Dixon/Solano RCD Water Quality Coalition

Irrigated Lands Program

Grower, PCA, Applicator Meeting

October 19, 2021

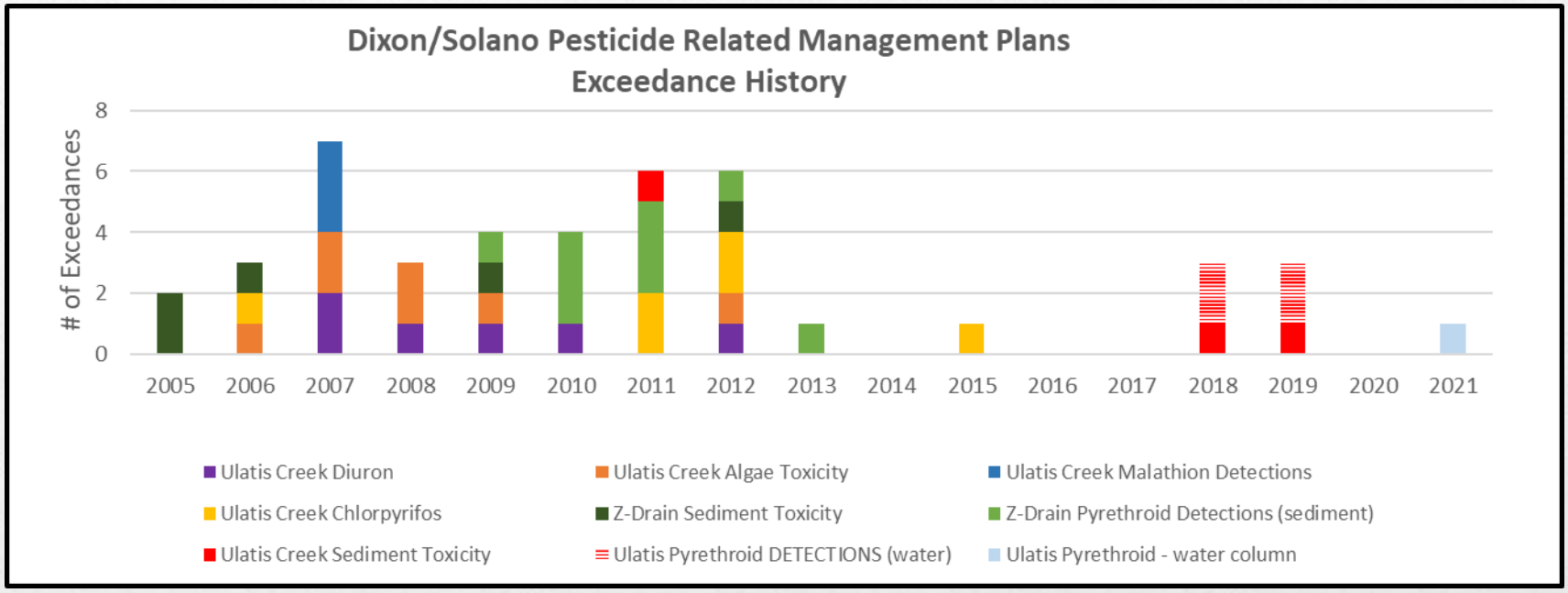
AGENDA

- Management Plan and June 23rd Exceedance
  - Kelly Huff, Dixon RCD District Manager
- Recommended Practices
  - Rachael Long, UCCE Field Crops, Pest Management
  - Franz Niederholzer, UCCE Orchard Systems
  - Martha McKeen, Dixon RCD Program Coordinator
  - Ed King, Solano County Ag Commissioner
  - Tony Avina, Solano County Deputy Ag Commissioner
- Growers, Applicators & Advisors
  - Q&A / Discussion
  - 2022 Crop Year

PURPOSE OF MEETING

- To Provide Awareness of Exceedance, Requirements & Recommended Practices
- To Answer Questions & Agree on Strategy to Avoid Additional Exceedances & Prescriptive Requirements
- NOT to determine specific application(s) that caused June 23rd exceedance

PESTICIDE MANAGEMENT PLANS



NO EXCEEDANCES IN JULY OR AUGUST 2021!

MANAGEMENT PLAN REQUIREMENTS

- MANDATORY OUTREACH & EDUCATION
- STRATEGY WITH SCHEDULE & MILESTONES
- MANAGEMENT PRACTICE REPORTING
- 3 YEARS + OF NO MORE EXCEEDANCES
- *If Management Plan does not result in improvements, Regional Board can require individual monitoring and reporting.*

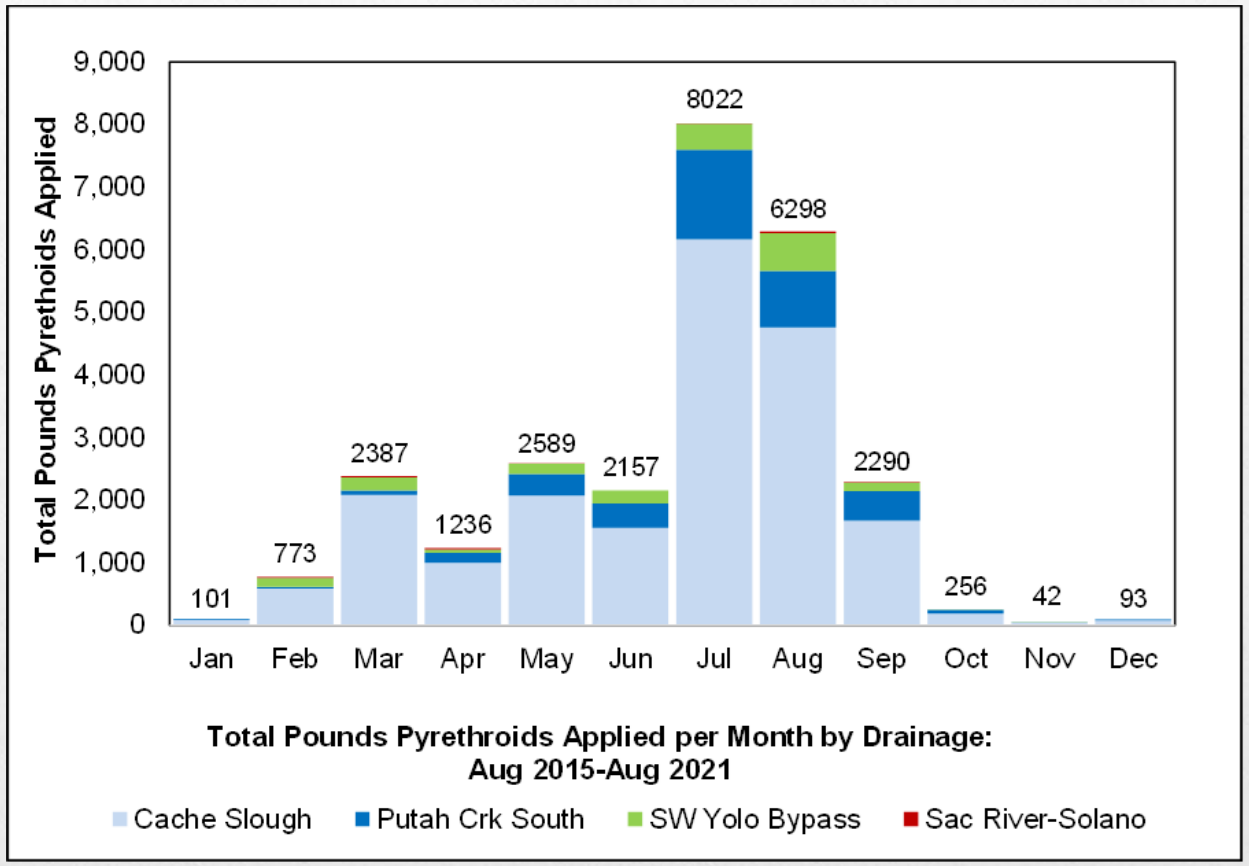
June 23, 2021 Exceedance

- Water Column Toxicity = 18 ng/L
- An exceedance >1 ng/L

Hyalella azteca

- 1ng/L is like 1 drop of pesticide in a large Olympic size pool
- Even these trace amounts can cause toxicity for organisms in the waterways.

Total Pounds Pyrethroids Applied by Irrigated Agriculture per Month in Solano Subwatershed Drainages: 2015 – 2021



MOST LIKELY PATHWAYS

Application Drift

Attached to
Sediment in Runoff

RECOMMENDED PRACTICES

Use extreme caution during applications around **field edges.** Eliminate drift and overspray, especially near ditches (supply and drainage). Apply by ground whenever possible.

Pay special attention to buffer zone & vegetated buffer requirements on label under **SPRAY DRIFT PRECAUTIONS.**

- Irrigation management practices to reduce and/or slow tail water runoff:
- Avoid applications of pyrethroids just prior to a rainfall event or irrigation to minimize the potential for runoff.

RECOMMENDED PRACTICES

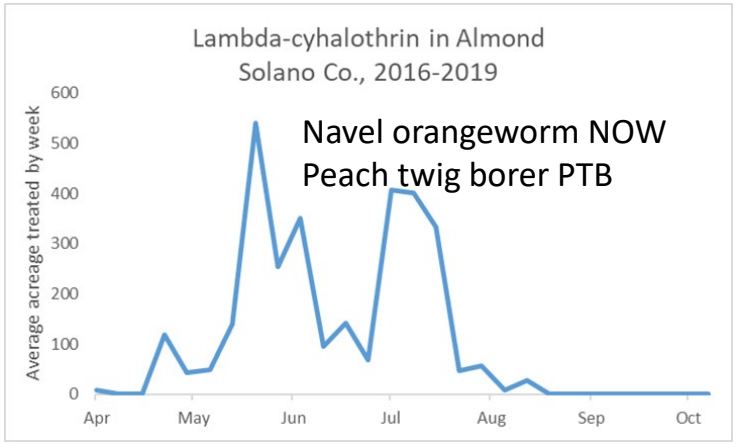
https://www2.ipm.ucanr.edu/agriculture/walnut/Codling-Moth/

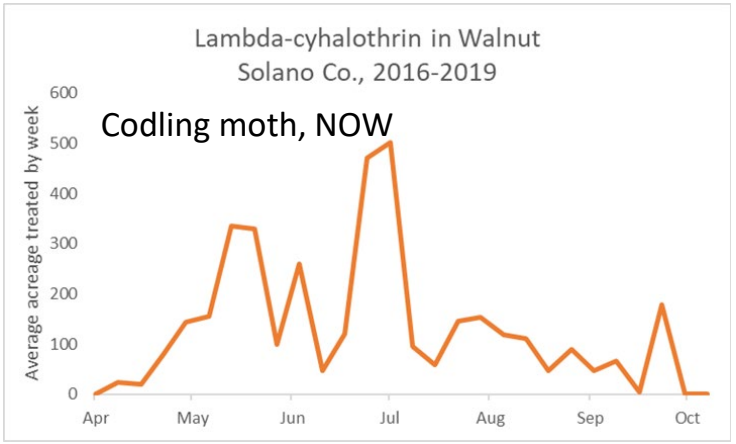
https://www2.ipm.ucanr.edu/agriculture/almond/navel-orangeworm/

RACHAEL LONG

University of CA
Cooperative Extension

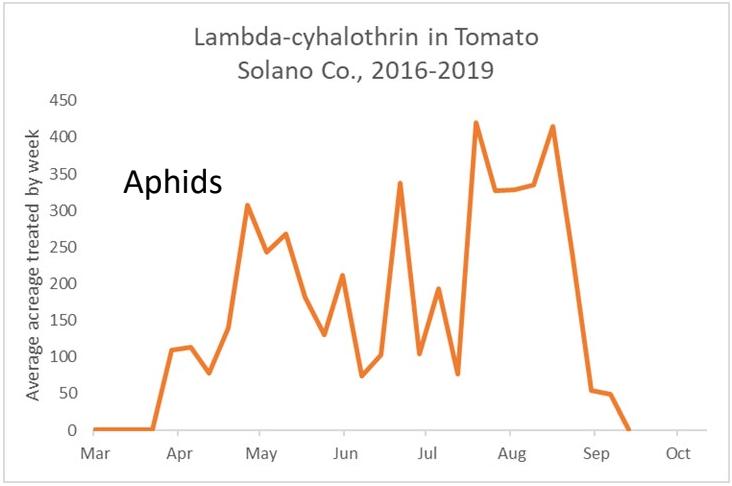
Acres treated, lambda-cyhalothrin, almonds and walnuts, 2016-2019, Solano Co.

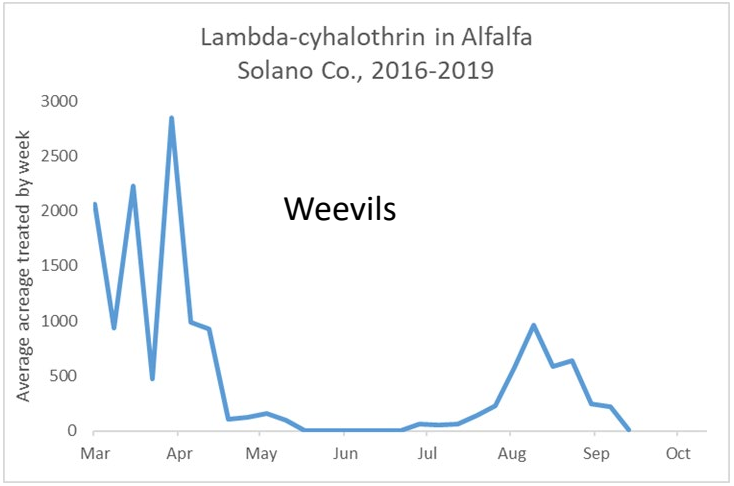




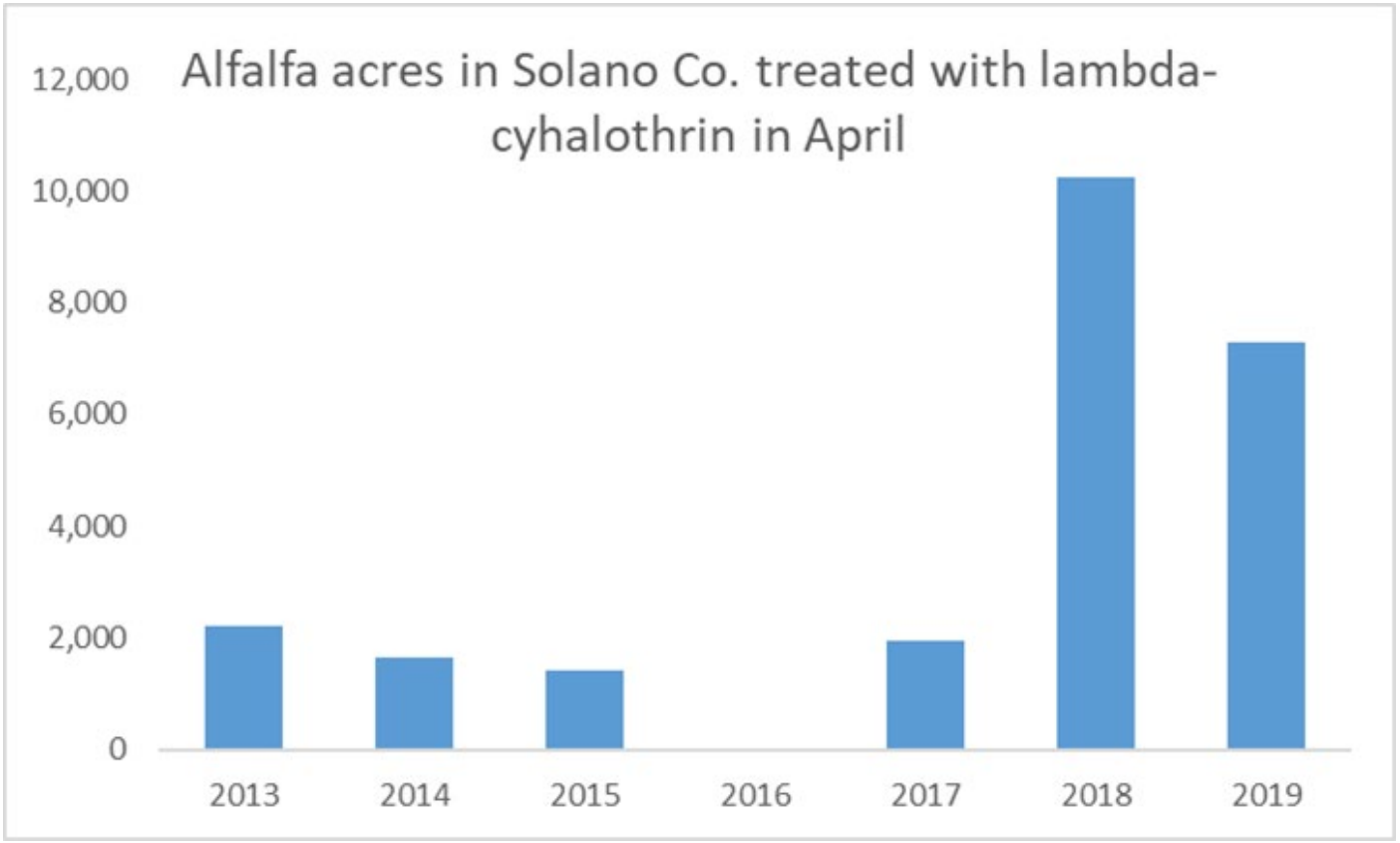
- May spray is the one we care about.
- If May sprays for PTB or NOW are made, avoid pyrethroids to protect beneficial insects and prevent secondary pest outbreaks, esp. mites.
- NOW control: Intrepid (methoxyfenozide), Altacor (chlorantraniliprole, Rynaxypyr), and mating disruption, plus sanitation and timely harvest.
- Pyrethroids (<$10/acre) vs. Intrepid or Altacor (~$50/acre); but won't flare mites.

Acres treated, lambda-cyhalothrin, tomatoes and alfalfa, 2016-2019, Solano Co.





- March, April, May sprays are of concern. Where waterbodies might be affected:
- Tomatoes: Aphid control: Sivanto Prime (flupyradifurone), Beleaf (flonicamid), Sefina (afidopyropen).
- Alfalfa: Weevil control: Steward (indoxacarb)


Alfalfa acres in Solano Co. treated with lambda-cyhalothrin in April
12,000
10,000
8,000
6,000
4,000
2,000
0
2013
2014
2015
2016
2017
2018
2019

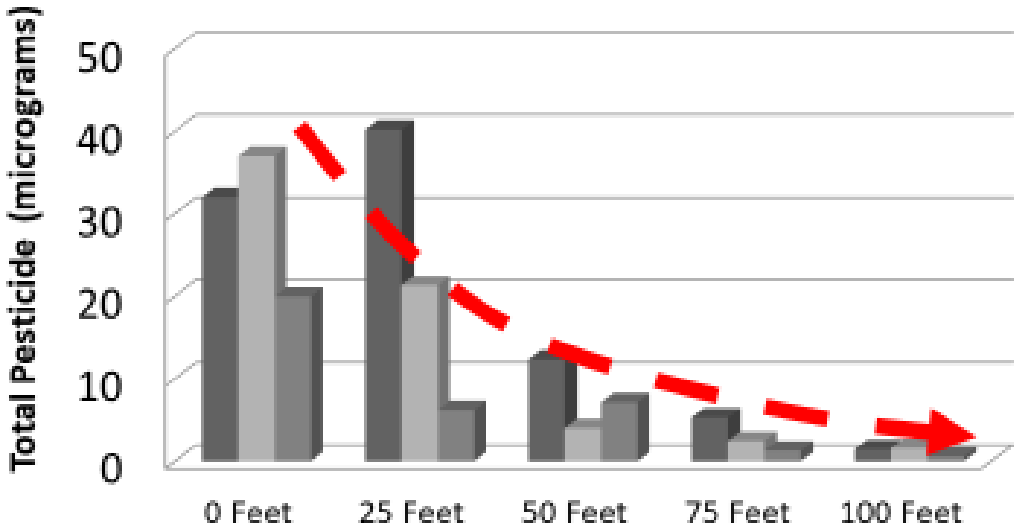
FRANZ NIEDERHOLZER

University of CA
Cooperative Extension

There is no easy, cheap answer(s) to manage spray drift.

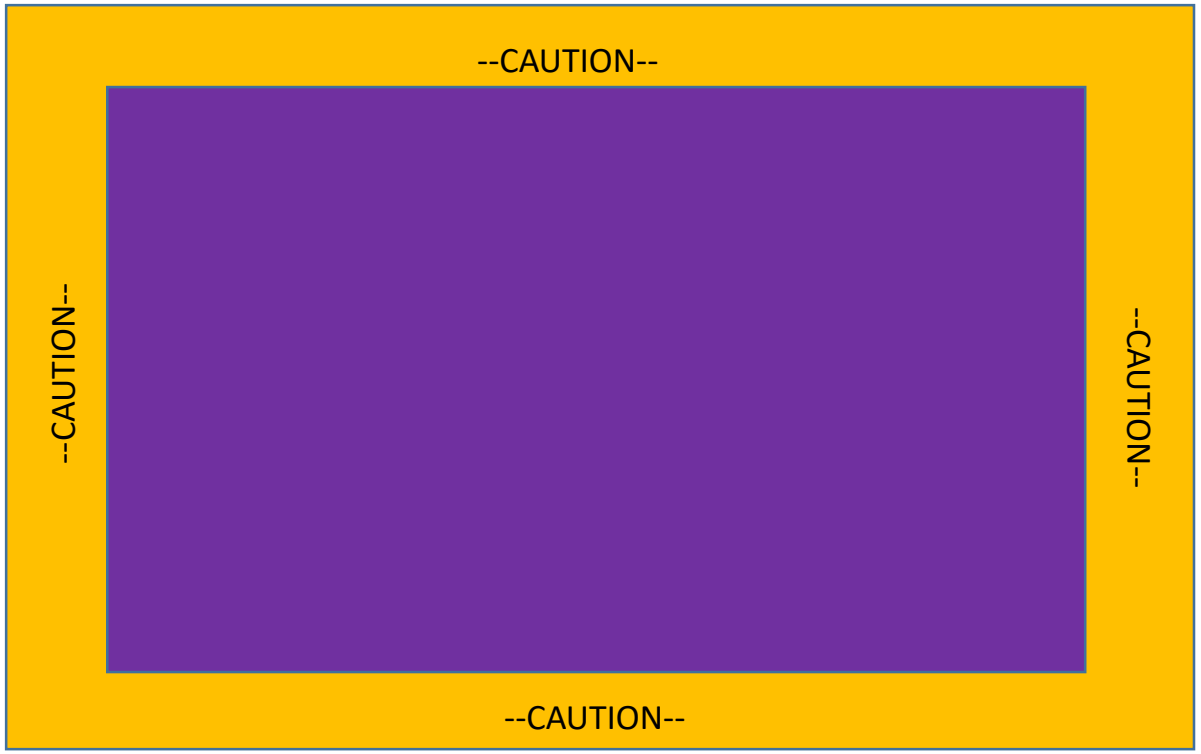
There are things that can be done to address the question “What are you doing to reduce drift?”

Droplet drift risk is greatest at the field edge.

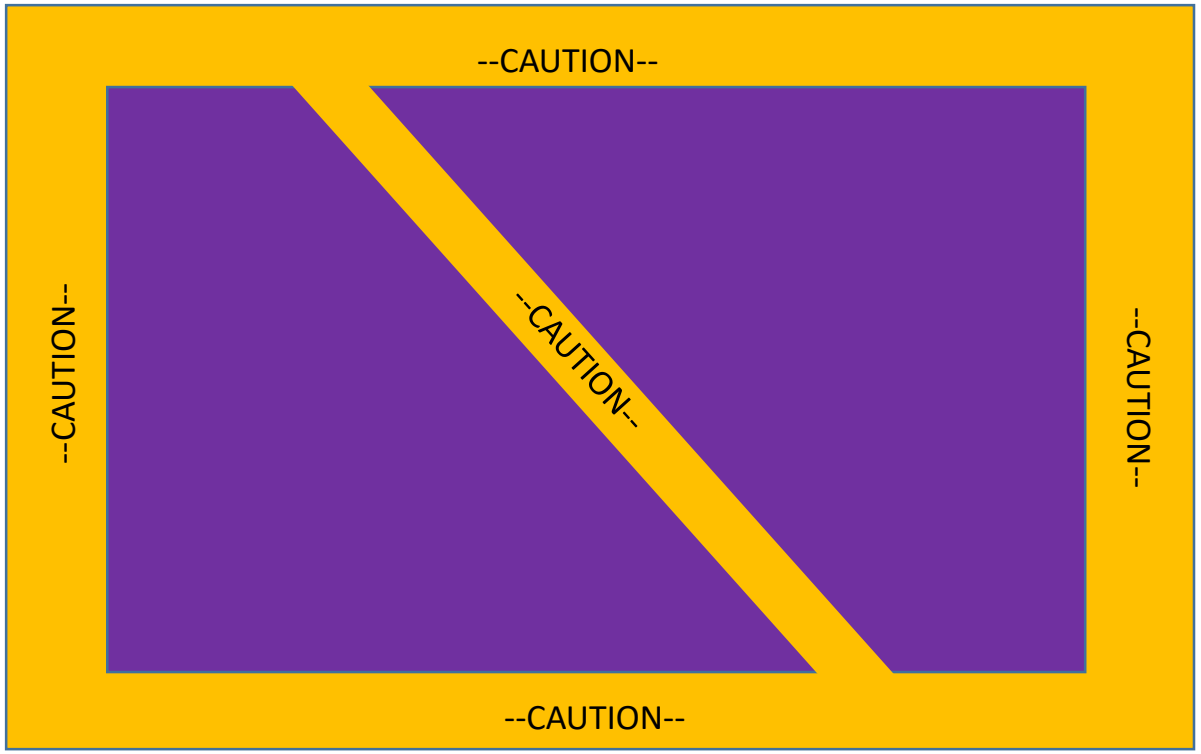


It is very hard to eliminate measurable drift within <100' of the orchard when spraying large trees in summer.

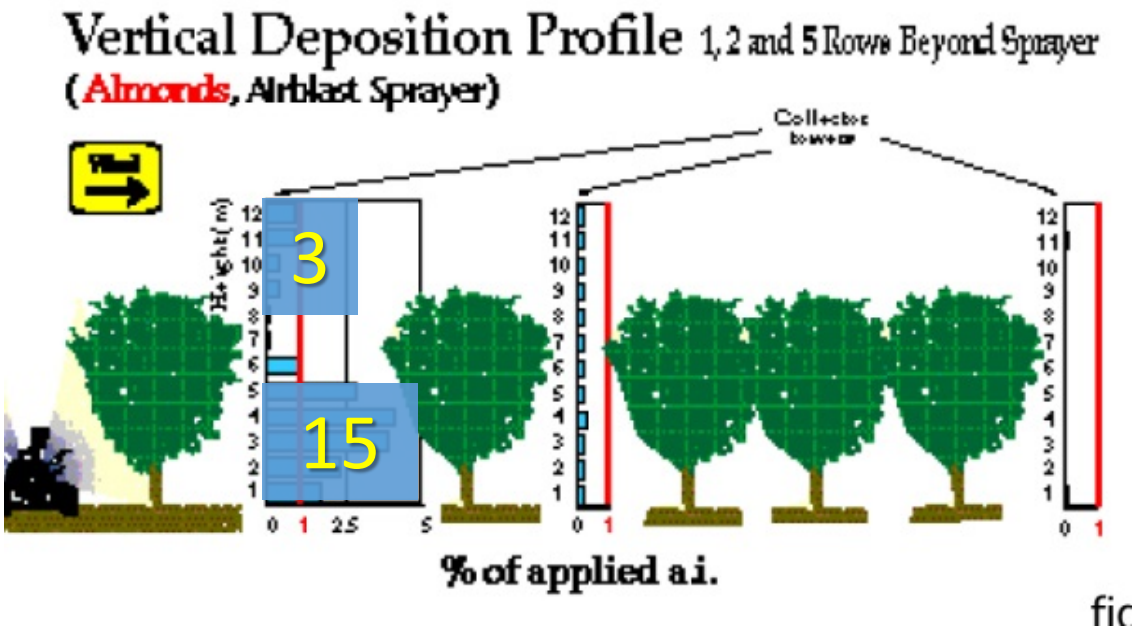
Since the orchard edge of the orchard is where the drift risk is highest, focus on practices at the edges.



If stream runs through an orchard, that adds to the edges, to areas of concern.



Most wasted pesticide is lost below the canopy; on to the ground.



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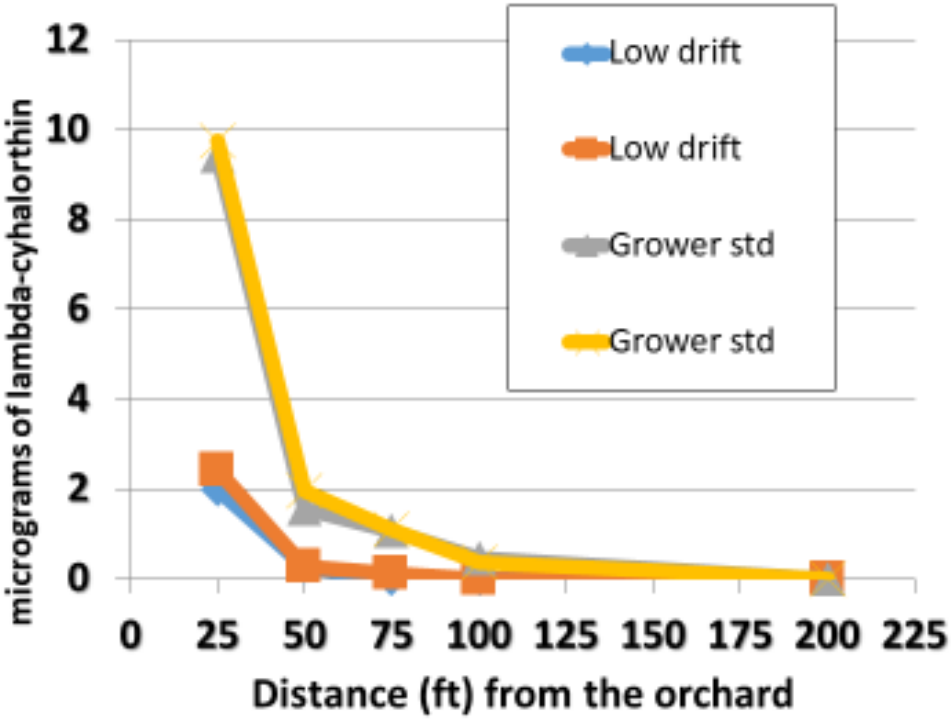
Two of the biggest factors related to drift are…

- Air movement (wind and/or fan)
- Droplet size

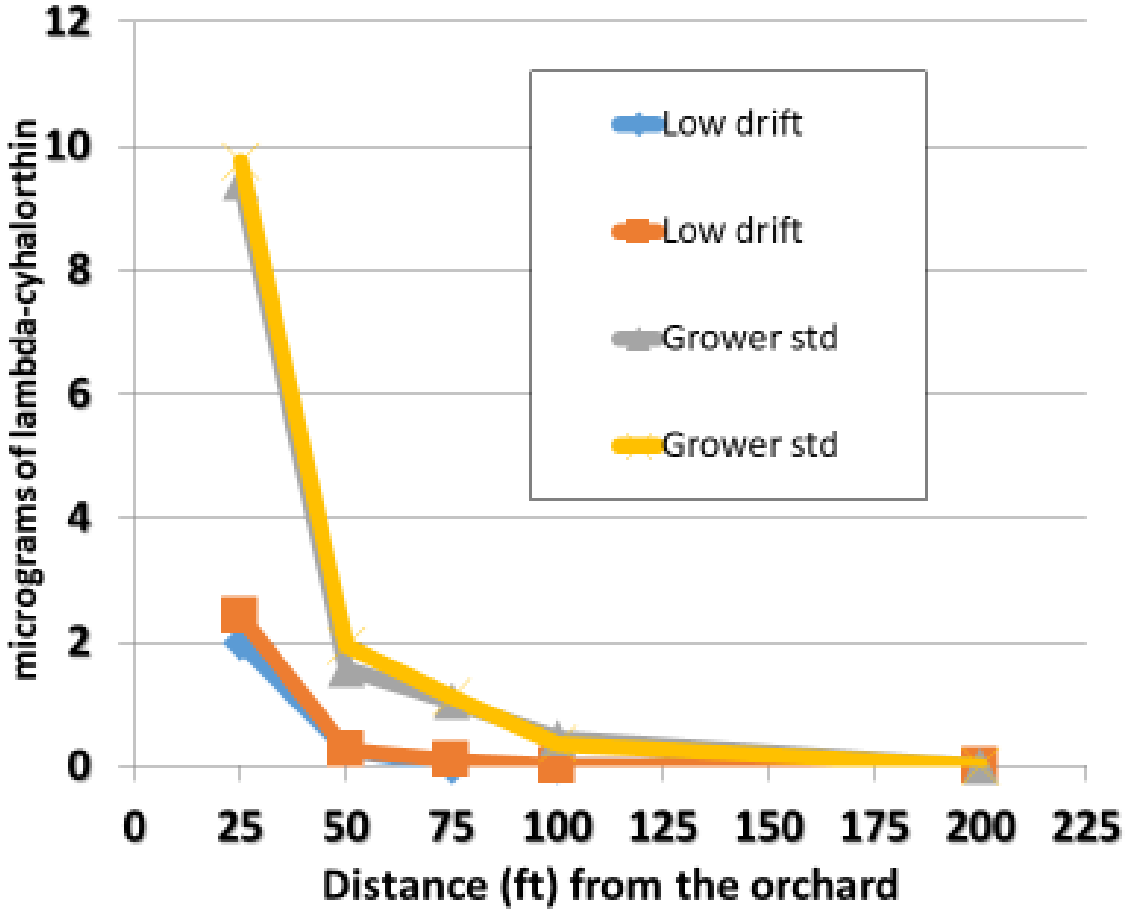
Drift is reduced when large nozzles and slower fan speeds are used.



Drift control practices to consider when spraying near field edges.

1. Spray when wind is blowing into the orchard.
2. Reduce drift potential of the sprayer.
   - Use larger nozzles or low drift (AI) nozzles to make larger droplets
   - Target tree with more flow towards heaviest canopy (and crop).
   - Slow down the fan (lower engine RPMs) = less air to push spray past trees. This is especially important for young (small) trees.
   - Prune trees for better spray coverage at faster ground speeds.
   - Use a “smart sprayer” to further target the trees

Gear up, throttle down reduces drift w/o harming pest control in fall, when drift risk is highest. Could help in season near field edges?



Navel orangeworm management practices to limit the need to spray.

Preplant decisions:

Early harvesting

- Varieties (Independence, Nonpareil, new?)
- Less vigorous rootstocks like Rootpac-R for earlier harvest (compared with vigorous rootstocks like peach/almond hybrid.

Once the trees are in the ground:

- Careful winter sanitation to limit NOW population in the orchard.
- Intensive trapping (2 Peterson traps per acre) to reduce females before egg laying.

More Best Practices

- Train all applicators
- Read labels
- Not all product is the same
- Mix according to label, not what was done "last time"
- Weather matters

Spray Drift Precautions/Buffer Zones Label Requirements

RESISTANCE

Some insects tend to develop resistance to products used repeatedly for control. Because the development of resistance cannot be predicted, the use of this product should conform to resistance management strategies established for the use area. Consult your local or state agricultural authorities for details.

If resistance to this product develops in your area, this product or other products with a similar mode of action, may not provide adequate control. If poor performance cannot be attributed to improper application or extreme weather conditions, a resistant strain of insect may be present. If you experience difficulty with control and resistance is a reasonable cause, immediately consult your local company representative or agricultural advisor for the best alternative method of control for your area.

SPRAY DRIFT PRECAUTIONS

BUFFER ZONES

Vegetative Buffer Strip

Construct and maintain a minimum 10-foot-wide vegetative filter strip of grass or other permanent vegetation between the field edge and down gradient aquatic habitat (such as, but not limited to, lakes, rivers, permanent streams, marshes or natural ponds; estuaries; and commercial fish farm ponds).

Only apply products containing lambda-cyhalothrin onto fields where a maintained vegetative buffer strip exists between the field and down gradient aquatic habitat.

For guidance, refer to the following publication for information on construction and maintenance of *Conservation Buffers to Reduce Pesticide Losses. Natural Resources Conservation Service*, USDA. Publication No. Texas. 21 pp. http://www.in.nrcs.usda.gov/technical/agronomy/newconbuf.pdf

Buffer Zone for Ground Application (groundboom, overhead chemig

Do not apply within 25 feet of aquatic habitats (such as, but not limited to, lakes, estuaries, and commercial fish ponds).

Buffer Zone for ULV Aerial Application

Do not apply within 450 feet of aquatic habitats (such as, but not limited to, lakes, estuaries, and commercial fish ponds).

Buffer Zone for Non-ULV Aerial Application

Do not apply within 150 feet of aquatic habitats (such as, but not limited to, lakes, estuaries, and commercial fish ponds).

In the state of New York, a 25-foot vegetated, non-cropped buffer strip untraversed by equipment is required between a treated field and a coastal salt marsh or stream that drains into a coastal salt marsh for ground application. For aerial applications, the 25-foot vegetated non-cropped buffer strip is required in addition to the larger 150-foot buffer strip (or 450-foot buffer strip for ULV application) required for non-ULV aerial application.

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SPRAY DRIFT REQUIREMENTS

Wind Direction and Speed

Only apply this product if the wind direction favors

Do not apply when the wind velocity exceeds 15 m

Temperature Inversion

Do not make aerial or ground applications into ter

Inversions are characterized by stable air and incre the presence of an inversion in humid areas. The a observing a smoke layer near the ground surface.

Droplet Size

Use only medium or coarser spray nozzles (for ground and non-ULV aerial application) according to ASAE (S572) definition for standard nozzles. In conditions of low humidity and high temperatures, applicators should use a coarser droplet size.

Additional Requirements for Ground Applications

Wind speed must be measured adjacent to the application site on the upwind side, immediately prior to application.

For ground boom applications, apply using a nozzle height of no more than 4 feet above the ground or crop canopy.

For airblast applications, turn off outward pointing nozzles at row ends and when spraying the outer two rows. To minimize spray loss over the top in orchard applications, spray must be directed into the canopy.

Additional Requirements for Aerial Applications

The spray boom should be mounted on the aircraft as to minimize drift caused by wingtip or rotor vortices. The minimum practical boom length should be used and must not exceed 75% of the wing span or 80% rotor diameter.

Flight speed and nozzle orientation must be considered in determining droplet size.

Spray must be released at the lowest height consistent with pest control and flight safety. Do not release spray at a height greater than 10 feet above the crop canopy unless a greater height is required for aircraft safety.

When applications are made with a cross-wind, the swath will be displaced downwind. The applicator must compensate for this displacement at the downwind edge of the application area by adjusting the path of the aircraft upwind.

RESTRICTED USE PESTICIDE

DUE TO TOXICITY TO FISH AND AQUATIC ORGANISMS

FOR RETAIL SALE TO AND USE ONLY BY CERTIFIED APPLICATORS OR PERSONS UNDER THEIR DIRECT SUPERVISION AND ONLY FOR THOSE USES COVERED BY THE CERTIFIED APPLICATOR'S CERTIFICATION.

Silencer®

GROUP 3 INSECTICIDE

ACTIVE INGREDIENT:	% BY WT.
Lambda-cyhalothrin; [1a(S*), 3a(Z)]-(±)-cyano-(3 phenoxyphenyl)methyl-3-(2-chloro-3,3,3-trifluoro-1-propenyl)-2,2-dimethylcyclopropanecarboxylate:	12.7%
OTHER INGREDIENTS:	87.3%
TOTAL:	100.0%

Contains 1 pound of active ingredient per gallon. Contains Petroleum Distillate.

EPA Reg. No. 66222-104 EPA Est. No. 37429-GA-001[MT]; 37429-GA-002[RO]

Letter(s) in lot number correspond(s) to superscript in EPA Est. No.

SHAKE WELL BEFORE USING

KEEP OUT OF REACH OF CHILDREN

WARNING/AVISO

Si usted no entiende la etiqueta, busque a alguien para que se la explique a usted en detalle. (If you do not understand this label, find someone to explain it to you in detail.)

PRECAUTIONARY STATEMENTS

HAZARDS TO HUMANS AND DOMESTIC ANIMALS

WARNING: May be fatal if swallowed. Causes substantial but temporary eye injury. Harmful if absorbed through skin or inhaled. Avoid breathing vapor or spray mist. Do not get in eyes, on skin, or on clothing. Wear appropriate protective clothing and eyewear as specified in the Personal Protective Equipment (PPE) section of this label. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, or using tobacco. Remove and wash contaminated clothing before reuse.

For additional Precautionary Statements, First Aid, and Directions for Use, see inside of this booklet.

How can we help? 1-866-406-6262

INSECTICIDE

ADAMA ESSENTIALS

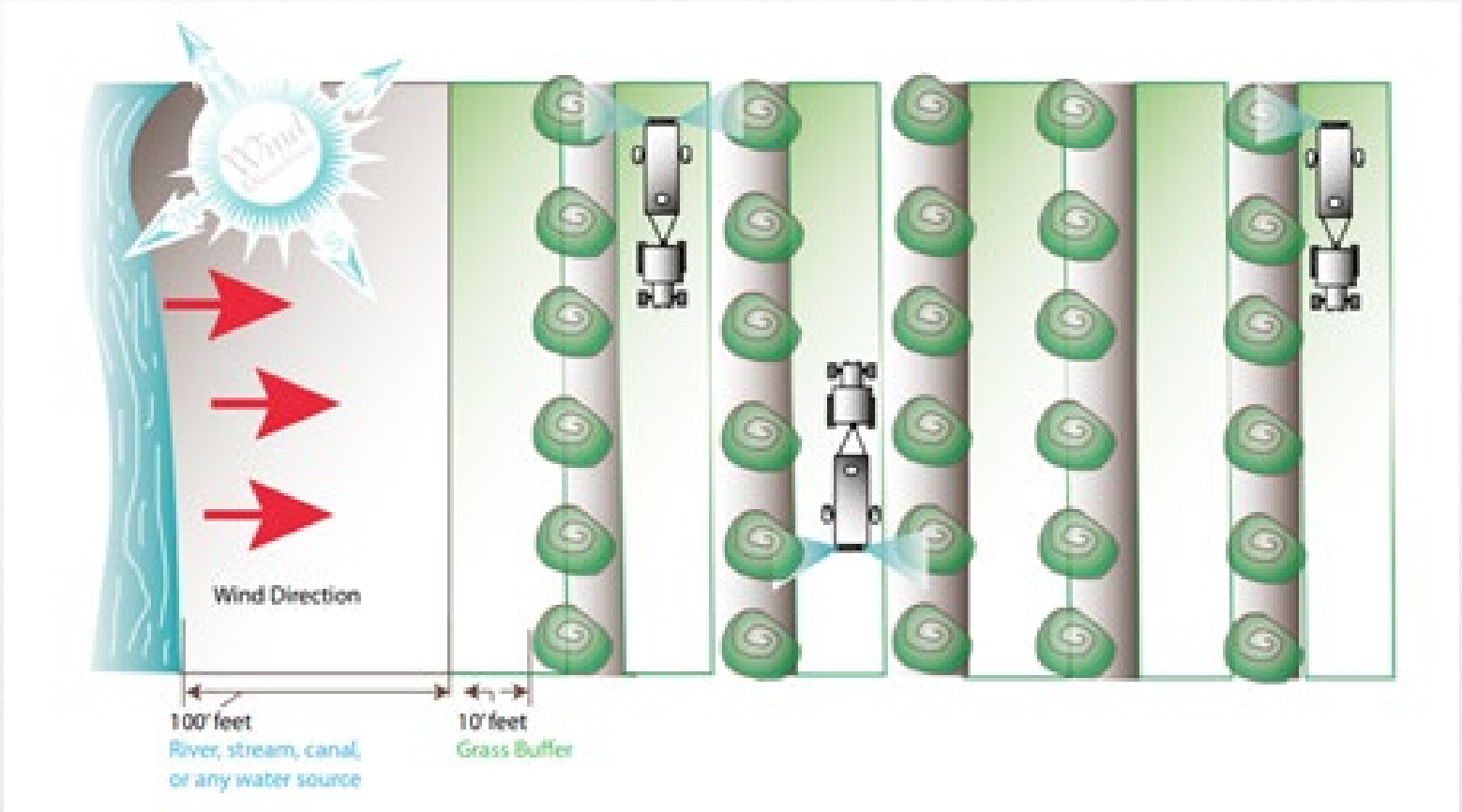
Sensitive Sites Conditions

- Sensitive site zones are as followed: estuaries, reservoirs, lakes, ponds, and waterways.
- Aerial applications shall not be made unless the air movement is 90 to 180 degrees away from such areas.
- Air movement shall be away from the sensitive sites noted above at all times during an application regardless the size of the required buffer.

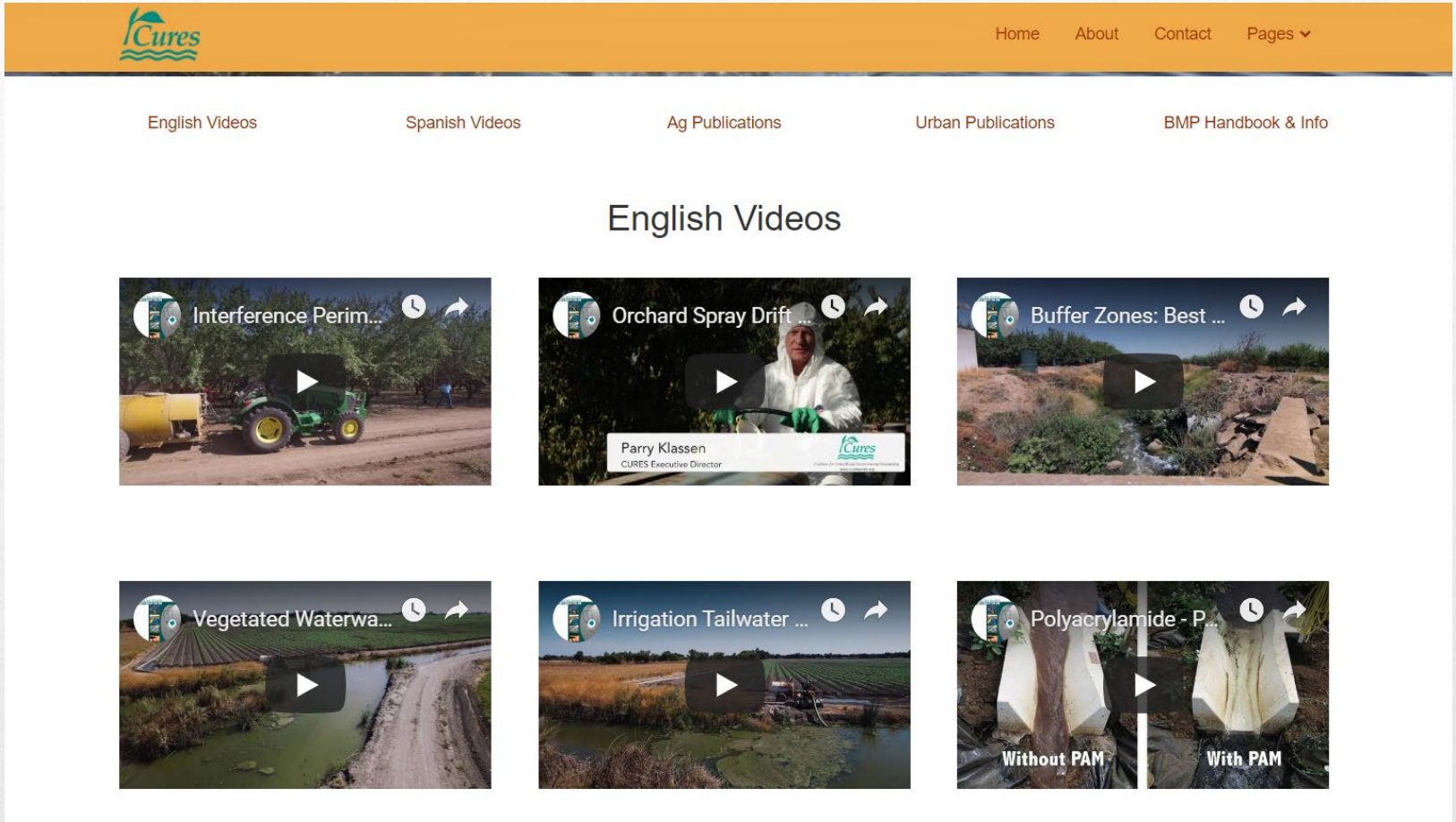
SOURCE: County Ag Commissioner-SENSITIVE SITES CONDITION AND DISTANCE TABLE 10/2017)

Sensitive Site Distance Table

TYPE OF PESTICIDE APPLICATION EQUIPMENT	MINIMUM DISTANCE BETWEEN CLOSEST OPERATING NOZZLE AND THE NON-TARGET AREA
A. Aircraft	500 ft Danger, 300 ft Warning
B. Air blast orchard sprayer	100 feet
C. High boom ground rig in open field use	100 feet
D. Ground rig applying liquid or dust formulations of pesticide no more than 12 inches above the soil	100 feet
E. Ground rig applying liquid or gas below soil (see also fumigation requirements if applicable)	100 feet (or in compliance w/ fumigation regulations, whichever is more restrictive)
F. Ground rig applying dry pesticide pellets no more than 12 inches above the soil or below the soil	5 feet


Wind Direction
100' feet
River, stream, canal,
or any water source
10' feet
Grass Buffer

www.curesworks.org/best-management-practices/



DISCUSSION

Q&A