Abamectin (177)

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EXPLANATION

Abamectin is a common name for a mixture of the components avermectin B1a (≥ 80%) and avermectin B1b (≤ 20%). Abamectin is used to control insect and mite pests of a range of agronomic, fruit, vegetable and ornamental crops, and it is used by homeowners for control of fire ants. Abamectin was first evaluated for toxicology and residues by the JMPR in 1992 and re-evaluated in 1994, 1995, 1997, 2000, 2015 and 2017. An ADI of 0–0.001 mg/kg bw and an ARfD of 0.003 mg/kg bw were established. The residue definition for compliance with the MRL and dietary risk assessment for plant and animal commodities is avermectin B1a. The residue is fat-soluble.

It was scheduled at the Forty-ninth Session of the CCPR for the evaluation of additional uses by the 2018 JMPR. The current Meeting received information on GAP; supervised residue trials in grape, cane berry, pineapple, green onions, beans, soya bean, sweet corn and herbs (basil, chives and mint); processing studies for soya bean, herbs, mint and citrus fruit; and storage stability data for cane berry.

METHODS OF RESIDUE ANALYSIS

Analytical methods

Methods of analysis for abamectin in various plant and animal commodities were reviewed by the 2015 JMPR. The 2015 JMPR concluded that the methods were sufficiently validated for representative commodities and could support the residue trials.

The current Meeting received several concurrent method validation tests for confirming the method performances. Five analytical methods were used in trials: Merck Method 936-95-2 was applied in bean, basil and chive trials; METHOD M-073 was applied in pineapple, cane berry, green onion and mint trials; METH-192,v2 was applied in bulb vegetable trials; and POPIT MET.009 and POPIT MET.121 were applied in grape trials.

Average recoveries at several fortification levels in the above trials generally fell within the 70–120% range with relative standard deviations less than 20%. Information on the concurrent recovery rates in the submitted supervised field trials are summarised below.

Table 1 Avermectin B1a analytical concurrent recovery rates in supervised trials

Matrix	Method	Fortification level (mg/kg)	Recovery(Average)	RSD (%)	Reference
Bean	Merck Method 936-95-2	0.002 0.01	81,84,88 (86) 80,85,89 (85)	3 5	IR-4 PR No. 07271
Basil，fresh	Merck Method 936-95-2	0.002 0.03 0.1	75,80,82,83,86 (81) 84,88,90(87) 82,84,89,99,100(91)	5 3 9	IR-4 PR No. 06755
Basil, dried		0.002 0.06 0.1	71,74,86,91(81) 73,75,76,86(78) 77,79,80(79)	12 7 2	
Chive, fresh	Merck Method 936-95-2	0.002 0.025 0.1	78,80,81,82(80) 79,83,86(83) 77,90,96,97(90)	2 3 9	IR-4 PR No. 07102 MV+CR
Chive, dry		0.002 0.025	71,71,73(71) 78,78,80(79)	1 1	
Grape	POPIT MET.009	0.005 0.05 0.14	82,84,85,87,92,96,99(89) 84,84,86,93,97(89) 90,94,100,102,105(98)	7 7 6	M09084
Grape	POPIT MET.121	0.002 0.02 0.04	83,86,86,92,93,93,101(91) 88,94,10,104,105(98) 77,86,101,103,104(94)	7 7 13	M10073
Pineapple	METHOD M-073	0.002 0.02	81,88,91,102,109,111(97) 93,97,106(99)	13 7	IR-4 PR No.08439

Matrix	Method	Fortification level (mg/kg)	Recovery(Average)	RSD (%)	Reference
Cane berry	METHOD M-073	0.002 0.025 0.050 0.1 0.12	85,85,85,85,105,105, 105, 105,105,105,105,105, 105, 105,105,105(99) 72,72,75,75,82,85,87,8788, 88,88,90,90,92,92,92,92,92, 93,94,95,102,105,110(89) 68,80,83,83,91,91, 92,94,94(86) 77,81,83,85,86,89 89,92,92,94(87) 87,88,88,113(94)	9 10 10 6 13	IR-4 PR No.06475
Mint tops	METHOD M-073	0.002 0.005 0.015 1.5 4	74,79,84,95,95,95,96,120(92) 97 81 78 77	13	142-98
Mint Oil		0.002	96,104,105(102)	5	
Onion green	METHOD M-073	0.002 0.02 0.1	73,81,82,88,96(84) 60,78,80,93(78) 77,87,89(84)	10 17 8	IR-4 PR No.A4068
Bulb vegetable Bulb Onion	METH-192, v2	0.002-0.025	66,73,77,77,77,77,78,81 81,83,83,83,84,87,92,93 95,109(83)	12	TK0176043
Bulb vegetable Onion green		0.002-0.025	81,84,85,92(86)	5	
Soya bean forage	METH-192, v2	0.002 0.00336 0.2 2	71,74,81,83,83,98(82) 82,85,87,88,92(87) 80 81	12 4	TK0040391
Soya bean Hay		0.002 0.00336 5	62,71,74,84,88,94(79) 72,79,80,86,91,93(84) 79	15 10	
Soya bean Seed		0.002 0.00336	62,68,77,78,88,93(78) 60,67,76,80,83,96(77)	15 16	
Soya bean Aspirated Grain Fractions		0.002 0.00336 0.839	83 86 99		
Soya bean Meal		0.002 0.00336	88 73		
Soya bean Hulls		0.002 0.00336	65,77(71) 81,83(82)		
Soya bean Refined Oil		0.002 0.00336	105,117(111) 96,115(106)		
Sweet corn Forage	METH-192, v2	0.002 0.00336 5	65,79,89,95,106(87) 88,91,96,98,103(95) 74	18 6	TK0056923
Sweet corn K+CWHR		0.002 0.00336	71,82,92,113(90) 79,87,88,95(87)	20 8	
Sweet corn Stover		0.002 0.00336 1	78,102,111,120(103) 73,80,87,96(84) 96	18 12	

Stability of pesticide residues in stored analytical samples

The 2015 JMPR concluded that avermectin B1a and its 8,9-Z isomer were stable for at least 12 months in a variety of crop samples stored under frozen conditions. Residues of avermectin B1a in citrus peel samples were stable for at least 52 months when stored at ≤ 10 °C. Residues of abamectin were stable in tomato samples for at least 15 months, in celery and strawberry samples for at least 24 months and in pear samples for at least 35 months.

The current Meeting received residue stability data for cane berry spiked at 0.02 mg/kg and stored concurrently with residue trial samples. The stability of abamectin residues in stored samples of cane berry was demonstrated for at least 32 months.

Table 2 Stability of abamectin residues in homogenised cane berry samples

Commodity (fortification)	Analyte	Storage interval (days)	Spiking level	% Remaining	Procedural recovery
			mg/kg	% (mean)	% (fortified level, mg/kg)
Cane berry	B1a	978	0.02	75,94,111 (93)	85,85 (0.002) 72,88,95,102 (0.025) 86,90 (0.60) 74 (0.245)
		986	0.02	117,134 (125)	
		995	0.02	89,110,119 (106)	
		1001	0.02	80	

USE PATTERNS

The Meeting received additional information on recently authorised uses on grape in Brazil and cane berry, pineapple, green onion, green beans, soya bean, sweet corn and herbs in the USA. The national GAPs for these crops are summarised in the following table.

Table 3 Registered uses of abamectin (8% SC or 1.8% SC formulations)

Crop	Country	Form	Application				Max applications		PHI (days)
			kg ai/ha	kg ai/hL	water L/ha	RTI (days)	no	kg ai/ha	
Grapes (Subgroup 13-07F)	Brazil	SC	0.0108		600	7	2		7
	USA	SC	0.0213		472.5	21	2		28
Cane berry (subgroup 13-07A)	USA	SC	0.0213		94.5	7	2		7
Pineapple	USA	SC	0.0261		472.5	7	2		112
Onion green (subgroup 3-07B)	USA	SC	0.0213		189	7	2		7
Onion, bulb (subgroup 3-07A)	USA	SC	0.0213		189	7	2		30
Beans, shelled	USA	SC	0.0213		94.5	6	2		7
Soya beans	USA	SC	0.0213		94.5	7	2		28
Sweet corn	USA	SC	0.0213		94.5	7	2		7
Herbs (subgroup 19A)	USA	SC	0.0213		189	7	2		14
Mint	USA	SC	0.0152		189	7	3		28

RESIDUES RESULTING FROM SUPERVISED TRIALS

The Meeting received information on supervised field trials involving foliar treatments of abamectin to grapes, caneberries, pineapple, spring onion, dry bean, soya bean, sweet corn, basil, chives, mint.

Group		Crop	Countries	Table no
004	Berries and other small fruits	Grapes	Brazil	4
		Cane berries	USA	5
006	Assorted tropical and sub-tropical fruits - inedible peel	Pineapple	USA	6
009	Bulb vegetables	Spring onion	USA	7
014	Legume vegetables	Dry bean	USA	8
015	Pulses	Soya bean	USA	9
012	Fruiting vegetables, other than Cucurbits	Sweet corn	USA	10
027	Herbs	Basil, chives	USA	11
		Mint		12

Results from replicated field plots are listed and mean values are calculated. The results from trials used for the estimation of maximum residue levels (underlined) have been rounded to two significant digits (or if close to the LOQ, rounded to one significant digit). Residue values were selected for estimating maximum residue levels and for dietary risk assessment at a longer PHI instead of that at the GAP, if the value was found to be higher. The highest residue was selected from trials which were considered to be not independent.

Method validation including analytical recoveries were reported in the supervised crop field trials with control samples being fortified with abamectin at 0.002 mg/kg and at higher levels that generally reflected the range of expected residues.

Berries And Other Small Fruits

The results of eight supervised trials on grapes in Brazil were provided to the Meeting.

Grape

In four grape trials, five applications of abamectin (SC) were applied, including two applications at 0.18 kg ai/ha and three applications at 0.0144 kg ai/ha. In the other four trails, three applications of 0.18 kg ai/ha were applied. All application intervals were 7 days. The PHI was 7 days. Based on the decline data, the half-lives of abamectin in grape were 2.1–3.7 days.

Table 4 Residues in grape from supervised trials in Brazil involving three or five foliar applications of abamectin (SC formulation).

GRAPE Country, year Location (Variety)	Application				Growth Stage	Matrix	DAT	Residues (mg/kg)		Reference & Comments
	N	kg ai/ha	kg ai/hL	water (L/ha)				abamectin	mean	
GAP: Brazil	2	0.0108		600			PHI: 7			
Brazil,2009 Colombo (Terci)	5	0.018 0.018 0.0144 0.0144 0.0144			83-85 83-85 85-87 85-87 87-89	Fruit	0 1 3 5 7	0.042 0.023 0.026 0.006 <0.004	0.042 0.023 0.026 0.006 <u>≤0.004</u>	Report: M09084Trial: M09084-DMO
Brazil,2009 Petrolina (Itália)	5	0.018 0.018 0.0144 0.0144 0.0144			77-79 81-83 83-85 85-87 87-88	Fruit	0 1 3 5 7	0.062 0.032 0.019 0.012 0.012	0.062 0.032 0.019 0.012 0.012	Report: M09084Trial: M09084-LZF1
Brazil,2009 Petrolina (Benitaka)	5	0.018 0.018 0.0144 0.0144 0.0144			77-79 81-83 83-85 85-87 87-88	Fruit	0 1 3 5 7	0.082 0.060 0.038 0.027 0.022	0.082 0.060 0.038 0.027 <u>0.022</u>	Report: M09084Trial: M09084-LZF2
Brazil,2009 Petrolina (Itália Muscat)	5	0.018 0.018 0.0144 0.0144 0.0144			75-77 77-79 79-81 81-84 86-87	Fruit	0 1 3 5 7	0.053 0.044 0.032 0.018 0.011	0.053 0.044 0.032 0.018 0.011	Report: M09084Trial: M09084-LZF3
Brazil,2009 Porto Feliz (Niágara)	3	0.018 0.018 0.018			81 83 85	Fruit	0 7 14 28 30	0.022 <0.002 <0.002 <0.002 <0.002	0.022 <u>≤0.002</u> <0.002 <0.002 <0.002	Report: M10073Trial: M10073-LZF1
Brazil,2009 Andradas (Jacones)	3	0.018 0.018 0.018			77 78 81	Fruit	0 7 14 28 30	0.007 <0.002 <0.002 <0.002 <0.002	0.007 <u>≤0.002</u> <0.002 <0.002 <0.002	Report: M10073Trial: M10073- LZF2
Brazil,2009 Ponta Grossa (Coder)	3	0.018 0.018 0.018			75-77 77-79 77-79	Fruit	0 7 14 28 30	0.019 0.007 0.004 <0.002 0.007	0.019 <u>0.007</u> 0.004 <0.002 0.007	Report: M10073Trial: M10073-DMO1

GRAPE Country, year Location (Variety)	Application				Growth Stage	Matrix	DAT	Residues (mg/kg)		Reference & Comments
	N	kg ai/ha	kg ai/hL	water (L/ha)				abamectin	mean	
Brazil,2009 Jaboti (Niagara)	3	0.018 0.018 0.018			75-77 77-79 77-79	Fruit	0 7 14 28 30	0.027 <0.002 <0.002 <0.002 <0.002	0.027 <0.002 <0.002 <0.002 <0.002	Report: M10073Trial: M10073- DMO2

Cane berries

The results of seven supervised trials on cane berry in the USA were provided to the Meeting.

In the cane berry trials, three foliar applications of 0.0213 kg ai/ha abamectin (SC) were applied at seven-day intervals to single replicate plots. The GAP in the USA is for two applications of 0.0213 kg ai/ha.

Table 5 Residues in cane berries from supervised trials in the USA involving three foliar applications of abamectin (SC formulation).

Caneberry Country, year Location (Variety)	Application				Growth Stage	Matrix	DAT	Residues (mg/kg)		Reference & Comments
	N	kg ai/ha	kg ai/hL	water (L/ha)				abamectin	mean	
GAP: USA	2	0.0213		94.5			PHI: 7			
USA,2000 Lansing, MI (Heritage, Raspberry)	3	0.0201 0.0207 0.0212		198.6 196.1 200.5	fruiting fruiting fruiting	Fruit	6	0.0056, 0.0071	0.0064	Report: IR-4 06475 Trial: 06475.00-MI07
USA,2000 Jackson Springs, NC (Shawnee, Blackberry)	3	0.0207 0.0210 0.0209		127.4 128.9 128.7	fruiting fruiting fruiting	Fruit	7	0.060, 0.041	0.050	Report: IR-4 06475 Trial: 06475.00-NC05
USA,2000 Deerfield, NJ (Chester, Blackberry)	3	0.0214 0.0211 0.0213		280.7 276.2 279.8	bloom - fruiting fruiting fruiting	Fruit	6	0.022, 0.015	0.018	Report: IR-4 06475 Trial: 06475.00-NJ08
USA,2000 Lansing, NY (Chester, Blackberry)	3	0.0216 0.0216 0.0217		188.9 188.4 189.7	fruiting fruiting fruiting	Fruit	8	0.016, 0.014	0.015	Report: IR-4 06475 Trial: 06475.00-NY07
USA,2000 Wilsonville, OR (Meeker, Raspberry)	3	0.0220 0.0225 0.0231		486.4 503.8 512.2	fruiting fruiting fruiting	Fruit	7	0.0052, 0.0042	0.0047	Report: IR-4 06475 Trial: 06475.00-OR02
USA,2000 Wilsonville, OR (Evergreen, Blackberry)	3	0.0220 0.0222 0.0219		489.7 495.8 486.3	fruiting fruiting fruiting	Fruit	0 3 7 9	0.11, 0.12 0.029, 0.038 0.024, 0.024 0.0073, 0.010	0.11 0.033 0.024 0.0088	Report: IR-4 06475 Trial: 06475.00-OR03
USA,2000 Burlington, WA (Meeker, Raspberry)	3	0.0208 0.0212 0.0194		432.8 441.1 404.7	late bloom fruiting mature fruit	Fruit	7	0.11, 0.11	0.11	Report: IR-4 06475 Trial: 06475.00-WA28

Assorted Tropical and Sub-Tropical Fruits - Inedible Peel

Pineapple

The results of eight trials on pineapple conducted in the USA were provided to the Meeting. In the pineapple trials, two foliar applications of 0.026 or 0.13 kg ai/ha abamectin (SC) were applied at seven-day intervals to single replicate plots using a CO_2 backpack sprayer.

Table 6 Residues in pineapple from supervised trials in the USA involving 2 foliar applications of abamectin (SC formulation).

pineapple Country, year Location (Variety)	Application				Growth Stage	Matrix	DAT	Residues (mg/kg)		Reference & Comments
	no	kg ai/ha	kg ai/hL	water (L/ha)				abamectin	Mean	
GAP: USA	2	0.0261		472.5			PHI: 112			
USA,2002 Wahiawa, HI (Tropical Gold)	2	0.0264 0.0266			fruiting fruiting	Fruit	108	<0.002, <0.002	<0.002	Report: IR-4 08439 Trial: 08439.02-HI09
	2	0.132 0.130			fruiting fruiting	Fruit	108	<0.002, <0.002	<0.002	
USA,2002 Wahiawa, HI (Tropical Gold)	2	0.0266 0.0263			fruiting fruiting	Fruit	105	<0.002, <0.002	<0.002	Report: IR-4 08439 Trial: 08439.02-HI10
	2	0.133 0.133			fruiting fruiting	Fruit	105	<0.002, <0.002	<0.002	
USA,2002 Makawao, HI (Hawaiian Gold)	2	0.0262 0.0260			fruiting fruiting	Fruit	98	<0.002, <0.002	<0.002	Report: IR-4 08439 Trial: 08439.02-HI11
	2	0.130 0.129			fruiting fruiting	Fruit	98	<0.002, <0.002	<0.002	
USA,2002 Makawao, HI (Cayenne)	2	0.0266 0.0263			fruiting fruiting	Fruit	91	<0.002, <0.002	<0.002	Report: IR-4 08439 Trial: 08439.02-HI12
USA,2002 Makawao, HI (Cayenne)	2	0.0268 0.0264			fruiting fruiting	Fruit	88	<0.002, <0.002	<0.002	Report: IR-4 08439 Trial: 08439.02-HI13
USA,2002 Wahiawa, HI (Cayenne)	2	0.0261 0.0265			fruiting fruiting	Fruit	112	<0.002, <0.002	<0.002	Report: IR-4 08439 Trial: 08439.02-HI14
USA,2002 Wahiawa, HI (Tropical Gold)	2	0.0263 0.0266			fruiting fruiting	Fruit	112	<0.002, <0.002	<0.002	Report: IR-4 08439 Trial: 08439.02-HI15

pineapple Country, year Location (Variety)	Application				Growth Stage	Matrix	DAT	Residues (mg/kg)		Reference & Comments
	no	kg ai/ha	kg ai/hL	water (L/ha)				abamectin	Mean	
USA,2002 Makawao, HI (Hawaiian Gold)	2	0.0262 0.0261			fruiting fruiting	Fruit	78	<0.002, <0.002	<0.002	Report: IR-4 08439 Trial: 08439.02-HI16

Note：The trials in Wahiawa were conducted in May, June, July and September. The trials in Makawao were conducted in August and September

Bulb Vegetables

Spring onion (green onion)

The results of eight supervised trials on spring onion conducted in the USA were provided to the Meeting. In the spring onion trials, four foliar applications of 0.0213 kg ai/ha abamectin (SC) were applied at seven-day intervals to single replicate plots.

Table 7 Residues in spring onion from supervised trials in the USA involving four foliar applications of abamectin (SC formulations).

Spring onion (green onion) Country, year, Location (Variety)	Application					DAT	Matrix	Residues (mg/kg)		Reference
	mg ai/seed	N	kg ai/ha	water (L/ha)	GS (BBCH)			abamectin	Mean	
GAP: USA		2	0.0213	189		PHI: 7				
USA,2009 Salisbury, MD (Evergreen Hardy White)		4	0.0220 0.0222 0.0222 0.0221		Third true leaves Immature bulbs Immature bulbs nearly mature	6	Whole plant	<0.002, <0.002	<0.002	Report: IR-4 A4068 Trial: A4068.09-MD18
USA,2009 Citra, FL (Feast)		4	0.0225 0.0226 0.0226 0.0228		vegetative vegetative vegetative vegetative	6	Whole plant	<0.002, <0.002	<0.002	Report: IR-4 A4068 Trial: A4068.09-FL55
USA,2009 Salinas, CA (White Spear)		4	0.0226 0.0226 0.0222 0.0224		3 true leaves - 4 true leaves 4 true leaves - 5 true leaves 4 true leaves - 5 true leaves mature	0 3 7 11	Whole plant Whole plant Whole plant Whole plant	0.048, 0.044 0.0032, 0.0048 <0.002, 0.00201 <0.002, <0.002	0.046 0.0040 0.002 <0.002	Report: IR-4 A4068 Trial: A4068.09-CA*20
Canada,2009 Harrow, ON (Feast)		4	0.0230 0.0232 0.0228 0.0229		3 leaves 3-4 leaves 3-4 leaves 3-4 leaves	7	Whole plant	<0.002, <0.002	<0.002	Report: IR-4 A4068 Trial: A4068.09-ON02
Canada,2009 Ste. Clotilde, QC (Parade Bunching)		4	0.0207 0.0229 0.0220 0.0232		3 leaves 3 -4 leaves 4 leaves mature	8	Whole plant	0.0028, 0.0023	0.0026	Report: IR-4 A4068 Trial: A4068.09-QC01
USA,2014	0.0151	1			BBCH 00	112	Whole plant	<0.002, <0.002	<0.002	

Spring onion (green onion) Country, year, Location (Variety)	Application					DAT	Matrix	Residues (mg/kg)		Reference
	mg ai/seed	N	kg ai/ha	water (L/ha)	GS (BBCH)			abamectin	Mean	
San Angelo, TX (Guardsman)	0.0151	4	0.0216 0.0216 0.0211		BBCH 00 BBCH 15-16 BBCH 15-16 BBCH 16	14	Whole plant	<0.002, <0.002	<0.002	
USA,2013 Frenchtown, NJ (Guardsman)	0.0156	1			BBCH 00	68	Whole plant	<0.002, <0.002	<0.002	
	0.0156	4	0.0224 0.0221 0.0222		BBCH 00 BBCH 102-103 BBCH 103-105 BBCH 104-105	7 10 14 17 21	Whole plant	0.0041 0.0038 <0.002,0.0036 <0.002 <0.002	0.0041 0.0038 0.0019 <0.002 <0.002	
USA,2013 Paso Robles, CA (Guardsman)	0.0156	1			BBCH 00	98	Whole plant	<0.002, <0.002	<0.002	
	0.0156	4	0.0231 0.0216 0.0202		BBCH 00 BBCH 43-46 BBCH 43-46 BBCH 43-46	14	Whole plant	<0.002, 0.0029	0.0016	

Legume Vegetables

Beans without pods

The results of seven supervised trials on beans conducted in the USA were provided to the Meeting. In the bean trials, in the USA three applications of 0.0213 kg ai/ha abamectin (SC) were applied. Samples of shelled bean seeds were collected at normal commercial harvest, 6-8 days after the last application.

Table 8 Residues in bean from supervised trials in the USA involving three foliar applications of abamectin (SC formulation).

Bean Country, year, Location (Variety)	Application				Growth Stage	Matrix	DAT	Residues (mg/kg)		Trial Reference
	no	kg ai/ha	kg ai/hL	water (L/ha)				abamectin	mean	
GAP: USA	2	0.0213		94.5	fruiting		PHI:7			
USA,1999 Parlier, CA (Henderson's Baby Bush)	3	0.0212 0.0207 0.0215			fruiting Maturing seed Maturing seed	Seed	6	<0.002, <0.002	<0.002	Report: IR-4 07271 Trial: 07271.99-99-CA58
USA,2000 Tifton, GA (Cangreen)	3	0.0211 0.0212 0.0212			fruiting fruiting fruiting	Seed	7	<0.002, <0.002	<0.002	Report: IR-4 07271 Trial: 07271.99-00-GA*09
USA,1999 Tifton, GA (Nemagreen)	3	0.0211 0.0210 0.0210			fruiting fruiting fruiting	Seed	8	<0.002, <0.002	<0.002	Report: IR-4 07271 Trial: 07271.99-99-GA*10
USA,2000 Kimberly, ID (Henderson)	3	0.0213 0.0214 0.0204			Pod Fill Pod Fill - nearly mature nearly mature	Seed	8	<0.002, <0.002	<0.002	Report: IR-4 07271 Trial: 07271.99-00-ID12
USA,1999 Fremont, OH (Nemagreen)	3	0.0212 0.0222 0.0195			fruit fruit fruit	Seed	7	<0.002, <0.002	<0.002	Report: IR-4 07271 Trial: 07271.99-99-OH*09
USA,1999 Charleston, SC (Henderson Bush)	4	0.0207 0.0211 0.0213 0.0208			vegetative vegetative vegetative vegetative	Seed	7	<0.002, <0.002	<0.002	Report: IR-4 07271 Trial: 07271.99-99-SC*07
USA,1999 Arlington, WI (Improved Kingston)	3	0.0205 0.0206 0.0206			Starting to fruit fruiting NA	Seed	6	<0.002, <0.002	<0.002	Report: IR-4 07271 Trial: 07271.99-99-WI11

Pulses

Soya bean

The results of 20 trials on soya bean conducted in the USA were provided to the Meeting. In the soya bean trials, two foliar applications of 0.0213 kg ai/ha abamectin (SC) were applied at 7 day-intervals to single replicate plots. In addition, seed pretreatments of 0.15 mg ai/seed abamectin were applied in all trials.

Table 9 Residues in soya bean from supervised trials in the USA involving one seed treatment and two foliar applications of abamectin (SC formulation).

Soya bean Country, year Location (Variety)	Application				Growth Stage	Matrix	DAT	Residues (mg kg)		Reference & Comments
	no	mg ai/seed	kg ai/ha	water (L/ha)				abamectin	Mean	
GAP: USA	2		0.0213	94.5			PHI: 28			
USA,2011 Suffolk, VA (S56-G6)	3	0.154	 0.0215 0.0214		BBCH 00 BBCH 75 BBCH 85	Seed	28	<0.002, <0.002	<0.002	Report: TK0040391 Trial: TK0040391-01
USA,2011 Seven Springs, NC (S56-G6)	3	0.154	 0.0214 0.0210		BBCH 00 BBCH 75 BBCH 77	Seed	29	<0.002, <0.002	<0.002	Report: TK0040391 Trial: TK0040391-02
USA,2011 Pollard, AR (S49-A5)	3	0.158	 0.0213 0.0214		BBCH 00 BBCH 79 BBCH 81	Seed	27	<0.002, <0.002	<0.002	Report: TK0040391 Trial: TK0040391-03
USA,2011 Cheneyville, LA (S49-A5)	3	0.158	 0.0206 0.0209		BBCH 00 BBCH 79 BBCH 79 - 80	Seed	27	<0.002, <0.002	<0.002	Report: TK0040391 Trial: TK0040391-04
USA,2011 Fisk, MO (S49-A5)	3	0.158	 0.0210 0.0212		BBCH 00 BBCH 79 BBCH 81	Seed	27	<0.002, <0.002	<0.002	0Report: TK0040391 Trial: TK0040391-05
USA,2011 Hedrick, IA (S33-K5)	3	0.147	 0.0215 0.0214		BBCH 00 BBCH 79 BBCH 79	Seed	28	<0.002, <0.002	<0.002	Report: TK0040391 Trial: TK0040391-06
USA,2011 Carlyle, IL (S33-K5)	3	0.147	 0.0216 0.0217		BBCH 00 BBCH 79 BBCH 79	Seed Seed Seed Seed Seed	20 24 28 31 35	<0.002 <0.002 <0.002, <0.002 <0.002 <0.002	<0.002 <0.002 <0.002 <0.002 <0.002	Report: TK0040391 Trial: TK0040391-07
USA,2011 Wyoming, IL (S33-K5)	3	0.147	 0.0213 0.0210		BBCH 00 BBCH 81 BBCH 86	Seed Seed Seed Seed Seed	21 23 28 32 34	<0.002 <0.002 <0.002, <0.002 <0.002 <0.002	<0.002 <0.002 <0.002 <0.002 <0.002	Report: TK0040391 Trial: TK0040391-08
USA,2011 Fisk, MO (S49-A5)	3	0.158	 0.0212 0.0214		BBCH 00 BBCH 79 BBCH 81	Seed	27	<0.002, <0.002	<0.002	Report: TK0040391 Trial: TK0040391-09
USA,2011 Geneva, MN (S19-A6)	3	0.155	 0.0216 0.0214		BBCH 00 Fehr-Caviness R6 Fehr-Caviness R7	Seed	27	<0.002, <0.002	<0.002	Report: TK0040391 Trial: TK0040391-10
USA,2011 Northwood, ND (-7317090)	3	0.146	 0.0212 0.0216		BBCH 00 BBCH 79 BBCH 79	Seed	27	<0.002, <0.002	<0.002	Report: TK0040391 Trial: TK0040391-11
USA,2011 Cherry Grove, MN (S19-A6)	3	0.155	 0.0220 0.0215		BBCH 00 BBCH 77 BBCH 79	Seed	28	<0.002, <0.002	<0.002	Report: TK0040391 Trial: TK0040391-12
USA,2011 McVille, ND (-7317090)	3	0.146	 0.0212 0.0213		BBCH 00 BBCH 79 BBCH 79	Seed	28	<0.002, <0.002	<0.002	Report: TK0040391 Trial: TK0040391-13

Soya bean Country, year Location (Variety)	Application				Growth Stage	Matrix	DAT	Residues (mg kg)		Reference & Comments
	no	mg ai/seed	kg ai/ha	water (L/ha)				abamectin	Mean	
USA,2011 Ellendale, MN (S19-A6)	3	0.155	0.0212 0.0213		BBCH 00 Fehr-Caviness R6 Fehr-Caviness R6	Seed	28	<0.002, <0.002	<0.002	Report: TK0040391 Trial: TK0040391-14
USA,2011 Fitchburg, WI (S19-A6)	3	0.155	0.0214 0.0214		BBCH 00 BBCH 79 BBCH 81 - 85	Seed	28	<0.002, <0.002	<0.002	Report: TK0040391 Trial: TK0040391-15
USA,2011 Seymour, IL (S33-K5)	3	0.147	0.0210 0.0211		BBCH 00 BBCH 79 BBCH 79	Seed	28	<0.002, <0.002	<0.002	Report: TK0040391 Trial: TK0040391-16
USA,2011 Bellmore, IN (S33-K5)	3	0.147	0.0214 0.0222		BBCH 00 BBCH 75 - 77 BBCH 79	Seed	28	<0.002, <0.002	<0.002	Report: TK0040391 Trial: TK0040391-17
USA,2011 Rice, MN (S08-M8)	3	0.135	0.0216 0.0214		BBCH 00 BBCH 75 BBCH 85	Seed	28	<0.002, <0.002	<0.002	Report: TK0040391 Trial: TK0040391-18
USA,2011 Richland, IA (S33-K5)	3	0.147	0.0217 0.0216		BBCH 00 BBCH 79 BBCH 80	Seed	27	<0.002, <0.002	<0.002	Report: TK0040391 Trial: TK0040391-19
	3	0.147	0.106 0.106		BBCH 00 BBCH 79 BBCH 80	Seed	27	<0.002, <0.002, <0.002	<0.002	
USA,2011 Bagley, IA (S33-K5)	3	0.147	0.0210 0.0203		BBCH 00 BBCH 71 BBCH 73	Seed	29	<0.002, <0.002	<0.002	Report: TK0040391 Trial: TK0040391-20
	3	0.147	0.105 0.106		BBCH 00 BBCH 71 BBCH 73	Seed	37	<0.002, <0.002, <0.002	<0.002	

Sweet corn

The results of 12 trials on sweet corn conducted in the USA were provided to the Meeting. In the sweet corn trials, two foliar applications of 0.0213 kg ai/ha abamectin (SC) were applied. In addition, a seed treatment of 0.234–0.262 mg ai/seed was applied in each sweet corn trial.

Table 10 Residues in sweet corn from supervised trials in the USA involving two foliar applications of abamectin (SC formulation).

Sweet corn Country, year Location (Variety)	Application				Growth stage	Matrix	DAT	Residues (mg/kg)		Reference & Comments
	no	mg ai/seed	kg ai/ha	water (L/ha)				abamectin	Mean	
GAP: USA	2		0.0213	94.5			PHI: 7			
USA,2011 North Rose, NY (SS Garrison)	3	0.262	0.0220 0.0214		BBCH 00 BBCH 71 BBCH 73	K+cwhr	7	<0.002, <0.002	<0.002	Report: TK0056923 Trial: TK0056923-01
USA,2011 Germansville, PA (SS Jubilee Plus)	3	0.234	0.0211 0.0221		BBCH 00 BBCH 71 BBCH 73	K+cwhr	6	<0.002, <0.002	<0.002	Report: TK0056923 Trial: TK0056923-02
USA,2011 Seven Springs, NC (SS Garrison)	3	0.262	0.0212 0.0216		BBCH 00 BBCH 67 BBCH 73	K+cwhr	7	<0.002, <0.002	<0.002	Report: TK0056923 Trial: TK0056923-03
USA,2011 Oviedo, FL (SS Jubilee Plus)	3	0.234	0.0215 0.0211		BBCH 00 BBCH 67 BBCH 73	K+cwhr	7	<0.002, <0.002	<0.002	Report: TK0056923 Trial: TK0056923-04

Sweet corn Country, year Location (Variety)	Application				Growth stage	Matrix	DAT	Residues (mg/kg)		Reference & Comments
	no	mg ai/seed	kg ai/ha	water (L/ha)				abamectin	Mean	
USA,2011 Lenexa, KS (SS Garrison)	3	0.262	 0.0213 0.0215		BBCH 00 BBCH 71 BBCH 73	 K+cwhr	6	<0.002, <0.002	<0.002	Report: TK0056923 Trial: TK0056923-05
USA,2011 Delavan, WI (SS Jubilee Plus)	3	0.234	 0.0215 0.0215		BBCH 00 BBCH 73 BBCH 74	K+cwhr K+cwhr K+cwhr K+cwhr K+cwhr	1 3 7 10 14	<0.002 <0.002 <0.002, <0.002 <0.002 <0.002	<0.002 <0.002 <0.002 <0.002 <0.002	Report: TK0056923 Trial: TK0056923-06
USA,2011 Campbell, MN (SS Garrison)	3	0.262	 0.0214 0.0213		BBCH 00 BBCH 71 BBCH 73	K+cwhr K+cwhr K+cwhr K+cwhr K+cwhr	1 3 7 10 14	<0.002 <0.002 <0.002, <0.002 <0.002 <0.002	<0.002 <0.002 <0.002 <0.002 <0.002	Report: TK0056923 Trial: TK0056923-07
USA,2011 Bagley, IA (SS Jubilee Plus)	3	0.234	 0.0214 0.0206		BBCH 00 BBCH 51 BBCH 69	K+cwhr	6	<0.002, <0.002	<0.002	Report: TK0056923 Trial: TK0056923-08
USA,2011 Rice, MN (SS Garrison)	3	0.262	 0.0214 0.0213		BBCH 00 BBCH 66 – 67 Early milk	K+cwhr	7	<0.002, <0.002	<0.002	Report: TK0056923 Trial: TK0056923-09
USA,2011 Paso Robles, CA (SS Jubilee Plus)	3	0.234	 0.0215 0.0215		BBCH 00 BBCH 75 BBCH 79	K+cwhr	7	<0.002, <0.002	<0.002	Report: TK0056923 Trial: TK0056923-10
USA,2011 Parkdale, OR (SS Garrison)	3	0.262	 0.0214 0.0207		BBCH 00 BBCH 73 BBCH 79	K+cwhr	7	<0.002, <0.002	<0.002	Report: TK0056923 Trial: TK0056923-11
USA,2011 Hillsboro, OR (SS Jubilee Plus)	3	0.234	 0.0215 0.0217		BBCH 00 BBCH 71 – 75 BBCH 73 - 79	K+cwhr	7	<0.002, <0.002	<0.002	Report: TK0056923 Trial: TK0056923-12

Note: K+cwhr means kernel plus cob with husk removed.

Herbs

The results of 6 trials on herbs (3 basil, 3 chives) and 5 trials on mint in the USA were provided to the Meeting. In the trials on herbs, three foliar applications of 0.022 kg ai/ha abamectin (SC) were applied at seven-day intervals to single replicate plots. Note: In the Codex crop grouping system, chives are in the green onion sub-group.

Table 11 Residues in herbs from supervised trials in the USA involving three foliar applications of abamectin (SC formulation).

Herbs Country, year Location (Variety)	Application				Growth Stage	Matrix	DAT	Residues (mg/kg)		Reference & Comments
	no	kg ai/ha	kg ai/hL	water (L/ha)				abamectin	Mean	
GAP: USA	2	0.0213		189			PHI: 14			
USA,1998 Holtville, California (Large Leaf Cal Select, **Basil**)	3	0.0223 0.0225 0.0221			vegetative vegetative vegetative	Leaves (fresh)	14	0.0068, 0.0080	0.0074	Report: IR-4 PR No. 06755 Trial: 06755.98-CA10

Herbs Country, year Location (Variety)	Application				Growth Stage	Matrix	DAT	Residues (mg/kg)		Reference & Comments
	no	kg ai/ha	kg ai/hL	water (L/ha)				abamectin	Mean	
USA,1998 Salinas, California (Mammoth, Basil)	3	0.0223 0.0224 0.0221			8-12 leaves 14-20 leaves multiple leaves	Leaves (fresh) Leaves (dry)	13 13	<0.002,<0.002 0.017, 0.018,	<0.002 0.017	Report: IR-4 PR No. 06755 Trial: 06755.98-CA*09
USA,2001 Gainesville, Florida (Genovese, Basil)	3	0.0224 0.0224 0.0223			vegetative bud vegetative bud bloom	Leaves (fresh)	6 13	0.018, 0.015 <0.002, 0.0026	0.017 0.0026	Report: IR-4 PR No. 06755 Trial: 06755.00-FL77
USA, in Bridgeton, New Jersey (-- , **chives**)	3	0.0213 0.0213 0.0235			vegetative vegetative vegetative	Leaves (fresh)	5	<0.002,<0.002	<0.002	Report: IR-4 PR No. 07102 Trial: 07102.01-NJ36
USA, in Moxee, Washington (Staro, chives)	3	0.0213 0.0224 0.0224			vegetative vegetative vegetative	Leaves (fresh) Leaves (dry)	7 13 7	0.0022,<0.002 <0.002,<0.002 0.010	<0.002 <0.002 0.010	Report: IR-4 PR No. 07102 Trial: 07102.00-WA*27
USA, in Salisbury, Maryland (Fancy, chives)	3	0.0213 0.0213 0.0213			vegetative vegetative vegetative	Leaves (fresh)	7	<0.002, 0.0025	0.0025	Report: IR-4 PR No. 07102 Trial: 07102.99-MD05

In the mint trials, three foliar applications of 0.0212 or 0.106 kg ai/ha abamectin (SC) were applied at seven-day intervals.

Table 12 Residues in mint from supervised trials in the USA involving three foliar applications of abamectin (SC formulation).

Mint Country, year Location (Variety)	Application				Growth Stage	Matrix	DAT	Residues (mg/kg)		Reference & Comments
	no	kg ai/ha	kg ai/hL	water (L/ha)				abamectin	Mean	
GAP: USA	3	0.0152		189			PHI: 28			
USA,1998 Umatilla, Oregon (Black Mitchum)	3	0.0212 0.0212 0.0212			vegetative bloom post bloom	Tops Oil	28 28	0.007,0.007,<0.002 <0.002	0.0055 <0.002	Report: 142-98 Trial: OW-IR-308-98
	3	0.106 0.106 0.106				Tops Oil	28 28	0.029,0.039 <0.002	0.034 <0.002	
USA,1998 Canyon, Idaho (Black Mitchum)	3	0.0212 0.0212 0.0212			Vegetative vegetative vegetative	Tops	28	<0.002,0.003	0.003	Report: 142-98 Trial: OW-IR-309-98
USA,1998 Yakima, Washington (Native)	3	0.0212 0.0212 0.0212			pre-bloom pre-bloom bloom	Tops Oil	0 7 14 21 28 35 28	0.78,0.75 0.010,0.017 0.005,0.008 0.002,0.003 <0.002,<0.002,<0.002 <0.002,<0.002 <0.002	0.77 0.014 0.007 0.003 <0.002 <0.002 <0.002	Report: 142-98 Trial: OW-IR-602-98

Mint Country, year Location (Variety)	Application				Growth Stage	Matrix	DAT	Residues (mg/kg)		Reference & Comments
	no	kg ai/ha	kg ai/hL	water (L/ha)				abamectin	Mean	
	3	0.106 0.106 0.106				Tops Oil	0 28 28	3.2,3.8 0.034,0.037,0.025 <0.002	3.5 0.032 <0.002	
USA,1998 Adams, Washington (Marestem)	3	0.0212 0.0212 0.0212			vegetative vegetative vegetative	Tops	28	<0.002,<0.002	<0.002	Report: 142-98 Trial: OW-IR-603-98
USA,1998 Walworth, Wisconsin ((--))	3	0.0212 0.0212 0.0212			pre-bloom pre-bloom pre-bloom	Tops	0 7 14 21 28 35	0.14,0.093 0.005,0.004 0.002,0.002 <0.002, <0.002 <0.002, <0.002 <0.002, <0.002	0.12 0.005 0.002 <0.002 <0.002 <0.002	Report: 142-98 Trial: MW-IR-702-98

Primary Feed Commodities of Plant Origin

Soya bean forage and hay

The results from 20 trials on soya bean forage and hay, and 12 trials on sweet corn forage and stover conducted in the USA were provided to the Meeting.

The US label for abamectin SC includes the statement “Do not allow livestock to graze in treated areas or harvest treated soya bean forage, straw or hay as feed for meat or dairy animals. Do not feed treated soya bean fodder or silage to meat or dairy animals.”

Abamectin residues in soya bean forage and hay were reported in all 20 trials.

Table 13 Residues in soya bean forage and hay from supervised trials in the USA involving three foliar applications of abamectin (SC formulation).

Soya bean Country, year Location (Variety)	Application				Growth Stage	Matrix	DAT	Residues (mg kg)		Reference & Comments
	no	mg ai/seed	kg ai/ha	water (L/ha)				abamectin	Mean	
GAP: USA	2		0.0213	94.5		Whole fruit	PHI: 28			
USA,2011 Suffolk, VA (S56-G6)	3	0.154	 0.0220 0.0215		BBCH 00 BBCH 67 BBCH 67	Forage Hay	8 8	0.025, 0.019 0.041, 0.053	0.025 0.041	Report: TK0040391 Trial: TK0040391-01
USA,2011 Seven Springs, NC (S56-G6)	3	0.154	 0.0215 0.0214		BBCH 00 BBCH 25 BBCH 61	Forage Hay	7 7	0.096, 0.093 0.34, 0.24	0.096 0.34	Report: TK0040391 Trial: TK0040391-02
USA,2011 Pollard, AR (S49-A5)	3	0.158	 0.0215 0.0214		BBCH 00 BBCH 63 BBCH 65	Forage Hay	7 7	0.026, 0.034 0.14, 0.16	0.026 0.14	Report: TK0040391 Trial: TK0040391-03
USA,2011 Cheneyville, LA (S49-A5)	3	0.158	 0.0219 0.0223		BBCH 00 Fehr-Caviness V6 Fehr-Caviness R1	Forage Hay	7 7	0.016, 0.016 0.20, 0.24	0.016 0.20	Report: TK0040391 Trial: TK0040391-04
USA,2011 Fisk, MO (S49-A5)	3	0.158	 0.0212 0.0213		BBCH 00 BBCH 63 BBCH 65	Forage Hay	6 6	0.011, 0.011 0.040, 0.046	0.011 0.043	0Report: TK0040391 Trial: TK0040391-05
USA,2011 Hedrick, IA (S33-K5)	3	0.147	 0.0216 0.0213		BBCH 00 BBCH 61 BBCH 65	Forage Hay	7 7	0.14, 0.12 0.57, 0.52	0.13 0.54	Report: TK0040391 Trial: TK0040391-06

Soya bean Country, year Location (Variety)	Application				Growth Stage	Matrix	DAT	Residues (mg kg)		Reference & Comments
	no	mg ai/seed	kg ai/ha	water (L/ha)				abamectin	Mean	
USA,2011 Carlyle, IL (S33-K5)	3	0.147	 0.0214 0.0214		BBCH 00 BBCH 17 BBCH 61	Forage Forage Forage Forage Forage Hay Hay Hay Hay Hay	1 3 7 10 14 1 3 7 10 14	0.52 0.25 0.085, 0.13 0.068 0.043 0.74 2.0 0.32, 0.32 0.17 0.16	0.52 0.25 0.11 0.068 0.043 0.74 2.0 0.32 0.17 0.16	Report: TK0040391 Trial: TK0040391-07
USA,2011 Wyoming, IL (S33-K5)	3	0.147	 0.0209 0.0211		BBCH 00 BBCH 15 BBCH 16 - 61	Forage Forage Forage Forage Forage Hay Hay Hay Hay Hay	1 3 7 10 14 1 3 7 10 14	1.1 0.75 0.15, 0.16 0.069 0.037 3.2 2.0 0.42, 0.39 0.13 0.064	1.1 0.75 0.16 0.069 0.037 3.2 2.0 0.41 0.13 0.064	Report: TK0040391 Trial: TK0040391-08
USA,2011 Fisk, MO (S49-A5)	3	0.158	 0.0212 0.0211		BBCH 00 BBCH 63 BBCH 65	Forage Hay	8 8	0.014, 0.019 0.077, 0.079	0.014 0.077	Report: TK0040391 Trial: TK0040391-09
USA,2011 Geneva, MN (S19-A6)	3	0.155	 0.0213 0.0250		BBCH 00 BBCH 62 Fehr-Caviness R2	Forage Hay	7 7	0.018, 0.024 0.46, 0.73	0.018 0.46	Report: TK0040391 Trial: TK0040391-10
USA,2011 Northwood, ND (-7317090)	3	0.146	 0.0215 0.0222		BBCH 00 BBCH 64 BBCH 71	Forage Hay	8 8	0.047, 0.044 0.11, 0.12	0.047 0.12	Report: TK0040391 Trial: TK0040391-11
USA,2011 Cherry Grove, MN (S19-A6)	3	0.155	 0.0219 0.0214		BBCH 00 BBCH 60 BBCH 65	Forage Hay	6 6	0.017, 0.015 0.25, 0.46	0.015 0.35	Report: TK0040391 Trial: TK0040391-12
USA,2011 McVille, ND (-7317090)	3	0.146	 0.0216 0.0214		BBCH 00 BBCH 61 BBCH 67	Forage Hay	7 7	0.0087, 0.012 0.042, 0.043	0.010 0.042	Report: TK0040391 Trial: TK0040391-13
USA,2011 Ellendale, MN (S19-A6)	3	0.155	 0.0216 0.0214		BBCH 00 Fehr-Caviness R2 Fehr-Caviness R2	Forage Hay	7 7	0.13, 0.16 0.48, 0.41	0.14 0.48	Report: TK0040391 Trial: TK0040391-14
USA,2011 Fitchburg, WI (S19-A6)	3	0.155	 0.0212 0.0213		BBCH 00 BBCH 12 BBCH 13 - 14	Forage Hay	7 7	0.047, 0.066 0.20, 0.22	0.056 0.21	Report: TK0040391 Trial: TK0040391-15
USA,2011 Seymour, IL (S33-K5)	3	0.147	 0.0208 0.0210		BBCH 00 Fehr-Caviness V5 Fehr-Caviness R2	Forage Hay	7 7	0.11, 0.076 0.34, 0.38	0.093 0.36	Report: TK0040391 Trial: TK0040391-16
USA,2011 Bellmore, IN (S33-K5)	3	0.147	 0.0221 0.0210		BBCH 00 Fehr-Caviness R1 BBCH 69	Forage Hay	7 7	0.028, 0.037 0.13, 0.10	0.032 0.12	Report: TK0040391 Trial: TK0040391-17
USA,2011 Rice, MN (S08-M8)	3	0.135	 0.0213 0.0214		BBCH 00 BBCH 63 BBCH 65	Forage Hay	7 7	0.034, 0.040 0.064, 0.15	0.037 0.064	Report: TK0040391 Trial: TK0040391-18
USA,2011 Richland, IA (S33-K5)	3	0.147	 0.0221 0.0221		BBCH 00 BBCH 61 BBCH 65	Forage Hay	7 7	0.022, 0.021 0.060, 0.041	0.022 0.06	Report: TK0040391 Trial: TK0040391-19
USA,2011 Bagley, IA (S33-K5)	3	0.147	 0.0208 0.0210		BBCH 00 BBCH 51 BBCH 63	Forage Hay	6 6	0.061, 0.054 0.15, 0.21	0.058 0.18	Report: TK0040391 Trial: TK0040391-20

Straw, fodder and forage of cereal grains and grasses

Table 14 Residues in sweet corn forage and stover from supervised trials in the USA involving three foliar applications of abamectin (SC formulation).

Sweet corn Country, year Location (Variety)	Application				Growth stage	Matrix	DAT	Residues (mg/kg)		Reference & Comments
	no	mg ai/seed	kg ai/ha	water (L/ha)				abamectin	Mean	
GAP: USA	2		0.0213	94.5		Whole fruit	PHI: 7			
USA,2011 North Rose, NY (SS Garrison)	3	0.262	 0.0220 0.0214		BBCH 00 BBCH 71 BBCH 73	Forage Stover	7 7	0.0089, 0.013 0.018, 0.019	0.011 0.019	Report: TK0056923 Trial: TK0056923-01
USA,2011 Germansville, PA (SS Jubilee Plus)	3	0.234	 0.0211 0.0221		BBCH 00 BBCH 71 BBCH 73	Forage Stover	6 6	0.081, 0.11 <u>0.36</u>, 0.29	0.096 0.32	Report: TK0056923 Trial: TK0056923-02
USA,2011 Seven Springs, NC (SS Garrison)	3	0.262	 0.0212 0.0216		BBCH 00 BBCH 67 BBCH 73	Forage Stover	7 7	0.022, 0.020 0.018, 0.030	0.021 0.024	Report: TK0056923 Trial: TK0056923-03
USA,2011 Oviedo, FL (SS Jubilee Plus)	3	0.234	 0.0215 0.0211		BBCH 00 BBCH 67 BBCH 73	Forage Stover	7 7	0.048, 0.058 0.069, 0.068	0.053 0.068	Report: TK0056923 Trial: TK0056923-04
USA,2011 Lenexa, KS (SS Garrison)	3	0.262	 0.0213 0.0215		BBCH 00 BBCH 71 BBCH 73	Forage Stover	6 6	0.10, 0.096 0.093, 0.15	0.098 0.12	Report: TK0056923 Trial: TK0056923-05
USA,2011Delavan, WI (SS Jubilee Plus)	3	0.234	 0.0215 0.0215		BBCH 00 BBCH 73 BBCH 74	Forage Forage Forage Forage Forage Stover Stover Stover Stover Stover	1 3 7 10 14 1 3 7 10 14	0.36 0.16 0.070, 0.049 0.060 0.026 0.16 0.11 0.050, 0.037 0.041 0.026	0.36 0.16 0.06 0.061 0.026 0.16 0.11 0.044 0.041 0.026	Report: TK0056923 Trial: TK0056923-06
USA,2011 Campbell, MN (SS Garrison)	3	0.262	 0.0214 0.0213		BBCH 00 BBCH 71 BBCH 73	Forage Forage Forage Forage Forage Stover Stover Stover Stover Stover	1 3 7 10 14 1 3 7 10 14	0.23 0.099 0.048, 0.054 0.036 0.027 0.14 0.058 0.045, 0.068 0.055 0.032	0.23 0.099 0.051 0.036 0.027 0.14 0.058 0.056 0.055 0.032	Report: TK0056923 Trial: TK0056923-07
USA,2011 Bagley, IA (SS Jubilee Plus)	3	0.234	 0.0214 0.0206		BBCH 00 BBCH 51 BBCH 69	Forage Stover	6 6	0.066, 0.058 0.18, 0.26	0.062 0.22	Report: TK0056923 Trial: TK0056923-08

Sweet corn Country, year Location (Variety)	Application				Growth stage	Matrix	DAT	Residues (mg/kg)		Reference & Comments
	no	mg ai/seed	kg ai/ha	water (L/ha)				abamectin	Mean	
USA,2011 Rice, MN (SS Garrison)	3	0.262	0.0214 0.0213		BBCH 00 BBCH 66 – 67 Early milk	Forage Stover	7 7	0.020, 0.034 0.062, 0.044	0.027 0.053	Report: TK0056923 Trial: TK0056923-09
USA,2011 Paso Robles, CA (SS Jubilee Plus)	3	0.234	0.0215 0.0215		BBCH 00 BBCH 75 BBCH 79	Forage Stover	7 7	0.079, 0.056 0.13, 0.14	0.067 0.14	Report: TK0056923 Trial: TK0056923-10
USA,2011 Parkdale, OR (SS Garrison)	3	0.262	0.0214 0.0207		BBCH 00 BBCH 73 BBCH 79	Forage Stover	7 7	0.016, 0.014 0.012, 0.031	0.015 0.022	Report: TK0056923 Trial: TK0056923-11
USA,2011 Hillsboro, OR (SS Jubilee Plus)	3	0.234	0.0215 0.0217		BBCH 00 BBCH 71 – 75 BBCH 73 - 79	Forage Stover	7 7	0.066, 0.056 0.11, 0.049	0.061 0.079	Report: TK0056923 Trial: TK0056923-12

FATE OF RESIDUES IN STORAGE AND PROCESSING

Soya bean

Two processing studies on soya bean were conducted in the USA during 2011. Two foliar applications of abamectin were applied at a rate of 106 g ai/ha (5 times the maximum label rate of 5 × 21.2 g ai/ha) with a retreatment interval of 7 days and PHIs of 27 or 37 days. Treated and untreated field samples of soya bean seed (RAC) were received frozen (-12 °C) at the processing facility and stored frozen until processing.

Soya bean samples were allowed to reach room temperature and then classified to remove light impurities and generating an aspirated grain fraction (AGF). For production of hulls, meal and processed oil the cleaned whole soya beans were fed into a roller mill to crack the hull and liberate the kernel. After hulling, the material was passed through the aspirator to separate hull and kernel material. Resulting fractions were hulls and kernel. Kernel moisture content was detected and the moisture of kernel was adjusted to 13.5%. The moisture adjusted kernel was heated, flaked and extruded. Soya bean meal was left after solvent extraction to generate crude oil. Crude oil was refined by NaOH, then bleached and deodorized to produce oil.

Table 15 Abamectin residues in soya bean seed and processed commodities

Location, Country; Year; (variety)	Process type (Trial application rate)	Commodity	Residue of abamectin (mg/kg) [a]	Processing Factor (PF)	Trial no.
USA,2011 Richland, IA (S33-K5)	oil production (106 g ai/ha)	Seed	<0.002	-	Trial: TK0040391-19
		Oil (refined)	<0.002	n/a	
		Hull	<0.002	n/a	
		Meal	<0.002	n/a	
		aspirated grain fraction	0.20	>100	
USA,2011 Bagley, IA (S33-K5)	oil production (106 g ai/ha)	Seed	<0.002	-	Trial: TK0040391-20
		Oil (refined)	<0.002	n/a	
		Hull	0.003	>1.5	
		Meal	<0.002	n/a	
		aspirated grain fraction	0.50	>250	

[a] The factor is the ratio of abamectin residues in the processed item divided by the residue of abamectin in the RAC.

n/a not applicable

Herbs

Six residue field trials were conducted in the USA between 1998 and 2001, in which abamectin was applied to basil and chives. Three foliar applications were made to basil and chives at a rate of 21.5 g ai/ha. The application interval was 6–8 days. In two trials fresh leaves were used for producing dried herbs.

Basil and chives

For basil, fresh leaves were placed in a dryer at 51.6 °C and dried with forced air for 72 hours. For chives, fresh leaves were placed into a drying cabinet at 40.6 °C equipped with a fan. The chive samples were left in the cabinet for 48 hours.

Table 16 Abamectin residues in herbs and processed commodities

Location, Country; Year; (variety)	Process type (Trial application rate)	Commodity	Residue of abamectin (mg/kg)	Processing Factor (PF) [a)]	Trial no.
USA,1998 Salinas, California (Mammoth)	drying of herbs (21.3 g ai/ha)	Fresh leaves	<0.002	-	Trial: 06755.98-CA*09 **(basil)**
		Dried leaves	0.017	>8.6	
USA, in Moxee, Washington (Staro)	drying of herbs (21.3 g ai/ha)	Fresh leaves	0.002	-	Trial: 07102.00-WA*27 **(chives)**
		Dried leaves	0.010	5	

[a] The factor is the ratio of abamectin residues in the processed item divided by the residue of abamectin in the RAC.

Mint

The processing of mint oil was performed in an external laboratory (Englar Food Laboratories, Inc., Moses Lake, Washington, USA). The processing is not described in the report but it is assumed that mint oil is obtained by steam distillation as a standard process in essential oil production.

Table 17 Abamectin residues in mint and processed commodities

Location, Country; Year; (variety)	Process type (Trial application rate)	Commodity	Residue of abamectin (mg/kg)	Processing Factor (PF) [a]	Trial no.
USA,1998 Umatilla, Oregon (Black Mitchum)	oil production (21.2 g ai/ha)	Fresh leaves	0.0055	-	OW-IR-308-98
		Oil	<0.002	<0.36	
	oil production (106 g ai/ha)	Fresh leaves	0.034	-	
		Oil	<0.002	<0.06	
USA, 1998 Wisconsin, Walworth (variety unknown)	oil production (21.2 g ai/ha)	Fresh leaves	<0.002	-	OW-IR-602-98
		Oil	<0.002	n/a	
	oil production (106 g ai/ha)	Fresh leaves	0.032	-	
		Oil	<0.002	<0.06	

n/a - not applicable

[a] The factor is the ratio of abamectin residues in the processed item divided by the residue of abamectin in the RAC.

Citrus fruit

Three residue field trials were conducted in the USA in 1986, in which abamectin formulated as an emulsifiable concentrate (EC) was applied to citrus (1× grapefruit, 1× Hamlin orange, 1× Orlando tangelo). Three foliar applications were made to citrus trees at an exaggerated rate of 112 g ai/ha that is 4× the maximum label rate of 26 g ai/ha.

At harvest, 3 days after the last application, samples of treated and untreated citrus fruits were harvested and transported to the processing facility. The following processes were investigated: washed fruits, dried peel, and citrus oil. Three processing trials were conducted for each process. The processes were representative of commercial citrus oil processing.

Initial residues of avermectin B1a/8,9-Z-B1a of 0.0090 mg/kg (grapefruit), 0.0099 mg/kg (orange) and 0.0170 mg/kg (tangelo) decreased by washing to <0.005–0.0092 mg/kg in the washed whole fruit but following industrial processing increased to 0.011–0.074 mg/kg in the dried peel and 0.054–0.118 mg/kg in the oil.

Table 18 Abamectin residues in citrus fruit and processed commodities

Trial	Commodity	Residue of abamectin [a] (mg/kg) (mean)	Processing Factor (PF)
001-86-35R (Grapefruit)	whole fruit	0.0074, 0.0106 (0.0090)	—
	washed whole fruit	<0.005, <0.005 (<0.005)	<0.56
	dried peel	0.0086, 0.0094, 0.0130 0.0126 (0.0109)	1.2
	Oil	0.0839, 0.089, 0.089 (0.0873)	9.7
001-86-36R (Hamlin orange)			
	whole fruit	0.0102, 0.0095 (0.0099)	—
	washed whole fruit	<0.005, <0.005 (<0.005)	<0.51
	dried peel	0.0468, 0.0414 (0.0441)	4.5
	Oil	0.0483, 0.0516, 0.0625 (0.0541)	5.5
001-86-37R (Tangelo)			
	whole fruit	0.0169, 0.0171 (0.0170)	—
	washed whole fruit	0.0094, 0.0090 (0.0092)	0.54
	chopped peel	0.0119, 0.0128 (0.0124)	0.73
	dried peel	0.0739, 0.0783, 0.0720 0.0705 (0.0737)	4.3
	Oil	0.1201, 0.1145, 0.1206. 0.1151 (0.1176)	6.9

[a] Sum of avermectin B1a and 8,9-Z-B1a

Table 19 Summary of processing factors for abamectin in processed fractions of citrus, soya bean, herbs, and mint.

Processed commodity	Abamectin	
	Individual processing factors	PF median or best estimate
Citrus fruit		
washed whole fruit	<0.51,0.54,<0.56	0.54
dried peel	0.73,1.2,4.5	1.2
Oil	4.3,5.5,9.7	5.5
Soya bean		
refined oil	<1, <1	-
Hull	<1, 2.9	-
Meal	<1, <1	-
AGF	>100, >250	-
Herbs		
Dried leaves	5, >8.6	5
Mint		
Oil	<0.06, <0.06, <0.36	<0.06

APPRAISAL

Abamectin is used to control insect and mite pests of a wide range of crops. Abamectin was first evaluated for toxicology and residues by the 1992 JMPR and was reviewed by the 2015 JMPR as part of the periodic review program of CCPR. The compound has an ADI of 0–0.001 mg/kg bw and an ARfD of 0.003 mg/kg bw. The residue definition for compliance with the MRL and dietary risk assessment for plant and animal commodities is avermectin B1a. The residue is fat-soluble.

Abamectin was scheduled at the Forty-ninth Session of the CCPR for the evaluation of additional uses in 2018 JMPR. The current Meeting received information on GAP and supervised residue trials on various crops; processing studies for soya bean, herbs, mint and citrus fruit; and storage stability data for cane berries.

Methods of analysis

The methods of analysis for abamectin residues in various plant and animal commodities were reviewed by the 2015 JMPR. The current Meeting received concurrent recovery data for the crops considered at by the Meeting.

Stability of pesticide residues in stored analytical samples

The 2015 JMPR concluded that abamectin residues in a variety of crop samples except raisins, when stored under frozen conditions were stable for at least 12 months. The current Meeting received storage stability data for cane berry spiked at 0.02 mg/kg and stored concurrently with residue trial samples. The stability of abamectin residues in stored samples of cane berry was demonstrated for at least 978 days.

Results of supervised residue trials on crops

The Meeting received supervised residue trial data for foliar applications of abamectin on grape, cane berries, pineapple, spring onion, dry bean, soya bean, sweet corn, basil, chives and mint.

Berries and other small fruits

Grapes

The critical GAP for abamectin on grapes in Brazil is 2 foliar applications of 0.0108 kg ai/ha with a re-treatment interval (RTI) of 7 days and a PHI of 7 days.

Trials were conducted on grapes in Brazil with 3–5 foliar applications at 0.0144 or 0.018 kg ai/ha, a PHI of 7 days. Residue decline data demonstrated that residues dissipate extensively over seven days, and as a result the first applications would be unlikely to affect the final residue at harvest. Therefore, the Meeting agreed to use the proportionality approach to estimate the residues at cGAP.

In six trials conducted at higher application rates the residues of abamectin in grapes were: < 0.002(3), < 0.004, 0.007 and 0.022 mg/kg. Using the proportionality approach (with scaling factors of 0.75 or 0.6) the residues of abamectin in grapes were (n=6): 0.0012 (3), 0.003, 0.0042 and 0.016 mg/kg.

The Meeting estimated a maximum residue level of 0.03 mg/kg, a STMR of 0.0021 mg/kg and a HR of 0.016 mg/kg for abamectin in grapes. This estimation replaces the previous of 0.01 mg/kg for abamectin in grapes.

Cane berries

The critical GAP for abamectin on cane berries in the USA, is 2 foliar applications at 0.0213 kg ai/ha, a RTI of 7 days and a PHI of 7 days.

Seven trials were conducted on blackberry and raspberry in the USA with 3 foliar applications at 0.021 kg ai/ha with a re-treatment interval of 7 days and a PHI of 7 days. Based on residue decline data the first application is unlikely to contribute significantly to the residue level at harvest and therefore the Meeting considered that these trials approximated GAP. The residues of abamectin in cane berries were (n=7): 0.0047, 0.0064, 0.015, 0.018, 0.024, 0.050 and 0.11 mg/kg.

The Meeting estimated a maximum residue level of 0.2 mg/kg, a STMR of 0.018 mg/kg and a HR of 0.11 mg/kg for abamectin in the subgroup of Cane berries.

The Meeting withdraw the previous recommendation of 0.05 mg/kg for abamectin in Blackberries and Raspberries, Red, Black.

Pineapple

The critical GAP for abamectin on pineapple in the USA is 2 foliar applications of 0.0261 kg ai/ha, a 7 day RTI and a PHI of 112 days.

In six trials matching the GAP, the residues of abamectin in pineapples were (n=6): < 0.002 mg/kg.

The Meeting estimated a maximum residue level of 0.002(*) mg/kg, a STMR of 0 mg/kg, and a HR of 0 mg/kg for abamectin on pineapple.

Green onions

The critical GAP for abamectin on green onions (includes chives) in the USA is 2 foliar applications of 0.0213 kg ai/ha, a 7 day RTI and a PHI of 7 days.

Eight trials were conducted in the USA on spring onions with 4 foliar applications at 0.021–0.023 kg ai/ha. Two decline studies indicated that abamectin residues dissipated quickly in spring onions. The earlier applications were considered unlikely to contribute significantly to the residue level at harvest and therefore the Meeting considered that these trials approximated GAP. In six trials, where samples were harvested at a 7 day PHI, the residues of abamectin in spring onions were < 0.002(3), 0.002, 0.003 and 0.004 mg/kg.

In three trials matching GAP, and conducted in the USA, on chives residues of abamectin were < 0.002 (2) and 0.002 mg/kg.

Based on the residue data on spring onion, the Meeting estimated a maximum residue level of 0.01 mg/kg, a STMR of 0.002 mg/kg, and a HR of 0.004 mg/kg and for abamectin on the subgroup of Green onions.

The Meeting withdraw the previous recommendation of 0.005 mg/kg for abamectin in leek.

Beans without pods

The critical GAP for abamectin on beans, shelled in the USA is 2 foliar applications of 0.0213 kg ai/ha, a 6 day RTI and a PHI of 7 days.

Seven trials were conducted in the USA with 3–4 foliar applications at 0.021 kg ai/ha. Based on the rapid decline of abamectin residues in other crops the Meeting considered that these trials approximated GAP. The residues of abamectin in shelled beans at a 7 day PHI were (n=7): < 0.002 mg/kg.

The Meeting estimated a maximum residue level of 0.002(*) mg/kg a STMR of 0.002 mg/kg, and a HR of 0.002 mg/kg and for abamectin on beans without pods.

Soya bean (dry)

The critical GAP for abamectin on soya bean in the USA is 2 foliar applications of 0.0213 kg ai/ham a 7 day RTI and with a PHI of 28 days.

In 19 trials conducted on soya bean in the USA a seed treatment followed by 2 foliar applications at 0.021 kg ai/ha were applied. Based on the rapid decline of abamectin residues in other crops the Meeting considered that these trials approximated GAP. The residues of abamectin in soya bean at a 28 day PHI were (n=19): < 0.002 mg/kg.

The Meeting estimated a maximum residue level of 0.002(*) mg/kg, and a STMR of 0.002 mg/kg for abamectin on soya bean (dry).

Sweet corns

The critical GAP for abamectin on sweet corn in the USA is 2 foliar applications of 0.0213 kg ai/ha, a 7 day RTI and a PHI of 7 days.

In twelve trials conducted on sweet corn in the USA matching cGAP, the residues of abamectin in sweet corn (kernels+cobs with husks removed) were (n=12): < 0.002 mg/kg .

The Meeting estimated a maximum residue level of 0.002(*) mg/kg, a STMR of 0.002 mg/kg and a HR of 0.002 mg/kg for abamectin on sweet corns (whole kernel with husk removed).

Herbs

The critical GAP for abamectin on herbs in the USA is 2 foliar applications of 0.0213 kg ai/ha (7 days RTI) and a PHI of 14 days.

In five trials conducted in the USA on basil (3) and mint (2) 3 foliar applications at 0.021 kg ai/ha were applied with samples collected at a PHI of 14 days. Based on the rapid decline of abamectin residues in other crops the Meeting considered that these trials approximated GAP. The residues of abamectin in basil and mint at a PHI of 14 days were: < 0.002, 0.002, 0.003 and 0.007 (2) mg/kg.

The Meeting estimated a maximum residue level of 0.015 mg/kg, a STMR of 0.003 mg/kg and a HR of 0.008 mg/kg (highest individual) for abamectin on herbs.

Animal feed commodities

The GAP in the USA does not permit the grazing of livestock on treated crops or harvesting of treated soya bean forage, straw or hay as feed for meat or dairy animals. As a result, the animal feed items from soya bean were not considered in the animal dietary burden calculations.

Sweet corn forage

The critical GAP for abamectin on sweet corn in the USA is for up to 2 foliar applications of 0.0213 kg ai/ha applied at a 7 day RTI and with a PHI of 7 days.

In twelve trials conducted on sweet corn in the USA matching the cGAP, residues of abamectin in sweet corn forage were(n=12): 0.011, 0.015, 0.021, 0.027, 0.051, 0.053, 0.06, 0.061, 0.062, 0.067, 0.096 and 0.098 mg/kg.

The Meeting estimated a median and a highest residue of 0.056 mg/kg and 0.10 mg/kg (highest individual), respectively, for abamectin in sweet corn forage.

Fate of residues during processing

The Meeting received processing studies for soya bean, herbs, mint, and citrus fruit. The 2015 JMPR also considered processing studies on grape. In two processing studies on soya bean, residues in seed were < 0.002 mg/kg, therefore, no processing factors could be estimated. In one processing study conducted on chives residues were 0.002 mg/kg in fresh leaves and 0.010 mg/kg in dried leaves, leading to a processing factor of 5. In three processing studies on mint abamectin residues in fresh mint leaves were 0.0055, 0.034 and 0.032 mg/kg while residues in mint oil were < 0.002 (3) mg/kg; the median processing factor was 0.06. In three processing studies on citrus fruit abamectin residues in citrus fruits were 0.0092, 0.0099 and 0.017 mg/kg while residues in orange oil were 0.054, 0.087 and 0.118 mg/kg; the median processing factor was 5.5.

The estimated processing factors with the respective recommendations for STMR-Ps are shown in the following table.

RAC	Matrix	Processing factor	Median Processing Factors	STMR RAC (mg/kg)	STMR-P (mg/kg)
Chives	Chives, dried	5	5	0.003	0.015
Mint	Mint oil	< 0.06, < 0.06, < 0.36	0.06	0.003	0.00002
Citrus fruits	Orange oil	4.3, 5.5, 9.7	5.5	0.005	0.0275
Grapes	dried grape (= currants, raisins and sultanas)		2.8	0.0021	0.0059
	Grape juice		1.4		0.0029
	Grape pomace	4.75			0.01

Based on the estimated maximum residue level of 0.015 mg/kg for herbs, the Meeting estimated a maximum residue level of 0.08 mg/kg for abamectin in chives, dried.

Based on the recommended maximum residue level of 0.02 mg/kg for citrus fruits, the Meeting estimated a maximum residue level of 0.1 mg/kg for abamectin in orange oil.

Based on processing data on raisin and grape juice considered by the 2015 JMPR, the current Meeting recommended a maximum residue level of 0.1 mg/kg for dried grape (= currants, raisins and sultanas), to replace the previous recommendation of 0.03 mg/kg and recommended a maximum residue level of 0.05 mg/kg for grape juice, to replace the previous recommendation of 0.015 mg/kg.

Residues in animal commodities

The additional animal feed commodities considered by the present Meeting (soya beans, sweet corn forage and grape pomace) do not significantly impact the dietary burden estimated by the 2015 JMPR. The Meeting confirmed its previous conclusions for abamectin in animal commodities.

RECOMMENDATIONS

On the basis of the data from supervised trials the Meeting concluded that the residue levels listed below are suitable for establishing maximum residue limits and for IEDI and IESTI assessment.

Definition of the residue for -compliance with the MRL and dietary risk assessment for plant and animal commodities: *avermectin B1a.*

The residue is fat soluble.

	Commodity	Recommended Maximum residue level (mg/kg)		STMR or STMR-P (mg/kg)	HR or HR-P (mg/kg)
CCN	Name	New	Previous		
FB 0264	Blackberries	W	0.05		
FB 2005	Cane berries, subgroup of (includes all commodities in this subgroup)	0.2	-	0.018	0.11
	Chives, dried	0.08	-	0.015	-
DF 0269	Dried grape (=currants, raisins and sultanas)	0.1	0.03	0.0059	0.045
JF 0269	Grape juice	0.05	0.015	0.0029	-
FB 0269	Grapes	0.03	0.01	0.0021	0.016
VA 2032	Green onions, subgroup of (includes all commodities in this subgroup)	0.01	-	0.002	0.004
HH 2095	Herbs, subgroup of	0.015	-	0.003	0.008
VA 0384	Leek	W	0.005		
OR 0001	Orange oil	0.1	-	0.0275	-
FI 0353	Pineapple	0.002*	-	0	0
FB 0272	Raspberries, Red, Black	W	0.05		
VD 0541	Soya bean (dry)	0.002*	-	0.002	-
VP 2062	Succulent beans without pods, subgroup of (includes all commodities in this subgroup)	0.002*	-	0.002	0.002
GC 2090	Sweet corns, subgroup of (includes all commodities in this subgroup)	0.002*	-	0.002	0.002

For use in dietary risk assessment and livestock feed burden

CCN	Commodity name			STMR/STMR-P/Median (mg/kg)	HR/HR-P/Highest residue (mg/kg)
	Sweet corn forage	-	-	0.056	0.10
	Grape wet pomace	-	-	0.010	-

DIETARY RISK ASSESSMENT

Long-term dietary exposure

The ADI for abamectin is 0–0.001 mg/kg bw. The International Estimated Daily Intakes (IEDIs) for abamectin were estimated for the 17 GEMS/Food Consumption Cluster Diets using the STMR or STMR-P values estimated by the previous and present JMPR. The results are shown in Annex 3 of the 2018 JMPR Report. The IEDIs ranged 1–6% of the maximum ADI.

The Meeting concluded that the long-term dietary exposure to residues of abamectin from uses considered by the JMPR is unlikely to present a public health concern.

Acute dietary exposure

The ARfD for abamectin is 0.003 mg/kg bw. The International Estimate of Short Term Intakes (IESTIs) for abamectin were calculated for the food commodities and their processed commodities for which HRs/HR-Ps or STMRs/STMR-Ps were estimated by the present JMPR and for which consumption data were available. The results are shown in Annex 4 of the 2018 JMPR Report. The IESTIs varied from 0–40% of the ARfD for children and 0–30% for the general population.

The Meeting concluded that the acute dietary exposure to residues of abamectin from uses considered by the JMPR is unlikely to present a public health concern.

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