

More Than a Number...

MRLs from an International Beverage Company Perspective

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Why is The Coca-Cola Company interested in MRLs?

Two key drivers...

The ingredients that go into our beverages are largely derived from agricultural commodities.

Our products are available in more than 200 countries.

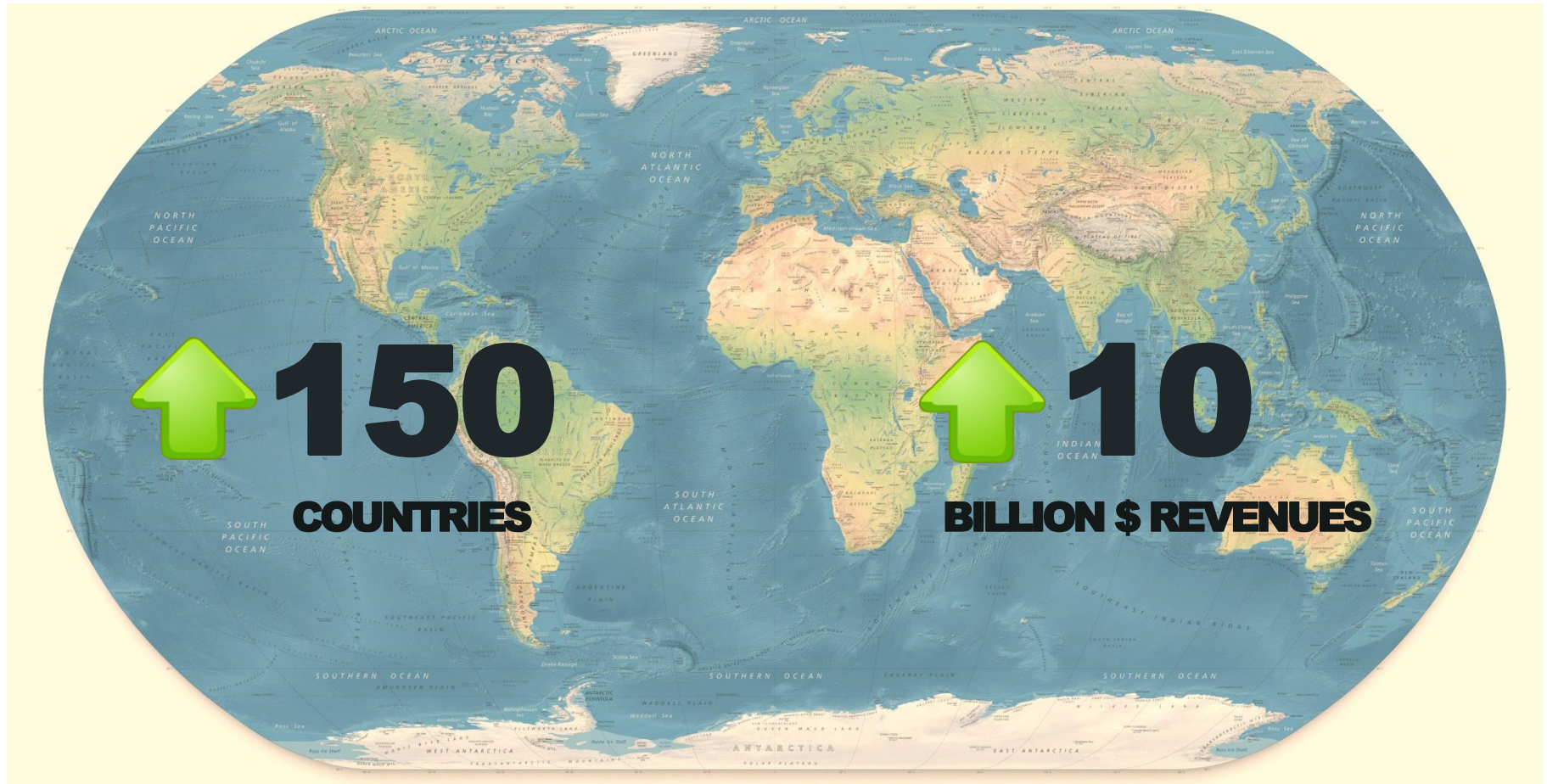
Presentation Outline

- Products and Commodities
- Pesticides and Regulatory Compliance in Agricultural Commodities
- Pesticide Monitoring - Survey Data
- Moving Forward

The Importance of Juice...

Globally, The Coca-Cola Company is the No. 1 provider of juices and juice drinks.

Coca-Cola Juice Brands – A Global Business



The Coca-Cola Company produces and sells all types of juice products.....

Juice Drinks



100% Juices & Nectars



Chilled Juices & Smoothies



Kids Drinks



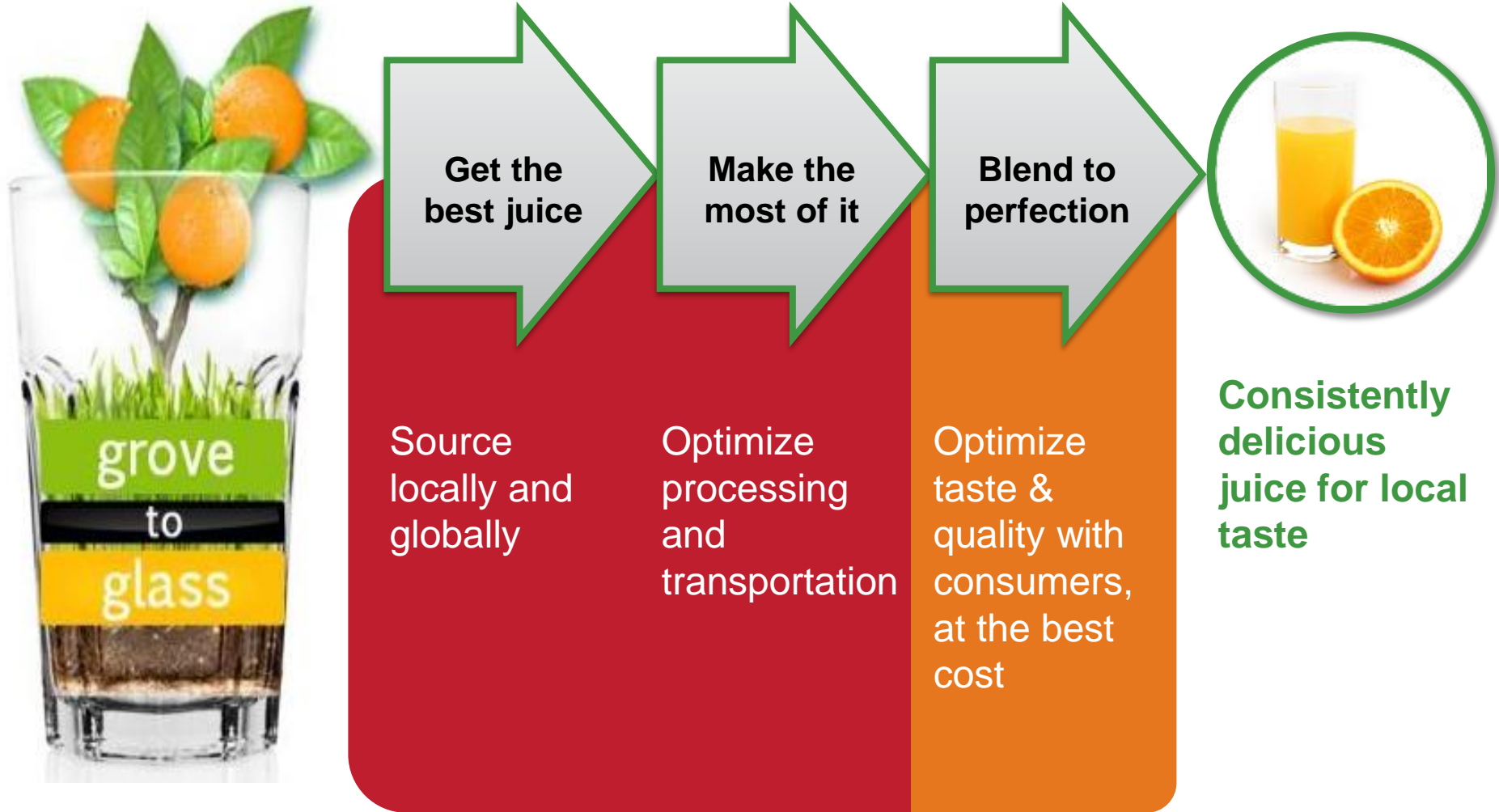
Dairy Blends



Powders & Concentrates



Grove-To-Glass Operating System



Ready to Drink Teas and Coffees



Odwalla – Liquid Food Category

pick a category

- All Products
- All Natural Juices
- Proteins
- Quenchers
- Fruit Smoothies
- Smoothie Refreshers™
- Smoothies for Kids
- Superfoods
- Bars

Discover our good products

Discover beverages and bars that bring goodness to your entire day—from rooster crow to owl hoot.



- Apple
- Carrot
- Grapefruit
- Orange
- Tangerine
- Mango
- Coconut
- Pumpkin
- Strawberry
- Grape
- Peach
- Lemon
- Raspberry
- Pineapple
- Blueberry
- Pear
- Pomegranate
- Lime
- Plum

Regulatory Considerations



Residues and Regulations

- Regulatory authorities establish and enforce allowable residues.
- Pesticide residues, when they do occur, are typically found at very low levels.
- Pesticide residues may or may not be detected on treated crops after harvest.



Balancing Benefits and Risks

Benefits

- Increased productivity and lower food costs
- Improved fruit and vegetable quality and appearance
- Longer shelf-life
- Public health issues (e.g., mosquito control)

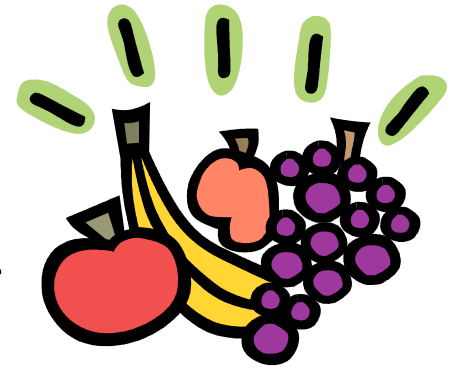


Risks

- Worker exposure
- Soil and water contamination
- Non-target effects (e.g., beneficial insects, spray drift)
- Potential for residues in food

Establishing Tolerances and MRLs

- Requires residue data from controlled field studies (maximum rate, number of treatments, minimum harvest interval)
- MRLs are subject to review and revision
- New registrations are expensive
- Growers and associations have significant influence with chemical manufacturers for new uses and tolerances



Codex - MRLs on an International Basis

Codex Committee on Pesticide Residues (CCPR)

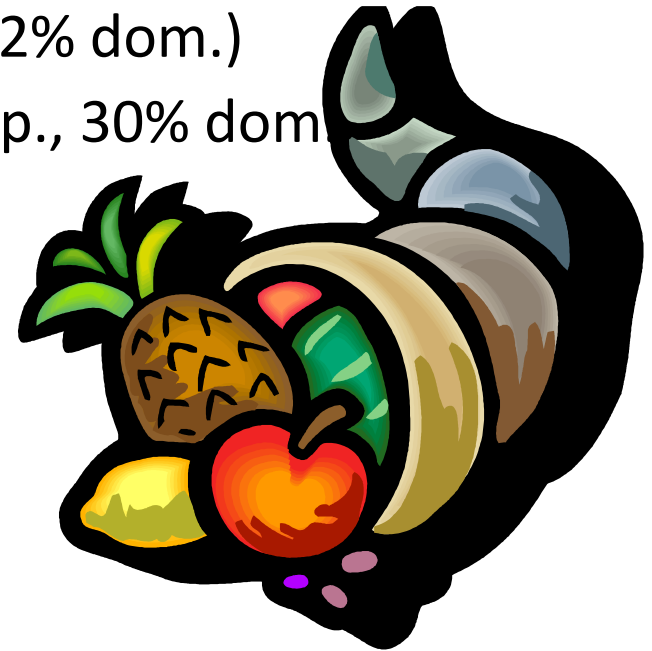
- Prepares priority lists of pesticides for evaluation by the expert group at Joint FAO/WHO Meeting on Pesticide Residues (JMPR)
- Uses scientific advice from JMPR to establish maximum limits for pesticide residues in food and feed
- Used primarily by countries that do not have the regulatory resources to establish their own residue levels

Pesticide Residue Monitoring



USDA – Pesticide Data Program (PDP)

- Started in 1991
- 100+ commodities and 500+ pesticides
- Samples collected in 11 states
- From the 2011 Annual Summary...
 - 11,894 total samples
 - 0.27% exceed tolerance (78% imp., 22% dom.)
 - 3.4% no approved tolerance (70% imp., 30% dom.)
 - Orange juice (585 samples)
 - Carbaryl (22.2%)
 - Imazalil (6.3%)
 - Imidacloprid (5.8%)
 - Thiabendazole (9.6%)
- No illegal orange juice residues reported



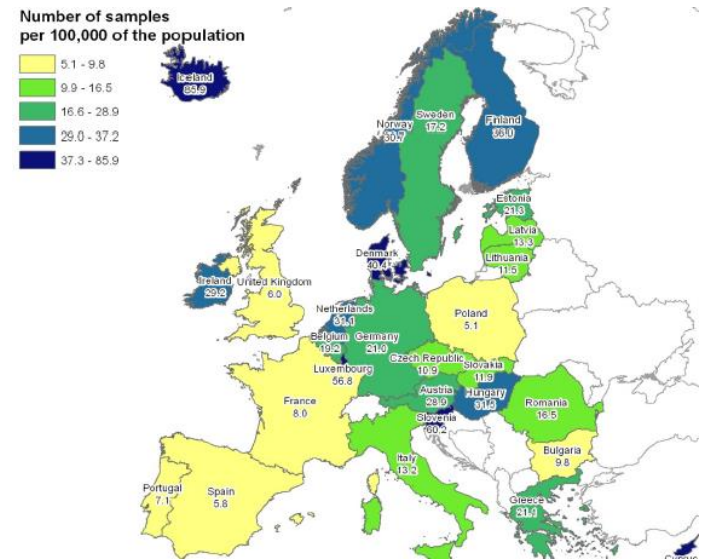
Carbaryl Residues in Orange Juice – 2011 USDA PDP

- 130 detections out of 585 samples
- 455 non-detects
- Range of detections: 0.003 – 0.018 ppm
- Average residue (when detected): 0.007 ppm
- Carbaryl/orange tolerances and MRLs:
 - ✓ US: 10 ppm
 - ✓ Codex: 15 ppm
 - ✓ EU: 0.01 ppm
 - ✓ Japan: 7 ppm



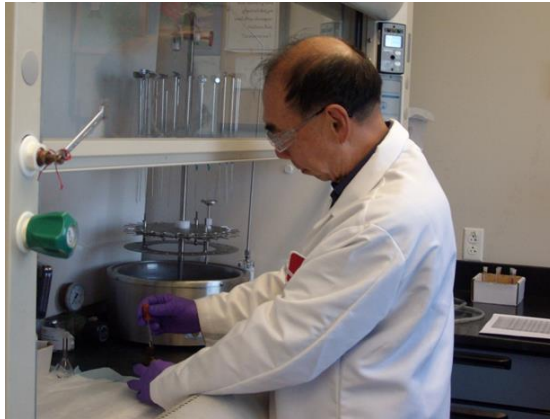
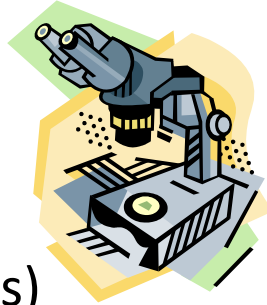
2010 EU Report on Pesticide Residues in Food

- 27 EU member states plus Iceland and Norway
- More than 77,000 domestic and imported samples
- 2.8% exceed MRL for one or more pesticides
- EU Coordinated Program: 30 major foods, 10/year on a three-year cycle, statistically based



TCCC Testing and Pesticide Residue Monitoring

- Basic Attributes
 - Brix, acidity, color, turbidity, viscosity, etc.
 - Stability
 - Microbiology
 - Sensory
- Residues (screening >150 a.i.s)
- Heavy metals (arsenic, cadmium, lead)
- Adulteration
- More than 20,000 samples in 2012



Pesticide Residue Monitoring Summary

- Detections of pesticide residues exceeding an established tolerance are rare
- In the US, the detection of unapproved pesticides, those for which a tolerance has not been requested and/or approved (or has expired) are still rare
- As a consumer facing business, we must be able to respond to reports of residues, and the differences between allowable residue limits from one country to another



Moving Forward



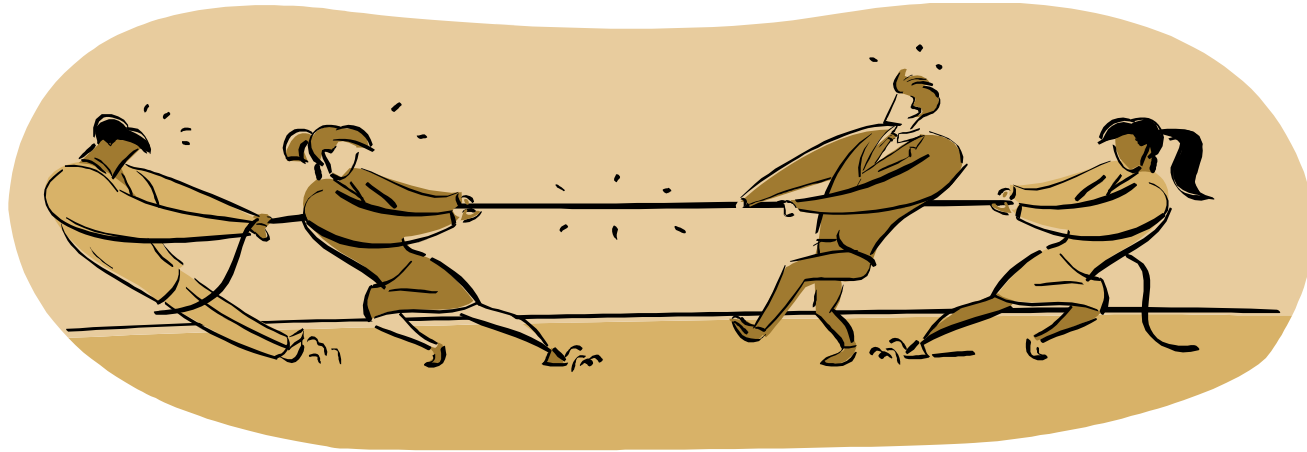
MRL Priorities for Food and Beverage Companies

- Harmonization
- MRL Needs
- Partnerships



Benefits of Harmonization

- Simplify purchasing and distribution
- Flexibility in sourcing
- Simplify supplier messaging and requirements
- Consistent message to consumers



Tea: Additional Tolerances/MRLs Needed

- Tea Act of 1897 – shielded tea imports from most regulatory agencies
- Revoked in 1996
- 2008 – FDA detention of tea due to illegal pesticide residues
- FDA and Tea Association of the USA reached an agreement for enforcement discretion with good faith efforts to obtain tolerances
- Obstacles to new tolerances include: ownership and revenue for off-patent compounds, minor crop status in the US, new data generation requirements and expenses, registration fees and harmonization challenges.



Tea Tolerances and MRLs: US, EU and Codex

- **US:** tea tolerances for 18 active ingredients
 - plus 19 food and feed storage/handling tolerances
- **Codex:** 16 current (1 revision and 1 new MRL proposed for 2013)
- **EU:** 40+ established tea MRLs and default MRLs for many other active ingredients

Comparison of Selected Tea Tolerances/MRLs

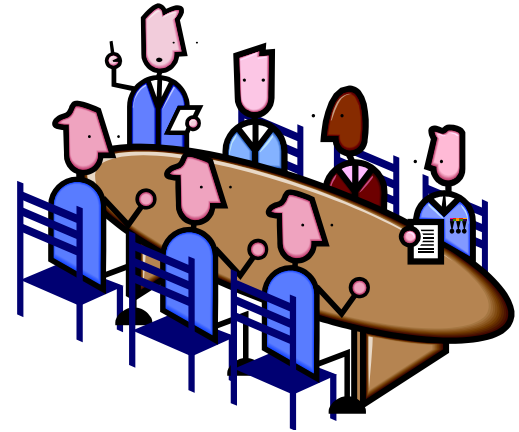
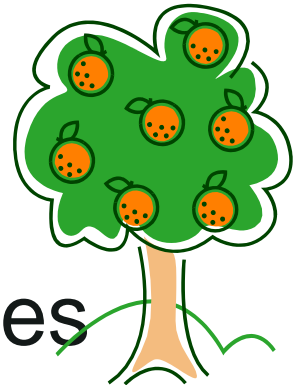
Active Ingredient	US Tolerance (ppm)	EU MRL (ppm)	Codex MRL (ppm)
Acetamiprid	50.0	0.1*	none
Bifenthrin	30	5	30
Buprofezin	20	0.05*	30 (2013)
Carfentrazone-ethyl	0.10	0.02*	none
Chlorantraniliprole	50.0	0.02*	none
Chlorpyrifos	none	0.1*	2
Clothianidin	70	0.7	0.7
Deltamethrin	none	5	5
Dicofol	50.0	20	50 40 (2013)



* Indicates the lower limit of analytical detection.

Partnerships and Engagement

- Suppliers and Growers
- Codex Committee on Pesticide Residues
- Trade Associations and Commodity Groups
 - Tea Association of the USA
 - FL Citrus Mutual
 - CropLife America
 - Juice Products Association
- Agrochemical Manufacturers



Questions and Comments...

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