



the Almond
CONFERENCE
2019

Pest Management Considerations in an Ever-Changing Regulatory Environment

Session Speakers

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Occupational Safety and Health Laws and Regs Update

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Laws and Regs Update

- Current Enforcement Trends
- Cal/OSHA Reporting Requirements
- Night Work in Agriculture



Current Cal/OSHA Enforcement Trends

Cal/OSHA Standard	# of Citations	Fines
3395 - Heat Illness Prevention	26	\$ 112,785
3441 - Operation of Agricultural Equipment	6	\$ 43,085
3328 -Machinery and Equipment	2	\$ 35,480
3314 - Lockout/Tagout	2	\$ 33,750
342 - Reporting Notifications	4	\$ 16,000
4002 - Moving Parts of Machinery	1	\$ 22,500
	115	\$ 336,095

41 inspections averaged 2.8 citations with \$8,000 in fines

Cal/OSHA Reporting Requirements

AB 1805 – Effective January 1, 2020

- Modified definition of “serious injury or illness”
- Now reporting all in-patient hospitalizations, other than medical observation or diagnostic testing
- Now reporting an amputation, loss of an eye or serious degrees of permanent disfigurement



Cal/OSHA Reporting Requirements

AB 1805 – Effective January 1, 2020

- Modified definition of “serious exposure”
- Refers to exposure of an employee to a hazardous substance
- Now if that exposure creates a “realistic” possibility of serious injury or death as a result of the “actual hazard”



Cal/OSHA Reporting Requirements

AB 1804 – Effective January 1, 2020

- Currently must report a serious injury, illness or fatality within 8 hours to Cal/OSHA
- Via phone call or email
- Email to be replaced with online submission portal created and maintained by Cal/OSHA



Night Work in Agriculture

Illumination Requirements – 30” off the ground

Foot-candles	Lux	Areas or Tasks
0.09-0.19	1-2	Poultry harvesting or catching operations
3	32.29	Meeting area and meal/rest area
5	53.82	General movement during outdoor ag operations; Pathways leading to and around restrooms and water; Inside restrooms; Storage area accessed by employees; Areas within 25' of agricultural equipment where workers are present
10	107.64	Intermittently exposed or exposed point of operation equipment; Operationally visible moving parts of machinery; Task lighting for active agricultural operations (harvesting, irrigation)
20	215.30	Task lighting for maintenance work on equipment

Night Work in Agriculture

- Provide personal, hands-free lighting if needed to meet the illumination requirements
- Conduct training at the start of each shift to review the location of the meal/rest area, restrooms, drinking water, bodies of water and other potential hazards including high traffic areas
- Provide and require employees to wear Class 2 high visibility safety clothing



Night Work in Agriculture

Light meter specifications from Cal/OSHA:

- Brands:
 - Davis
 - SPER
 - Extech
- Meter range (difference between lowest level and highest level it can record):
max 50,000 Lux to 400,000 Lux
- Max. Resolution: 0.1Fc / 1Lux
- Basic Accuracy: $\pm 5\%$



Questions?

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Update on International MRLs

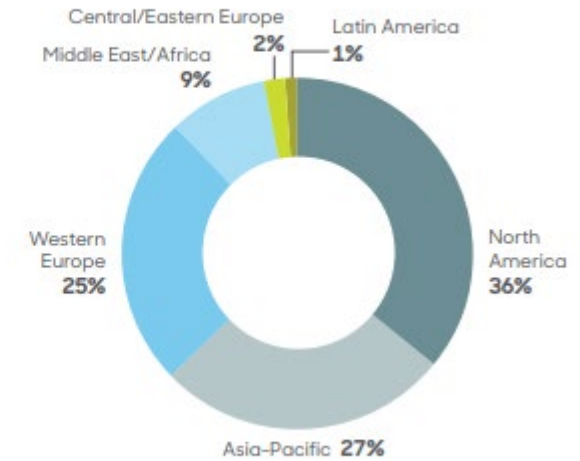
Gabriele Ludwig, Ph.D.
Director, Sustainability & Env. Affairs



Where Do California Almonds Go?

Shipments by Region

crop year 2018/19



Source: Almond Board of California. Note: Totals may not add precisely due to rounding.

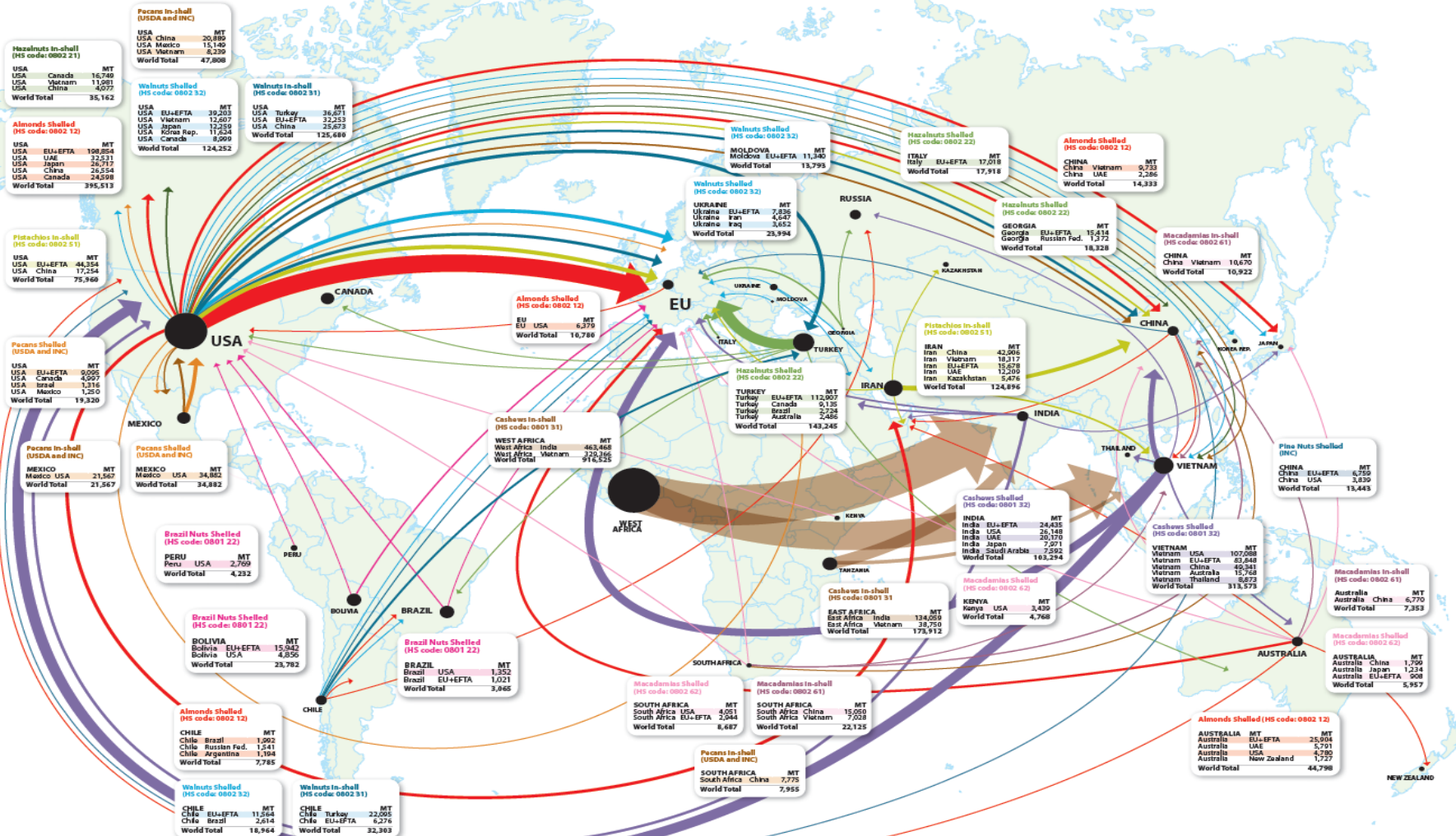
Top Global Destinations

crop year 2018/19 | million pounds



Source: Almond Board of California. July 2019 Position Report

Tree Nut Export Flows



Almond Processing – Sort by Size, Quality



Individual Orchards/Fields for EU Export Not an Option for Almond Growers

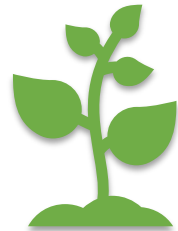


Why MRLs Matter



MRL attention is increasing

Growing emphasis on food safety



Consequences of violations can be severe



International MRLs

MRL = **Maximum Residue Limit** = Tolerance

- A number (usually in ppm) that assures pesticides are applied according to label (GAP) and allows foods with residues to be in trade
- It is set based on residues from using the maximum labeled rates, frequency, shortest PHI for a particular crop/pesticide combination.
- It is not a health or safety standard
- It is assessed that it doesn't pose a dietary health risk.

International MRL Disharmony....

- Missing MRLs
- Lower MRLs

Why? Multiple reasons:

- Different use patterns
- Different risk assessments
- Different ability to process applications
- Different residue definitions
- Different policies on use of Codex MRLs
- Different policies on establishment of import MRLs

Information on current MRLs

- <https://bcglobal.bryantchristie.com>

So What is Going on in Key Almond Markets

- EU is causing real grief
- China is working on establishing more MRLs, but missing many
- India missing many
- Japan generally good.
- South Korea – managed transition to new positive list system
- UAE – defers to Codex
- Canada – stable and default MRL of 0.1 ppm helps

Top Global Destinations

crop year 2018/19 | million pounds



Source: Almond Board of California, July 2019 Position Report

- Limited MRL list but expanding
- Planning for 10,000 MRLs by 2020
- **No system for import tolerances & no default tolerance**
- Limited testing to date





Japan

- Maintains large national MRL list established in 2006
- **0.01 ppm default tolerance**
- Import tolerance system
- Extensive testing - very strict violation policies



Taiwan

- Maintains strict national MRL list established in 1999
- No deferral to Codex - **no default tolerances**
- Many MRLs established over last few years, but still missing MRLs
- Food safety important issue in Taiwan
- Regular testing - frequent violations - Media attention common



Hong Kong

- New national MRL list August 1, 2014
- Need additional MRLs
- Testing and enforcement: **Only test against existing MRLs**



Thailand

- Mixture of national list and Codex MRLs
- **Will be banning use of chlorpyrifos and paraquat, and change the MRLs**
- Deferred banning glyphosate



Vietnam

- Mixture of national list and Codex MRLs
- **Recent decision to ban use of glyphosate, unclear re MRLs**
- Testing and enforcement: does occur to extent, but violations rare and actions limited



Canada

- Canada national list expanding, joint reviews with EPA
- **0.1 ppm default tolerance**
- Testing and enforcement: does occur to extent, but violations rare and actions limited



Australia

- Maintains national MRL list
- **No default tolerance**
- Easy import tolerance system

South Korea - Transition to Positive List System

- South Korea in 2013 decided to use only Korean-established MRLs (move to a positive list system).
- Tree nuts, tropical fruit, and oil seeds required Korean-set MRL as of Jan. 1, 2017
- ABC developed priority list based on residues and use data
- Contacted registrants with help of BCI to request data packages submission for almonds/tree nuts

Successful Transition!!

- 69 Almond/Nut MRLS established at acceptable level or default level (0.01)
 - 15 set at default level of 0.01
 - 5 MRL's that are less than US or CODEX MRL's



European Union

- EU is implementing “cut-off” criteria legislation from 2009 as a part of their registration review

Risk Assessment Process

- **Hazard x Exposure = Risk to human health**
- To do a complete risk assessment, scientists need both how hazardous the compound is, as well as risk of exposure to the human body. (e.g. skin contact, diet, water, air, etc.)

EU Risk Assessment Process

- **Hazard x Exposure = Risk to human health**
XXX
- If a compound meets one of the cut-off criteria, then EU only considers the hazard. It **does not** account for human exposure, creating an incomplete picture of risk to human health.

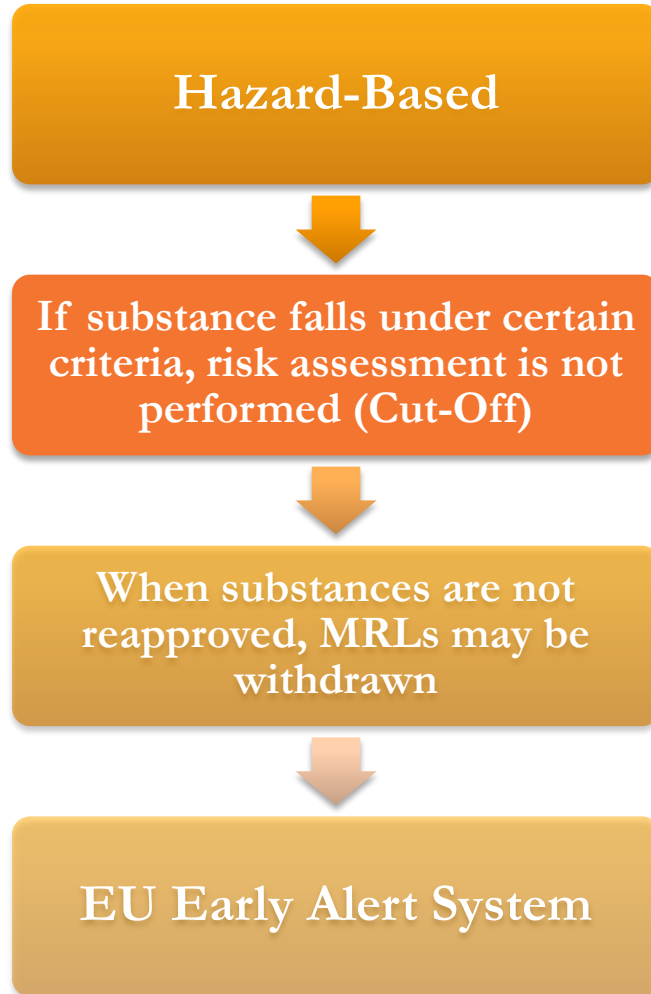


Hazard

Exposure

Risk Analysis

EU's Hazard-Based System



Hazard Criteria:

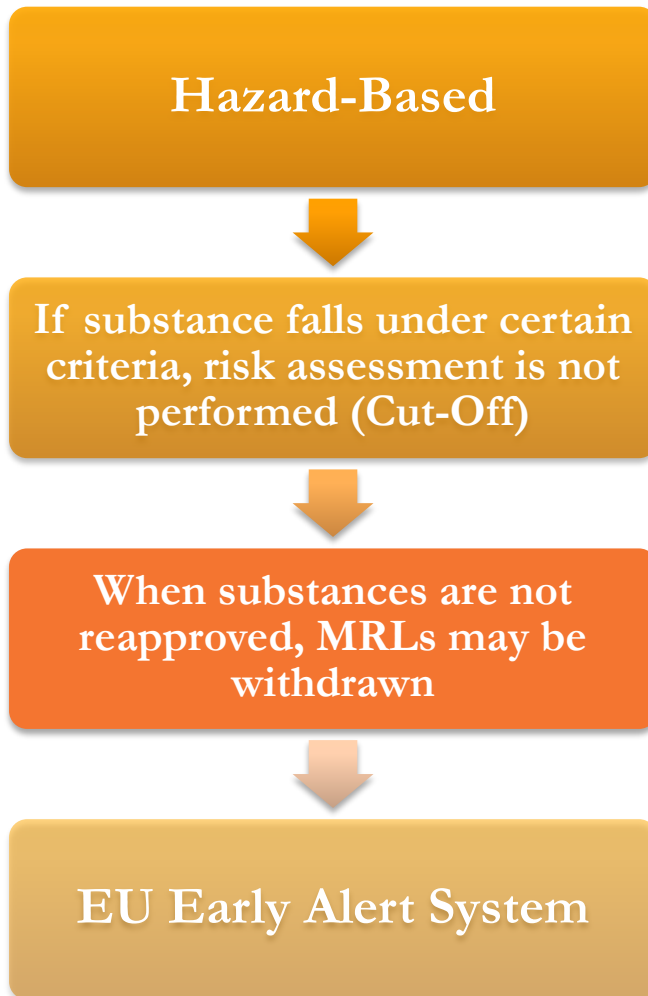
- Carcinogenic
- Genotoxic
- Toxic for reproduction
- Endocrine disruptor

Precautionary Principle:

- Missing toxicological data for minor metabolites

Environmental Criteria:

- Persistent organic pollutant
- Persistent, bioaccumulative, and toxic
- Very persistent and very bioaccumulative
- Ecotoxicology (i.e. risk to bees)



In January 2019, EU MRLs withdrawn for:

- Iprodione
- Diflubenzuron
- Buprofezin
- Picoxystrobin

Soon for:

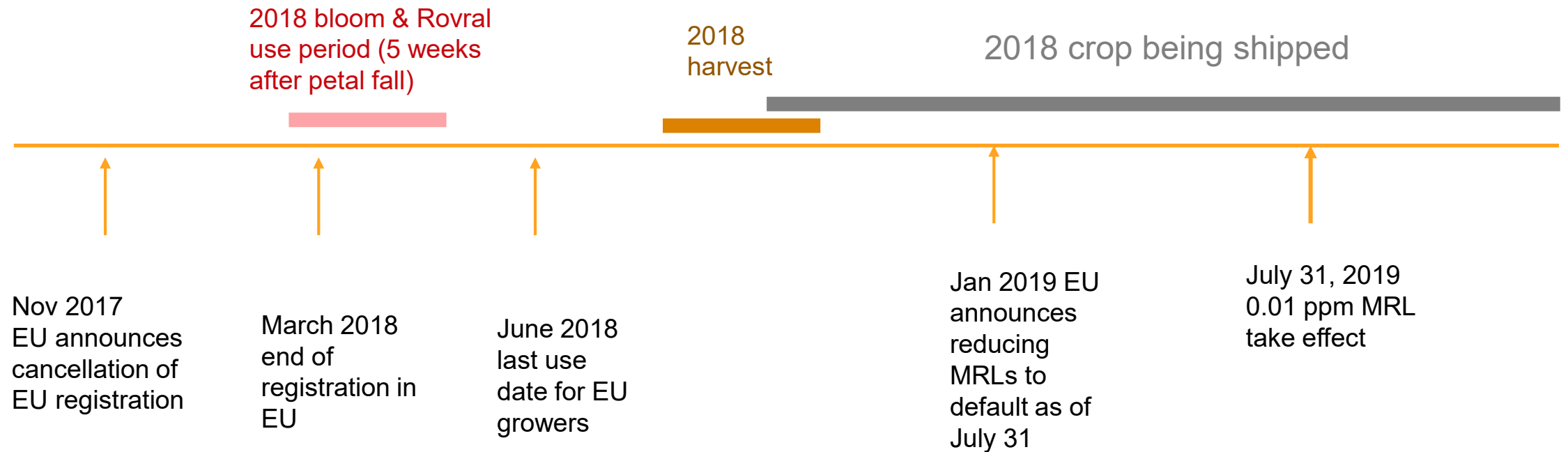
- Chlorpyrifos
- Chlorothalonil
- Propiconazole

MRLs typically, but not always, are lowered to the default MRL of 0.01 ppm (limit of detection)

Lack of Transition Periods in the EU

- A significant problem for longer shelf-life products
- EU not budging....

Example: iprodione (Rovral):



So What Does This Mean for Almond Pest Management Choices?

- We do an assessment of compounds
 - Look at usage data – is it widely used?
 - Look at residue data – have there been any detections? If yes, at what levels?
 - What is the current EU MRL – if already at 0.01 ppm then likely no change.

In January 2019, EU MRLs withdrawn for:

- Iprodione (Rovral) – have residues
 - some handlers asked growers to not use in 2018 growing season
- Diflubenzuron (Dimilin) – no residues detected
- Buprofezin (Applaud) – little use, no residues detected
- Picoxystrobin (Acapela) – too new, so not sure yet

Soon for:

- Chlorpyrifos (Lorsban) – have had residues, CA has limited, now ending its use
- Chlorothalonil (Bravo) – no residues detected
- Propiconazole (Tilt, etc) – EU MRL already 0.01 ppm.

Registrants may try applying for import tolerances. Uncertain EU will grant.

Considerations for MRLs

- Talk to your handler about what markets they export to.
 - - They may ask that certain compounds not be used
- Use Global MRL Database to determine MRLs in key export markets
www.bryantchristie.com
- Talk to your PCA about MRLs
- ABC is considering research to determine PHIs for lower MRLs



Questions?

Thank you!





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