Laboratories, Mausoleums, Meat processing plants, Milk storage areas, Hedgerow, Human bedding, Human clothing, Laundry (Mattresses and pillows), Limousines, Mulch, Non-feed/food processing and storage areas Nursing homes, Poultry processing plants, Railroad cars/trains, Recreational areas, Refuse and Solid waste sites, Poultry processing plants, Schools, Septic tanks, Sewage systems, Ships, Storage areas, Taxis, Trucks, Utility rights-of-ways, Urban areas, Wineries, Wine cellars, Wood Structures, Vet hospitals, Zoos*
- **Pet and Domestic Animal Pest Control**

PUR

Where Are Neonics Used?



Currently Viewing:

Pesticide	Crop	Year	Units
Neonicotinoids	All	2015	Summed Pounds

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Meridian 25WG Insecticide
Starting at: \$132.50
VIEW DETAILS
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Caravan G Insecticide/Fungicide
\$100.81
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ADD TO CART
Add to Compare

Optigard Ant Bait Gel
\$36.50
AS LOW AS: \$29.90
ADD TO CART
Add to Compare

Not Reported



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imidacloprid for dogs

Departments -

Browsing History - Kay's Amazon.com Today's Deals Gift Cards & Registry Sell Help

Pet Supplies Dogs Cats Fish & Aquatics Small Animals Birds Reptiles Horses Deals & Coupons Subscribe & Save Dash Buttons

1-24 of 80 results for Pet Supplies: "imidacloprid for dogs"

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Minimum Dog Weight
 20 to 25 Pounds
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 80 to 85 Pounds
 90 Pounds & Above

Brand
 Advecta

SPONSORED BY PEACHYDOG
Skincare for dogs & puppies, naturally effective

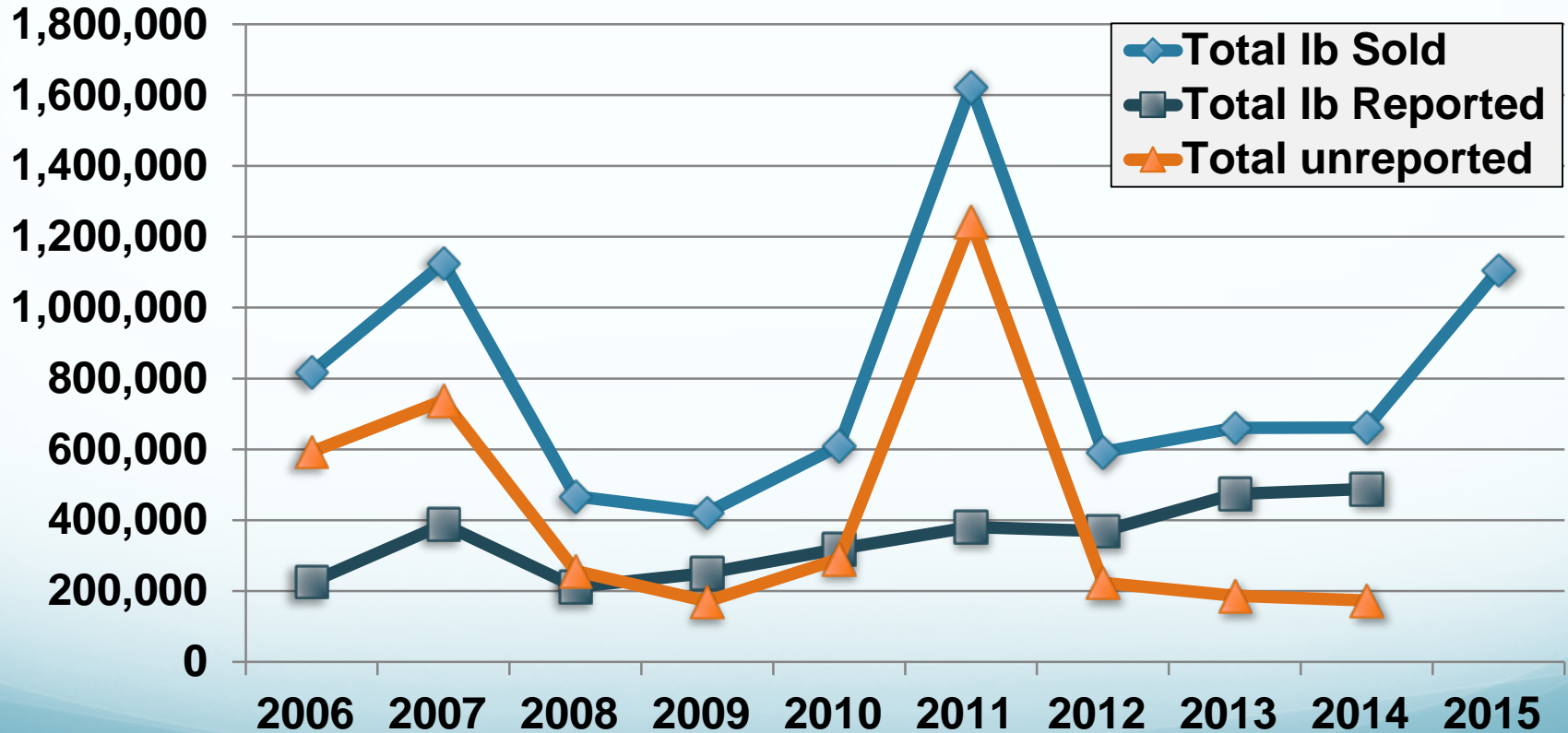
Advecta II Flea Treatment for Dogs, Over 55 lbs, 4...

Advantus 30 Soft Chew for Large Dog, 4 lb or Greater

TevraPet Activate II Flea and Tick Topical, Extra Large...

Invasive Species
Treatment Programs

Total CA Neonitic Use



What We Don't Know

AG Uses?

- **Does amount used correlate with:**
 - Detects?
 - Exceedances?
- **Where are spikes coming from?**
- **Could different uses be bigger risks?**
 - What about residue buildup?
 - Drift?
- **Is timing a factor**

What We Don't Know

Urban Uses?

- **Unreported non-Ag uses**
- **Location of residues?**
- **Urban “spikes”?**
- **Risk to WQ?**
 - **Hard surfaces?**
 - **Pet grooming?**
- **Groundwater threats?**
- **Wastewater treatment?**

What We Don't Know

Monitoring And Analysis

- **More Analyses Needed:**
 - Temporal?
 - Spatial?
 - Uses?
- **Detection ≠ environmental impact**
- **Commercially feasible analytical methods?**
- **Does laboratory analysis reflect field reality**

What We Don't Know

True Impact?

- **Ubiquitous Use = Ubiquitous Toxicity?**
- **Concentration-based standards vs. Load**
 - Concentration-based standards useful for Regs
 - Is there a relationship in natural environment?
 - Are they useful for problem solving?

What We Don't Know

Compliance Questions

- **Is Dilution the Solution?**
 - Can concentration-based standards be met under low-flow conditions?
 - If not, what are we going to do with low-flow areas?
- **What establishes compliance?**
 - Detections?
 - Standards?
 - No Effects?
- **Where is the point of compliance?**
 - Edge of field?
 - Waters of the State?
 - In Ag drains? Tributaries?
 - Point of discharge?

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Thank you!

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