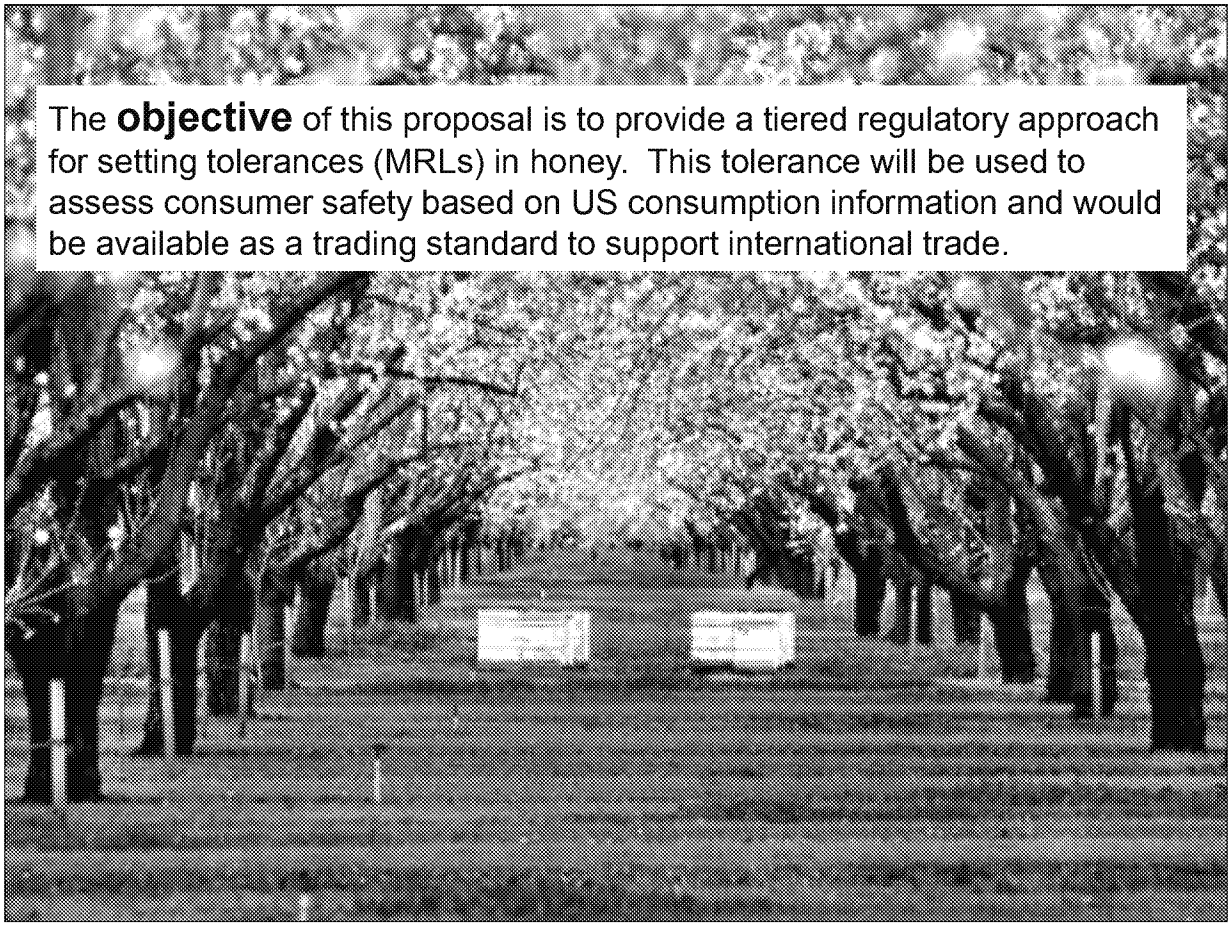
Crop Life America Proposal for setting MRLs in honey

CLA Residue Expert Working Group

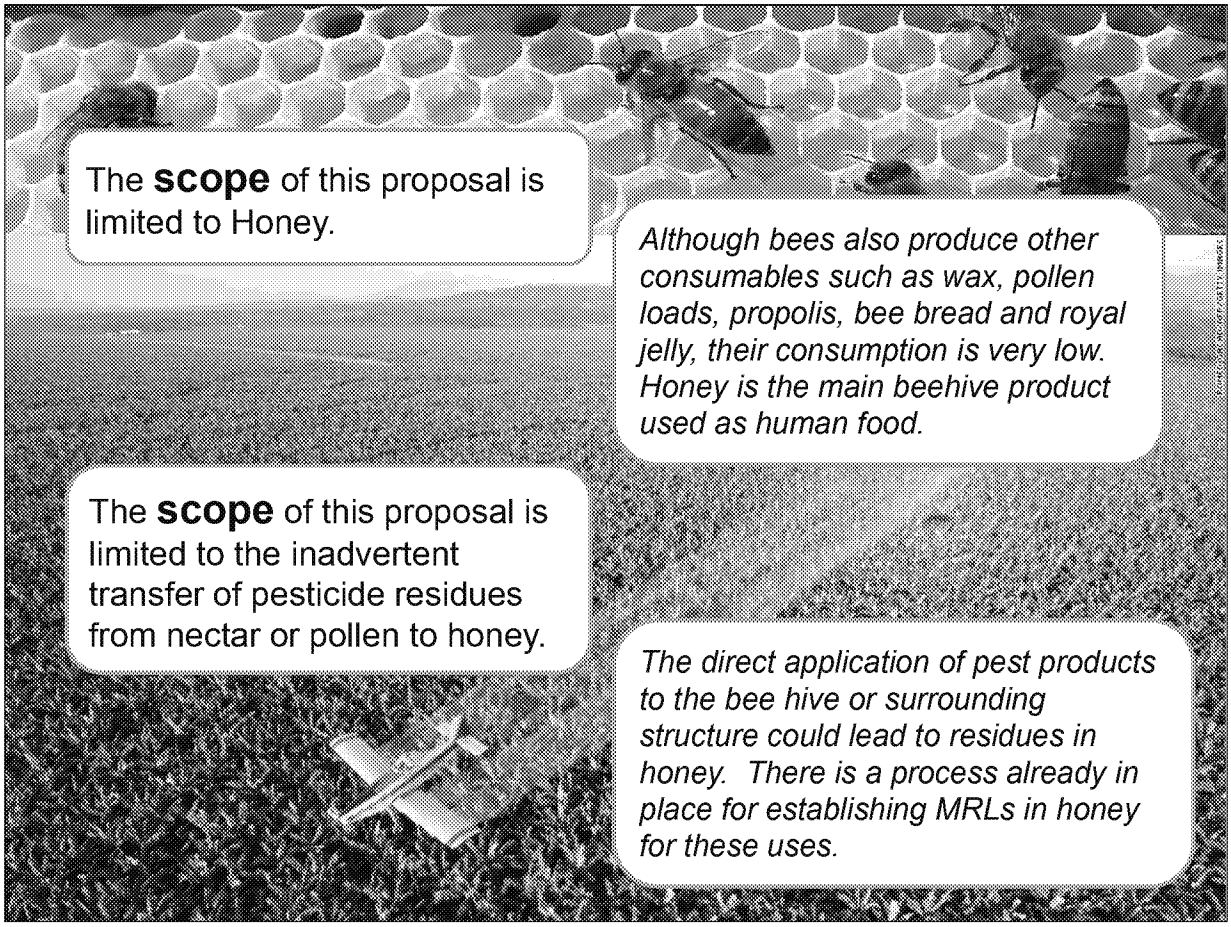
January 27, 2016

DRAFT 3/18/2010



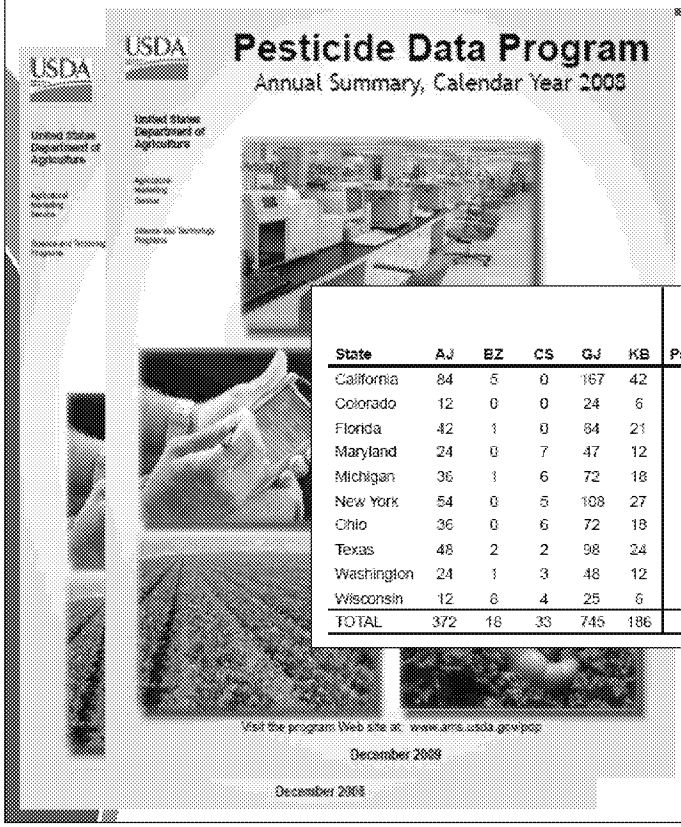
The **objective** of this proposal is to provide a tiered regulatory approach for setting tolerances (MRLs) in honey. This tolerance will be used to assess consumer safety based on US consumption information and would be available as a trading standard to support international trade.

DRAFT 3/18/2010


The **scope** of this proposal is limited to Honey.
Although bees also produce other consumables such as wax, pollen loads, propolis, bee bread and royal jelly, their consumption is very low. Honey is the main beehive product used as human food.
The **scope** of this proposal is limited to the inadvertent transfer of pesticide residues from nectar or pollen to honey.
The direct application of pest products to the bee hive or surrounding structure could lead to residues in honey. There is a process already in place for establishing MRLs in honey for these uses.

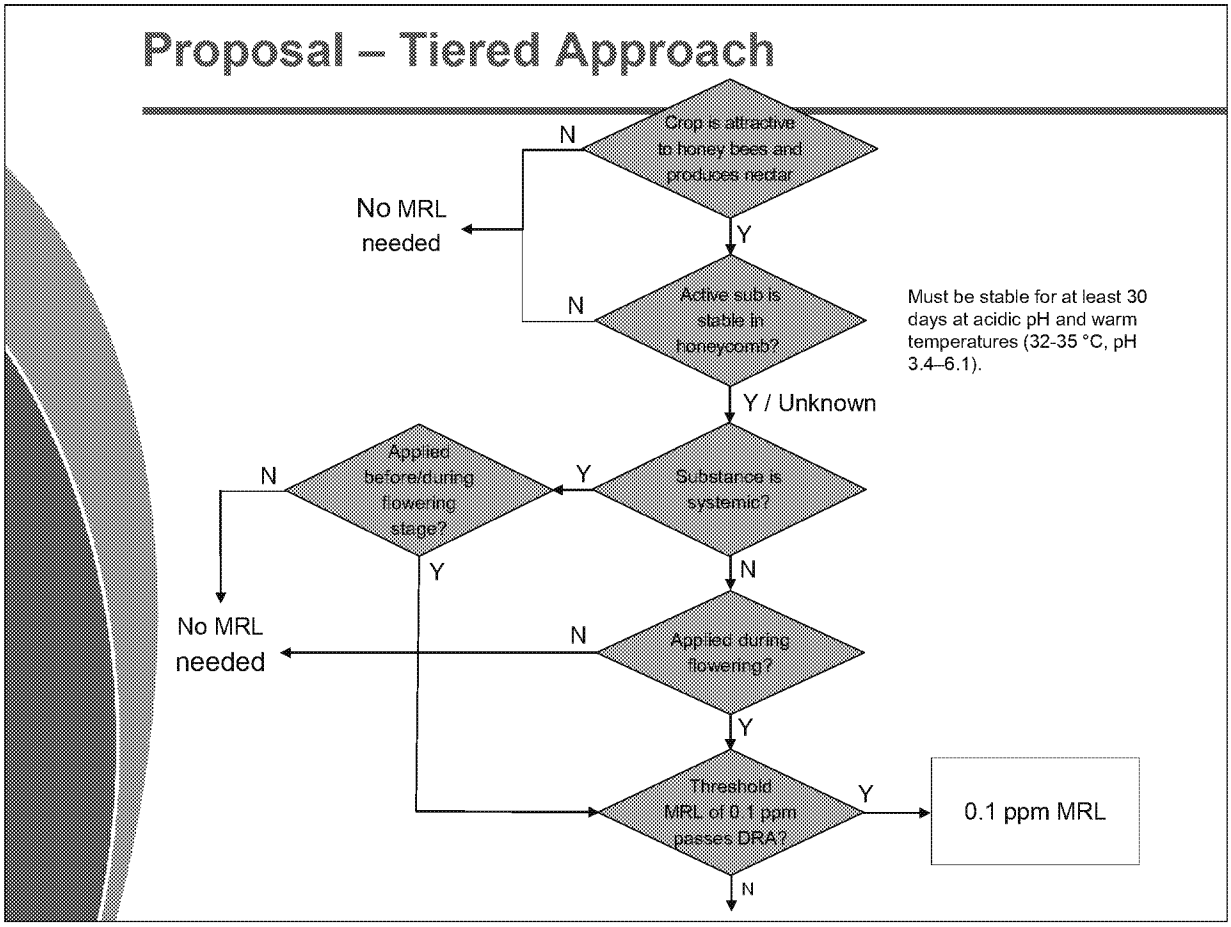
DRAFT 3/18/2010

US Monitoring Data



State	AJ	BZ	CS	GJ	KB	Total Processed	Total Fresh & Proccessed F&V	Nuts AL	Honey HY	Fish FC	Grain RI
California	84	5	0	167	42	298	2,351	42	126	125	42
Colorado	12	0	0	24	6	42	329	6	18	18	6
Florida	42	1	0	84	21	148	1,174	21	63	63	21
Maryland	24	0	7	47	12	90	669	12	36	35	12
Michigan	36	1	6	72	18	133	1,021	18	54	54	18
New York	54	0	5	108	27	194	1,537	27	81	81	27
Ohio	36	0	6	72	18	132	968	18	54	54	18
Texas	48	2	2	98	24	174	1,361	24	72	72	72
Washington	24	1	3	48	12	88	653	12	36	35	12
Wisconsin	12	8	4	25	6	55	319	6	18	15	6
TOTAL	372	18	33	745	186	1,354	10,382	186	558	552	184

DRAFT 3/18/2010



DRAFT 3/18/2010

Threshold MRL – based on PDP data

Pesticide Data Program

2007 S

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Pesticide	# of Samples Analyzed	S w
1-Naphthol	186	
2,4-dimethyl aniline (2,4 DMA)	186	
2,4-dimethylphenyl formamide (2,4-DMPF)	186	
3-Hydroxycarbofuran	186	
4,4-dibromobenzophenone	186	
Acephate	186	
Acetamiprid	186	
Acetochlor	186	
Alachlor	186	
Aldicarb	186	
Aldicarb sulfone	186	
Aldicarb sulfoxide	186	
Aldrin	186	
Allethrin	186	
Amicarbazone	186	
Amitraz	186	
Atrazine	186	
Azinphos methyl	186	
Azoxystrobin	186	
Bendiocarb	186	
Benoxacor	186	
BHC alpha	186	
Bifenazate	186	
Bifenthrin	186	
Boscalid	186	
Bromuconazole	186	
Buprofezin	[illegible]	

Pesticide Data Program

2008 Summary of Residue Findings in Honey for All Pesticides

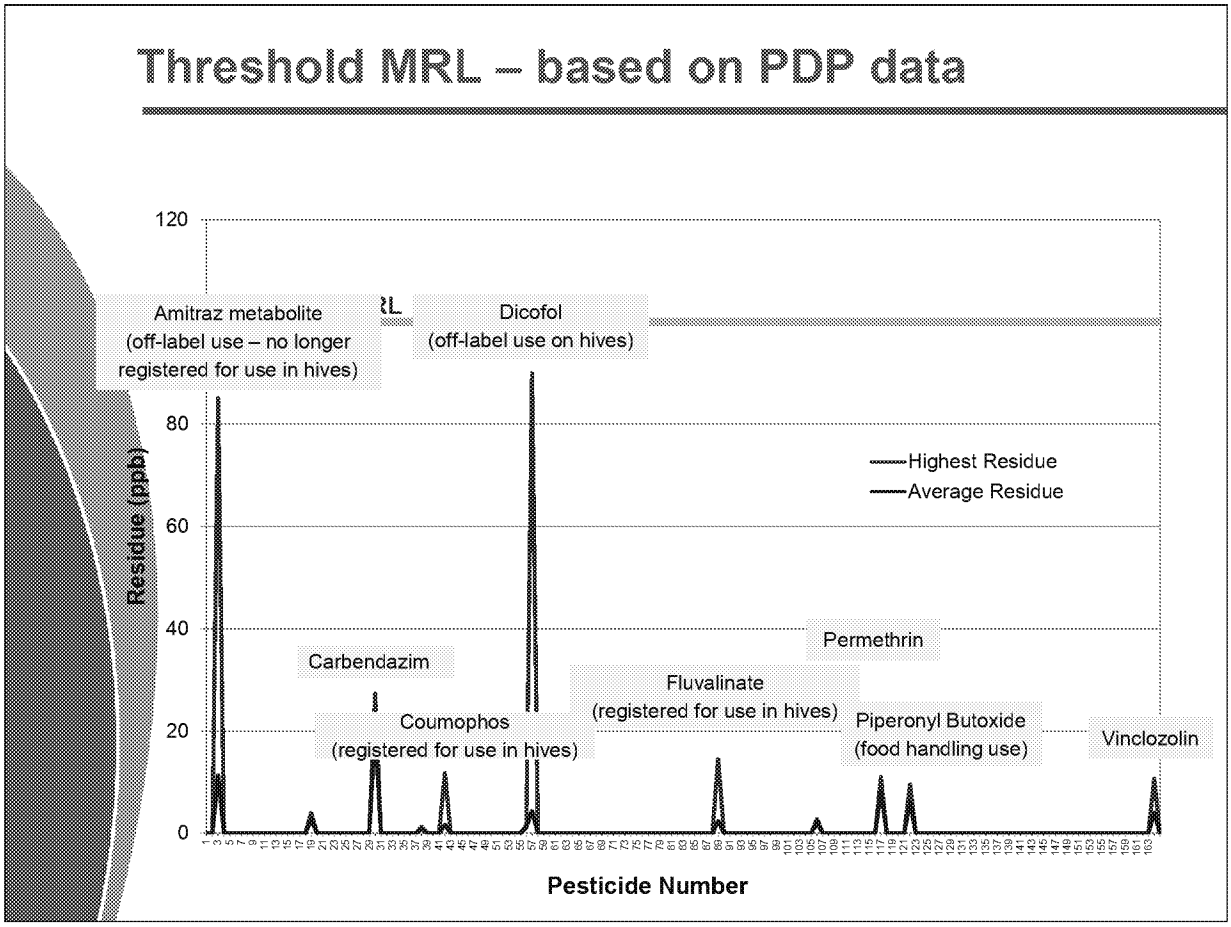
Pesticide	# of Samples Analyzed	# of Samples w/Detects	% of Samples w/Detects	Min Value Detected	Max Value Detected	Avg Value Detected	Range of LODs	Unit pp_
1-Naphthol	558						10 - 10	B
2,4-dimethyl aniline (2,4 DMA)	558						50 - 50	B
2,4-dimethylphenyl formamide (2,4-DMPF)	558	73	13.1	4.1	85.1	12.189	4 - 4	B
3-Hydroxycarbofuran	558						4 - 4	B
4,4-dibromobenzophenone	558						4 - 4	B
Acephate	558						50 - 50	B
Acetamiprid	558						40 - 40	B
Acetochlor	558						10 - 10	B
Alachlor	558						10 - 10	B
Aldicarb	558						4 - 4	B
Aldicarb sulfone	558						15 - 15	B
Aldicarb sulfoxide	558						20 - 20	B
Aldrin	558						10 - 10	B
Allethrin	558						10 - 10	B
Amicarbazone	558						30 - 30	B
Amitraz	558						4 - 4	B
Atrazine	558						6 - 6	B
Azinphos methyl	558						6 - 6	B
Azoxystrobin	558	3	0.5	3.3	4	3.667	2 - 2	B
Bendiocarb	558						2 - 2	B
Benoxacor	558						4 - 4	B
BHC alpha	558						4 - 4	B
Bifenazate	558						20 - 20	B
Bifenthrin	558						2 - 2	B
Boscalid	558						4 - 4	B
Bromuconazole	558						20 - 20	B

DRAFT 3/18/2010

Threshold MRL – based on PDP data

Program	Pesticide	Number of Samples	Samples with Detections	% of Samples	Range of Values Detected ppb	Range of LODs ppb	US Tolerance ppb
2007 PDP	Coumaphos	186	*Registered for use on hives*		1.0 – 11.8	1.0	150
	Dicloran	186	1	0.5	1.0	1.0	--
	Dicofol p,p'	186	3	1.6	1.3 – 3.6	1.0	--
	2,4-DMPF	186	8	4.3	4.2 - 27.5	4.0	200
	Fluvalinate	186	*Registered for use on hives*		1.0 - 6.7	1.0	20
	Vinclozolin	186	2	1.1	10.6 – 10.7	1.0	--
2008 PDP	Azoxystrobin	558	3	0.5	3.3 - 4.0	2.0	--
	Carbendazim	558	1	0.2	27.3	5.0	--
	Chlorpyrifos	558	*Food handling use*		1.3	1.0	100
	Coumaphos	558	*Registered for use on hives*		1.0 - 8.2	1.0	150
	Dicloran (V-2)	558	2	0.4	1.1 - 1.6	1.0	--
	Dicofol p,p'	558	32	5.7	1.0 - 90	1.0	--
	2,4-DMPF	558	73	13.1	4.1 - 85.1	4.0	200
	Fluvalinate	558	*Registered for use on hives*		1.0 - 14.5	1.0	20
	Methoxyfenozide	558	1	0.2	2.8	2.0	--
	Permethrin Total	558	1	0.2	11	10	--
	Piperonyl butoxide	558	*Food handling use*		6.3 - 9.6	6.0	10000
	Vinclozolin	558	3	0.5	1.3 - 2.1	1.0	--

DRAFT 3/18/2010



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DRAFT 3/18/2010

Dietary Impact

Risk Cup Utilization for 363 compounds in the HHBM database from Residues in Honey at Threshold MRL of 0.1 mg/kg	Acute at 95%tile (mg/kg bw/day)	Chronic (mg/kg bw/day)
No. of compounds where honey exposure exceeds the reference dose for children age 1-2	0	1 (0.3%)
No. of compounds where honey exposure is more than 5% of reference dose for children age 1-2*	4 (1%)	10 (3%)
No. of compounds where honey exposure is less than 5% of reference dose for children age 1-2*	235 (65%)	345 (95%)
No. of compounds in HHBM with no reference dose	124 (34%)	8 (2%)

*Honey exposure at the threshold MRL of 0.1 mg/kg would exceed 5% of the RfD for pesticides with acute RfDs lower than 0.000283 mg/kg bw/day and/or chronic RfDs lower than 0.000073 mg/kg bw/day.

Dietary Impact

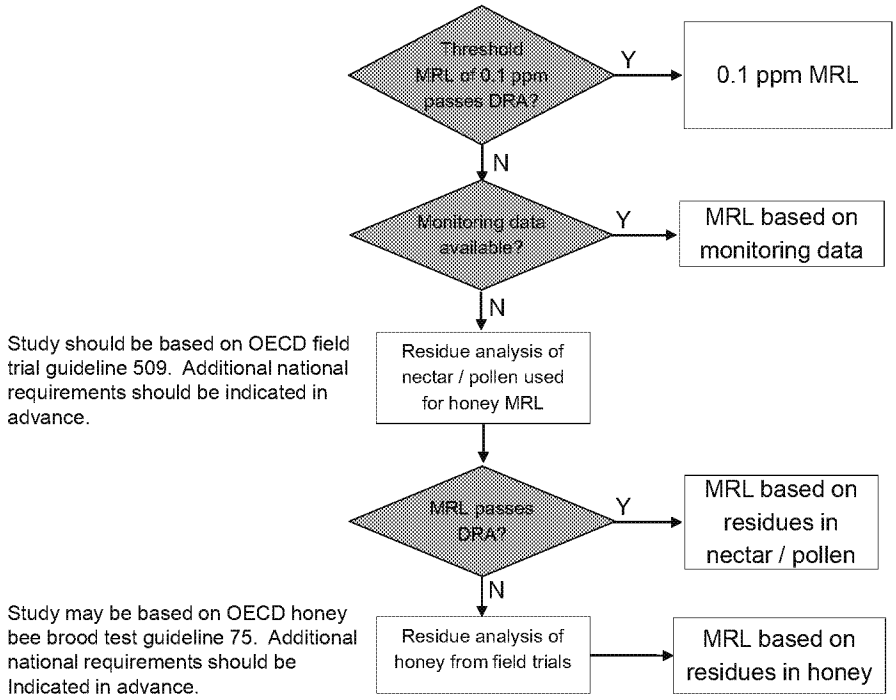
Impact of 0.1 mg/kg Threshold Honey MRL on Acute and Chronic Dietary Risk for Selected Compounds

Compound	aPAD	cPAD	% children aPAD 95%, 99.9	% children cPAD
Fipronil	0.025	0.0002	0.06, 1.10	1.8
Imidacloprid**	0.14	0.057	0.1, 1.96	<0.1
Boscalid	NA	0.218	-	~0
Pyrethins	0.07	0.044	0.02, 0.39	<0.1
Cadusafos***	0.00002	0.000001	70.50, 1372.35	358.1
Coumaphos*	0.0025	0.0003	0.56, 10.98	1.2
Fluvalinate*	0.005	0.005	0.28,5.49	0.1

*registered on hives
** neonicotinoid
*** No US registration. Only one import tolerance on bananas.

DRAFT 3/18/2010

Proposal – Tiered Approach



Study should be based on OECD field trial guideline 509. Additional national requirements should be indicated in advance.

Study may be based on OECD honey bee brood test guideline 75. Additional national requirements should be Indicated in advance.

DRAFT 3/18/2010

Advantages of the CLA Proposal

- Pragmatic, yet conservative
- Threshold MRL based on real residue data
- threshold MRL will be acceptable for most pesticides
- Tiered approach allows for refinement for highly toxic or tightly managed pesticides
- Harmonized with EU/OECD

Thank you for your time!

CropLife AMERICA

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