Current Status of Pesticide Registrations and Residue Tolerances

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A Decade of Progress 2001-2011

- Where we were in 2001:
  - Fungicides: 3 active ingredients (a.i.)
    - Benomyl, Azoxystrobin, Copper
  - Insecticides: 8 a.i.'s
  - Herbicides: 8 or 9 a.i.'s
    - Some herbicides limited to nonbearing
    - Oryzalin availability limited due to manufacturing problems

A Decade of Progress 2001-2011

- Where we are now:
  - Fungicides: 15 a.i.'s (from 3)
  - Insecticides: 26 a.i.'s (from 8)
  - Herbicides: 18 a.i.'s (from 8)
- In 2001, problem was lack of materials
- In 2011, problem is lack of residue tolerances in export markets

Pesticide Registration for Pistachios

- Chemical industry, scientists, commodity growers identify a problem
- Potential pesticides are screened for efficacy and toxicology
- Use patterns are determined and applied to a representative crop (almonds)
- Product analyzed for pesticide
- Use patterns may be adjusted to fit toxicology

Maximum Residue Limits - MRLs

- When a pesticide is registered, an MRL or tolerance is established
- MRL is based on label applications
- Assumption is that the MRL can't be exceeded if the label is followed
- But…MRLs are based on toxicology and different markets/countries use different standards for evaluation/regulation

MRLs – Politics or Science?

- MRLs can be arrived at scientifically
- Whether a country sets an MRL and the number used can reflect political preferences
  - Protect a domestic industry
  - Favor one supplier over another
  - Retaliation
- Harmonized MRLs favor trade

Fungicides and MRLs

	EXPORT MARKET				
STROBILURINS	EU	Israel	Japan	Korea	China
Azoxystrobin	2	2	=	none	none
Trifloxystrobin	0.5	0.5	=	none	none
Pyraclostrobin	1.5	1.5	1.5	none	none
TRIAZOLES					
Difenoconazole	2	none	0.3	none	none
Metconazole	0.5	none	none	none	none
Propiconazole	0.5	none	0.5	none	none
Tebuconazole	=	none	none	none	none

Fungicides and MRLs

	EXPORT MARKET				
OTHER	EU	Israel	Japan	Korea	China
Boscalid	1.25	1.25	1.25	none	none
Fenhexamid	2.5	none	=	none	none
Pyrimethanil	=	none	=	none	none
"Switch"	0.5	none	=	none	none
Thiophanate	2	=	=	=	none
Polyoxin-D	none	none	none	none	none

Insecticides and MRLs

	EXPORT MARKET				
PYRETHROIDS	EU	Israel	Japan	Korea	China
Bifenthrin	=	none	=	none	none
Cyfluthrin	2	none	4	none	none
Cyhalothrin	=	0.2	10	10	none
Fenpropathrin	0.1	none	none	none	none
Permethrin	0.5	0.5	0.5	none	none

Insecticides and MRLs

	EXPORT MARKET				
OTHERS	EU	Israel	Japan	Korea	China
Methoxyfenozide	0.2	=	=	none	none
Phosmet	20	2	2	none	none
Acetamiprid	0.1	none	=	none	none
Spinetoram	0.5	0.1	none	none	none
Spirodiclofen	0.2	0.5	=	none	none
Buprofezin	=	none	none	none	none
Chlorantraniliprole	1.2	none	none	none	none
Thiamethoxam	2.5	none	none	none	none

Take Home Lessons

- Pesticide residues can be a significant impediment to trade
- MRLs in export destinations is the responsibility of the registrant
- Work with your processor to determine if particular use could create problem
- Use pesticides in "appropriate" manner