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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

WASHINGTON, D.C. 20460

OFFICE OF
PREVENTION, PESTICIDES
AND TOXIC SUBSTANCES

5/17/00

MEMORANDUM

Subject: PP#9F5046 and PP#9F5051. Permanent Tolerance Petitions for Use of **Thiamethoxam** on Barley, Canola, Cotton, Cucurbit Vegetables, Fruiting (except Cucurbit) Vegetables, Pome Fruit, Tuberous and Corm Vegetables, Sorghum, and Wheat. **Chronic/Cancer Anticipated Residue Calculations.**
DP Barcode: D265607
PC Code: 060109

From: G. Jeffrey Herndon, Chemist
Registration Action Branch 2
Health Effects Division (7509C)

G. Jeffrey Herndon

Through: Maxie Jo Nelson, Chemist, Secondary Reviewer
Registration Action Branch 2
Health Effects Division (7509C)

mjn

Through: Richard Loranger, Branch Senior Scientist
Registration Action Branch 2
Health Effects Division (7509C)

R. Loranger

To: Michael Doherty, Dietary Exposure Analyst
Registration Action Branch 2
Health Effects Division (7509C)

and

Tina Levine/Helene Daniel, P.M. Team #4
Insecticide/Rodenticide Branch
Registration Division (7505C)

Introduction

Novartis Crop Protection, Inc. has requested, in PP#9F5046 and PP#9F5051, uses for a new insecticide, thiamethoxam, on barley, canola, cotton, cucurbit vegetables, fruiting (except cucurbit) vegetables, pome fruit, tuberous and corm vegetables, sorghum, and wheat.

Thiamethoxam was identified as a likely human carcinogen and was subsequently given a unit risk value (Q_1^*) of 0.0377 $(mg/kg/day)^{-1}$. Application of this unit risk to the Tier 1 (tolerance-level residues, 100% crop treated) DEEM™ estimated chronic exposure to the general U.S. population due to the requested thiamethoxam uses results in a cancer risk estimate of approximately 3×10^{-5}. This risk is above HED's level of concern. RAB2 examined the Tier 1 risk assessment to determine the drivers. In order of highest to lowest risk, the top 8 drivers are: tomatoes and related commodities (1.0×10^{-5}), apples and related commodities (8.3×10^{-6}), milk 5.4×10^{-6}), wheat and barley commodities (1.2×10^{-6}), meat and meat byproduct commodities (1.1×10^{-6}), melons and related commodities (1.0×10^{-6}), pears and related commodities (8.4×10^{-7}), and white potatoes and related commodities (7.0×10^{-7}).

In order to better refine the estimates of exposure to thiamethoxam, anticipated residues have been calculated from field trial data for the plant commodities, and for animal commodities a combination of the field trial data for the feed items coupled with the ruminant feeding study. The information derived for these calculations was taken from the residues chemistry reviews on these actions (PP#9F5046, G.J. Herndon, 3/30/00; PP#9F5051, G.J. Herndon, 5/8/00). Described below are the anticipated residue rationale and calculations for the drivers of the total risk. Due to time and resource constraints, RAB2 has chosen to spend more effort to refine the risk drivers, rather than refining the risks from all commodities equally.

Although tolerances on Brassica (cole) leafy vegetables and leafy (except Brassica) vegetables are also requested, residues cannot be estimated at this time due to the lack of field trial data. RAB2 has requested that these proposed tolerances be removed from the Section F (PP#9F5051, G.J. Herndon, 5/8/00).

BEAD has provided estimates on projected market share (see Attachment). These values have been incorporated into Table 1. Where no market share value was supplied for a given crop, a value of 100% was used as a default, conservative assumption.

CONCLUSIONS

The following values should be used in the chronic/cancer DEEM runs:

Table 1

Thiamethoxam DEEM Inputs

Crop	Commodity	Anticipated Residue[1] (ppm)	% Crop Treated	Concentration Factor
tuberous and corm vegetables - Crop Subgroup 1C	potato, white-peel only	0.01	26	N/A
	potato, white-peeled	0.01	26	N/A
	potato, white-unspecified	0.01	26	N/A
	potato, white-whole	0.01	26	N/A
	potato, white-dry	0.01	26	on (1.9X)
	all others in 1C	0.01	100	N/A
fruiting vegetables (except cucurbits) - Crop Group 8	tomato, whole	0.052	21	N/A
	tomato, juice	0.052	21	1
	tomato, catsup	0.052	21	on (3.8X)
	tomato, puree	0.052	21	on (1.7X)
	tomato, paste	0.052	21	on (3.8X)
	tomato, dried	0.052	21	on (default DEEM)
	peppers-sweet (garden)	0.072	21	N/A
	peppers-other	0.072	21	N/A
	paprika	0.072	21	N/A
	eggplant	0.072	21	N/A
	ground cherries	0.072	21	N/A
	peppers-chile including jalapeno	0.074	21	N/A
	pimentos	0.074	21	N/A
cucurbit vegetables - Crop Group 9	cucumbers	0.038	44	N/A
	melons-cantaloupe-juice	0.045	44	N/A
	melons-cantaloupe-pulp	0.045	44	N/A

[1] for the combined residues of thiamethoxam and CGA-322704

Crop	Commodity	Anticipated Residue[1] (ppm)	% Crop Treated	Concentration Factor
	casabas	0.045	44	N/A
	crenshaws	0.045	44	N/A
	melons-honeydew	0.045	44	N/A
	melons-Persian	0.045	44	N/A
	watermelons	0.045	44	N/A
	bitter melons	0.045	44	N/A
	squash-summer	0.046	44	N/A
	squash-winter	0.046	44	N/A
	pumpkin	0.046	44	N/A
pome fruit - Crop Group 11	apples	0.057	53	N/A
	crabapples	0.057	53	N/A
	apples-juice/cider	0.057	53	on (0.75X)
	apples-juice-concentrate	0.057	53	on (2.25X)
	apples-dried	0.057	53	on (default DEEM)
	pears	0.054	18	N/A
	pears-juice	0.054	18	on (0.75X)
	pears-dried	0.054	18	on (default DEEM)
	quinces	0.054	53	N/A
	loquats	0.054	53	N/A
barley	barley	0.01	100	N/A
sorghum (including milo)	sorghum	0.01	12	N/A
wheat	wheat-rough	0.01	2	N/A
	wheat-germ	0.01	2	N/A
	wheat-bran	0.01	2	N/A
	wheat-flour	0.01	2	N/A
	wheat-germ oil	0.01	2	N/A

Crop	Commodity	Anticipated Residue[1] (ppm)	% Crop Treated	Concentration Factor
canola	canola oil	0.01	100	N/A
cotton	cottonseed-meal	0.016	21	on (0.15X)
	cottonseed-oil	0.016	21	on (0.10X)
milk	milk sugar (lactose)	0.000098	100	N/A
	milk-based water	0.000098	100	N/A
	milk-fat solids	0.000098	100	N/A
	milk-nonfat solids	0.000098	100	N/A
beef, veal, sheep, goat	lean(fat free) w/o bones	0.000043	100	N/A
	dried	0.000043	100	on (default DEEM)
	kidney	0.000032	100	N/A
	liver	0.0018	100	N/A
	meat byproducts	0.000032	100	N/A
	other organ meats	0.000032	100	N/A
horse	horsemeat	0.000043	100	N/A

DETAILED CONSIDERATIONS

Anticipated Residue Calculations

Analytical and Chemical Considerations. The HED's Metabolism Assessment Review Committee, in meetings held on 7/28/99 and 10/14/99, determined that, for tolerance setting and risk assessment purposes, thiamethoxam and its CGA-322704 metabolite will be regulated in plants and ruminants. For both thiamethoxam and CGA-322704 in most matrices, the limits of quantitation are 0.01 ppm (each). Until the limits of detection are verified using standard methodology, the petitioner's estimates will not be used in RAB2's anticipated residue calculations.

Crops

Canola

In field trials conducted with canola seed treated at 1X the proposed application rate, residues of both thiamethoxam and CGA-322704 were below the combined LOQ (< 0.02 ppm) in all samples (12). In samples (2) treated at a 3X rate, residues were also below the combined

LOQ (< 0.02 ppm). Based on this, a processing study was not performed. Using ½ the LOQ of the method to estimate risk to canola commodities in the human diet, **RAB2 has calculated an anticipated residue of 0.01 ppm for the combined residues of thiamethoxam and CGA-322704 to be used in the chronic/cancer dietary risk assessment for canola oil.**

Tuberous and Corm Vegetable Crop Subgroup

In field trials conducted with potatoes receiving both the proposed 1X soil rate and 1X foliar rate and harvested at the proposed PHI (14 days), residues of thiamethoxam and CGA-322704 were each <0.01 ppm (<LOQ) in/on 31 samples; one sample bore residues of thiamethoxam *per se* at 0.014 ppm. Residues of both analytes were also <0.01 ppm in/on 32 potato samples harvested 14 days following the second of two foliar application totaling 0.044 lb ai/A/season (1x foliar rate). Using the overall average of 63 samples with residues at 0.01 ppm (½ the combined LOQ of the method) plus the one sample with a combined residue of 0.019 ppm, RAB2 has calculated an anticipated residue of 0.010 ppm for the combined residues of thiamethoxam and CGA-322704 to be used in the chronic/cancer dietary risk assessment for potatoes.

The results of the potato processing study indicate the following concentration factors: wet peel 1.0X, granules 1.2X, and chips 1.9X. **In the chronic/cancer DEEM analysis, the 0.010 ppm whole potato value should be used for potato, white-peel only; potato, white-peeled; potato, white-unspecified; and potato, white-whole. For potato, white-dry, the 0.010 ppm whole potato value should be used with a 1.9X concentration factor in lieu of the default factor in DEEM.**

For the remaining commodities under the tuberous and corm vegetables crop subgroup, **an anticipated residue of 0.010 ppm should be used in the chronic/cancer dietary risk assessment.**

Fruiting Vegetables (except Cucurbits) Crop Group

In field trials conducted with tomatoes receiving foliar application of thiamethoxam at the proposed 1X rate and harvested at the proposed PHI (0 day), or after an at-planting soil application in which thiamethoxam was applied in-furrow, banded, or by transplant drench at 1x the soil rate followed by a single foliar application of thiamethoxam at 0.5x the single foliar rate, and harvested at the proposed PHI (0 days), residues of thiamethoxam and CGA-322704 were <0.02-0.14 ppm in 52 samples (**average of 0.052 ppm**). For residues below the limit of quantitation, a value of 0.005 ppm was used for each analyte (½ the combined LOQ of the method).

In field trials conducted with peppers (bell and non-bell) receiving foliar application of thiamethoxam at the proposed 1X rate and harvested at the proposed PHI (0 day), or after an at-planting soil application in which thiamethoxam was applied in-furrow, banded, or by transplant

drench at 1x the soil rate followed by a single foliar application of thiamethoxam at 0.5x the single foliar rate, and harvested at the proposed PHI (0 days), residues of thiamethoxam and CGA-322704 were <0.02-0.24 ppm in all 36 pepper (bell and non-bell) samples (average of 0.072 ppm). In 26 **bell pepper samples, average residues were 0.072 ppm** and in 10 **hot pepper samples, average residues were 0.074 ppm**). For residues below the limit of quantitation, a value of 0.005 ppm was used for each analyte (½ the combined LOQ of the method).

The results of the tomato processing study indicate the following concentration factors: puree 1.7X and paste 3.8X. **In the chronic/cancer DEEM analysis, the 0.052 ppm unwashed whole tomato value should be used for tomato, whole and tomato, juice with the concentration factor set to 1 instead of the default. For tomato, puree, the 0.052 ppm whole tomato value should be used with a 1.7X concentration factor (from puree) in lieu of the default factor in DEEM. For tomato, paste, and tomato, catsup, the 0.052 ppm whole tomato value should be used with a 3.8X concentration factor in lieu of the default factor in DEEM. For tomato, dried, the 0.052 ppm whole tomato value should be used with the default factor in DEEM.**

In DEEM, the 0.072 ppm bell pepper average residue value should be used for: peppers-sweet (garden); peppers-other; paprika; and eggplant. The 0.074 ppm hot pepper average residue value should be used for: peppers-chile including jalapeno; and pimentos. The 0.052 ppm whole tomato average residue value should be used for: ground cherries.

Cucurbit Vegetables Crop Group

In field trials conducted with cucurbit vegetables (cucumbers, cantaloupe, and summer squash) receiving 2 foliar applications of thiamethoxam with a 4-6 day retreatment interval (2X the proposed seasonal rate) and harvested at the proposed PHI (0 day), or after an at-planting soil application in which thiamethoxam was applied in-furrow or banded at 1x the soil rate followed by a single foliar application of thiamethoxam at 1x the single foliar rate, and harvested at the proposed PHI (0 days), residues of thiamethoxam and CGA-322704 were <0.02-<0.15 ppm in 84 samples. **Average residues in cucumbers were 0.038 ppm in 38 samples, average residues in cantaloupe were 0.045 ppm in 28 samples, and average residues in summer squash were 0.046 ppm in 24 samples (overall average of 0.042 ppm in 90 samples).** For residues below the limit of quantitation, a value of 0.005 ppm was used for each analyte (½ the combined LOQ of the method).

In DEEM, the 0.038 ppm average residue value in cucumbers should be used for cucumbers. The 0.045 ppm average residue value in cantaloupe should be used for: melons-cantaloupe-juice; melons-cantaloupe-pulp; casabas; crenshaws; melons-honeydew; melons-Persian; watermelon; and bitter melon. The 0.046 ppm average residue value in summer squash should be used for: squash-summer; squash-winter; and pumpkin.

Pome Fruit Crop Group

Field trials were conducted with pome fruit (apples and pears) receiving four foliar applications of thiamethoxam applied successively at 1.4, 1.4, 0.7, and 0.7 oz ai/A, for a total of 0.26 lb ai/A (1.5x) and harvested at the proposed minimum PHI (14 days). The use pattern being proposed for pome fruits allows for 3 foliar applications of thiamethoxam (25% DF) at 0.7 oz ai/A/application with a 14-day PHI, or 2 foliar applications at 1.4 oz ai/A/application with a 35-day PHI. The combined residues of thiamethoxam and CGA-322704 were <0.03-<0.12 ppm in/on 26 apple samples and 12 pear samples. **Average residues in apples were 0.057 ppm in 26 samples and average residues in pears were 0.054 ppm in 12 samples (overall average of 0.056 ppm in 38 samples).** For residues below the limit of quantitation, a value of 0.005 ppm was used for each analyte (½ the combined LOQ of the method).

The results of the apple processing study indicate the following concentration factors: wet pomace 1.6X and juice 0.75X. **In the chronic/cancer DEEM analysis, the 0.057 ppm unwashed whole apple value should be used for apples and crabapples. For apples-juice/cider, the 0.057 ppm whole apple value should be used with a 0.75X concentration factor in lieu of the default factor in DEEM (1.3X).** For apples-juice-concentrate, the default concentration factor is 3.9X, which is a combination of the default 1.3X factor from apples to juice and default factor of 3X from juice to juice concentrate. **Therefore, for apples-juice-concentrate, the 0.057 ppm whole apple value should be used with a 2.25X concentration factor (0.75X measured value from apples to juice multiplied by the 3X default value from juice to concentrate) in lieu of the default factor in DEEM. For apples-dried, the 0.057 ppm whole apple value should be used with the default factor in DEEM.**

In the chronic/cancer DEEM analysis, the 0.054 ppm unwashed whole pear value should be used for pears, quinces, and loquats. For pears-juice, the 0.054 ppm whole pear value should be used with a 0.75X concentration factor (from apples) in lieu of the default factor in DEEM (1.3X). For pears-dried, the 0.054 ppm whole pear value should be used with the default factor in DEEM.

Barley

Field trials were conducted with barley grown from seed treated with thiamethoxam at 0.07 lb ai/100 lb seed (1.4X the proposed use rate). The combined residues of thiamethoxam and CGA-322704 in/on barley grain samples were below the combined LOQ (< 0.02 ppm) in all samples (24). Using ½ the LOQ of the method, **RAB2 has calculated an anticipated residue of 0.01 ppm to be used in the chronic/cancer dietary risk assessment for barley.**

Grain Sorghum (Milo)

Field trials were conducted with sorghum grown from seed treated with thiamethoxam at at 0.30 lb ai/100 lb seed (1.5X the proposed use rate). The combined residues of thiamethoxam

and CGA-322704 in/on sorghum grain samples were below the combined LOQ (< 0.02 ppm) in all samples (18). Using ½ the LOQ of the method, **RAB2 has calculated an anticipated residue of 0.01 ppm to be used in the chronic/cancer dietary risk assessment for sorghum (including milo).**

Wheat

Field trials were conducted with wheat grown from seed treated with thiamethoxam at 0.07 lb ai/100 lb seed (1.4X the proposed use rate). The combined residues of thiamethoxam and CGA-322704 in/on wheat grain samples were below the combined LOQ (< 0.02 ppm) in all samples (41). Using ½ the LOQ of the method, **RAB2 has calculated an anticipated residue of 0.01 ppm to be used in the chronic/cancer dietary risk assessment for wheat.**

The results of the wheat processing study indicate that the residues of thiamethoxam and CGA-322704 do not concentrate in wheat fractions (germ, bran, middlings, shorts, and low grade flour) processed from grain grown from seed treated at up to 4.2X (residues in the grain used for processing were less than the combined LOQ of 0.02 ppm). **In the chronic/cancer DEEM analysis, the 0.01 ppm wheat grain value should be used for all wheat commodity fractions (rough, germ, bran, flour, and germ oil).**

Cotton

In field trials conducted with cotton receiving both the proposed 1X soil rate and 1X foliar rate and harvested at the proposed PHI (21 days), combined residues of thiamethoxam and CGA-322704 were <0.02-<0.07 ppm in/on 26 samples of undelinted cottonseed (average of 0.016 ppm). For residues below the limit of quantitation, a value of 0.005 ppm was used for each analyte (½ the combined LOQ of the method).

The results of the cottonseed processing study indicate that the following concentration factors: meal 0.15X, hulls 0.25X, and refined oil 0.10X. **In the chronic/cancer DEEM analysis, for cottonseed-meal, the 0.016 ppm average cottonseed value should be used with a 0.15X concentration factor in lieu of the default factor in DEEM. For cottonseed-oil, the 0.016 ppm average cottonseed value should be used with a 0.10X concentration factor in lieu of the default factor in DEEM.**

Meat, Meat Byproducts, and Milk

Background

In PP#9F5051 (memo of G.J. Herndon, 5/8/00), RAB2 determined that tolerances were required on ruminant muscle, meat byproducts, and milk. The need for ruminant fat, and all poultry and swine tolerances was determined not to be required (40 CFR 180.6(a)(3)). The maximum tolerated dietary burden (MTDB) for dairy cattle (which was higher than beef cattle, and therefore used for meat and meat byproduct, as well as milk calculations) was determined to

be 1.4 ppm, based on a diet consisting of 60% wheat forage, 20% cotton gin byproducts, and 20% barley or wheat grain.

Current Anticipated Residue Calculations

Wheat Forage

Field trials were conducted with wheat grown from seed treated with thiamethoxam at 0.07 lb ai/100 lb seed (1.4X the proposed use rate). The combined residues of thiamethoxam and CGA-322704 in/on 56 wheat forage samples were <0.02-0.46 ppm when harvested about 42 days after planting (**average of 0.080 ppm**).

Cotton Gin Byproducts

In field trials conducted with cotton receiving both the proposed 1X soil rate and 1X foliar rate and harvested near the proposed PHI (21 days), combined residues of thiamethoxam and CGA-322704 were 0.06-0.47 ppm in/on 12 samples of cotton gin byproducts (**average of 0.34 ppm**).

Barley/Wheat Grain

As noted in the earlier sections of this memo, average combined residues of thiamethoxam and CGA-322704 in both barley and wheat grain were calculated to be 0.01 ppm

Animal Commodities

Using the BEAD projected market share data (see Attachment) along with average residue values from field trials, RAB2 has calculated an average dietary burden of 0.02 ppm, as shown in Table 2.

Table 2

Dietary Burden from Average Residues in Cattle Feed Items and Projected Market Share

Commodity	% Dry Matter	Average Combined Residue from Field Trials (ppm)	% of Diet	Dietary Burden (ppm)	Projected Market Share (%)	Dietary Burden (ppm)
Cotton gin byproducts	90	0.34	20	0.075	21	0.016
Wheat grain	89	0.01	20	0.0022	2	0.000044
Wheat forage	25	0.08	60	0.19	2	0.0038
					TOTAL	0.02

In the feeding study reviewed in the memo of G.J. Herndon dated 5/8/00 (PP#9F5051), three groups of three Holstein cows were dosed daily with thiamethoxam at 2, 6, or 20 ppm via gelatin capsules for 28-30 days. These dose levels are equivalent to 100x, 300x, and 1000x the average dietary burden for cattle. Milk was collected on Days 1, 3, 7, 14, 21, and 26. One additional cow served as a control. The control and one treated cow from each dose group were sacrificed on Day 28, a second cow from each group was sacrificed on Day 29 and the third cow on Day 30. Tenderloin and round muscle, omental and perirenal fat, liver, and kidneys were collected from each animal. Residues of thiamethoxam and CGA-322704 were analyzed The LOQs were 0.005 ppm for each analyte in milk and 0.01 ppm for each analyte in tissues/organs.

Milk

The combined residues in milk plateaued for each dose group between 7-14 days of dosing. For the 2 ppm dose group, the maximum combined residues of thiamethoxam and CGA-322704 in milk was 0.018 ppm. Using a value of 0.0025 ppm for each analyte where residues were below the limit of quantitation (½ the LOQ of the method), RAB2 calculated an average residue of 0.0098 ppm in 18 milk samples (3 cows at 6 intervals from days 1 through 26). The maximum combined residues of thiamethoxam and CGA-322704 in milk were 0.07 ppm on Day 26 from cows dosed at 6 ppm and were 0.25 ppm on Day 7 from cows dosed at 20 ppm. For the range of doses used, there was a linear relationship between the dosing level and residues in milk.

Normalizing the average milk residue of 0.0098 ppm from the 2 ppm feeding level to a dietary burden of 0.02 ppm, **RAB2 has calculated an anticipated residue value of 0.000098 ppm for use in the chronic/cancer DEEM run for milk.**

Meat

Combined residues in muscle (tenderloin and round) were <0.03-<0.07 ppm at the high-dose feeding level (20 ppm), and <0.02 ppm (<LOQ) for all samples from the low- (2 ppm) and mid- (6 ppm) dose levels. The 6 ppm feeding level was the lowest level where residues could be quantitated (residues were a maximum of 0.01 ppm parent and <0.01 ppm CGA-322704). Using a value of 0.005 ppm for each analyte where residues were below the limit of quantitation (½ the LOQ of the method), RAB2 calculated an average residue of 0.013 ppm in 6 muscle samples (combined tenderloin and round) from the 6 ppm feeding level.

Normalizing the average muscle residue of 0.013 ppm from the 6 ppm feeding level to a dietary burden of 0.02 ppm, **RAB2 has calculated an anticipated residue value of 0.000043 ppm for use in the chronic/cancer DEEM run for cattle, goats, horses, and sheep meat (default concentration factor for dried meat should be left on).**

Liver

Based on the results from the goat and hen metabolism studies, microwave extraction is required to release bound/conjugated residues of thiamethoxam and its CGA-322704 from liver, which accounted for the majority (> 10X additional released after microwave extraction) of the radioactivity in this organ. The proposed enforcement method (AG-675) does not include a microwave extraction step, and therefore would not be capable of extracting bound/conjugated residues of thiamethoxam and its CGA-322704 metabolite from liver. No residues of thiamethoxam or its CGA-322704 metabolites were found in liver samples from the high (20 ppm - 14X) feeding level. However, based on use of Method AG-675 (HPLC/MS) without a microwave extraction step, these results are expected. Given that there are questions regarding the adequacy of Method AG-675 in determining CGA-322704 residues in liver, and the fact that the combined residues of thiamethoxam and CGA-322704 were somewhat higher in kidneys than in liver in the goat metabolism study, the residue data for kidneys were used to determine the tolerance for meat-by-products. For risk assessment purposes, RAB2 has estimated residues in liver from the goat metabolism study. At a 100 ppm feeding level, residues in liver were found to be as high as 0.90 ppm (combined thiamethoxam and CGA-322704) **after** microwave extraction. Normalized to a dietary burden of 0.02 ppm, this would equate to a residue level of 0.00018 ppm. Given the uncertainties in the process and species difference (goat vs. cow), RAB2 will add a 10X factor to this level. **RAB2 has calculated an anticipated residue value of 0.0018 ppm for use in the chronic/cancer DEEM run for cattle, goats, horses, and sheep liver.**

Kidney

Combined residues in kidney from the high dose (20 ppm) group were <0.02-<0.05 ppm (maximum residues of thiamethoxam *per se* at 0.04 ppm), and were <0.02 ppm (<LOQ) in kidney samples from the low- (2 ppm) and mid- (6 ppm) dose levels. The 20 ppm feeding level was the lowest level where residues could be quantitated (residues were a maximum of 0.04 ppm parent and <0.01 ppm CGA-322704). Using a value of 0.005 ppm for each analyte where residues were below the limit of quantitation (½ the LOQ of the method), RAB2 calculated an average residue of 0.032 ppm in 3 kidney samples from the 20 ppm feeding level.

Normalizing the average kidney residue of 0.032 ppm from the 20 ppm feeding level to a dietary burden of 0.02 ppm, **RAB2 has calculated an anticipated residue value of 0.000032 ppm for use in the chronic/cancer DEEM run for cattle, goats, horses, and sheep meat byproducts, other organ meats, and kidney.**

Attachment: Memo of Jihad Alsadek, BEAD

cc(with Attachment): G. Herndon, M. Nelson, PP#9F5046, PP#9F5051