SPINETORAM (233)

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EXPLANATION

Spinetoram is a multicomponent tetracyclic macrolide in the class of spinosyn insecticides obtained from chemical modification of fermentation product of *Saccharopolyspora spinosa.* It consists of two closely related active ingredients (XDE-175-J and XDE-175-L) present approximately in a three to one ratio. It controls lepidopterous larvae, leaf miners, and thrips on a variety of crops by disruption of nicotinic/gamma amino butyric acid-gated chloride channels.

It was first evaluated by the 2008 JMPR which established an ADI of 0–0.05 mg/kg bw and decided that an ARfD is unnecessary. The 2008 Meeting also received information on metabolism on lactating goats and laying hens, apples, lettuces and turnips; environmental fates in soil (aerobic soil metabolism and aqueous photolysis); residues in succeeding crops; methods of analysis for plant and animal matrices; storage stability; supervised residue trials; processing of apples and oranges; and farm animal feeding studies. After reviewing these data, it recommended the following residue definition for plant and animal commodities and estimated maximum residue levels for lettuce, head; lettuce, leaf; oranges, sweet, sour; pome fruits; sugar beets; tomatoes; tree nuts; edible offal, mammalian; meat (from mammals other than marine mammals); milk fats; and milks:

Definition of the residue (for compliance with the MRL): Spinetoram.

Definition of the residue (for estimation of dietary intake): Spinetoram and N-demethyl and N-formyl metabolites of the major spinetoram component.

The residue is fat-soluble.

Note: Spinetoram consists of two related components.

The current Meeting received information on supervised trials in support of additional maximum residue levels.

METHODS OF RESIDUE ANALYSIS

Analytical methods

The analytical methods used in the supervised trials provided to the current Meeting, i.e., GRM 05.03 and GRM 05.04, were reviewed by the 2008 JMPR. GRM 05.03 and GRM 05.04 had been developed for the determination of residues of XDE-175-J and XDE-175-L and their metabolites N-demethyl-175-J and -L, N-formyl-175-J and -L in plant matrices using HPLC with positive-ion electron-spray (ESI) tandem mass spectrometry (LC-MS/MS).

Each method had been validated for each analyte at 0.01–1.0 mg/kg for a variety of crops for which Codex MRLs had been established. Mean recovery was in a range of 82–111%. Validated LOQ was 0.01 mg/kg for all matrices tested.

The 2008 JMPR also reviewed the validation data of one of the existing multi-residue enforcement methods, DFG S19, and concluded that the method was validated successfully for the determination of spinetoram and its N-demethyl and N-formyl metabolites in apples, grapes and oranges.

Procedural recoveries in the analysis of commodities for which supervised trial data were submitted to the current Meeting by the relevant analytical methods are summarized in Table 1. The mean recovery ranges from 73% to 111% except that the mean recovery of N-formyl-J in blueberry was 64%. Relative standard deviation was all < 20% where it could be calculated.

Table 1 Summary of procedural recovery data for crops supported in this document

Crop	Analyte	Fortification mg/kg	n	Recovery %		RSD %	Method	Reference
				Range	Mean			
Citrus Fruits								
Orange	XDE-175-J	0.01–1	17	85–103	94	6	GRM 05.04	246845, 246 851
	XDE-175-L	0.01–1	17	73–102	91	10	GRM 05.04	
	N-Demethyl-J	0.01–1	17	74–103	86	11	GRM 05.04	
	N-Formyl-J	0.01–1	17	74–110	88	14	GRM 05.04	
Whole orange	XDE-175-J	0.01–0.1	10	87–100	94	5	GRM 05.03	JMPR, 2008
	XDE-175-L	0.01–0.1	10	76–98	89	8	GRM 05.03	
	N-Demethyl-J	0.01–0.1	10	84–93	88	4	GRM 05.03	
	N-Formyl-J	0.01–0.1	10	71–104	90	10	GRM 05.03	
Whole orange	XDE-175-J	0.01–0.1	10	82–100	93	7	GRM 05.03	JMPR, 2008
	XDE-175-L	0.01–0.1	10	84–100	91	5	GRM 05.03	
	N-Demethyl-J	0.01–0.1	10	70–93	80	11	GRM 05.03	
	N-Formyl-J	0.01–0.1	10	88–119	105	11	GRM 05.03	
Acidic crops [a]	XDE-175-J	0.01–1	35	93–115	102	4.8	GRM 05.04	JMPR, 2008
	XDE-175-L	0.01–1	35	92–114	103	5	GRM 05.04	
	N-Demethyl-J	0.01–1	35	96–114	103	4.5	GRM 05.04	
	N-Formyl-J	0.01–1	35	76–118	100	9.8	GRM 05.04	
Orange juice	XDE-175-J	0.01–1	17	80–103	94	8	GRM 05.04	246845, 246 851
	XDE-175-L	0.01–1	17	76–105	91	9	GRM 05.04	
	N-Demethyl-J	0.01–1	17	74–103	90	8	GRM 05.04	
	N-Formyl-J	0.01–1	17	83–119	104	13	GRM 05.04	
Orange	XDE-175-J *m/z* Q1/Q3 748.7/142.1	0.01–1	10	92–114	99	7	DFG-S-19	JMPR, 2008
	XDE-175-L *m/z* Q1/Q3 760.7/142.1	0.01–1	10	81–104	93	7	DFG-S-19	
	N-Demethyl-J *m/z* Q1/Q3 734.7/127.9	0.01–1	10	88–112	95	7	DFG-S-19	
Orange	N-Formyl-J *m/z* Q1/Q3 762.3/156.1	0.01–1	10	92–105	99	5	DFG-S-19	
Orange	XDE-175-J *m/z* Q1/Q3 748.7/98.2	0.01–1	10	87–104	94	6	DFG-S-19	JMPR, 2008
	XDE-175-L *m/z* Q1/Q3 760.7/98.2	0.01–1	10	79–101	92	8	DFG-S-19	
	N-Demethyl-J *m/z* Q1/Q3 734.7/84.2	0.01–1	10	82–100	90	6	DFG-S-19	

Crop	Analyte	Fortification mg/kg	n	Recovery %		RSD %	Method	Reference
				Range	Mean			
	N-Formyl-J *m/z* Q1/Q3 762.3/203.0	0.01–1	10	91–108	99	5	DFG-S-19	
Tangerine	XDE-175-J	0.01–10	17	85–120	104	11	GRM 05.04	246796,
	XDE-175-L	0.01–10	17	89–118	106	8	GRM 05.04	242998,
	N-Demethyl-J	0.01–10	17	93–112	101	5	GRM 05.04	246801, 246802,
	N-Formyl-J	0.01–10	17	73–115	87	16	GRM 05.04	246803, 246807 246809, 246811
Stone Fruits								
Apricot	XDE-175-J	0.01–1	18	92–117	106	6	GRM 05.04	259246
	XDE-175-L	0.01–1	18	81–107	89	2		
	N-Demethyl-J	0.01–1	18	83–106	92	7		
	N-Formyl-J	0.01–1	18	71–88	78	7		
Apricot	XDE-175-J	0.016–0.16	6	67–100	83	21	GRM 05.04	240988
	XDE-175-L	0.004–0.04	6	84–99	91	8		
	N-Demethyl-J	0.01–0.1	6	81–93	87	5		
	N-Formyl-J	0.011–0.11	6	84–112	97	13		
Apricot	XDE-175-J	0.005–0.2	11	89–109	100	6	GRM 05.03	239322
	XDE-175-L	0.005–0.2	11	87–116	103	12		
	N-Formyl-J	0.005– 0.2	11	79–107	93	11		
Cherry	XDE-175-J	0.01–1	18	95–119	106	6	GRM 05.04	259245
	XDE-175-L	0.01–1	18	82–108	93	8		
	N-Demethyl-J	0.01–1	18	80–115	93	10		
	N-Formyl-J	0.01–1	18	70–84	74	6		
Cherry	XDE-175-J	0.016–0.16	12	77–103	90	9	GRM 05.04	240988
	XDE-175-L	0.004–0.04	12	82–102	91	8		
	N-Demethyl-J	0.01–0.1	12	79–94	87	6		
	N-Formyl-J	0.011–0.11	12	79–103	90	7		
Cherry	XDE-175-J	0.005–0.2	17	79–107	96	7	GRM 05.03	239322
	XDE-175-L	0.005–0.2	17	86–108	96	6		
	N-Formyl-J	0.005–0.2	15	79–115	95	12		
Nectarine	XDE-175-J	0.01–1	18	89–118	109	8	GRM 05.04	259331
	XDE-175-L	0.01–1	18	83–108	95	8		
	N-Demethyl-J	0.01–1	18	84–101	91	5		
	N-Formyl-J	0.01–1	18	71–112	88	17		
Nectarine	XDE-175-J	0.01–1	18	91–108	98	4	GRM 05.04	2003238
	XDE-175-L	0.01–1	18	89–115	103	6		
	N-Demethyl-J	0.01–1	18	94–110	99	5		

Crop	Analyte	Fortification mg/kg	n	Recovery %		RSD %	Method	Reference
				Range	Mean			
	N-Formyl-J	0.01–1	18	71–116	100	12		
Nectarine	XDE-175-J	0.016–0.16	6	80–94	88	7	GRM 05.04	240988
	XDE-175-L	0.004–0.04	6	80–105	93	11		
	N-Demethyl-J	0.01–0.1	6	76–90	84	8		
	N-Formyl-J	0.01–0.11	6	87–98	93	5		
Peach	XDE-175-J	0.01–1	18	92–113	102	7	GRM 05.04	259328
	XDE-175-L	0.01–1	18	73–98	84	10		
	N-Demethyl-J	0.01–1	18	81–112	96	10		
	N-Formyl-J	0.01–1	18	71–93	77	7		
Peach	XDE-175-J	0.01–1	18	78–101	91	5	GRM 05.04	2003242
	XDE-175-L	0.01–1	18	86–98	95	4		
	N-Demethyl-J	0.01–1	18	83–99	89	4		
	N-Formyl-J	0.01–1	18	75–118	92	15		
Peach	XDE-175-J	0.01–1	14	80–119	106	10	GRM 05.04	2000698
	XDE-175-L	0.01–1	14	81–112	93	11		
	N-Demethyl-J	0.01–1	14	81–110	87	10		
	N-Formyl-J	0.01–1	14	85–120	98	12		
Peach	XDE-175-J	0.01–0.25	5	95–99	97	2	GRM 05.04	244912
	XDE-175-L	0.01–0.25	5	90–107	98	6		
	N-Demethyl-J	0.01–0.25	5	85–93	89	3		
	N-Formyl-J	0.01–0.25	5	84–101	89	7		
Peach	XDE-175-J	0.016–0.16	12	70–103	82	13	GRM 05.04	240988
	XDE-175-L	0.004–0.04	12	79–94	87	6		
	N-Demethyl-J	0.01–0.1	12	74–97	86	10		
	N-Formyl-J	0.01–0.11	12	83–112	100	9		
Peach	XDE-175-J	0.005–0.2	12	80–101	95	8	GRM 05.03	239322
	XDE-175-L	0.005–0.2	12	87–108	97	7		
	N-Formyl-J	0.005–0.2	12	68–110	88	18		
Plum	XDE-175-J	0.01–1	18	81–111	95	8	GRM 05.04	259247
	XDE-175-L	0.01–1	18	85–104	97	5		
	N-Demethyl-J	0.01–1	18	74–96	85	6		
	N-Formyl-J	0.01–1	18	83–115	99	11		
Berries and Other Small Fruits								
Raspberry	XDE-175-J	0.01, 1	10	96–114	104	5.7	GRM 05.04	S10-01992
	XDE-175-L	0.01, 1	10	94–105	101	3.4	GRM 05.04	
	N-Demethyl-J	0.01, 1	10	101–113	106	4.2	GRM 05.04	
	N-Formyl-J	0.01, 1	10	79–101	92	7	GRM 05.04	
Blueberry	XDE-175-J	0.01, 1	10	100–109	103	2.8	GRM 05.04	S10-01993

Crop	Analyte	Fortification mg/kg	n	Recovery %		RSD %	Method	Reference
				Range	Mean			
	XDE-175-L	0.01, 1	10	94–103	99	3.6	GRM 05.04	
	N-Demethyl-J	0.01, 1	10	94–114	104	6.8	GRM 05.04	
	N-Formyl-J	0.01, 1	10	58–69	64	6.3	GRM 05.04	
Grapes	XDE-175-J	0.01–1	18	89–120	104	9	GRM 05.04	259332
	XDE-175-L	0.01–1	18	75–84	79	4	GRM 05.04	
	N-Demethyl-J	0.01–1	18	72–101	89	10	GRM 05.04	
	N-Formyl-J	0.01–1	18	73–114	85	13	GRM 05.04	
Grapes	XDE-175-J	0.01, 0.1	2	99, 107	103		GRM 05.04	259851
	XDE-175-L	0.01, 0.1	2	100, 112	106		GRM 05.04	
	N-Demethyl-J	0.01, 0.1	2	95, 98	97		GRM 05.04	
	N-Formyl-J	0.01, 0.1	2	91, 77	84		GRM 05.04	
Grapes	XDE-175-J	0.01, 0.1	2	98, 98	98		GRM 05.04	2007533
	XDE-175-L	0.01, 0.1	2	98, 104	101		GRM 05.04	
	N-Demethyl-J	0.01, 0.1	2	98, 96	97		GRM 05.04	
	N-Formyl-J	0.01, 0.1	2	89, 96	93		GRM 05.04	
Grapes	XDE-175-J *m/z* Q1/Q3 748.7/142,1	0.01–1	9	77–96	87	7	DFG-S-19	JMPR, 2008
	XDE-175-L *m/z* Q1/Q3 760.7/142.1	0.01–1	9	71–92	82	9	DFG-S-19	
	N-Demethyl-J *m/z* Q1/Q3 734.7/127.9	0.01–1	9	73–91	81	7	DFG-S-19	
	N-Formyl-J *m/z* Q1/Q3 762.3/156.1	0.01–1	10	88–111	98	8	DFG-S-19	
Grapes	XDE-175-J *m/z* Q1/Q3 748.7/98.2	0.01–1	9	76–95	86	8	DFG-S-19	JMPR, 2008
	XDE-175-L *m/z* Q1/Q3 760.7/98.2	0.01–1	9	69–89	80	9	DFG-S-19	
	N-Demethyl-J *m/z* Q1/Q3 734.7/84.2	0.01–1	9	72–81	77	9	DFG-S-19	
	N-Formyl-J *m/z* Q1/Q3 762.3/203.0	0.01–1	10	89–106	96	6	DFG-S-19	
Bulb Vegetables								

Crop	Analyte	Fortification mg/kg	n	Recovery %		RSD %	Method	Reference
				Range	Mean			
Onion, green	XDE-175-J	0.01–1	10	96–103	99	2	GRM 05.04	S10-01991
	XDE-175-L	0.01–1	10	98–106	102	3		
	N-Demethyl-J	0.01–1	10	91–112	102	9		
	N-Formyl-J	0.01–1	10	75–92	83	6		
Onion, bulb	XDE-175-J	0.01–1	17	70–81	73	5	GRM 05.04	257916
	XDE-175-L	0.01–1	18	71–93	81	8		
	N-Demethyl-J	0.01–1	18	77–96	87	7		
	N-Formyl-J	0.01–1	17	70–87	79	6		
Brassica Vegetables								
Broccoli	XDE-175-J	0.01–2	6		105	2	GRM 05.03	090004
	XDE-175-L	0.01–2	6		103	2		
	N-Demethyl-J	0.01–2	6		106	2		
	N-Formyl-J	0.01–2	6		102	2		
Broccoli	XDE-175-J	0.01–1	9		102	3	GRM 05.03	090002
	XDE-175-L	0.01–1	9		103	2		
	N-Demethyl-J	0.01–1	9		104	2		
	N-Formyl-J	0.01–1	9		104	2		
Cabbage	XDE-175-J	0.01–2	6		102	2	GRM 05.03	090004
	XDE-175-L	0.01–2	6		99	5		
	N-Demethyl-J	0.01–2	6		102	2		
	N-Formyl-J	0.01–2	6		98	4		
Cabbage	XDE-175-J	0.01–1	9		105	2	GRM 05.03	090002
	XDE-175-L	0.01–1	9		104	2		
	N-Demethyl-J	0.01–1	9		104	2		
	N-Formyl-J	0.01–1	9		97	4		
Brussels sprouts	XDE-175-J	0.01–2	6		104	2	GRM 05.03	090004
	XDE-175-L	0.01–2	6		103	2		
	N-Demethyl-J	0.01–2	6		103	1.2		
	N-Formyl-J	0.01–2	6		102	3		
Cauliflower	XDE-175-J	0.01–2	6		101	1.2	GRM 05.03	090004
	XDE-175-L	0.01–2	6		98	4		
	N-Demethyl-J	0.01–2	6		102	1		
	N-Formyl-J	0.01–2	6		99	5		
Leafy Vegetables								
Spinach	XDE-175-J	0.01–2	6		103	2	GRM 05.03	090010
	XDE-175-L	0.01–2	6		95	2.2		
	N-Demethyl-J	0.01–2	6		103	2		
	N-Formyl-J	0.01–2	6		96	6		

Crop	Analyte	Fortification mg/kg	n	Recovery %		RSD %	Method	Reference
				Range	Mean			
Spinach	XDE-175-J	0.01–1	10	91–100	96	3	GRM 05.04	S10-01989
	XDE-175-L	0.01–1	10	94–102	98	3		
	N-Demethyl-J	0.01–1	10	94–110	103	5.3		
	N-Formyl-J	0.01–1	10	79–93	87	5		
Legume Vegetables								
Beans	XDE-175-J	0.01–10	17	74–102	85	7	GRM 05.04	246852–246855; 246858, 246859
	XDE-175-L	0.01–10	17	71–108	90	10		
	N-Demethyl-J	0.01–10	17	90–113	101	10		
	N-Formyl-J	0.01–10	17	70–107	83	14		
Stalk and Stem Vegetables								
Celery	XDE-175-J	0.01–1	10	99–113	108	4	GRM 05.04	S10-01990
	XDE-175-L	0.01–1	10	106–114	111	2.5		
	N-Demethyl-J	0.01–1	10	96–110	104	6		
	N-Formyl-J	0.01–1	10	75–86	78	4		

Stability of pesticide residues in stored analytical samples

The 2008 JMPR evaluated stability of spinetoram and its N-demethyl and N-formyl metabolites (each at a fortification level of 0.10 mg/kg) in homogenized samples of orange, lettuce, sugar beet, soya bean and wheat grain stored in deep freezer at -20 ºC over 12 months. These commodities represented each of the five crop groupings (dry, oily, acidic, wet, and root crops). The 2008 JMPR concluded that at -20 ºC, spinetoram and its N-demethyl and N-formyl metabolites were stable for about 12 months (372 days) in orange, sugar beet, soya bean and wheat.

USE PATTERN

The Meeting received approved labels in Argentina, Australia, Brazil, Canada, Columbia, Israel, Japan, Kenya, South Africa, Turkey and the United States of America.

Information on registered formulations, application methods and dosage rates of spinetoram for uses on the crops for which supervised trial data were provided is summarized in Table 2. Unless otherwise noted, each of the following GAPS are for field use and all applications are foliar applications.

Table 2 Registered uses of spinetoram related to supervised trials

Crop	Country	Formulation		Application					PHI days
		g ai/L or g ai/kg	type	g ai/ha	hL/ha	g ai/hL	Interval days	Max no. or g ai/ season/ha	
Beans	Colombia	60	SC	6–9					1
Blueberry	USA	250	WG	53–105			6	6/(342) [a]	3
Brassica vegetables	Australia	120	SC	24–48			7–14	4	3
Bulb vegetables	USA [c]	120	SC	44–88			4	5 (263) [a]	1
Cabbage	Japan [b]	120	SC		10–30	2.4–4.8		2	1

Crop	Country	Formulation		Application					PHI
		g ai/L or g ai/kg	type	g ai/ha	hL/ha	g ai/hL	Interval days	Max no. or g ai/ season/ha	days
Caneberries (blackberry, raspberry, etc.)	USA	250	WG	53–105			4	6/(342) [a]	1
Celery	USA	120	SC	44–88			4	6/(298) [a]	1
Citrus fruits	Brazil	250	WG		20–40	1.25–2.5		3	1
Citrus fruits	USA	250	WG	53–105			7	3/ (210) [a]	1
Grape	Turkey	250	WG			4–6			7
Leafy vegetables (except Brassica)	USA [c]	120	SC	44–88			4	6/(298) [a]	1
Legume vegetables	Australia	120	SC	24–48			7–14	3	3
Nectarine	Argentina	250	WG	Min 60		3.75–5	14	3	1
Peach	Argentina	250	WG	Min 60		3.75–5	14	3	1
Peach	Japan [b]	250	WG		20–70	2.5–5		2	1
Stone fruits	Australia	250	WG			2.5–5	14	4	3
Welsh onion (green onion)	Japan [b]	120	SC		10–30	4.8		2	1

[a] Total application per season or year.

[b] The application rate in g ai/ha is not specified on the label

[c] Applicable to Puerto Rico, Autonomous Territory of the USA.

RESIDUES RESULTING FROM SUPERVISED TRIALS ON CROPS

The Meeting received information on supervised field trials of spinetoram on the following crops:

Crop Group	Commodity	Country	Table No.
Citrus fruits	Orange	Brazil, USA	Table 3
	Tangerine	Brazil	Table 4
	Comparison of citrus fruits	USA	Table 5
Stone fruits	Apricot	Australia, New Zealand, Chile	Table 6
	Cherry	Australia, New Zealand, Chile	Table 7
	Nectarine	Australia, Argentina, Chile	Table 8
	Peach	Australia, New Zealand, Argentina, Chile, Japan, France, Spain	Table 9
	Plum	Chile, France, Germany, Italy	Table 10
Berries and other small fruits	Raspberry	USA	Table 11
	Blueberry	USA	Table 12
	Grape	Chile, France, Italy	Table 13

Bulb vegetables	Onion	Brazil	Table 14
	Welsh onion	Japan	Table 15
	Spring onion	USA	Table 16
Brassica vegetables	Broccoli	Australia, New Zealand	Table 17
	Cauliflower	Australia, New Zealand	Table 18
	Cabbage	Australia, New Zealand, Japan	Table 19
	Brussels sprout	Australia, New Zealand	Table 20
Leafy vegetable	Spinach	USA	Table 21
Legume vegetable	Common bean	Brazil	Table 22
Pulses	Common bean	France, Greece, Italy, Spain	Table 23
Stalk and stem vegetable	Celery	USA	Table 24

Trials were generally well documented with full laboratory and field reports. Laboratory reports include method validation, with batch recoveries at residue levels similar to those occurring in samples from the supervised trials. Dates of analyses or duration of residue sample storage were also provided. The analytical methods employed in relation to the supervised residue trials provided to the current Meeting were reviewed by the 2008 JMPR and considered to be sufficiently validated. In general, procedural recoveries were within the acceptable range of 70–120%, with relative standard deviation of < 20%.

All commodities tested were stored at or below -20 ºC for periods ranging from 55 to 372 days. The 2008 JMPR concluded that at -20 ºC, spinetoram and its N-demethyl and N-formyl metabolites were stable for 12 months in orange, sugar beet, soya bean and wheat. The current Meeting also concluded that within the storage periods of 55–372 days, samples tested in Tables 3–23 were stable when analysed.

Field reports provide data on the dates of spray applications, methods used and sampling dates. Although trials included control plots, no control data are recorded in the tables below unless residues in control samples exceeded the LOQ.

The residue concentrations are reported for XDE-175-J, XDE-175-L, N-demethyl-175-J and N-formyl-175-J. They are unadjusted for procedural recovery. Where residues were below the limit of detection, they are expressed as "ND". Where they are below the LOQ of 0.01 mg/kg and at or above the limit of detection, they are expressed as "< 0.01".

Total residues for estimation of maximum residue levels and those for estimation of STMRs were calculated in the same manner as done by the 2008 JMPR.

Total residues for estimation of maximum residue levels were calculated by summing up the concentrations of XDE-175-J and XDE-175-L. XDE-175-J was the primary residue reflecting higher ratio in spinetoram formulations. The method for calculation of the total residues is illustrated below. In the calculation, "ND" is treated in the same manner as "< 0.01".

XDE-175-J	XDE-175-L	Total
mg/kg		
< 0.01	< 0.01	< 0.01
0.05	< 0.01	0.05
0.06	0.02	0.08

Total residues for estimation of STMRs were calculated by summing up the concentrations of XDE-175-J, XDE-175-L, *N*-demethyl-175-J and *N*-formyl-175-J. In most trials, XDE-175-J was the primary residue at shorter PHIs while, in many cases, N-formyl-175-J was found at higher concentrations than XDE-175-J at longer PHIs. On the other hand, XDE-175-L, with its concentration being one third of that of XDE-175-J, was a minor component in the four compounds. N-demethyl-J was in most cases at lower concentrations than XDE-175-J and in a number of trials was not determined. The method for calculation of the total residues taking the above into account is illustrated below. In the calculation, "ND" is treated in the same manner as "< 0.01".

XDE-175-J	XDE-175-L	N-demethyl-175-J	N-formyl-175-J	Total
mg/kg				
< 0.01	< 0.01	< 0.01	< 0.01	< 0.02
0.05	< 0.01	< 0.01	< 0.01	0.06
< 0.01	< 0.01	< 0.01	0.05	0.06
0.05	< 0.01	< 0.01	0.05	0.10
0.06	0.02	0.02	0.06	0.16

In trials where replicate field samples were taken from a single plot and analysed separately, or where duplicate analyses of the same sample were made, the average of residue values were used for the estimation of maximum residue levels or STMRs.

Total values of XDE-175-J and XDE-175-L residues from the trials conducted according to the GAP have been underlined and used for the estimation of maximum residue levels. Corresponding total values of XDE-175-J, XDE-175-L, N-demethyl-175-J and N-formyl-175-J residues were used for estimation of STMRs and they are double underlined.

Citrus fruits

There is an existing CXL of 0.07 mg/kg for oranges (sweet, sour), recommended by the 2008 JMPR on a basis of supervised trials conducted according to the GAP in the USA (three applications at a rate of 53–105 g ai/ha for a total seasonal rate of 210 g ai/ha and a PHI of 1 day). Additional trials conducted later on tangerines and grapefruit were submitted in support of a group maximum residue level on citrus fruits.

Oranges

The twelve supervised trials on oranges were conducted in the USA in 2004 and 2007 following the US GAP. They were reviewed by the 2008 JMPR. Trial data summarized in the 2008 JMPR Report are reproduced in Table 3.

Four supervised trials on oranges were carried out in Brazil in 2004 (Report 040063). Each trial consisted of two plots, one treated with 70 g ai/ha of spinetoram 250 WG and the other, with 140 g ai/ha of the same formulation. Samples were collected 0, 1, 3, 7, 14, and 28 days after the final application. Samples were stored frozen up to 368 days. The GAP in Brazil for citrus fruits allows up to three applications at the spray concentration of 1.25–2.5 g ai/hL with the spray volume of 20–40 hL/ha and a PHI of 1 day.

Residues of spinetoram and its metabolites were determined using method GRM 05.04, which had been validated with an LOQ of 0.01 mg/kg.

Table 3-1 Residues of spinetoram from supervised trials on oranges in the USA and Brazil (for estimation of maximum residue level)

ORANGE Country, year (Variety)	Form	Application/treatment			Total/ season, g ai/ha	PHI, days	Residue, mg/kg			Report No.
		g ai/ hL	g ai/ha	No			XDE-175-J	XDE-175-L	Total [a] (Average)	
GAP, USA	SC or WG		53–105	3	210	1				
Foliar application using low spray volume (approx. 700 L/ha)										
Deleon Spring FL, USA 2004 (Valencia)	SC	10	70–72	3	213	1	0.030	< 0.01	0.030	JMPR, 2008
							0.028	< 0.01	0.028 (0.029)	
Mount Dora, FL, USA 2004 (Valencia)	SC	11	71–72	3	214	1	0.011	ND	0.011	JMPR, 2008
							0.022	< 0.01	0.022 (0.017)	
Raymondville, TX, USA 2004 (N-33)	SC	10	70–72	3	213	1	< 0.01	ND	< 0.01	JMPR, 2008
							< 0.01	ND	< 0.01 (< 0.01)	
Richgrove, CA [b], USA, 2004 (Olinda)	SC	9	70–71	3	211	1	< 0.01	ND	< 0.01	JMPR, 2008
							< 0.01	ND	< 0.01 (< 0.01)	
Porterville, CA, USA, 2004 (Cutter Valencia)	SC	9	70	3	210	0	0.011	ND	0.011	JMPR, 2008
							0.014	< 0.01	0.014 (0.013)	
						1	0.012	< 0.01	0.012	
							0.010	ND	0.010 (0.011)	
						3	< 0.01	ND	< 0.01	
							0.011	ND	0.011 (0.011)	
						7	< 0.01	ND	< 0.01	
							< 0.01	ND	< 0.01 (< 0.01)	
						14	< 0.01	ND	< 0.01	

ORANGE Country, year (Variety)	Form	Application/treatment			Total/ season, g ai/ha	PHI, days	Residue, mg/kg			Report No.
		g ai/ hL	g ai/ha	No			XDE-175-J	XDE-175-L	Total [a] (Average)	
							< 0.01	ND	< 0.01 (< 0.01)	
FL, 2007 (not specified)	WG	11	69–72	3	212	1	0.028	< 0.01	0.028	JMPR, 2008
							0.025	ND	0.025 (0.027)	
Foliar application using high spray volume (approx. 3300L/ha)										
Deleon Spring FL, 2004 (Valencia)	SC	2	70–71	3	212	1	0.015	< 0.01	0.015	JMPR, 2008
							0.014	ND	0.013 (0.014)	
Mount Dora, FL, 2004 (Valencia)	SC	2	70–71	3	212	1	0.017	< 0.01	0.017	JMPR, 2008
							0.018	< 0.01	0.018 (0.018)	
Raymondville, TX, 2004 (N-33)	SC	2	70–71	3	211	1	< 0.01	ND	< 0.01	JMPR, 2008
							ND	ND	< 0.01 (< 0.01)	
Richgrove, CA [b], 2004 (Olinda)	SC	2	70–71	3	211	1	0.021	< 0.01	0.021	JMPR, 2008
							0.020	< 0.01	0.020 (0.021)	
Porterville, CA, 2004 (Cutter Valencia)	SC	2	70	3	210	0	0.021	< 0.01	0.021	JMPR, 2008
							0.012	< 0.01	0.012 (0.017)	
						1	0.010	ND	0.010	
							0.012	ND	0.012 (0.011)	
						3	< 0.01	ND	< 0.01	
							ND	ND	< 0.01 (< 0.01)	
						7	< 0.01	ND	< 0.01	

ORANGE Country, year (Variety)	Form	Application/treatment			Total/ season, g ai/ha	PHI, days	Residue, mg/kg			Report No.
		g ai/ hL	g ai/ha	No			XDE-175-J	XDE-175-L	Total [a] (Average)	
							< 0.01	ND	< 0.01 (< 0.01)	
						14	< 0.01	ND	< 0.01	
							< 0.01	ND	< 0.01 (< 0.01)	
FL, 2007 (not specified)	WG	2	69–70	3	209	1	0.021	< 0.01	0.021	JMPR, 2008
							0.024	< 0.01	0.024 (0.023)	
GAP, Brazil	SC or WG	1.25–2.5	25–100 [c]	3		1				
Jaboticabal, SP Brazil, 2006 (Pera Rio)	250 WG	2.33	70	3	210	0	< 0.01	< 0.01	< 0.01	242980/ 246845 (Amended)
						1	< 0.01	ND	< 0.01	
						3	< 0.01	ND	< 0.01	
						7	ND	ND	< 0.01	
						14	ND	ND	< 0.01	
						28	ND	ND	< 0.01	
	250 WG	4.67	140	3	420	0	0.020	0.013	0.033	
						1	0.012	ND	0.012	
						3	< 0.01	ND	< 0.01	
						7	< 0.01	ND	< 0.01	
						14	< 0.01	ND	< 0.01	
						28	< 0.01	ND	< 0.01	
Mogi Mirim, SP, Brazil, 2006 (Pera)	250 WG	7	70	3	210	0	0.053	< 0.01	0.053	242983/ 246851 (Amended)
						1	0.052	0.01	0.062	
						3	0.025	< 0.01	0.025	
						7	0.023	ND	0.023	
						14	0.019	ND	0.019	
						28	0.012	ND	0.012	
	250 WG	14	140	3	420	0	0.096	0.021	0.117	
						1	0.089	0.012	0.101	
						3	0.052	< 0.01	0.052	
						7	0.039	< 0.01	0.039	
						14	0.043	ND	0.043	
						28	0.035	ND	0.035	

ORANGE Country, year (Variety)	Form	Application/treatment			Total/ season, g ai/ha	PHI, days	Residue, mg/kg			Report No.
		g ai/ hL	g ai/ha	No			XDE-175-J	XDE-175-L	Total [a] (Average)	
Anhembi, SP Brazil, 2006 (Pera Murcha)	250 WG	7	70	3	210	1	0.041	< 0.01	0.041	242984/ 246850 (Amended)
	250 WG	14	140	3	420	1	0.046	< 0.01	0.046	
Limeira, SP Brazil, 2006 (Valencia)	250 WG	7	70	3	210	0	0.058	0.018	0.076	244444/ 246849 (Amended)
						1	0.029	< 0.01	0.029	
						3	0.018	ND	0.018	
						7	0.022	ND	0.022	
						14	0.012	ND	0.012	
						28	< 0.01	ND	< 0.01	
	250 WG	14	140	3	420	0	0.157	0.055	0.212	
						1	0.067	0.013	0.080	
						3	0.061	< 0.01	0.061	
						7	0.025	ND	0.025	
						14	0.040	< 0.01	0.040	
						28	0.016	ND	0.016	

[a] Total residue = XDE-175-J + XDE-175-L

[b] Data from these two trials must have been interchanged

[c] Calculated from the specified spray volume and spray concentration.

Table 3-2 Residues of spinetoram from supervised trials on oranges in the USA and Brazil (for estimation of STMR)

ORANGE Country, year (Variety)	Form	Application/treatment			Total/ season g ai/ha	PHI, days	Residue, mg/kg					Report No.
		g ai/hL	g ai/ha	No			XDE-175-J	XDE-175-L	N-demethyl-J	N-formyl-J	Total [a]	
GAP, USA	SC or WG		53–105	3	210	1						
Foliar application using low spray volume (approx. 700 L/ha)												
Deleon Spring FL USA,2004 (Valencia)	SC	10	70–72	3	213	1	0.028	< 0.01	0.014	0.024	0.066	JMPR, 2008
							0.030	< 0.01	0.011	0.016	0.057 (0.062)	
Mount Dora, FL, USA,2004 (Valencia)	SC	11	71–72	3	214	1	0.011	ND	< 0.01	< 0.01	0.021	JMPR, 2008
							0.022	< 0.01	0.012	0.017	0.051 (0.039)	
Raymondville TX, USA,2004 (N-33)	SC	10	70–72	3	213	1	< 0.01	ND	< 0.01	0.012	0.022	JMPR, 2008
							< 0.01	ND	< 0.01	0.011	0.021 (0.022)	

ORANGE Country, year (Variety)	Form	Application/treatment			Total/ season g ai/ha	PHI, days	Residue, mg/kg					Report No.
		g ai/hL	g ai/ha	No			XDE-175-J	XDE-175-L	N-demethyl-J	N-formyl-J	Total [a]	
Richgrove [b], CA, USA, 2004 (Olinda)	SC	9	70–71	3	211	1	< 0.01	ND	ND	ND	< 0.02	JMPR, 2008
							< 0.01	ND	ND	< 0.01	< 0.02 (< 0.02)	
Porterville, CA, USA 2004 (Cutter Valencia)	SC	2	70	3	210	0	0.011	ND	< 0.01	0.014	0.025	JMPR, 2008
							0.014	< 0.01	< 0.01	0.012	0.026 (0.026)	
						1	0.012	< 0.01	ND	0.015	0.027	
							0.010	ND	< 0.01	0.020	0.030 (0.029)	
						3	< 0.01	ND	ND	< 0.01	< 0.02	
							0.011	ND	< 0.01	0.022	0.033 (0.027)	
						7	< 0.01	ND	ND	0.015	0.025	
							< 0.01	ND	ND	< 0.01	< 0.02 (0.023)	
						14	< 0.01	ND	ND	0.013	0.023	
							< 0.01	ND	ND	0.015	0.025 (0.024)	
FL, USA 2007 (not specified)	WG	2	69–70	3	209	1	0.028	< 0.01	0.013	< 0.01	0.041	JMPR, 2008
							0.025	ND	< 0.01	ND	0.035 (0.038)	
Foliar application using high spray volume (approx. 3300 L/ha)												
Deleon Spring FL, USA, 2004 (Valencia)	SC	2	70–71	3	212	1	0.015	< 0.01	< 0.01	0.026	0.041	JMPR, 2008
							0.014	ND	< 0.01	0.024	0.038 (0.040)	
Mount Dora, FL, USA, 2004 (Valencia)	SC	2	70–71	3	212	1	0.017	< 0.01	< 0.01	0.022	0.039	JMPR, 2008
							0.018	< 0.01	< 0.01	0.021	0.039 (0.039)	
Raymondville	SC	2	70–71	3	211	1	< 0.01	ND	< 0.01	< 0.01	< 0.02	JMPR,

ORANGE Country, year (Variety)	Form	Application/treatment			Total/ season g ai/ha	PHI, days	Residue, mg/kg					Report No.
		g ai/hL	g ai/ha	No			XDE-175-J	XDE-175-L	N-demethyl-J	N-formyl-J	Total [a]	
TX, USA, 2004 (N-33)							ND	ND	ND	< 0.01	< 0.02 (< 0.02)	2008
Richgrove [b], CA, USA, 2004 (Olinda)	SC	2	70–71	3	211	1	0.021	< 0.01	< 0.01	0.032	0.053	JMPR, 2008
							0.020	< 0.01	< 0.01	0.049	0.069 (0.061)	
Porterville, CA, USA, 2004 (Cutter Valencia)	SC	2	70	3	210	0	0.021	< 0.01	< 0.01	0.038	0.059	JMPR, 2008
							0.012	< 0.01	< 0.01	0.026	0.038 (0.048)	
						1	0.010	ND	< 0.01	0.035	0.045	
							0.012	ND	< 0.01	0.035	0.047 (0.046)	
						3	< 0.01	ND	ND	0.019	0.029	
							ND	ND	ND	< 0.01	< 0.02 (0.025)	
						7	< 0.01	ND	ND	0.026	0.036	
							< 0.01	ND	ND	0.026	0.036	
						14	< 0.01	ND	ND	0.023	0.033	
							< 0.01	ND	ND	0.020	0.030 (0.032)	
FL, USA,2007 (not specified)	WG	2	69–70	3	209	1	0.021	< 0.01	0.010	< 0.01	0.031	
							0.024	< 0.01	0.012	< 0.01	0.036 (0.034)	
GAP, Brazil	SC or WG	1.25–2.5	25–100 [c]	3		1						
Jaboticabal, SP Brazil, 2006 (Pera Rio)	250 WG	2.33	70	3	210	0	< 0.01	< 0.01	ND	0.012	0.022	242980/ 246845 (Amended)
						1	< 0.01	ND	ND	ND	< 0.02	
						3	< 0.01	ND	ND	ND	< 0.02	
						7	ND	ND	ND	ND	ND	
						14	ND	ND	ND	ND	ND	
						28	ND	ND	ND	ND	ND	
	250	4.67	140	3	420	0	0.020	0.013	ND	0.014	0.047	

ORANGE Country, year (Variety)	Form	Application/treatment			Total/ season g ai/ha	PHI, days	Residue, mg/kg					Report No.
		g ai/hL	g ai/ha	No			XDE-175-J	XDE-175-L	N-demethyl-J	N-formyl-J	Total [a]	
	WG					1	0.012	ND	ND	0.010	0.022	
						3	< 0.01	ND	ND	0.011	0.021	
						7	< 0.01	ND	ND	0.011	0.021	
						14	< 0.01	ND	ND	0.014	0.024	
						28	< 0.01	ND	ND	ND	< 0.02	
Mogi Mirim, SP, Brazil, 2006 (Pera)	250 WG	7	70	3	210	0	0.053	< 0.01	< 0.01	0.014	0.067	242983/ 246851 (Amended)
						1	0.052	0.01	< 0.01	0.013	0.075	
						3	0.025	< 0.01	< 0.01	0.018	0.043	
						7	0.023	ND	ND	0.012	0.035	
						14	0.019	ND	< 0.01	< 0.01	0.029	
						28	0.012	ND	ND	< 0.01	0.022	
	250 WG	14	140	3	420	0	0.096	0.021	< 0.01	0.029	0.146	
						1	0.089	0.012	< 0.01	0.025	0.126	
						3	0.052	< 0.01	< 0.01	0.033	0.085	
						7	0.039	< 0.01	< 0.01	0.015	0.054	
						14	0.043	ND	< 0.01	0.022	0.065	
						28	0.035	ND	< 0.01	0.015	0.050	
Anhembi, SP Brazil, 2006 (Pera Murcha)	250 WG	7	70	3	210	1	0.041	< 0.01	< 0.01	0.035	0.076	242984/ 246850 (Amended)
	250 WG	14	140	3	420	1	0.046	< 0.01	< 0.01	0.060	0.106	
Limeira, SP Brazil, 2006 (Valencia)	250 WG	7	70	3	210	0	0.058	0.018	< 0.01	0.018	0.094	244444/ 246849 (Amended)
						1	0.029	< 0.01	ND	0.013	0.042	
						3	0.018	ND	ND	0.014	0.032	
						7	0.022	ND	< 0.01	0.013	0.035	
						14	0.012	ND	< 0.01	0.013	0.025	
						28	< 0.01	ND	ND	< 0.01	< 0.02	
	250 WG	14	140	3	420	0	0.157	0.055	< 0.01	0.020	0.232	
						1	0.067	0.013	< 0.01	0.044	0.124	
						3	0.061	< 0.01	< 0.01	0.045	0.106	
						7	0.025	ND	< 0.01	0.019	0.044	
						14	0.040	< 0.01	< 0.01	0.043	0.083	
						28	0.016	ND	< 0.01	0.011	0.027	

[a] Total residues = XDE-175-J +XDE-175-L +N-Demethyl-J + N-Formyl-J

[b] Data from these two trials must have been interchanged.

[c] Calculated from the specified spray volume and spray concentration.

Tangerine

A total of eight supervised trials on tangerines were carried out in Brazil in 2006 (Reports 246796, 246801, 246802, 246803, 246806, 246807, 246809, and 246811). Each site consisted of two treated plots which received three applications of a 250 WG formulation of spinetoram at the rate of 70 g ai/ha for a total of 210 g ai/ha per season. The GAP in Brazil for citrus fruits allows up to three applications at the spray concentration of 1.25–2.5 g ai/hL with the spray volume of 20–40 hL/ha and a PHI of 1 day.

Mature samples were collected one day after the last application. For the four decline trials, samples were also harvested at 0, 3, 7, 14 and 28 days after the last application. The GAP in Brazil is three applications at 25–100 g ai/ha spinetoram, which is similar to the GAP in the USA. The PHI is 1 day. Samples were stored frozen up to about 372 days at approximately -20 ºC. Storage stability studies reviewed by the JMPR showed that residues of spinetoram are stable up to 372 days in similar crops stored frozen thus illustrating that the residues in this study were stable at the time of analysis.

Residues of XDE-175-J, XDE-175-L, N-demethyl-J and N-formyl-J were determined by liquid chromatography with tandem mass spectrometry (LC/MS/MS), following method GRM.05.04, which had been previously validated with an LOQ of 0.01 mg/kg.

Table 4-1 Residues of spinetoram from supervised trials on tangerines in Brazil (for estimation of maximum residue level)

TANGERINE Country, year (Variety)	Form	Application/treatment			Total/ season, g ai/ha	PHI, days	Residue, mg/kg			Report No.
		g ai/hL	g ai/ha	No			XDE-175-J	XDE-175-L	Total	
GAP, Brazil	SC or WG	1.25–2.5	25–100	3		1				
Piracicaba, SP Brazil, 2006 (Poncã)	250 WG	7	70	3	210	1	0.012	ND	0.012	242939/ 246809 (Amended)
Anhembi, SP Brazil, 2006 (Poncã)	250 WG	4.7	70	3	210	1	0.028	< 0.01	0.028	242940/ 246801 (Amended)
Monte Santo de Minas, Minas Gerais, Brazil, 2006 (Poncã)	250 WG	3.5	70	3	210	1	0.018	< 0.01	0.018	242942/ 246796 (Amended)
Campinas, SP Brazil, 2006 (Mexerica Murcote)	250 WG	7	70	3	210	0	0.110	0.034	0.144	242943/ 246803 and 247091 (Amended)
						1	0.026	< 0.01	0.026	
						3	0.022	ND	0.022	
						7	0.013	ND	0.013	
						14	ND	ND	< 0.01	
						28	ND	ND	< 0.01	

TANGERINE Country, year (Variety)	Form	Application/treatment			Total/ season, g ai/ha	PHI, days	Residue, mg/kg			Report No.
		g ai/hL	g ai/ha	No			XDE-175-J	XDE-175-L	Total	
Londrina, Paraná Brazil, 2006 (Poncã)	250 WG	3.5	70	3	210	1	0.026	< 0.01	0.026	242944/ 246802 (Amended)
Mogi Mirim, SP, Brazil 2006 (Poncã)	250 WG	4.7	70	3	210	0	0.051	0.018	0.069	242945/ 246811 (Amended)
						1	0.034	0.011	0.045	
						3	0.020	< 0.01	0.020	
						7	0.017	< 0.01	0.017	
						14	ND	ND	< 0.01	
						28	ND	ND	< 0.01	
Limeira, SP Brazil, 2006 (Poncã)	250 WG	7	70	3	210	0	0.091	0.015	0.106	243036/ 246806 and 242998 (Amended)
						1	0.038	< 0.01	0.038	
						3	ND	0.012	0.012	
						7	0.022	ND	0.022	
						14	0.012	ND	0.012	
						28	ND	ND	< 0.01	
Conchal, SP Brazil, 2006 (Murcote)	250 WG	4.7	70	3	210	0	0.035	0.01	0.045	243034/ 246807 and 246658 (Amended)
						1	0.018	< 0.01	0.018	
						3	< 0.01	ND	< 0.01	
						7	< 0.01	ND	< 0.01	
						14	ND	ND	< 0.01	
						28	ND	ND	< 0.01	

Table 4-2 Residues of spinetoram from supervised trials on tangerines in Brazil (for estimation of STMR)

TANGERINE Country, year (Variety)	Form	Application/treatment			Total/ season g ai/ha	PHI, days	Residue, mg/kg					Report No.
		g ai/hL	g ai/ha	No			XDE-175-J	XDE-175-L	N-demethyl-J	N-formyl-J	Total	
GAP, Brazil	WG	1.25–2.5	25–100	3								
Piracicaba, SP Brazil, 2006 (Ponca)	250 WG	7	70	3	210	1	0.012	ND	< 0.01	< 0.01	0.022	242939/ 246809 (Amended)

TANGERINE Country, year (Variety)	Form	Application/treatment			Total/ season g ai/ha	PHI, days	Residue, mg/kg					Report No.
		g ai/hL	g ai/ha	No			XDE-175-J	XDE-175-L	N-demethyl-J	N-formyl-J	Total	
Anhembi, SP Brazil, 2006 (Poncã)	250 WG	4.7	70	3	210	1	0.028	< 0.01	0.011	0.014	0.053	242940/ 246801 (Amended)
Monte Santo de Minas, Minas Gerais, Brazil, 2006 (Poncã)	250 WG	3.5	70	3	210	1	0.018	< 0.01	< 0.01	< 0.01	0.028	242942/ 246796 (Amended)
Campinas, SP Brazil, 2006 (Poncã)	250 WG	7	70	3	210	0	0.110	0.034	0.037	0.013	0.194	242943/ 246803 and 247079 (Amended)
						1	0.026	< 0.01	< 0.01	< 0.01	0.036	
						3	0.022	ND	< 0.01	< 0.01	0.032	
						7	0.013	ND	ND	< 0.01	0.023	
						14	ND	ND	ND	< 0.01	< 0.02	
						28	ND	ND	ND	< 0.01	< 0.02	
Londrina, Paraná Brazil, 2006 (Poncã)	250 WG	3.5	70	3	210	1	0.026	< 0.01	0.010	0.016	0.052	242944/ 246802 (Amended)
Mogi Mirim, SP, Brazil 2006 (Poncã)	250 WG	4.7	70	3	210	0	0.051	0.018	0.012	< 0.01	0.081	242945/ 246811 (Amended)
						1	0.034	0.011	< 0.01	< 0.01	0.055	
						3	0.020	< 0.01	< 0.01	< 0.01	0.030	
						7	0.017	< 0.01	< 0.01	< 0.01	0.027	
						14	ND	ND	ND	< 0.01	< 0.02	
						28	ND	ND	ND	ND	< 0.02	
Limeira, SP Brazil, 2006 (Poncã)	250 WG	7	70	3	210	0	0.091	0.015	< 0.01	ND	0.116	243036/ 246806 and 242998 (Amended)
						1	0.038	< 0.01	< 0.01	< 0.01	0.048	
						3	ND	0.012	0.019	< 0.01	0.031	
						7	0.022	ND	< 0.01	< 0.01	0.032	
						14	0.012	ND	< 0.01	< 0.01	0.022	
						28	ND	ND	ND	< 0.01	< 0.02	
Conchal, SP Brazil, 2006 (Poncã)	250 WG	4.7	70	3	210	0	0.035	0.01	< 0.01	< 0.01	0.055	243034/ 246807 and 246658 (Amended)
						1	0.018	< 0.01	< 0.01	< 0.01	0.028	
						3	< 0.01	ND	ND	ND	< 0.02	
						7	< 0.01	ND	ND	ND	< 0.02	
						14	ND	ND	ND	ND	< 0.02	
						28	ND	ND	ND	ND	< 0.02	

Comparison of citrus fruits and effect of spray volume

A confirmatory bridging study including a trial on grapefruit was conducted with an aim to illustrate the effect of spray volume on the residues and that residues among different citrus crops are comparable.

A trial on grapefruit was conducted in the USA as part of a study aimed at supporting a lower spray application volume for citrus crops (Report 263602). The study involved three trials, one each on orange, tangerine and grapefruit. Each trial consisted of two treated plots, one using a low volume application, and the other, a high volume one. Each plot was treated with a single application of a 250 WG formulation at the rate of 105 g ai/ha. Three samples of mature citrus (oranges, grapefruit, and tangerines) were collected from each plot at 1, 3, 5, and 7 days after application. Only the l-day PHI samples were analysed, after it was shown that residues in samples from ULV application were not significantly greater than those receiving the application at a conventional spray volume.

Samples were stored frozen for 106 days at about –20 ºC. Residues of spinetoram and its major metabolites analysed by liquid chromatography with tandem mass spectrometry following method GRM 05.04, which had been validated with an LOQ of 0.01 mg/kg.

The results confirmed that there are no significant differences in residues obtained from use of different spray volumes. In addition, the trials illustrated that residues in different citrus crops are comparable, following the same GAP. Therefore, a crop group maximum residue level for citrus fruit is proposed. Tables 9 and 10 summarize the results on citrus fruits. The residues from these trials are not included in the estimation of the maximum residue level and STMR since the trial did not use maximum US GAP rate.

Table 5-1 Residues of spinetoram from supervised trials on citrus fruits in the USA (for estimation of maximum residue level)

Country, year (Variety)	Form	Application/ treatment			Total/ season, g ai/ha	PHI, days	Residue, mg/kg			Report No.
		g ai/hl	g ai/ha	No			XDE-175-J	XDE-175-L	Total	
GAP, USA	SC or WG		53–105	3	210	1				
09-FL61 Florida, USA, 2008 (Orange – Valencia)	250 WG	57	107	1	107	1	0.0308 0.0205 0.0297	< 0.01 < 0.01 < 0.01	0.03 0.02 0.03	263602
	250 WG	5.7	108	1	108	1	0.0275 0.0386 0.0376	< 0.01 0.0114 0.0110	0.03 0.05 0.049	263602
09-FL62 Florida, USA, 2008 (Grapefruit–Flame)	250 WG	57	107	1	107	1	0.0251 0.0341 0.0448	< 0.01 < 0.01 0.0108	0.03 0.03 0.06	263602
		5.8	110	1	110	1	0.0142 < 0.01 < 0.01	< 0.01 < 0.01 < 0.01	0.01 < 0.01 < 0.01	263602
09-FL63 Florida, USA, 2008	250 WG	57	108	1	108	1	0.0232 0.0182 0.0243	< 0.01 < 0.01 < 0.01	0.02 0.02 0.02	263602

Country, year (Variety)	Form	Application/ treatment			Total/ season, g ai/ha	PHI, days	Residue, mg/kg			Report No.
		g ai/hl	g ai/ha	No			XDE-175-J	XDE-175-L	Total	
(Tangerine–Sunburst)		5.6	106	1	106	1	< 0.01 < 0.01 < 0.01	< 0.01 < 0.01 < 0.01	< 0.01 < 0.01 < 0.01	263602

Table 5-2 Residues of spinetoram from supervised trials on citrus fruits in the USA (for estimation of STMR)

Country, year (Variety)	Form	Application/treatment			Total/ season g ai/ha	PHI, days	Residue, mg/kg					Report No.
		g ai/hL	g ai/ha	No			XDE-175-J	XDE-175-L	N-demethyl-J	N-formyl-J	Total	
09-FL61 Florida, USA, 2008 (Orange—Valencia)	250 WG	57	107	1	107	1	0.0308 0.0205 0.0297	< 0.01 < 0.01 < 0.01	0.0135 < 0.01 0.0128	0.0161 < 0.01 0.0195	0.06 0.03 0.06	263602
		5.7	108	1	108	1	0.0275 0.0386 0.0376	< 0.01 0.0114 0.0110	< 0.01 < 0.01 < 0.01	< 0.01 < 0.01 < 0.01	0.04 0.06 0.06	263602
09-FL62 Florida, USA, 2008 (Grapefruit—Flame)	250 WG	57	107	1	107	1	0.0251 0.0341 0.0448	< 0.01 < 0.01 0.0108	< 0.01 < 0.01 0.0108	0.0152 0.0204 0.0267	0.04 0.05 0.09	263602
		5.8	110	1	110	1	0.0142 < 0.01 < 0.01	< 0.01 < 0.01 < 0.01	< 0.01 < 0.01 < 0.01	< 0.01 < 0.01 < 0.01	0.02 < 0.02 < 0.02	263602
09-FL63 Florida, USA, 2008 (Tangerine—Sunburst)	250 WG	57	108	1	108	1	0.0232 0.0182 0.0243	< 0.01 < 0.01 < 0.01	0.0119 < 0.01 0.0111	0.0150 0.0123 0.0146	0.05 0.03 0.05	263602
		5.6	106	1	106	1	< 0.01 < 0.01 < 0.01	< 0.01 < 0.01 < 0.01	< 0.01 < 0.01 < 0.01	< 0.01 < 0.01 < 0.01	< 0.02 < 0.02 < 0.02	263602

Stone fruits

The 2008 JMPR reviewed information on the supervised field trial data on apricots, cherries, nectarines and peaches conducted in Australia and New Zealand and decided that since no approved GAP was available, no maximum residue level could be recommended for spinetoram in stone fruit. The GAP in Australia for stone fruits has been approved since then and recently modified. This GAP

allows up to four applications at the spray concentration of 2.5–5 g ai/hL (14 days interval) with a PHI of 3 days.

The same trials are re-submitted for review by the current Meeting. In addition, supervised trials on stone fruit were also conducted in Chile, Argentina, Japan and Europe.

Supervised trials on cherries, peaches, apricots and nectarines in Australia

Twenty-three supervised trials (eight on cherries, seven on peaches, four on nectarines, and four on apricots were conducted during the 2005–2006 season in Australia (Report 240988). Trials were conducted in six sites (two sites for cherries, two for peaches, and one each for apricots and nectarines), each site consisting of one untreated and four treated plots. Each plot, which had 1 to 4 trees ranging from flowering to 7 cm diameter fruits, was treated with four or seven applications of a WG formulation of spinetoram containing 250 g ai/kg. Two treatment regimes were used. The first treatment schedule consisted of three applications at 5-day intervals over flowering followed by four applications at 14-day intervals commencing 63 days before harvest so that the last application was 21 days before harvest. The second treatment schedule consisted of four applications at 14-day intervals commencing 63 days before harvest so that the last application was 21 days before harvest. Treatments were made as foliar spray applications at rates of 5 g ai/hL or 7.5 g ai/hL of spinetoram.

Approximately 2 kg each of whole peaches, apricots, and nectarines and 0.5 kg of cherries were collected 0, 7, 14 or 15, 21 or 22, 28 and 35 days after the last application. Samples were placed in plastic bags, labelled, and frozen at –20 °C until analysed. The maximum storage period was 293 days, which fell within the demonstrated limit of stability as confirmed in a previous storage stability study on various commodities.

Samples were analysed for residues of spinetoram and the metabolites using the method GRM 05.03. The LOQ for the method was 0.01 mg/kg. Recoveries were within the acceptable range of 70–120% and relative standard deviation < 20%, with the exception of apricots. The mean recovery of XDE-175-J from apricots fortified at the LOQ (66%) was lower than 70%. The results are summarized in the tables below under each commodity (Tables 11 and 12 for apricots, Tables 13 and 14 for cherries, Tables 15 and 16 for nectarines and Tables 17–22 for peaches and Tables 23 and 24 for plums).

Supervised trials on cherries, peaches and apricots in New Zealand

Trials on cherries (12), peach (8), and apricot (8) were conducted during the 2005 to 2006 season in New Zealand (Report 239322). Trials were conducted in seven sites (three sites for cherries, two for peaches, and two for apricots), each site consisting of one untreated and four treated plots. Each peach and apricot site had four trees while the cherry plots had two trees each. Four applications of a SC formulation of spinetoram containing 120 g ai/L were made to each plot using high volume spray applications at rates of 2.5 g ai/hL, 3.7 g ai/hL, 5 g ai/hL or 7.6 g ai/ha. Treatments were made at intervals of 13–15 days to the stone fruit plots containing fruits ranging from 1.1 cm to 5 cm in diameter at the first application to 1.2 cm to 6.5 cm in diameter at the fourth application.

Approximately 2 kg each of whole peaches and apricots, and 1 kg of cherries were collected by hand 0, 1, 3, 7, 14, 21, and 28 days after the last application. Samples were placed in plastic bags, labelled, and frozen at –20 °C until analysed. The maximum period of frozen storage was 348 days, which fell within the demonstrated limit of storage stability for spinetoram, as confirmed by a previous study on several commodities.

Spinetoram and its metabolites were analysed using method GRM 05.03 with an LOQ of 0.01 mg/kg. Recoveries were within the acceptable range of 70–120% and relative standard deviation < 20%. The results are summarized for each specific stone fruit commodity (Tables 11 and 12 for apricots, Tables 13 and 14 for cherries, Tables 15 and 16 for nectarines and Tables 17 to 22 for peaches, and Tables 22 and 23 for plums).

Supervised trials on apricots in Chile

In addition to the four trials in Australia and eight in New Zealand, one trial was conducted in Chile in which two applications of a 250 WG formulation of spinetoram were made to apricot trees at the spray concentration of 3.6 g ai/hL and rate of 77–79 g ai/ha. Samples were collected at 0, 1, 3, 5, 7, and 14 days after the last application (Report 259246). There is no GAP for stone fruits in Chile and the trial did not match any available GAPs.

Table 6-1 Residues of spinetoram from supervised trials on apricot in Australia, New Zealand and Chile (for estimation of maximum residue level)

APRICOT Country, year (Variety)	Form	Application/treatment			Total/ season, g ai/ha	PHI, days	Residue, mg/kg			Report No.
		g ai/hL	g ai/ha	No			XDE-175-J	XDE-175-L	Total	
GAP, Australia (stone fruits)	250 WG	2.5–5		4		3				
TRIALS IN AUSTRALIA										
Ardmona, VIC, Australia, 2005 (Francesco)	250 WG	5	51	4	204	0	0.08	0.02	0.10	240988
						7	0.02	ND	0.02	
						14	< 0.01	< 0.01	< 0.01	
						21	< 0.01	ND	< 0.01	
						28	ND	ND	< 0.01	
						35	ND	ND	< 0.01	
Ardmona, VIC, Australia, 2005 (Francesco)	250 WG	7.5	76	4	304	0	0.08	0.02	0.10	240988
						7	0.02	ND	0.02	
						14	0.01	ND	0.01	
						21	< 0.01	ND	< 0.01	
						28	< 0.01	ND	< 0.01	
						35	ND	ND	< 0.01	
Ardmona, VIC, Australia, 2005 (Francesco)	250 WG	5	51–52	7	358	0	0.07	0.02	0.09	240988
						7	0.02	ND	0.02	
						14	0.01	ND	0.01	
						21	ND	ND	< 0.01	
						28	ND	ND	< 0.01	
						35	ND	ND	< 0.01	
Ardmona, VIC, Australia, 2005 (Francesco)	250 WG	7.5	76–79	7	536	0	0.16	0.04	0.20	240988
						7	0.02	ND	0.02	
						14	0.02	ND	0.02	
						21	0.01	ND	0.01	
						28	< 0.01	ND	< 0.01	
						35	< 0.01	ND	< 0.01	
TRIALS IN NEW ZEALAND										
Hawke's	120	2.5	31–	4	129	0	0.038	< 0.01	0.038	239322

APRICOT Country, year (Variety)	Form	Application/treatment			Total/ season, g ai/ha	PHI, days	Residue, mg/kg			Report No.
		g ai/hL	g ai/ha	No			XDE-175-J	XDE-175-L	Total	
Bay, New Zealand, 2005 (Castlebright)	SC		33			1	0.048	0.012	0.06	
						3	0.031	< 0.01	0.031	
						7	0.016	ND	0.016	
						14	0.010	ND	0.010	
Hawke's Bay, New Zealand, 2005 (Castlebright)	120 SC	3.7	46–48	4	189	0	0.057	0.015	0.072	239322
						1	0.048	0.012	0.06	
						3	0.032	< 0.01	0.032	
						7	0.041	< 0.01	0.041	
						14	0.014	ND	0.014	
Hawke's Bay, New Zealand, 2005 (Castlebright)	120 SC	5	62–65	4	256	0	0.080	0.019	0.099	239322
						1	0.091	0.022	0.113	
						3	0.063	0.015	0.078	
						7	0.055	0.012	0.067	
						14	0.017	ND	0.017	
Hawke's Bay, New Zealand, 2005 (Castlebright)	120 SC	7.6	93–98	4	385	0	0.185	0.043	0.228	239322
						1	0.208	0.052	0.260	
						3	0.153	0.033	0.186	
						7	0.080	0.017	0.097	
						14	0.030	< 0.01	0.03	
Earnscleugh, Central Otago, New Zealand, 2006 (Sundrop)	120 SC	2.5	36–40	4	150	0	0.035	0.01	0.05	239322
						1	0.039	0.012	0.051	
						3	0.018	ND	0.018	
						7	0.019	ND	0.019	
						14	< 0.01	ND	< 0.01	
Earnscleugh, Central Otago, New Zealand, 2006 (Sundrop)	120 SC	3.7	53–59	4	221	0	0.126	0.039	0.165	239322
						1	0.124	0.037	0.161	
						3	0.063	0.018	0.081	
						7	0.041	0.011	0.052	
						14	0.022	< 0.01	0.022	
Earnscleugh, Central Otago, New Zealand, 2006 (Sundrop)	120 SC	5	72–79	4	298	0	0.101	0.031	0.132	239322
						1	0.080	0.023	0.103	
						3	0.081	0.025	0.106	
						7	0.064	0.017	0.081	
						14	0.024	ND	0.024	
Earnscleugh, Central Otago, New	120 SC	7.4	107–119	4	447	0	0.222	0.067	0.289	239322
						1	0.213	0.062	0.275	

APRICOT Country, year (Variety)	Form	Application/treatment			Total/ season, g ai/ha	PHI, days	Residue, mg/kg			Report No.
		g ai/hL	g ai/ha	No			XDE-175-J	XDE-175-L	Total	
Zealand, 2006 (Sundrop)						3	0.139	0.038	0.177	
						7	0.084	0.022	0.106	
						14	0.034	< 0.01	0.034	
TRIAL IN CHILE										
Calera de Tango, Chile 2007 (Dina)	250 WG	3.6	75–79	2	144	0	0.113	0.024	0.137	259246
						1	0.059	0.013	0.072	
						3	0.057	0.013	0.070	
						5	0.036	< 0.01	0.036	
						7	0.033	< 0.01	0.033	
						14	0.026	< 0.01	0.026	

Table 6-2 Residues of spinetoram from supervised trials on apricots in Australia, New Zealand and Chile (for estimation of STMR)

APRICOT Country, year (Variety)	Form	Application/treatment			Total/ season g ai/ha	PHI, days	Residue, mg/kg					Report No.
		g ai/hL	g ai/ha	No			XDE-175-J	XDE-175-L	N-demethyl-J	N-formyl-J	Total [a]	
GAP, Australia (stone fruits)	250 WG	2.5–5		4		3						
TRIALS IN AUSTRALIA												
Ardmona, VIC, Australia, 2005 (Francesco)	250 WG	5	51	4	204	0	0.08	0.02	0.01	< 0.01	0.12	240988
						7	0.02	ND	0.01	< 0.01	0.03	
						14	< 0.01	< 0.01	ND	ND	< 0.02	
						21	< 0.01	ND	ND	ND	< 0.02	
						28	ND	ND	ND	ND	< 0.02	
						35	ND	ND	ND	ND	< 0.02	
Ardmona, VIC, Australia, 2005 (Francesco)	250 WG	7.5	76	4	304	0	0.08	0.02	0.02	< 0.01	0.13	240988
						7	0.02	ND	< 0.01	< 0.01	0.03	
						14	0.01	ND	< 0.01	< 0.01	0.02	
						21	< 0.01	ND	ND	ND	< 0.02	
						28	< 0.01	ND	ND	ND	< 0.02	
						35	ND	ND	ND	ND	< 0.02	
Ardmona, VIC, Australia, 2005 (Francesco)	250 WG	5	51–52	7	358	0	0.07	0.02	0.01	< 0.01	0.10	240988
						7	0.02	ND	0.01	0.01	0.04	
						14	0.01	ND	< 0.01	< 0.01	0.02	
						21	ND	ND	ND	ND	< 0.02	

APRICOT Country, year (Variety)	Form	Application/treatment			Total/ season g ai/ha	PHI, days	Residue, mg/kg					Report No.
		g ai/hL	g ai/ha	No			XDE-175-J	XDE-175-L	N-demethyl-J	N-formyl-J	Total [a]	
						28	ND	ND	ND	ND	< 0.02	
						35	ND	ND	ND	ND	< 0.02	
Ardmona, VIC, Australia, 2005 (Francesco)	250 WG	7.5	76–79	7	536	0	0.16	0.04	0.02	0.01	0.23	240988
						7	0.02	ND	0.01	< 0.01	0.03	
						14	0.02	ND	0.01	< 0.01	0.03	
						21	0.01	ND	< 0.01	< 0.01	0.02	
						28	< 0.01	ND	< 0.01	< 0.01	0.02	
						35	< 0.01	ND	ND	ND	< 0.02	
TRIALS IN NEW ZEALAND												
Hawke's Bay, New Zealand, 2005 (Castlebright)	120 SC	2.5	31–33	4	129	0	0.038	< 0.01	–	0.018	0.056	239322
						1	0.048	0.012	–	0.023	0.083	
						3	0.031	< 0.01	–	0.023	0.054	
						7	0.016	ND	–	0.015	0.031	
						14	0.010	ND	–	0.013	0.023	
Hawke's Bay, New Zealand, 2005 (Castlebright)	120 SC	3.7	46–48	4	189	0	0.057	0.015	–	0.020	0.092	239322
						1	0.048	0.012	–	0.021	0.081	
						3	0.032	< 0.01	–	0.021	0.053	
						7	0.041	< 0.01	–	0.028	0.069	
						14	0.014	ND	–	0.017	0.031	
Hawke's Bay, New Zealand, 2005 (Castlebright)	120 SC	5	62–65	4	256	0	0.080	0.019	–	0.026	0.125	239322
						1	0.091	0.022	–	0.036	0.149	
						3	0.063	0.015	–	0.032	0.110	
						7	0.055	0.012	–	0.042	0.109	
						14	0.017	ND	–	0.020	0.037	
Hawke's Bay, New Zealand, 2005 (Castlebright)	120 SC	7.6	93–98	4	385	0	0.185	0.043	–	0.045	0.273	239322
						1	0.208	0.052	–	0.058	0.318	
						3	0.153	0.033	–	0.065	0.251	
						7	0.080	0.017	–	0.055	0.152	
						14	0.030	< 0.01	–	0.030	0.06	
Earnscleugh, Central Otago, New Zealand, 2006 (Sundrop)	120 SC	2.5	36–40	4	150	0	0.035	0.055	–	0.010	0.10	239322
						1	0.039	0.012	–	0.013	0.064	
						3	0.018	ND	–	< 0.01	0.028	
						7	0.019	ND	–	< 0.01	0.029	
						14	< 0.01	ND	–	< 0.01	< 0.02	
Earnscleugh, Central Otago, New Zealand,	120 SC	3.7	53–59	4	221	0	0.126	0.039	–	0.024	0.189	239322
						1	0.124	0.037	–	0.036	0.197	

APRICOT Country, year (Variety)	Form	Application/treatment			Total/ season g ai/ha	PHI, days	Residue, mg/kg					Report No.
		g ai/hL	g ai/ha	No			XDE-175-J	XDE-175-L	N-demethyl-J	N-formyl-J	Total [a]	
2006 (Sundrop)						3	0.063	0.018	–	0.028	0.109	
						7	0.041	0.011	–	0.023	0.075	
						14	0.022	< 0.01	–	0.016	0.038	
Earnscleugh, Central Otago, New Zealand, 2006 (Sundrop)	120 SC	5	72–79	4	298	0	0.101	0.031	–	0.025	0.157	239322
						1	0.080	0.023	–	0.019	0.122	
						3	0.081	0.025	–	0.031	0.137	
						7	0.064	0.017	–	0.034	0.115	
						14	0.024	ND	–	0.021	0.045	
Earnscleugh, Central Otago, New Zealand, 2006 (Sundrop)	120 SC	7.4	107–119	4	447	0	0.222	0.067	–	0.038	0.327	239322
						1	0.213	0.062	–	0.046	0.321	
						3	0.139	0.038	–	0.038	0.215	
						7	0.084	0.022	–	0.036	0.142	
						14	0.034	< 0.01	–	0.017	0.051	
TRIALS IN CHILE												
Calera de Tango, Chile 2007 (Dina)	250 WG	3.6	75–79	2	144	0	0.113	0.024	0.01	< 0.01	0.147	259246
						1	0.059	0.013	< 0.01	< 0.01	0.082	
						3	0.057	0.013	< 0.01	< 0.01	0.080	
						5	0.036	< 0.01	< 0.01	< 0.01	0.046	
						7	0.033	< 0.01	< 0.01	< 0.01	0.043	
						14	0.026	< 0.01	< 0.01	< 0.01	0.036	

Cherries

In addition to the trials in Australia and New Zealand, one trial was conducted in Chile during 2007. In this trial, cherry trees were treated with two applications of a 250 WG formulation of spinetoram at the spray concentration of 3.6 g ai/hL and rate of 78 g ai/ha (Report 259245). Samples were taken 0, 1, 3, 5, 7, and 14 days after the last application. There is no GAP in Chile for stone fruit and no available GAP matched the trial.

Table 7-1 Residues of spinetoram from supervised trials on cherries in Australia, New Zealand and Chile (for estimation of maximum residue level)

CHERRY Country, year (Variety)	Form	Application/treatment			Total/ season, g ai/ha	PHI, days	Residue, mg/kg			Report No.
		g ai/hL	g ai/ha	No			XDE-175-J	XDE-175-L	Total	
GAP, Australia (stone fruits)	250 WG	2.5–5		4		3				
TRIALS IN AUSTRALIA										
Sheffield Rd,	WG	5	54–92	4	271	0	0.05	0.01	0.06	240988

CHERRY Country, year (Variety)	Form	Application/treatment			Total/ season, g ai/ha	PHI, days	Residue, mg/kg			Report No.
		g ai/hL	g ai/ha	No			XDE-175-J	XDE-175-L	Total	
Spreyton TAS Australia, 2005 (Van)						7	< 0.01	ND	< 0.01	
						14	< 0.01	ND	< 0.01	
						21	< 0.01	ND	< 0.01	
						28	< 0.01	ND	< 0.01	
Sheffield Rd, Spreyton TAS Australia, 2005 (Van)	WG	7.5	93–125	4	432	0	0.085	0.025	0.11	240988
						7	0.02	ND	0.02	
						14	ND	ND	< 0.01	
						21	< 0.01	ND	< 0.01	
						28	< 0.01	ND	< 0.01	
Sheffield Rd, Spreyton TAS Australia, 2005 (Van)	WG	5	54–92	7	471	0	0.14	0.04	0.18	240988
						7	0.02	ND	0.02	
						14	0.01	ND	0.01	
						21	ND	ND	< 0.01	
						28	< 0.01	ND	< 0.01	
Sheffield Rd, Spreyton TAS Australia, 2005 (Van)	WG	7.5	93–125	7	758	0	0.13	0.04	0.17	240988
						7	0.02	ND	0.02	
						14	< 0.01	ND	< 0.01	
						21	< 0.01	ND	< 0.01	
						28	< 0.01	ND	< 0.01	
Tumut Road, Batlow, NSW Australia, 2005 (Stella)	WG	5	70–90	4	330	7	< 0.01	ND	< 0.01	240988
						14	ND	ND	< 0.01	
						21	ND	ND	< 0.01	
						28	ND	ND	< 0.01	
						35	ND	ND	< 0.01	
Tumut Road, Batlow, NSW Australia, 2005 (Stella)	WG	7.5	105–135	4	495	7	0.01	ND	0.01	240988
						14	< 0.01	ND	< 0.01	
						21	ND	ND	< 0.01	
						28	ND	ND	< 0.01	
						35	ND	ND	< 0.01	
Tumut Road, Batlow, NSW Australia, 2005 (Stella)	WG	5	60–90	7	560	7	< 0.01	ND	< 0.01	240988
						14	ND	ND	< 0.01	
						21	ND	ND	< 0.01	
						28	ND	ND	< 0.01	
						35	ND	ND	< 0.01	
Tumut Road, Batlow, NSW	WG	7.5	90–135	7	694	7	< 0.01	ND	< 0.01	240988
						14	< 0.01	ND	< 0.01	

CHERRY Country, year (Variety)	Form	Application/treatment			Total/ season, g ai/ha	PHI, days	Residue, mg/kg			Report No.
		g ai/hL	g ai/ha	No			XDE-175-J	XDE-175-L	Total	
Australia, 2005						21	ND	ND	< 0.01	
(Stella)						28	ND	ND	< 0.01	
						35	ND	ND	< 0.01	
TRIALS IN NEW ZEALAND										
Tukituki, Hawke's Bay, NZ, 2005	SC	2.5	38–40	4	157	0	0.019	< 0.01	0.019	239322
(Stella)						1	0.018	ND	0.018	
						3	< 0.01	ND	< 0.01	
						7	< 0.01	ND	< 0.01	
						14	ND	ND	< 0.01	
Tukituki, Hawke's Bay, NZ, 2005	SC	3.7	57–58	4	231	0	0.041	0.011	0.052	239322
(Stella)						1	0.025	< 0.01	0.025	
						3	0.018	ND	0.018	
						7	< 0.01	ND	< 0.01	
						14	ND	ND	< 0.01	
						21	ND	ND	< 0.01	
Tukituki, Hawke's Bay, NZ, 2005	SC	5	78–79	4	313	0	0.069	0.019	0.088	239322
(Stella)						1	0.048	0.013	0.061	
						3	0.036	< 0.01	0.036	
						7	0.018	ND	0.018	
						14	< 0.01	ND	< 0.01	
						21	< 0.01	ND	< 0.01	
Tukituki, Hawke's Bay, NZ, 2005	SC	7.6	116–119	4	469	0	0.136	0.037	0.173	239322
(Stella)						1	0.092	0.024	0.116	
						3	0.029	< 0.01	0.029	
						7	0.045	< 0.01	0.045	
						14	0.028	ND	0.028	
						21	< 0.01	ND	< 0.01	
Alexandra, Central Otago, NZ, 2006	SC	2.5	35–41	4	156	0	0.030	< 0.01	0.03	239322
(Lapins)						1	0.028	< 0.01	0.028	
						3	0.019	ND	0.019	
						7	0.019	ND	0.019	
						14	ND	ND	< 0.01	
						21	ND	ND	< 0.01	
						28	ND	ND	< 0.01	
Alexandra, Central Otago,	SC	3.7	52–61	4	231	0	0.06	0.015	0.075	239322
						1	0.032	< 0.01	0.032	

CHERRY Country, year (Variety)	Form	Application/treatment			Total/ season, g ai/ha	PHI, days	Residue, mg/kg			Report No.
		g ai/hL	g ai/ha	No			XDE-175-J	XDE-175-L	Total	
NZ, 2006 (Lapins)						3	0.019	< 0.01	0.019	
						7	0.019	ND	0.019	
						14	< 0.01	ND	< 0.01	
						21	< 0.01	ND	< 0.01	
						28	< 0.01	ND	< 0.01	
Alexandra, Central Otago, NZ, 2006 (Lapins)	SC	5	70–82	4	311	0	0.102	0.027	0.129	239322
						1	0.064	0.016	0.08	
						3	0.045	0.012	0.057	
						7	0.054	0.013	0.067	
						14	0.015	ND	0.015	
						21	0.013	ND	0.013	
						28	< 0.01	ND	< 0.01	
Alexandra, Central Otago, NZ, 2006 (Lapins)	SC	7.6	105–123	4	467	0	0.139	0.032	0.171	239322
						1	0.100	0.026	0.126	
						3	0.044	0.011	0.055	
						7	0.059	0.013	0.072	
						14	0.021	< 0.01	0.021	
						21	0.014	ND	0.014	
						28	< 0.01	ND	< 0.01	
Earnscleugh, Central Otago NZ, 2005 (Stella)	SC	2.5	41–49	4	187	0	0.040	0.012	0.052	239322
						1	0.039	0.011	0.05	
						3	0.025	< 0.01	0.025	
						7	0.024	< 0.01	0.024	
						14	< 0.01	ND	< 0.01	
						21	0.010	ND	0.01	
						28	ND	ND	< 0.01	
Earnscleugh, Central Otago NZ, 2005 (Stella)	SC	3.7	60–73	4	275	0	0.065	0.021	0.086	239322
						1	0.055	0.019	0.074	
						3	0.029	< 0.01	0.029	
						7	0.023	< 0.01	0.023	
						14	< 0.01	ND	< 0.01	
						21	< 0.01	ND	< 0.01	
						28	< 0.01	ND	< 0.01	
Earnscleugh, Central Otago NZ, 2005	SC	5	81–99	4	374	0	0.075	0.023	0.098	239322
						1	0.089	0.028	0.117	
						3	0.044	0.011	0.055	

CHERRY Country, year (Variety)	Form	Application/treatment			Total/ season, g ai/ha	PHI, days	Residue, mg/kg			Report No.
		g ai/hL	g ai/ha	No			XDE-175-J	XDE-175-L	Total	
(Stella)						7	0.025	< 0.01	0.025	
						14	0.024	< 0.01	0.024	
						21	< 0.01	ND	< 0.01	
						28	ND	ND	< 0.01	
Earnscleugh, Central Otago NZ, 2005 (Stella)	SC	7.6	122–148	4	560	0	0.103	0.035	0.138	239322
						1	0.053	0.017	0.07	
						3	0.059	0.017	0.076	
						7	0.052	0.015	0.067	
						14	< 0.01	< 0.01	< 0.01	
						21	0.013	ND	0.013	
						28	0.01	ND	0.01	
TRIAL IN CHILE										
Calera de Tango, Chile, 2007 (Bing)	250 WG	3.6	78	2	144	0	0.080	0.021	0.101	259245
						1	0.075	0.020	0.095	
						3	0.044	< 0.01	0.044	
						5	0.040	< 0.01	0.040	
						7	0.033	< 0.01	0.033	
						14	0.012	ND	0.012	

Table 7-2Residues of spinetoram from supervised trials on cherries in Australia, New Zealand, and Chile (for estimation of STMR)

CHERRY Country, year (Variety)	Form	Application/ treatment			Total/ season g ai/ha	PHI, days	Residue, mg/kg					Report No.
		g ai/hL	g ai/ha	No			XDE-175-J	XDE-175-L	N-demethyl-J	N-formyl-J	Total [a]	
GAP, Australia (stone fruits)	250 WG	2.5–5		4		3						
TRIALS IN AUSTRALIA												
Sheffield Rd, Spreyton TAS Australia, 2005 (Van)	WG	5	54–92	4	271	0	0.05	0.01	ND	< 0.01	0.07	240988
						7	< 0.01	ND	ND	< 0.01	< 0.02	
						14	< 0.01	ND	ND	< 0.01	< 0.02	
						21	< 0.01	ND	ND	< 0.01	< 0.02	
						28	< 0.01	ND	ND	0.01	0.02	
Sheffield Rd, Spreyton TAS Australia, 2005 (Van)	WG	7.5	93–125	4	432	0	0.085	0.025	ND	0.02	0.13	240988
						7	0.02	ND	< 0.01	0.03	0.05	
						14	ND	ND	ND	< 0.01	< 0.02	
						21	< 0.01	ND	ND	< 0.01	< 0.02	

CHERRY Country, year (Variety)	Form	Application/ treatment			Total/ season g ai/ha	PHI, days	Residue, mg/kg					Report No.
		g ai/hL	g ai/ha	No			XDE-175-J	XDE-175-L	N-demethyl-J	N-formyl-J	Total [a]	
						28	< 0.01	ND	ND	< 0.01	< 0.02	
Sheffield Rd, Spreyton TAS Australia, 2005 (Van)	WG	5	54–92	7	471	0	0.14	0.04	< 0.01	< 0.01	0.19	240988
						7	0.02	ND	ND	0.01	0.03	
						14	0.01	ND	ND	0.01	0.02	
						21	ND	ND	ND	ND	< 0.02	
						28	< 0.01	ND	ND	ND	< 0.02	
Sheffield Rd, Spreyton TAS Australia, 2005 (Van)	WG	7.5	93–125	7	758	0	0.13	0.04	< 0.01	0.02	0.19	240988
						7	0.02	ND	ND	0.02	0.04	
						14	< 0.01	ND	ND	< 0.01	< 0.02	
						21	< 0.01	ND	ND	< 0.01	< 0.02	
						28	< 0.01	ND	ND	< 0.01	< 0.02	
Tumut Road, Batlow, NSW Australia, 2005 (Stella)	WG	5	70–90	4	330	7	< 0.01	ND	ND	ND	< 0.02	240988
						14	ND	ND	ND	ND	< 0.02	
						21	ND	ND	ND	ND	< 0.02	
						28	ND	ND	ND	ND	< 0.02	
						35	ND	ND	ND	ND	< 0.02	
Tumut Road, Batlow, NSW Australia, 2005 (Stella)	WG	7.5	105–135	4	495	7	0.01	ND	ND	ND	0.02	240988
						14	< 0.01	ND	ND	ND	< 0.02	
						21	ND	ND	ND	ND	< 0.02	
						28	ND	ND	ND	ND	< 0.02	
						35	ND	ND	ND	ND	< 0.02	
Tumut Road, Batlow, NSW Australia, 2005 (Stella)	WG	5	60–90	7	560	7	< 0.01	ND	ND	ND	< 0.02	240988
						14	ND	ND	ND	ND	< 0.02	
						21	ND	ND	ND	ND	< 0.02	
						28	ND	ND	ND	ND	< 0.02	
						35	ND	ND	ND	ND	< 0.02	
Tumut Road, Batlow, NSW Australia, 2005 (Stella)	WG	7.5	90–135	7	694	7	< 0.01	ND	< 0.01	0.01	0.02	240988
						14	< 0.01	ND	ND	ND	< 0.02	
						21	ND	ND	ND	ND	< 0.02	
						28	ND	ND	ND	ND	< 0.02	
						35	ND	ND	ND	ND	< 0.02	
TRIALS IN NEW ZEALAND												
Tukituki, Hawke's Bay, NZ, 2005 (Stella)	SC	2.5	38–40	4	157	0	0.019	< 0.01		< 0.01	0.03	239322
						1	0.018	ND	–	0.012	0.03	
						3	< 0.01	ND	–	0.013	0.023	
						7	< 0.01	ND	–	< 0.01	< 0.02	

CHERRY Country, year (Variety)	Form	Application/ treatment			Total/ season g ai/ha	PHI, days	Residue, mg/kg					Report No.
		g ai/hL	g ai/ha	No			XDE-175-J	XDE-175-L	N-demethyl-J	N-formyl-J	Total [a]	
						14	ND	ND	–	< 0.01	< 0.02	
Tukituki, Hawke's Bay, NZ, 2005 (Stella)	SC	3.7	57–58	4	231	0	0.041	0.011	–	0.013	0.065	239322
						1	0.025	< 0.01	–	0.014	0.039	
						3	0.018	ND	–	0.018	0.036	
						7	< 0.01	ND	–	0.013	0.023	
						14	ND	ND	–	< 0.01	< 0.02	
						21	ND	ND	–	ND	< 0.02	
Tukituki, Hawke's Bay, NZ, 2005 (Stella)	SC	5	78–79	4	313	0	0.069	0.019	–	0.024	0.112	239322
						1	0.048	0.013	–	0.019	0.08	
						3	0.036	< 0.01	–	0.026	0.062	
						7	0.018	ND	–	0.028	0.046	
						14	< 0.01	ND	–	0.019	0.029	
						21	< 0.01	ND	–	< 0.01	< 0.02	
Tukituki, Hawke's Bay, NZ, 2005 (Stella)	SC	7.6	116–119	4	469	0	0.136	0.037	–	0.027	0.20	239322
						1	0.092	0.024	–	0.02	0.136	
						3	0.029	< 0.01	–	0.021	0.05	
						7	0.045	< 0.01	–	0.027	0.072	
						14	0.028	ND	–	0.032	0.06	
						21	< 0.01	ND	–	0.01	0.02	
Alexandra, Central Otago, NZ, 2006 (Lapins)	SC	2.5	35–41	4	156	0	0.030	< 0.01	–	0.015	0.045	239322
						1	0.028	< 0.01	–	0.018	0.046	
						3	0.019	ND	–	0.025	0.044	
						7	0.019	ND	–	0.022	0.041	
						14	ND	ND	–	< 0.01	< 0.02	
						21	ND	ND	–	< 0.01	< 0.02	
						28	ND	ND	–	< 0.01	< 0.02	
Alexandra, Central Otago, NZ, 2006 (Lapins)	SC	3.7	52–61	4	231	0	0.06	0.015	–	0.024	0.099	239322
						1	0.032	< 0.01	–	0.019	0.051	
						3	0.019	< 0.01	–	0.020	0.039	
						7	0.019	ND	–	0.018	0.037	
						14	< 0.01	ND	–	0.012	0.022	
						21	< 0.01	ND	–	< 0.01	< 0.02	
						28	< 0.01	ND	–	< 0.01	< 0.02	
Alexandra, Central Otago, NZ, 2006	SC	5	70–82	4	311	0	0.102	0.027	–	0.029	0.158	239322
						1	0.064	0.016	–	0.036	0.116	
						3	0.045	0.012	–	0.032	0.089	

CHERRY Country, year (Variety) (Lapins)	Form	Application/ treatment			Total/ season g ai/ha	PHI, days	Residue, mg/kg					Report No.
		g ai/hL	g ai/ha	No			XDE-175-J	XDE-175-L	N-demethyl-J	N-formyl-J	Total [a]	
						7	0.054	0.013	–	0.037	0.104	
						14	0.015	ND	–	0.016	0.031	
						21	0.013	ND	–	0.017	0.03	
						28	< 0.01	ND	–	0.013	0.023	
Alexandra, Central Otago, NZ, 2006 (Lapins) CHERRIES 050075-04	SC	7.6	105–123	4	467	0	0.139	0.032	–	0.033	0.204	239322
						1	0.100	0.026	–	0.027	0.153	
						3	0.044	0.011	–	0.017	0.072	
						7	0.059	0.013	–	0.037	0.109	
						14	0.021	< 0.01	–	0.026	0.047	
						21	0.014	ND	–	0.018	0.032	
						28	< 0.01	ND	–	0.016	0.024	
Earnscleugh, Central Otago NZ, 2005 (Stella)	SC	2.5	41–49	4	187	0	0.040	0.012	–	0.018	0.07	239322
						1	0.039	0.011	–	0.020	0.07	
						3	0.025	< 0.01	–	0.016	0.041	
						7	0.024	< 0.01	–	0.014	0.038	
						14	0.009	ND	–	0.015	0.024	
						21	0.010	ND	–	0.016	0.026	
						28	ND	ND	–	ND	< 0.02	
Earnscleugh, Central Otago NZ, 2005 (Stella)	SC	3.7	60–73	4	275	0	0.065	0.021	–	0.024	0.110	239322
						1	0.055	0.019	–	0.026	0.10	
						3	0.029	< 0.01	–	0.019	0.048	
						7	0.023	< 0.01	–	0.034	0.057	
						14	< 0.01	ND	–	0.016	0.026	
						21	< 0.01	ND	–	0.019	0.029	
						28	< 0.01	ND	–	< 0.01	< 0.02	
Earnscleugh, Central Otago NZ, 2005 (Stella)	SC	5	81–99	4	374	0	0.075	0.023	–	0.022	0.120	239322
						1	0.089	0.028	–	0.041	0.158	
						3	0.047	0.011	–	0.020	0.078	
						7	0.025	< 0.01	–	0.023	0.048	
						14	0.024	< 0.01	–	0.023	0.047	
						21	< 0.01	ND	–	0.015	0.025	
						28	ND	ND	–	ND	< 0.02	
Earnscleugh, Central Otago NZ, 2005 (Stella)	SC	7.6	122–148	4	560	0	0.103	0.035	–	0.027	0.165	239322
						1	0.053	0.017	–	0.024	0.094	
						3	0.059	0.017	–	0.027	0.103	
						7	0.052	0.015	–	0.024	0.091	

CHERRY Country, year (Variety)	Form	Application/ treatment			Total/ season g ai/ha	PHI, days	Residue, mg/kg					Report No.
		g ai/hL	g ai/ha	No			XDE-175-J	XDE-175-L	N-demethyl-J	N-formyl-J	Total [a]	
						14	< 0.01	< 0.01	–	0.015	0.025	
						21	0.013	ND	–	0.024	0.037	
						28	0.010	ND	–	0.015	0.025	
TRIAL IN CHILE												
Calera de Tango, Chile, 2007 (Bing)	250 WG	3.6	78	2	144	0 1 3 5 7 14	0.080 0.075 0.044 0.040 0.033 0.012	0.021 0.020 < 0.01 < 0.01 < 0.01 ND	< 0.01 < 0.01 < 0.01 < 0.01 < 0.01 ND	< 0.01 < 0.01 < 0.01 < 0.01 < 0.01 < 0.01	0.111 0.105 0.054 0.050 0.043 0.022	259245

Nectarines

In addition to the four trials on nectarines in Australia, two supervised trials were conducted in Argentina, during 2008, and one trial was carried out in Chile in 2007 (Reports 2003238 and 259331). The trials in Argentina received three applications of 4 g ai/hL resulting in 75 g ai/ha each. The GAP in Argentina allows up to three applications of a 250 WG formulation of spinetoram at the spray concentration of 3.75–5 g ai/hL (minimum 60 hL/ha) and a PHI of 1 day. Samples were immediately frozen after harvest and stored frozen until analysis about 181 days later. The storage period fell within the demonstrated stability of spinetoram in various commodities under frozen conditions (372 days).

The trial in Chile used two applications of 250 WG spinetoram at the spray concentration of 4 g ai/hL and rate of 72 g ai/ha. There is no current GAP for stone fruits in Chile, but this trial can be considered as in compliance with the GAP in Argentina.

Residues of spinetoram and its metabolites were determined by LC-MS/MS, following method GRM 05.04, which had been previously validated with an LOQ of 0.01 mg/kg.

Table 8-1 Residues of spinetoram from supervised trials on nectarines in Australia, Argentina and Chile (for estimation of maximum residue level)

NECTARINE Country, year (Variety)	Form	Application/ treatment			Total/ season, g ai/ha	PHI, days	Residue, mg/kg			Report No.
		g ai/hL	g ai/ha	No			XDE-175-J	XDE-175-L	Total	
GAP, Australia (stone fruits)	250 WG	2.5–5		4		3				
TRIALS IN AUSTRALIA										
McIssacs Rd, Ardmona VIC Australia, 2005 (Fire Pearl)	WG	5	62	4	248	0	0.010	ND	0.01	240988
						7	ND	ND	< 0.01	
						14	ND	ND	< 0.01	
						21	ND	ND	< 0.01	

NECTARINE Country, year (Variety)	Form	Application/ treatment			Total/ season, g ai/ha	PHI, days	Residue, mg/kg			Report No.
		g ai/hL	g ai/ha	No			XDE-175-J	XDE-175-L	Total	
						28	ND	ND	< 0.01	
						35	ND	ND	< 0.01	
McIssacs Rd, Ardmona VIC Australia, 2005 (Fire Pearl)	WG	7.5	93	4	372	0	0.020	ND	0.02	240988
						7	< 0.01	ND	< 0.01	
						14	ND	ND	< 0.01	
						21	ND	ND	< 0.01	
						28	ND	ND	< 0.01	
						35	ND	ND	< 0.01	
McIssacs Rd, Ardmona VIC Australia, 2005 (Fire Pearl)	WG	5	59–62	7	427	0	0.020	< 0.01	0.02	240988
						7	< 0.01	ND	< 0.01	
						14	ND	ND	< 0.01	
						21	ND	ND	< 0.01	
						28	ND	ND	< 0.01	
McIssacs Rd, Ardmona VIC Australia, 2005 (Fire Pearl)	WG	7.5	77–93	7	629	0	0.010	ND	0.01	240988
						7	< 0.01	ND	< 0.01	
						14	ND	ND	< 0.01	
						21	ND	ND	< 0.01	
						28	ND	ND	< 0.01	
						35	ND	ND	< 0.01	
TRIALS IN ARGENTINA										
GAP, Argentina	250 WG	3.75–5	Min 60	3		1				
Trial S08-02640-01 San Pedro, Argentina, 2008 (Snow Queen)	250 WG	4	71–72	3	225	0 1 3 5 7 10	0.022 0.013 < 0.01 < 0.01 ND ND	ND ND ND ND ND ND	0.022 0.013 < 0.01 < 0.01 < 0.01 < 0.01	2003238
S08-02640-02 La Consulta Mendoza, Argentina, 2008 (Caldessi 2000)	250 WG	4	72–75	3	225	0 1 3 5 7 14	0.011 0.012 < 0.01 ND < 0.01 ND	ND ND ND ND ND ND	0.011 0.012 < 0.01 ND < 0.01 ND	2003238
TRIAL IN CHILE										

NECTARINE Country, year (Variety)	Form	Application/ treatment			Total/ season, g ai/ha	PHI, days	Residue, mg/kg			Report No.
		g ai/hL	g ai/ha	No			XDE-175-J	XDE-175-L	Total	
Calera de Tango, Región Metropolitana Chile, 2007 (Flavor Top)	250 WG	4	70–73	2	144	0	0.119	0.028	0.147	259331
						1	0.060	0.012	0.072	
						3	0.042	0.010	0.052	
						5	0.048	0.010	0.058	
						7	0.038	< 0.01	0.038	
						14	0.020	0.012	0.032	

Table 8-2 Residues of spinetoram from supervised trials on nectarines in Australia, Argentina and Chile (for estimation of STMR)

NECTARINE Country, year (Variety)	Form	Application/ treatment			Total/ season g ai/ha	PHI, days	Residue, mg/kg					Report No.
		g ai/hL	g ai/ha	No			XDE-175-J	XDE-175-L	N-demethyl-J	N-formyl-J	Total	
TRIALS IN AUSTRALIA												
GAP, Australia (stone fruits)	250 WG	2.5–5		4		3						
McIssacs Rd, Ardmona VIC Australia, 2005 (Fire Pearl)	WG	5	62	4	248	0	0.010	ND	ND	ND	0.020	240988
						7	ND	ND	ND	ND	< 0.02	
						14	ND	ND	ND	ND	< 0.02	
						21	ND	ND	ND	ND	< 0.02	
						28	ND	ND	ND	ND	< 0.02	
						35	ND	ND	ND	ND	< 0.02	
McIssacs Rd, Ardmona VIC Australia, 2005 (Fire Pearl)	WG	7.5	93	4	372	0	0.020	ND	ND	ND	0.020	240988
						7	< 0.01	ND	ND	ND	< 0.02	
						14	ND	ND	ND	ND	< 0.02	
						21	ND	ND	ND	ND	< 0.02	
						28	ND	ND	ND	ND	< 0.02	
						35	ND	ND	ND	ND	< 0.02	
McIssacs Rd, Ardmona VIC Australia, 2005 (Fire Pearl)	WG	5	59–62	7	427	0	0.020	< 0.01	ND	ND	0.028	240988
						7	< 0.01	ND	ND	ND	< 0.02	
						14	ND	ND	ND	ND	< 0.02	
						21	ND	ND	ND	ND	< 0.02	
						28	ND	ND	ND	ND	< 0.02	
McIssacs Rd, Ardmona VIC Australia, 2005	WG	7.5	77–93	7	629	0	0.010	ND	ND	ND	0.020	240988
						7	< 0.01	ND	ND	ND	< 0.02	
						14	ND	ND	ND	ND	< 0.02	
						21	ND	ND	ND	ND	< 0.02	

NECTARINE Country, year (Variety)	Form	Application/ treatment			Total/ season g ai/ha	PHI, days	Residue, mg/kg					Report No.
		g ai/hL	g ai/ha	No			XDE-175-J	XDE-175-L	N-demethyl-J	N-formyl-J	Total	
TRIALS IN AUSTRALIA												
(Fire Pearl)						28	ND	ND	ND	ND	< 0.02	
						35	ND	ND	ND	ND	< 0.02	
TRIALS IN ARGENTINA												
GAP, Argentina	250 WG	3.75–5	Min 60	3		1						
Trial S08-02640-01 San Pedro, Argentina, 2008 (Snow Queen)	250 WG	4	71–72	3	225	0 1 3 5 7 10	0.022 0.013 < 0.01 < 0.01 ND ND	ND ND ND ND ND ND	ND ND ND ND ND ND	ND ND ND ND ND ND	0.032 0.023 < 0.02 < 0.02 < 0.02 < 0.02	2003238
S08-02640-02 La Consulta Mendoza, Argentina, 2008 (Caldessi 2000)	250 WG	4	75	3	225	0 1 3 5 7 14	0.011 0.012 < 0.01 ND < 0.01 ND	ND ND ND ND ND ND	ND ND ND ND ND ND	ND ND ND ND ND ND	0.021 0.022 < 0.02 < 0.02 < 0.02 < 0.02	2003238
TRIAL IN CHILE												
Calera de Tango, Región Metropolitana Chile, 2007 (Flavor Top)	250 WG	4	70–73	2	144	0 1 3 5 7 14	0.119 0.060 0.042 0.048 0.038 0.020	0.028 0.012 0.010 0.010 < 0.01 0.012	< 0.01 < 0.01 < 0.01 < 0.01 < 0.01 < 0.01	0.012 < 0.01 < 0.01 0.01 < 0.01 < 0.01	0.159 0.082 0.062 0.068 0.048 0.042	259331

Peaches

Numerous trials were conducted on peaches in Australia (8), New Zealand (4), Argentina (4), Chile (1), and Japan (2). The trials conformed to the respective GAP in each of the countries where trials were carried out. Trials were also conducted on peaches in Spain (4), France (6), but no registration has yet been granted in Europe.

Supervised trials in Argentina and Chile

Four supervised trials were conducted in Argentina during 2007 and 2008 (Reports 2000698 and 2003242) received three applications of 3.75 g ai/hL resulting in 75 g ai/ha each. The GAP in Argentina allows up to three applications of a 250 WG formulation of spinetoram at the spray concentration of 3.75–5 kg ai/hL (minimum 60 hL/ha) and a PHI of 1 day. Samples of mature peaches were collected 0, 1, 3, 5, 7, and 14 days after the last treatment. All samples were immediately frozen and stored frozen until analysis.

Residues of spinetoram and the main metabolites were analysed by method GRM 05.04, which had previously been validated with an LOQ of 0.01 mg/kg. The results are summarized in Tables 17 and 18.

One trial was conducted in Chile with three applications at the spray concentration of 6 g ai/hL. There is no current GAP for stone fruits in Chile but this trial can be considered as in compliance with the GAP in Argentina.

Supervised trials in Japan

Two supervised trials were conducted in different experimental stations in Japan during 2006 (Reports 2002671 and 2002672). Two applications each of a 250 WP formulation of spinetoram were made on treated plants one week apart, at the spray concentration of 5 g ai/hL. The GAP in Japan consists of two applications at 2.25–5 g ai/hL (20–70 hL/ha) and a PHI of 1 day. Samples were collected 1, 7, 14, and 21 days after the last treatment and stored frozen until analysis. Samples collected from the same field trial were sent to two different laboratories for analysis.

Replicate samples of fresh peaches (after removal of skin and seed) as well as of the skin alone were prepared and analysed by LC-MS/MS, with an LOQ of 0.01 to 0.011 mg/kg. Whole fruits were weighed and the total residue calculated after adjusting by the ratio of weight of flesh + skin to weight of whole fruit. For each field trial, the results of analyses by the two laboratories were averaged.

Supervised trials in Southern Europe

A total of ten supervised trials were conducted in Southern Europe on different varieties of peaches during 2006 and 2007. Applications were made at intervals of 28 days and samples were harvested at maturity 7 days after the last treatment. For the decline trials, samples were also collected at 0, 3, 7, 9-11, and 13-14 days after the last treatment. All samples were stored frozen and analysed within the demonstrated stability under frozen storage conditions (see Table 3).

Residues of spinetoram and its main metabolites were determined by method GRM 05.04, which was previously validated with an LOQ of 0.01 mg/kg.

Table 9-1 Residues of spinetoram from supervised trials on peaches in Australia, New Zealand, Argentina, Chile, Japan, Spain and France (for estimation of maximum residue level)

PEACH Country, year (Variety)	Form	Application/ treatment			Total/ season, g ai/ha	PHI, days	Residue, mg/kg			Report No.
		g ai/hL	g ai/ha	No			XDE-175-J	XDE-175-L	Total [a]	
GAP, Australia (stone fruits)	250 WG	2.5–5		4		3				
TRIALS IN AUSTRALIA										
McIssacs Rd, Ardmona VIC Australia, 2005 (Zea Lady)	SC	5	62	4	248	0	0.05	0.01	0.06	240988
						7	0.02	< 0.01	0.02	
						14	< 0.01	ND	< 0.01	
						21	ND	ND	< 0.01	
						28	ND	ND	< 0.01	
						35	ND	ND	< 0.01	
McIssacs Rd, Ardmona VIC Australia, 2005 (Zea Lady)	SC	7.5	93	4	372	0	0.025	< 0.01	0.025	240988
						7	0.020	ND	0.02	
						14	< 0.01	ND	< 0.01	
						21	ND	ND	< 0.01	

PEACH Country, year (Variety)	Form	Application/ treatment			Total/ season, g ai/ha	PHI, days	Residue, mg/kg			Report No.
		g ai/hL	g ai/ha	No			XDE-175-J	XDE-175-L	Total [a]	
						28	ND	ND	< 0.01	
						35	ND	ND	< 0.01	
McIssacs Rd, Ardmona VIC Australia, 2005 (Zea Lady)	SC	5	54–62	7	415	0	0.03	< 0.01	0.03	240988
						7	0.01	ND	0.01	
						14	ND	ND	< 0.01	
						21	ND	ND	< 0.01	
						28	ND	ND	< 0.01	
McIssacs Rd, Ardmona VIC Australia, 2005 (Zea Lady)	SC	7.5	86–93	7	637	0	0.05	0.01	0.06	240988
						7	0.01	ND	0.01	
						15	ND	ND	< 0.01	
						22	ND	ND	< 0.01	
						28	ND	ND	< 0.01	
						35	ND	ND	< 0.01	
Neale Road Upper Hermitage SA Australia, 2005/2006 (Tasty ee)	SC	5	81–91	4	360	0	0.11	0.03	0.14	240988
						7	0.02	ND	0.02	
						15	< 0.01	ND	< 0.01	
						22	< 0.01	ND	< 0.01	
						28	ND	ND	< 0.01	
						35	ND	ND	< 0.01	
Neale Road Upper Hermitage SA Australia, 2005/2006 (Tasty ee)	WG	7.5	121–136	4	538	0	0.115	0.03	0.145	240988
						7	0.03	ND	0.03	
						15	0.01	ND	0.01	
						22	0.01	ND	0.01	
						28	< 0.01	ND	< 0.01	
						35	ND	ND	< 0.01	
Neale Road Upper Hermitage SA Australia, 2005/2006 (Tasty ee)	WG	5	91–136	7	729	0	0.065	0.015	0.08	240988
						7	0.02	ND	0.02	
						15	< 0.01	ND	< 0.01	
						22	< 0.01	ND	< 0.01	
						28	ND	ND	< 0.01	
						35	ND	ND	< 0.01	
TRIALS IN NEW ZEALAND										
Havelock North, Hawke's Bay, NZ, 2006 (Golden Queen)	SC	2.5	46	4	184	0	0.02	ND	0.02	239322
						1	0.01	ND	0.01	
						3	0.011	ND	0.011	
						7	< 0.01	ND	< 0.01	

PEACH Country, year (Variety)	Form	Application/ treatment			Total/ season, g ai/ha	PHI, days	Residue, mg/kg			Report No.
		g ai/hL	g ai/ha	No			XDE-175-J	XDE-175-L	Total [a]	
						14	ND	ND	< 0.01	
						21	ND	ND	< 0.01	
						28	ND	ND	< 0.01	
Havelock North, Hawke's Bay, NZ, 2006 (Golden Queen)	SC	3.7	67–68	4	269	0	0.038	< 0.01	0.038	239322
						1	0.018	ND	0.018	
						3	0.02	ND	0.020	
						7	< 0.01	ND	< 0.01	
						14	< 0.01	ND	< 0.01	
						21	< 0.01	ND	< 0.01	
						28	ND	ND	< 0.01	
Havelock North, Hawke's Bay, NZ, 2006 (Golden Queen)	SC	5	91–92	4	365	0	0.049	0.012	0.061	239322
						1	0.032	< 0.01	0.032	
						3	0.026	< 0.01	0.026	
						7	0.024	< 0.01	0.024	
						14	< 0.01	ND	< 0.01	
						21	ND	ND	< 0.01	
						28	ND	ND	< 0.01	
Havelock North, Hawke's Bay, NZ, 2006 (Golden Queen)	SC	7.6	137–138	4	549	0	0.058	0.016	0.074	239322
						1	0.041	< 0.01	0.041	
						3	0.036	< 0.01	0.036	
						7	0.039	< 0.01	0.039	
						14	0.023	ND	0.023	
						21	0.012	ND	0.012	
						28	0.014	ND	0.012	
Earnscleugh, Central Otago NZ, 2006 (Southern Ice)	SC	2.5	49–52	4	199	0	0.06	0.014	0.074	239322
						1	0.094	0.024	0.118	
						3	0.032	< 0.01	0.032	
						7	0.013	ND	0.013	
						14	< 0.01	ND	< 0.01	
						21	0.019	ND	0.019	
						28	0.027	ND	0.027	
Earnscleugh, Central Otago NZ, 2006 (Southern Ice)	SC	3.7	72–76	4	293	0	0.078	0.019	0.097	239322
						1	0.053	0.012	0.065	
						3	0.052	0.01	0.062	
						7	0.03	< 0.01	0.03	
						14	< 0.01	ND	< 0.01	
						21	0.014	ND	0.014	

PEACH Country, year (Variety)	Form	Application/ treatment			Total/ season, g ai/ha	PHI, days	Residue, mg/kg			Report No.
		g ai/hL	g ai/ha	No			XDE-175-J	XDE-175-L	Total [a]	
						28	< 0.01	ND	< 0.01	
Earnscleugh, Central Otago NZ, 2006 (Southern Ice)	SC	5	98–103	4	397	0	0.154	0.032	0.186	239322
						1	0.053	0.012	0.065	
						3	0.071	0.013	0.084	
						7	0.039	< 0.01	0.039	
						14	0.015	ND	0.015	
						21	0.014	ND	0.014	
						28	0.02	ND	0.02	
Earnscleugh, Central Otago NZ, 2006 (Southern Ice)	SC	7.6	147–155	4	596	0	0.106	0.027	0.133	239322
						1	0.111	0.029	0.140	
						3	0.088	0.014	0.102	
						7	0.027	< 0.01	0.027	
						14	0.019	ND	0.019	
						21	0.020	ND	0.02	
						28	0.034	ND	0.034	
TRIALS IN ARGENTINA										
GAP, Argentina	250 WG	3.75–5	MIN 60	3		1				
Almeria S.A Rio Tala San Pedro Argentina, 2007 (Red Globe)	250 WG	3.75	75	3	225	0	0.042	< 0.01	0.042	2000698
						1	0.050	< 0.01	0.050	
						3	0.042	< 0.01	0.042	
						5	0.030	ND	0.030	
						7	0.020	ND	0.020	
						14	0.013	ND	0.013	
Finca Amejo Danti s/n Agua Amarga Tunuyán Mendoza Argentina, 2007 (Andross)	250 WG	3.75	75	3	225	0	0.055	< 0.01	0.055	2000698
						1	0.023	ND	0.023	
						3	0.025	ND	0.025	
						5	0.039	ND	0.039	
						7	0.035	< 0.01	0.035	
						14	0.016	ND	0.016	
S08-02641-01 San Pedro, Argentina, 2008 (June Gold)	250 WG	3.75	75	3	225	0	0.054	0.013	0.067	2003242
						1	0.056	0.012	0.068	
						3	0.022	< 0.01	0.022	
						5	0.016	ND	0.016	
						7	0.015	< 0.01	0.015	
						14	0.011	ND	0.011	

PEACH Country, year (Variety)	Form	Application/ treatment			Total/ season, g ai/ha	PHI, days	Residue, mg/kg			Report No.
		g ai/hL	g ai/ha	No			XDE-175-J	XDE-175-L	Total [a]	
S08-02641-02 La Consulta, Mendoza, Argentina, 2008 (Maria Bianca)	250 WG	3.75	75	3	225	0 1 3 5 7 14	0.027 0.021 < 0.01 < 0.01 < 0.01 ND	< 0.01 < 0.01 ND ND ND ND	0.027 0.021 < 0.01 < 0.01 < 0.01 < 0.01	2003242
TRIAL IN CHILE										
Calera de Tango, Región Metropolitana Chile, 2007 (Kaweah)	250 WG	6	108–111	3	324	0 1 3 5 7 14	0.164 0.112 0.070 0.125 0.126 0.063	0.034 0.025 0.014 0.024 0.027 0.011	0.198 0.137 0.084 0.149 0.153 0.074	259328

PEACH Country, year (Variety)	Form	Application/ treatment			PHI days	Residue, mg/kg				Report No.
		g ai/hL	hL/ha	No		XDE-175-J (Flesh + Skin)	XDE-175-L (Flesh + Skin)	Total [a] (Flesh + Skin)	Total whole fruit base [b]	
TRIALS IN JAPAN										
GAP, Japan	250 WG	2.5–5	20–70	2	1					
RLR-0067J Fukushima Japan, 2006 (Akatsuki)	250 WP	5	40	2	1 7 13 19 	< 0.01 + 1.39 < 0.01+ 1.84 < 0.01 + 0.54 < 0.01+ 0.90 < 0.01 + 0.36 < 0.01+ 0.44 < 0.01 + 0.25 < 0.01+ 0.34	< 0.01+ 0.18 < 0.01+ 0.22 < 0.01+ 0.06 < 0.01+ 0.10 < 0.01 + 0.04 < 0.01+ 0.04 < 0.01 + 0.02 < 0.01+ 0.02	< 0.01 + 1.57 < 0.01+ 2.06 < 0.01 + 0.60 < 0.01+ 1.00 < 0.01 + 0.40 < 0.01+ 0.48 < 0.01 + 0.27 < 0.01+ 0.34	0.21 0.18 (0.20) 0.09 0.10 (0.09) 0.06 0.05 (0.06) 0.04 0.04 (0.04)	2002671/ 2002672

PEACH Country, year (Variety)	Form	Application/ treatment			PHI days	Residue, mg/kg				Report No.
		g ai/hL	hL/ha	No		XDE-175-J (Flesh + Skin)	XDE-175-L (Flesh + Skin)	Total [a] (Flesh + Skin)	Total whole fruit base [b]	
RLR-0067J Wakayama/ Japan, 2006 (Hakuhou)	250 WP	5	50	2	1 7 14 21	< 0.01 + 1.37 < 0.01+ 1.90 < 0.01 + 0.97 < 0.01+ 1.12 < 0.01 + 0.36 < 0.01+ 0.55 < 0.01 + 0.33 < 0.01 0.51	< 0.01 + 0.30 < 0.01 0.40 < 0.01 + 0.18 < 0.01 0.20 < 0.01 + 0.05 < 0.01 0.06 < 0.01 + 0.05 < 0.01 0.08	< 0.01 + 1.67 < 0.01+ 2.30 < 0.01 + 1.15 < 0.01+ 1.32 < 0.01 + 0.41 < 0.01+ 0.61 < 0.01 + 0.38 < 0.01+ 0.59	0.27 0.28 (0.27) 0.17 0.12 (0.15) 0.06 0.06 (0.06) 0.06 0.06 (0.06)	2002671/ 2002672

[a] Data on flesh (no skin and stone) were from Report 2002671; data on skin alone were from Report 2002672.

[b] Residues on total fruit, including stone, were calculated using the following equation: [Total whole fruit residue =((residue in flesh × weight of flesh)+(residue in skin × weight of skin))/ total weight of fruit including stone]. Mean values in parentheses.

PEACH Country, year (Variety)	Form	Application/ treatment			PHI, days	Residue, mg/kg					Report No.
		g ai/hL	g ai/ha	No		XDE-175-J	XDE-175-L	Total [a] flesh	Wt ratio/ factor [b]	Total whole fruit [c]	
TRIALS IN SPAIN											
060066SZ1 Valencia, Spain, 2006 (Carrasco de Cofrentes)	250 WG	8	99.5	3	7	0.104	0.023	0.127	1:6.0[d]/0.86	0.109	244912

PEACH Country, year (Variety)	Form	Application/ treatment			PHI, days	Residue, mg/kg					Report No.
		g ai/hL	g ai/ha	No		XDE-175-J	XDE-175-L	Total [a] flesh	Wt ratio/ factor [b]	Total whole fruit [c]	
060066SZ3 Valencia, Spain, 2006 (Royal Gladys)	250 WG	8	100	3	0 3 7 9 14	0.091 0.077 0.061 0.046 0.027	0.025 0.019 0.014 0.011 < 0.01	0.116 0.096 0.075 0.057 0.027	1:5.8/ 0.85 1:8.1/ 0.89 1:5.0/ 0.83 1:9.3/ 0.90 1:11.7/0.92	0.099 0.085 0.062 0.051 0.025	244912
CEMS-3448H Valencia Spain, 2007 (Andross)	250 WG	11	100	4	7	0.060	0.010	–	–	0.070	259788
CEMS-3448L Valencia, Spain, 2007 (Royal Gladys)	250 WG	11	100	3	28 21 15 7	0.017 0.019 0.059 0.054	ND ND < 0.01 < 0.01	–	–	0.017 0.019 0.059 0.054	259788
TRIALS IN FRANCE											
060066SZ2 Roussillon, Franc, 2006 (Gladys)	250 WG	9	101	3	7	0.037	< 0.01	0.037	1:6.8/ 0.87	0.032	244912
060066SZ4 Roussillon, France, 2006 (Western Red)	250 WG	9	102	3	0 3 7 11 13	0.045 0.019 0.017 0.018 0.013	0.012 < 0.01 < 0.01 ND ND	0.057 0.019 0.017 0.018 0.013	1: 4.8/ 0.83 1:22.3/0.96 1:6.1/0.86 1:5.4/0.84 1:5.0/0.83	0.047 0.018 0.015 0.015 0.011	244912
CEMS-3448G Roussillon France, 2007 (Gladys)	250 WG	10	99	4	7	0.048	< 0.01	–	–	0.048	259788

PEACH Country, year (Variety)	Form	Application/ treatment			PHI, days	Residue, mg/kg					Report No.
		g ai/hL	g ai/ha	No		XDE-175-J	XDE-175-L	Total [a] flesh	Wt ratio/ factor [b]	Total whole fruit [c]	
CEMS-3448I Roussillon France, 2007 (O'Henry)	250 WG	10	98	4	0* 0 3 7 10 14	0.110 0.131 0.061 0.053 0.049 0.028	0.028 0.031 0.013 0.011 < 0.01 < 0.01	–	–	0.138 0.162 0.074 0.064 0.049 0.028	259788
CEMS-3448J Roussillon France, 2007 (Gladys)	250 WG	10	99	4	0* 0 3 7 10 14	0.028 0.133 0.103 0.053 0.042 0.031	< 0.01 0.031 0.017 < 0.01 < 0.01 < 0.01	–	–	0.028 0.164 0.120 0.053 0.042 0.031	259788
CEMS-3448K Roussillon France, 2007 (Toudibelle)	250 WG	8	97	3	28 21 14 7	< 0.01 0.031 0.043 0.090	ND < 0.01 < 0.01 0.018	–	–	< 0.01 0.031 0.043 0.108	259788

[a] Residues in flesh, no seed;

[b] Correction factor was calculated from the stone/flesh weight ratio as: flesh/whole fruit (flesh + stone) e.g. for a stone/flesh ratio of 1:4.8 the correction factor is 4.8/(4.8 + 1)= 0.83.

[c] Total residues in whole fruit = residues in flesh x Correction Factor.

[d] The stone weight was mistakenly not recorded for this sample. So, the average ratio of the samples collected 7 days after the last application from the other three sites was used as the ratio for this sample «6.8 + 5.0 + 6.1)/3) = 6.0, the average ratio is 1:6.0.

Table 9-2 Residues of spinetoram from supervised trials on peaches in Australia, New Zealand, Argentina, Chile, Japan, Spain and France (for estimation of STMR)

PEACH Country, year (Variety)	Form	Application/ treatment			Total/ season g ai/ha	PHI, days	Residue, mg/kg					Report No.
		g ai/hL	g ai/ha	No			XDE-175-J	XDE-175-L	N-demethyl-J	N-formyl-J	Total [a]	
GAP, Australia (stone fruits)	250 WG	2.5–5		4		3						
TRIALS IN AUSTRALIA												
McIssacs Rd, Ardmona VIC Australia, 2005 (Zea Lady)	SC	5	62	4	248	0	0.050	0.010	ND	ND	0.060	240988
						7	0.020	< 0.01	ND	ND	0.003	
						14	< 0.01	ND	ND	ND	< 0.02	
						21	ND	ND	ND	ND	< 0.02	
						28	ND	ND	ND	ND	< 0.02	
						35	ND	ND	ND	ND	< 0.02	

PEACH Country, year (Variety)	Form	Application/ treatment			Total/ season g ai/ha	PHI, days	Residue, mg/kg					Report No.
		g ai/hL	g ai/ha	No			XDE-175-J	XDE-175-L	N-demethyl-J	N-formyl-J	Total [a]	
GAP, Australia (stone fruits)	250 WG	2.5–5		4		3						
McIssacs Rd, Ardmona VIC Australia, 2005 (Zea Lady)	SC	7.5	93	4	372	0	0.025	< 0.01	ND	ND	0.035	240988
						7	0.020	ND	ND	ND	0.030	
						14	< 0.01	ND	ND	ND	< 0.02	
						21	ND	ND	ND	ND	< 0.02	
						28	ND	ND	ND	ND	< 0.02	
						35	ND	ND	ND	ND	< 0.02	
McIssacs Rd, Ardmona VIC Australia, 2005 (Zea Lady)	SC	5	54–62	7	415	0	0.030	< 0.01	ND	ND	0.04	240988
						7	0.010	ND	ND	ND	0.02	
						14	ND	ND	ND	ND	< 0.02	
						21	ND	ND	ND	ND	< 0.02	
						28	ND	ND	ND	ND	< 0.02	
McIssacs Rd, Ardmona VIC Australia, 2005 (Zea Lady)	SC	7.5	86–93	7	637	0	0.05	0.01	< 0.01	< 0.01	0.07	240988
						7	0.01	ND	ND	ND	0.02	
						15	ND	ND	ND	ND	< 0.02	
						22	ND	ND	ND	ND	< 0.02	
						28	ND	ND	ND	ND	< 0.02	
						35	ND	ND	ND	ND	< 0.02	
Neale Road Upper Hermitage SA Australia, 2005/2006 (Tasty ee)	SC	5	81–91	4	360	0	0.11	0.03	< 0.01	< 0.01	0.15	240988
						7	0.02	ND	ND	< 0.01	0.03	
						15	< 0.01	ND	ND	ND	< 0.02	
						22	< 0.01	ND	ND	ND	< 0.02	
						28	ND	ND	ND	ND	< 0.02	
						35	ND	ND	ND	ND	< 0.02	
Neale Road Upper Hermitage SA Australia, 2005/2006 (Tasty ee)	WG	7.5	121–136	4	538	0	0.115	0.03	0.01	0.015	0.17	240988
						7	0.03	ND	ND	0.01	0.04	
						15	0.01	ND	ND	< 0.01	< 0.02	
						22	0.01	ND	ND	< 0.01	< 0.02	
						28	< 0.01	ND	ND	< 0.01	< 0.02	
						35	ND	ND	ND	ND	< 0.02	
Neale Road Upper Hermitage SA Australia, 2005/2006 (Tasty ee)	WG	5	91–136	7	729	0	0.065	0.015	< 0.01	< 0.01	0.09	240988
						7	0.02	ND	ND	0.01	0.03	
						15	< 0.01	ND	ND	ND	< 0.02	
						22	< 0.01	ND	ND	ND	< 0.02	
						28	ND	ND	ND	ND	< 0.02	

PEACH Country, year (Variety)	Form	Application/ treatment			Total/ season g ai/ha	PHI, days	Residue, mg/kg					Report No.
		g ai/hL	g ai/ha	No			XDE-175-J	XDE-175-L	N-demethyl-J	N-formyl-J	Total [a]	
GAP, Australia (stone fruits)	250 WG	2.5–5		4		3						
						35	ND	ND	ND	ND	< 0.02	
TRIALS IN NEW ZEALAND												
Havelock North, Hawke's Bay, NZ, 2006 (Golden Queen)	SC	2.5	46	4	184	0	0.02	ND	–	0.011	0.03	239322
						1	0.01	ND	–	< 0.01	0.02	
						3	0.011	ND	–	0.011	0.022	
						7	< 0.01	ND	–	< 0.01	< 0.02	
						14	ND	ND	–	ND	< 0.02	
						21	ND	ND	–	ND	< 0.02	
						28	ND	ND	–	ND	< 0.02	
Havelock North, Hawke's Bay, NZ, 2006 (Golden Queen)	SC	3.7	67–68	4	269	0	0.038	< 0.01	–	0.013	0.051	239322
						1	0.018	ND	–	0.011	0.029	
						3	0.02	ND	–	0.016	0.036	
						7	< 0.01	ND	–	< 0.01	< 0.02	
						14	< 0.01	ND	–	< 0.01	< 0.02	
						21	< 0.01	ND	–	< 0.01	< 0.02	
						28	ND	ND	–	< 0.01	< 0.02	
Havelock North, Hawke's Bay, NZ, 2006 (Golden Queen)	SC	5	91–92	4	365	0	0.049	0.012	–	0.017	0.078	239322
						1	0.032	< 0.01	–	0.013	0.045	
						3	0.026	< 0.01	–	0.015	0.041	
						7	0.024	< 0.01	–	0.015	0.039	
						14	< 0.01	ND	–	0.011	0.021	
						21	ND	ND	–	ND	< 0.02	
						28	ND	ND	–	< 0.01	< 0.02	
Havelock North, Hawke's Bay, NZ, 2006 (Golden Queen)	SC	7.6	137–138	4	549	0	0.058	0.016	–	0.018	0.092	239322
						1	0.041	< 0.01	–	0.016	0.057	
						3	0.036	< 0.01	–	0.027	0.063	
						7	0.039	< 0.01	–	0.025	0.064	
						14	0.023	ND	–	0.017	0.04	
						21	0.012	ND	–	0.017	0.029	
						28	0.014	ND	–	0.020	0.034	

PEACH Country, year (Variety)	Form	Application/ treatment			Total/ season g ai/ha	PHI, days	Residue, mg/kg					Report No.
		g ai/hL	g ai/ha	No			XDE-175-J	XDE-175-L	N-demethyl-J	N-formyl-J	Total [a]	
GAP, Australia (stone fruits)	250 WG	2.5–5		4		3						
Earnscleugh, Central Otago NZ, 2006 (Southern Ice)	SC	2.5	49–52	4	199	0	0.06	0.014	–	0.022	0.096	239322
						1	0.094	0.024	–	0.038	0.156	
						3	0.032	< 0.01	–	0.023	0.055	
						7	0.013	ND	–	< 0.01	0.023	
						14	< 0.01	ND	–	< 0.01	< 0.02	
						21	0.019	ND	–	< 0.01	0.029	
						28	0.027	ND	–	0.010	0.037	
Earnscleugh, Central Otago NZ, 2006 (Southern Ice)	SC	3.7	72–76	4	293	0	0.078	0.019	–	0.013	0.11	239322
						1	0.053	0.012	–	0.020	0.085	
						3	0.052	0.01	–	0.025	0.087	
						7	0.03	< 0.01	–	0.017	0.047	
						14	< 0.01	ND	–	< 0.01	< 0.02	
						21	0.014	ND	–	0.011	0.025	
						28	< 0.01	ND	–	< 0.01	< 0.02	
Earnscleugh, Central Otago NZ, 2006 (Southern Ice)	SC	5	98–103	4	397	0	0.154	0.032	–	0.041	0.227	239322
						1	0.053	0.012	–	0.026	0.091	
						3	0.071	0.013	–	0.033	0.117	
						7	0.039	< 0.01	–	0.036	0.075	
						14	0.015	ND	–	0.014	0.029	
						21	0.014	ND	–	0.017	0.031	
						28	0.02	ND	–	0.02	0.04	
Earnscleugh, Central Otago NZ, 2006 (Southern Ice)	SC	7.6	147–155	4	596	0	0.106	0.027	–	0.017	0.15	239322
						1	0.111	0.029	–	0.035	0.175	
						3	0.088	0.014	–	0.041	0.143	
						7	0.027	< 0.01	–	0.019	0.046	
						14	0.019	ND	–	0.014	0.033	
						21	0.020	ND	–	0.012	0.032	
						28	0.034	ND	–	0.021	0.055	
TRIALS IN ARGENTINA												
GAP, Argentina	250 WG	3.75–5	Min 60	3		1						

PEACH Country, year (Variety)	Form	Application/ treatment			Total/ season g ai/ha	PHI, days	Residue, mg/kg					Report No.
		g ai/hL	g ai/ha	No			XDE-175-J	XDE-175-L	N-demethyl-J	N-formyl-J	Total [a]	
GAP, Australia (stone fruits)	250 WG	2.5–5		4		3						
Almeria S.A Rio Tala San Pedro Argentina, 2007 (Red Globe)	250 WG	3.75	75	3	225	0 1 3 5 7 14	0.042 0.050 0.042 0.030 0.020 0.013	< 0.01 < 0.01 < 0.01 ND ND ND	< 0.01 < 0.01 < 0.01 ND ND ND	ND < 0.01 < 0.01 ND ND < 0.01	0.052 0.060 0.052 0.040 0.030 0.023	2000698
Finca Amejo Danti s/n Agua Amarga Tunuyán Mendoza Argentina, 2007 (Andross)	250 WG	3.75	75	3	225	0 1 3 5 7 14	0.055 0.023 0.025 0.039 0.035 0.016	< 0.01 ND ND ND < 0.01 ND	< 0.01 ND ND < 0.01 < 0.01 < 0.01	< 0.01 < 0.01 ND < 0.01 0.011 < 0.01	0.065 0.033 0.035 0.049 0.046 0.026	2000698
S08-02641-01 San Pedro, Argentina, 2008 (June Gold)	250 WG	3.75	75	3	225	0 1 3 5 7 14	0.054 0.056 0.022 0.016 0.015 0.011	0.013 0.012 < 0.01 ND < 0.01 ND	ND < 0.01 ND ND ND ND	0.01 < 0.01 ND < 0.01 ND ND	0.077 0.078 0.032 0.026 0.025 0.021	2003242
S08-02641-02 La Consulta, Mendoza, Argentina, 2008 (Maria Bianca)	250 WG	3.75	75	3	225	0 1 3 5 7 14	0.027 0.021 < 0.01 < 0.01 < 0.01 ND	< 0.01 < 0.01 ND ND ND ND	ND ND ND ND ND ND	< 0.01 < 0.01 ND ND < 0.01 ND	0.037 0.031 < 0.02 < 0.02 < 0.02 < 0.02	2003242
TRIAL IN CHILE												
Calera de Tango, Región Metropolitana Chile, 2007 (Kaweah)	250 WG	6	108–111	3	324	0 1 3 5 7 14	0.164 0.112 0.070 0.125 0.126 0.063	0.034 0.025 0.014 0.024 0.027 0.011	0.016 0.012 < 0.01 0.01 0.012 < 0.01	0.022 0.022 0.020 0.022 0.023 0.014	0.236 0.171 0.104 0.181 0.188 0.088	259328

PEACH Country, year (Variety)	Form	Application/ treatment			PHI, days	Residue, mg/kg						Report No.
		g ai/hL	hL/ha	No		XDE-175-J (Flesh + Skin)	XDE-175-L (Flesh + Skin)	N-de-methyl-J (Flesh + Skin)	N-formyl-J (Flesh + Skin)	Total [a] (Flesh + Skin)	Total whole fruit [b]	
TRIALS IN JAPAN												
GAP, Japan	250 WG	2.5–5	20–70	2	1							
RLR-0067J Fukushima Japan, 2006 (Akatsuki)	250 WP	5	40	2	1 7 13 19	< 0.01 + 1.39 < 0.01+ 1.84 < 0.01 + 0.54 < 0.01+ 0.90 < 0.01 + 0.36 < 0.01+ 0.44 < 0.01 + 0.25 < 0.01+ 0.34	< 0.01+ 0.18 < 0.01+ 0.22 < 0.01+ 0.06 < 0.01+ 0.10 < 0.01 + 0.04 < 0.01+ 0.04 < 0.01 + 0.02 < 0.01+ 0.02	< 0.011 + 0.296 < 0.01+ 0.326 < 0.011 +0.092 < 0.01+ 0.184 < 0.011 + 0.133 < 0.01+ 0.194 < 0.011 + 0.082 < 0.01+ 0.112	< 0.01 + 0.255 < 0.01+ 0.304 < 0.01 + 0.098 < 0.01+ 0.235 < 0.01 + 0.157 < 0.01+ 0.216 < 0.01+ 0.137 < 0.01+ 0.127	< 0.02+ 2.12 < 0.02+ 2.69 < 0.02 + 0.79 < 0.02+ 1.42 < 0.02+ 0.69 < 0.02+ 0.89 < 0.021 +0.49 < 0.02+ 0.60	0.29 0.24 (0.27) 0.13 0.14 (0.13) 0.11 0.09 (0.10) 0.07 0.06 (0.07)	2002671/ 2002672
RLR-0067J Wakayama Japan, 2006 (Hakuhou)	250 WP	5	50	2	1 7 14 21	< 0.01 + 1.37 < 0.01 1.90 < 0.01 + 0.97 < 0.01+ 1.12 < 0.01 + 0.36 < 0.01+ 0.55 < 0.01 + 0.33 < 0.01+ 0.51	< 0.01 + 0.30 < 0.01+ 0.40 < 0.01 + 0.18 < 0.01+ 0.20 < 0.01 + 0.05 < 0.01+ 0.06 < 0.01 + 0.05 < 0.01+ 0.08	< 0.011 +0.194 < 0.01+ 0.245 < 0.011+ 0.122 < 0.01+ 0.1631 < 0.01+ 0.122 < 0.01+ 0.204 < 0.011 +0.102 < 0.01 0.163	< 0.01 + 0.274 < 0.01 0.274 < 0.01 + 0.196 < 0.01+ 0.216 < 0.01 + 0.167 < 0.01+ 0.235 < 0.01 + 0.147 < 0.01+ 0.235	< 0.02+ 2.14 < 0.02+ 2.82 < 0.02 + 1.47 < 0.02+ 1.70 < 0.02 + 0.670 < 0.02+ 1.05 < 0.02 + 0.63 < 0.02+ 0.99	0.35 0.34 (0.35) 0.22 0.17 (0.19) 0.11 0.11 (0.11) 0.11 0.10 (0.11)	2002671/ 2002672

[a] Data on flesh (no skin and stone) were from Report 2002671; data on skin alone were from Report 2002672.

[b] Residues on total fruit, including stone, were calculated using the following equation: [Total whole fruit residue =((residue in flesh × weight of flesh)+(residue in skin × weight of skin))/ total weight of fruit including stone]. Mean values in parentheses.

PEACH Country, year (Variety)	Form	Application/ treatment			PHI, days	Residue, mg/kg							Report No.
		g ai/hL	g ai/ha	No		XDE-175-J	XDE-175-L	N-de-methyl-J	N-formyl-J	Total [a] flesh	Wt ratio/ factor [b]	Total whole fruit [c]	
TRIALS IN SPAIN													
060066SZ1 Valencia, Spain, 2006 (Carrasco de Cofrentes)	250 WG	8	99.5	3	7	0.104	0.023	0.011	0.024	0.162	1:6.0 [d]/0.86	0.139	244912
060066SZ3 Valencia, Spain, 2006 (Royal Gladys)	250 WG	8	100	3	0 3 7 9 14	0.091 0.077 0.061 0.046 0.027	0.025 0.019 0.014 0.011 < 0.01	< 0.01 < 0.01 < 0.01 < 0.01 < 0.01	< 0.01 0.012 0.013 < 0.01 < 0.01	0.126 0.108 0.082 0.067 0.037	1:5.8/0.85 1:8.1/ 0.89 1:5.0/ 0.83 1:9.3/0.90 1:11.7/0.92	0.107 0.096 0.068 0.060 0.034	244912
CEMS-3448H Valencia Spain, 2007 (Andross)	250 WG	11	100	4	7	0.060	0.010	< 0.01	0.018	–	–	0.088	259788
CEMS-3448L Valencia, Spain, 2007 (Royal Gladys)	250 WG	11	100	3	28 21 15 7	0.017 0.019 0.059 0.054	ND ND < 0.01 < 0.01	< 0.01 < 0.01 0.019 0.020	0.010 0.013 0.029 0.028	–	–	0.027 0.032 0.107 0.102	259788
TRIALS IN FRANCE													
060066SZ2 Roussillon, France, 2006 (Gladys)	250 WG	9	101	3	7	0.037	< 0.01	< 0.01	< 0.01	0.047	1:6.8/0.87	0.041	244912

PEACH Country, year (Variety)	Form	Application/ treatment			PHI, days	Residue, mg/kg							Report No.
		g ai/hL	g ai/ha	No		XDE-175-J	XDE-175-L	N-de-methyl-J	N-formyl-J	Total [a] flesh	Wt ratio/ factor [b]	Total whole fruit [c]	
060066SZ4 Roussillon, France, 2006 (Western Red)	250 WG	9	102	3	0	0.045	0.012	< 0.01	< 0.01	0.067	1: 4.8/ 0.83	0.056	244912
					3	0.019	< 0.01	ND	< 0.01	0.029	1:22.3/0.96	0.028	
					7	0.017	< 0.01	< 0.01	< 0.01	0.027	1:6.1/0.86	0.023	
					11	0.018	ND	< 0.01	< 0.01	0.028	1:5.4/0.84	0.024	
					13	0.013	ND	ND	< 0.01	0.023	1:5.00.83	0.019	
CEMS-3448G Roussillon France, 2007 (Gladys)	250 WG	10	99	4	7	0.048	< 0.01	< 0.01	0.014	–	–	0.062	259788
CEMS-3448I Roussillon France, 2007 (O'Henry)	250 WG	10	98	4	0*	0.110	0.028	< 0.01	0.010	–	–	0.049	259788
					0	0.131	0.031	< 0.01	< 0.01	–	–	0.172	
					3	0.061	0.013	< 0.01	< 0.01	–	–	0.084	
					7	0.053	0.011	< 0.01	< 0.01	–	–	0.074	
					10	0.049	< 0.01	< 0.01	0.013	–	–	0.062	
					14	0.028	< 0.01	ND	< 0.01	–	–	0.038	
CEMS-3448J Roussillon France, 2007 (Gladys)	250 WG	10	99	4	0*	0.028	< 0.01	< 0.01	< 0.01	–	–	0.038	259788
					0	0.133	0.031	0.011	0.012	–	–	0.187	
					3	0.103	0.017	0.010	0.027	–	–	0.157	
					7	0.053	< 0.01	< 0.01	< 0.01	–	–	0.063	
					10	0.042	< 0.01	< 0.01	< 0.01	–	–	0.052	
					14	0.031	< 0.01	< 0.01	0.013	–	–	0.044	
CEMS-3448K Roussillon France, 2007 (Toudibelle)	250 WG	8	97	3	28	< 0.01	ND	ND	< 0.01	–	–	< 0.02	259788
					21	0.031	< 0.01	< 0.01	0.012			0.043	
					14	0.043	< 0.01	< 0.01	0.015			0.058	
					7	0.090	0.018	< 0.01	0.020			0.128	

[a] Residues in flesh, no seed;

[b] Correction factor was calculated from the stone/flesh weight ratio as: flesh/whole fruit (flesh + stone) e.g. for a stone/flesh ratio of 1:4.8 the correction factor is 4.8/(4.8 + 1)= 0.83.

[c] Total residues in whole fruit = residues in flesh x Correction Factor.

[d] The stone weight was mistakenly not recorded for this sample. So, the average ratio of the samples collected 7 days after the last application.

Plums

Supervised trials in Europe

Eleven supervised trials were carried out in France (6), Germany (4) and Italy (1) during 2007 and 2008 (Reports 259788 and 2007541). Each treated plot received three to four applications of 250 WP spinetoram at rates ranging from 98 to 109 g ai/ha. Samples of mature fruits were collected 7 days after the last application and for decline trials, also at 0, 3, 10 and 14 days after application. Spinetoram is yet to be registered in Europe.

Residues of spinetoram and the main metabolites were analysed by method GRM 05.04, which had been validated with an LOQ of 0.01 mg/kg.

Supervised trials in Chile

One trial was conducted in Chile. Two applications at 72 g ai/ha spinetoram were made using 250 WG spinetoram. Samples were collected 0, 1, 3, 5, 7, and 14 days after application. There is no current GAP for stone fruits in Chile or in Argentina.

Table 10-1 Residues of spinetoram from supervised trials on plums in France, Germany, Italy and Chile (for estimation of maximum residue level)

PLUM Country, year (Variety)	Form	Application/ treatment			PHI, days	Residue, mg/kg			Report No.
		g ai/hL	g ai/ha	No		XDE-175-J	XDE-175-L	Total	
TRIALS IN FRANCE									
CEMS-3448A Alsace, France, 2007 (Top)	250 WG	13	102	4	7	0.012	ND	0.012	259788
CEMS-3448C Alsace France, 2007 (Quetsches d'Alsace)	250 WG	13	99	4	0 [b] 0 3 7 10 14	< 0.01 0.073 0.021 0.016 0.012 < 0.01	ND 0.015 ND ND ND ND	< 0.01 0.088 0.021 0.016 0.012 < 0.01	259788
CEMS-3448F PACA France, 2007 (President)	250 WG	10	101	4	0 [b] 0 3 7 10 14	< 0.01 0.023 < 0.01 < 0.01 < 0.01 < 0.01	ND < 0.01 ND ND ND ND	< 0.01 0.023 < 0.01 < 0.01 < 0.01 < 0.01	259788
CEMS-3818A Alsace France, 2008 (Quetsches d'Alsace)	250 WG	10	101	3	0 [b] 0 3 7 10 14	ND 0.061 0.020 0.012 < 0.01 ND	ND 0.016 < 0.01 ND ND ND	< 0.01 0.077 0.020 0.012 < 0.01 < 0.01	2007541

PLUM Country, year (Variety)	Form	Application/ treatment			PHI, days	Residue, mg/kg			Report No.
		g ai/hL	g ai/ha	No		XDE-175-J	XDE-175-L	Total	
TRIALS IN FRANCE									
CEMS-3818B Alsace France, 2008 (Quetsches d'Alsace)	250 WG	10	101	3	7	0.071	0.011	0.082	2007541
CEMS-3818E Cote d'Azur, France, 2008 (President)	250 WG	10	101	3	0 [b] 0 3 7 10 14	ND 0.022 0.016 < 0.01 < 0.01 ND	ND < 0.01 < 0.01 ND ND ND	< 0.01 0.022 0.016 < 0.01 < 0.01 < 0.01	2007541
TRIALS IN GERMANY									
CEMS-3448B Lower Saxony Germany, 2007 {Vom Felde)	250 WG	10	98	4	7	< 0.01	ND	< 0.01	259788
CEMS-3448D Lower Saxony Germany, 2007 (Fellenberger)	250 WG	10	101	4	0 [b] 0 3 7 10 14	< 0.01 0.057 0.031 0.013 < 0.01 < 0.01	ND 0.012 < 0.01 ND ND ND	< 0.01 0.069 0.031 0.013 < 0.01 < 0.01	259788
CEMS-3818C Baden-Württemberg, Germany, 2008 (Presenta)	250 WG	10	109	3	7	0.016	ND	0.016	2007541
CEMS-3818D Lower Saxony, Germany, 2008 (Fellenberger)	250 WG	10	102	3	0 [b] 0 3 7 10 14	< 0.01 0.037 0.030 0.016 0.012 < 0.01	ND < 0.01 < 0.01 ND ND ND	< 0.01 0.037 0.030 0.016 0.012 < 0.01	2007541
TRIALS IN ITALY [a]									
CEMS-3449E Romagna Italy, 2007 (TC Sun)	250 WG	10	100	4	7	< 0.01	ND	< 0.01	259788
TRIAL IN CHILE									

PLUM Country, year (Variety)	Form	Application/ treatment			PHI, days	Residue, mg/kg			Report No.
		g ai/hL	g ai/ha	No		XDE-175-J	XDE-175-L	Total	
TRIALS IN FRANCE									
Calera de ChTango, Región Metropolitana Chile, 2007 (Larry Ann)	250 WG	4	72	2	0	0.028	0.010	0.038	259247
					1	0.022	< 0.01	0.022	
					3	0.026	< 0.01	0.026	
					5	0.014	< 0.01	0.014	
					7	0.011	< 0.01	0.011	
					14	0.010	< 0.01	0.010	

[a] Assumed GAP in Southern EU is the same as that for Northern EU.

[b] Before the last application.

Table10-2 Residues of spinetoram from supervised trials on plums in France, Germany, Italy and Chile (for estimation of STMR)

PLUM Country, year (Variety)	Form	Application/ treatment			PHI, days	Residue, mg/kg					Report No.
		g ai/hL	g ai/ha	No		XDE-175-J	XDE-175-L	N-demethyl-J	N-formyl-J	Total	
TRIALS IN FRANCE											
CEMS-3448A Alsace, France, 2007 (Top)	250 WG	13	102	4	7	0.012	ND	ND	0.016	0.028	259788
CEMS-3448C Alsace France, 2007 (Quetsches d'Alsace)	250 WG	13	99	4	0 [b]	< 0.01	ND	ND	< 0.01	< 0.01	259788
					0	0.073	0.015	< 0.01	0.099	0.187	
					3	0.021	ND	< 0.01	0.026	0.047	
					7	0.016	ND	< 0.01	0.020	0.036	
					10	0.012	ND	< 0.01	0.015	0.027	
					14	< 0.01	ND	ND	< 0.01	< 0.02	
CEMS-3448F PACA France, 2007 (President)	250 WG	10	101	4	0 [b]	< 0.01	ND	ND	ND	< 0.02	259788
					0	0.023	< 0.01	ND	ND	0.033	
					3	< 0.01	ND	ND	ND	< 0.02	
					7	< 0.01	ND	ND	ND	< 0.02	
					10	< 0.01	ND	ND	ND	< 0.02	
					14	< 0.01	ND	ND	ND	< 0.02	
CEMS-3818A Alsace France, 2008 (Quetsches d'Alsace)	250 WG	10	101	3	0 [b]	ND	ND	ND	ND	< 0.02	2007541
					0	0.061	0.016	ND	ND	0.087	
					3	0.020	< 0.01	< 0.01	ND	0.030	
					7	0.012	ND	< 0.01	ND	0.022	
					10	< 0.01	ND	ND	ND	< 0.02	
					14	ND	ND	ND	ND	< 0.02	

PLUM Country, year (Variety)	Form	Application/ treatment			PHI, days	Residue, mg/kg					Report No.
		g ai/hL	g ai/ha	No		XDE-175-J	XDE-175-L	N-demethyl-J	N-formyl-J	Total	
CEMS-3818B Alsace France, 2008 (Quetsches d'Alsace)	250 WG	10	101	3	7	0.071	0.011	0.018	0.018	0.118	2007541
CEMS-3818E Cote d'Azur, France, 2008 (President)	250 WG	10	101	3	0 [b]	ND	ND	ND	ND	< 0.02	2007541
					0	0.022	< 0.01	ND	ND	0.032	
					3	0.016	< 0.01	ND	ND	0.026	
					7	< 0.01	ND	ND	ND	< 0.02	
					10	< 0.01	ND	ND	ND	< 0.02	
					14	ND	ND	ND	ND	< 0.02	
TRIALS IN GERMANY											
CEMS-3448B Lower Saxony Germany, 2007 (Vom Felde)	250 WG	10	98	4	7	< 0.01	ND	ND	ND	< 0.02	259788
CEMS-3448D Lower Saxony Germany, 2007 (Fellenberger)	250 WG	10	101	4	0 [b]	< 0.01	ND	ND	ND	< 0.02	259788
					0	0.057	0.012	< 0.01	ND	0.079	
					3	0.031	< 0.01	0.010	0.010	0.053	
					7	0.013	ND	< 0.01	< 0.01	0.023	
					10	< 0.01	ND	< 0.01	< 0.01	< 0.02	
					14	< 0.01	ND	< 0.01	< 0.01	< 0.02	
CEMS-3818C Baden-Württemberg, Germany, 2008 (Presenta)	250 WG	10	109	3	7	0.016	ND	< 0.01	< 0.01	0.026	2007541
CEMS-3818D Lower Saxony, Germany, 2008 (Fellenberger)	250 WG	10	102	3	0 [b]	< 0.01	ND	ND	ND	< 0.02	2007541
					0	0.037	< 0.01	ND	ND	0.047	
					3	0.030	< 0.01	< 0.01	< 0.01	0.040	
					7	0.016	ND	ND	< 0.01	0.026	
					10	0.012	ND	ND	ND	0.022	
					14	< 0.01	ND	ND	< 0.01	< 0.02	
TRIALS IN ITALY [a]											

PLUM Country, year (Variety)	Form	Application/ treatment			PHI, days	Residue, mg/kg					Report No.
		g ai/hL	g ai/ha	No		XDE-175-J	XDE-175-L	N-demethyl-J	N-formyl-J	Total	
CEMS-3449E Romagna Italy, 2007 (TC Sun)	250 WG	10	100	4	7	< 0.01	ND	ND	ND	< 0.02	259788
TRIALS IN CHILE											
Calera de Tango, Región Metropolitana Chile, 2007 (Larry Ann)	250 WG	4	72	2	0	0.028	0.010	ND	0.011	0.117	259247
					1	0.022	< 0.01	ND	0.014	0.036	
					3	0.026	< 0.01	ND	0.014	0.040	
					5	0.014	< 0.01	ND	< 0.01	0.024	
					7	0.011	< 0.01	ND	< 0.01	0.021	
					14	0.010	< 0.01	ND	< 0.01	0.020	

[a] Assumed GAP in Southern EU is the same as that for Northern EU.

[b] Before last application

Berries and other small fruits

Raspberries

Supervised trials in the USA

Six supervised trials were conducted in different sites in the USA during 2010, following the GAP for caneberries (up to six applications at 53–105 g ai/ha for a seasonal maximum of 342 g ai/ha and PHI of 1 day). Each treated plot received 4 applications at 25–105 g ai/ha of a 250 WG formulation of spinetoram (first application at around 25 g ai/ha and the latter three applications at around 100 g ai/ha). The total applied rate for the season was 324–330 g ai/ha. Duplicate samples of mature berries were collected one day after the last application. For decline trials, duplicate samples were also collected 0, 3, 7, 14, and 21 days after the last application. All samples were frozen until analysis for periods ranging from 240 to 303 days.

Residues of spinetoram and the main metabolites were analysed by method GRM 05.04, which had been validation with an LOQ of 0.01 mg/kg.

Table 11-1 Residues of spinetoram from supervised trials on raspberries in the USA (for estimation of maximum residue level)

RASPBERRY Country, year (Variety)	Form	Application/ treatment			Total/ season, g ai/ha	PHI, days	Residue, mg/kg			Report No.
		g ai/hL	g ai/ha	No			XDE-175-J	XDE-175-L	Total	
GAP, USA (caneberry)	250 WG		53–105	6	342	1				

RASPBERRY Country, year (Variety)	Form	Application/ treatment			Total/ season, g ai/ha	PHI, days	Residue, mg/kg			Report No.
		g ai/hL	g ai/ha	No			XDE-175-J	XDE-175-L	Total	
NY-1 Williamson, NY, USA, 2010 (Laurin)	250 WG		25–102	4	330	0 1 3 7 14 21	0.307 0.159 0.113 0.087 0.043 0.032	0.065 0.022 0.012 < 0.01 < 0.01 < 0.01	0.372 0.181 0.125 0.087 0.043 0.032	2009870
WI-1 Marengo, IL, USA 2010 (Heritage)	250 WG		25–105	4	333	1	0.278	0.040	0.318	2009870
OR-1 Portland, OR, USA 2010 (Canby)	250 WG		26–100	4	324	1	0.034	< 0.01	0.034	2009870
OR-2 Lebanon, OR, USA 2010 (Meeker)	250 WG		25– 103	4	328	0 1 3 7 14 21	0.359 0.218 0.167 0.105 0.052 0.033	0.084 0.046 0.036 0.023 0.011 0.012	0.443 0.264 0.203 0.128 0.063 0.045	2009870
OR-3 Jefferson, OR, USA 2010 (Coho)	250 WG		26–104	4	330	1	0.144	0.030	0.174	2009870
OR-4 Hillsboro, OR USA 2010 (Williamette)	250 WG		26– 101	4	327	1	0.359	0.064	0.423	2009870

Table 11-2 Residues of spinetoram from supervised trials on raspberries in the USA (for estimation of STMR)

RASPBERRY Country, year (Variety)	Form	Application/ treatment			Total/ season g ai/ha	PHI, days	Residue, mg/kg					Report No.
		g ai/hL	g ai/ha	No			XDE-175-J	XDE-175-L	N-demethyl-J	N-formyl-J	Total	
GAP, USA (caneberry)	250 WG		53–105	6	342	1						
NY-1 Williamson, NY, USA, 2010 (Laurin)	250 WG		25–102	4	330	0	0.307	0.065	0.011	0.474	0.857	2009870
						1	0.159	0.022	0.061	0.534	0.776	
						3	0.113	0.012	0.045	0.426	0.596	
						7	0.087	< 0.01	0.033	0.292	0.412	
						14	0.043	< 0.01	0.017	0.039	0.099	
						21	0.032	< 0.01	< 0.01	0.013	0.045	
WI-1 Marengo, IL, USA 2010 (Heritage)	250 WG		25–105	4	333	1	0.238	0.040	0.067	0.168	0.513	2009870
OR-1 Portland, OR, USA 2010 (Canby)	250 WG		26-100	4	324	1	0.034	< 0.01	0.023	< 0.01	0.057	2009870
OR-2 Lebanon, OR, USA 2010 (Meeker)	250 WG		25-103	4	328	0	0.359	0.084	0.064	0.036	0.543	2009870
						1	0.218	0.046	0.042	0.018	0.324	
						3	0.167	0.036	0.031	0.017	0.251	
						7	0.105	0.023	0.020	< 0.01	0.148	
						14	0.052	0.011	0.020	< 0.01	0.083	
						21	0.033	0.012	0.019	< 0.01	0.064	
OR-3 Jefferson, OR, USA 2010 (Coho)	250 WG		26–104	4	330	1	0.144	0.030	0.024	0.012	0.210	2009870
OR-4 Hillsboro, OR USA 2010 (Williamette)	250 WG		26-101	4	327	1	0.359	0.064	0.083	0.042	0.548	2009870

Blueberries

Supervised trials in the USA

Six supervised trials were conducted on blueberries during 2010 in the USA following the GAP in the USA for blueberry (up to six applications at 53–105 g ai/ha for a seasonal maximum of 342 g ai/ha and PHI of 3 days). Each treated plot received four applications at 25–104 g ai/ha of a 250 WG formulation of spinetoram (first application at around 25 g ai/ha and the latter three applications at around 100 g ai/ha). The total treatment for the season was 327–330 g ai/ha. Duplicate samples of mature berries were collected 3 days after the last application. For decline trials, duplicate samples were also collected 0, 1, 7, 14, and 21 days after the last application. All samples were frozen until analysis for periods ranging from 256 to 313 days.

Residues of spinetoram and the main metabolites were analysed by method GRM 05.04, which had been validated with an LOQ of 0.01 mg/kg. Each sample was analysed and the results of duplicate samples from each plot were averaged.

Table 12-1 Residues of spinetoram from supervised trials on blueberries in the USA (for estimation of maximum residue level)

BLUEBERRY Country, year (Variety)	Form	Application/ treatment			Total/ season, g ai/ha	PHI, days	Residue, mg/kg			Report No.
		g ai/ hL	g ai/ha	No			XDE-175-J	XDE-175-L	Total	
GAP, USA	250 WG		53–105	6	342	3				
NY-1 Dundee, NY, USA, 2010 (Blue Ray)	250 WG		26–102	4	328	3	0.053	ND	0.053	2009871
GA-1 Montezuma, GA, USA 2010 (Bright Blue)	250 WG		25–101	4	327	0 1 3 7 10 14 21	0.160 0.131 0.069 0.039 0.029 0.019 < 0.01	0.035 < 0.01 ND ND ND ND ND	0.195 0.131 0.069 0.039 0.029 0.019 < 0.01	2009871
GA-2 Alma, GA, USA (2010) (Powder Blue)	250 WG		25–104	4	327	3	0.050	ND	0.050	2009871
WI-1 Morengo, IL, USA 2010 (Duke)	250 WG		26–102	4	330	0 1 3 7 10 14 21	0.189 0.092 0.049 0.038 0.027 0.020 0.014	0.034 0.014 ND ND ND ND ND	0.223 0.106 0.049 0.038 0.027 0.020 0.014	2009871

BLUEBERRY Country, year (Variety)	Form	Application/ treatment			Total/ season, g ai/ha	PHI, days	Residue, mg/kg			Report No.
		g ai/ hL	g ai/ha	No			XDE-175-J	XDE-175-L	Total	
MI-1 Freemont, MI, USA 2010 (Jersey)	250 WG		25–101	4	328	3	0.080	ND	0.080	2009871
OR-1 Hillsboro, OR, USA 2010 (Blue Crop)	250 WG		25–102	4	329	3	0.056	< 0.01	0.056	2009871

Table 12-2 Residues of spinetoram from supervised trials on blueberries in the USA (for estimation of STMR)

BLUEBERRY Country, year (Variety)	Form	Application/ treatment			Total/ season g ai/ha	PHI, days	Residue, mg/kg					Report No.
		g ai/hL	g ai/ha	No			XDE-175-J	XDE-175-L	N-demethyl-J	N-formyl-J	Total	
GAP, USA	250 WG		53–105	6	342	3						
NY-1 Dundee, NY, USA, 2010 (Blue Ray)	250 WG		26–102	4	328	3	0.053	ND	0.016	0.040	0.109	2009871
GA-1 Montezuma, GA, USA 2010 (Bright Blue)	250 WG		25–101	4	327	0 1 3 7 10 14 21	0.160 0.131 0.069 0.039 0.029 0.019 < 0.01	0.035 < 0.01 ND ND ND ND ND	0.028 0.055 0.036 0.023 0.016 0.012 < 0.01	0.015 0.031 0.025 0.017 0.013 0.012 ND	0.238 0.217 0.130 0.079 0.058 0.043 < 0.02	2009871
GA-2 Alma, GA, USA (2010) (Powder Blue)	250 WG		25–104	4	327	3	0.050	ND	0.017	0.033	0.100	2009871

BLUEBERRY Country, year (Variety)	Form	Application/ treatment			Total/ season g ai/ha	PHI, days	Residue, mg/kg					Report No.
		g ai/hL	g ai/ha	No			XDE-175-J	XDE-175-L	N-demethyl-J	N-formyl-J	Total	
WI-1 Morengo, IL, USA 2010 (Duke)	250 WG		26–102	4	330	0 1 3 7 10 14 21	0.189 0.092 0.049 0.038 0.027 0.020 0.014	0.034 0.014ND ND ND ND ND	0.031 0.027 0.021 0.018 0.014 0.011 < 0.01	0.115 0.164 0.117 0.088 0.056 0.036 0.022	0.369 0.297 0.187 0.144 0.097 0.067 0.036	2009871
MI-1 Freemont, MI, USA 2010 (Jersey)	250 WG		25–101	4	328	3	0.080	ND	0.027	0.054	0.161	2009871
OR-1 Hillsboro, OR, USA 2010 (Blue Crop)	250 WG		25–102	4	329	3	0.056	< 0.01	0.019	0.039	0.114	2009871

Grapes

Supervised trials in Southern Europe (France and Italy)

Eight supervised trials, four in France and four in Italy, were conducted during 2007 and 2008. Registration of spinetoram is yet to be granted in these countries.

The trials in Italy used three applications at 36 g ai/ha while those in France four applications from 37 to 42 g ai/ha. All samples were harvested 7 days after the final treatment. Samples were stored frozen until a maximum of 293 days prior to analysis.

Residues of spinetoram and the main metabolites were analysed by method GRM 05.04, validated with an LOQ of 0.01 mg/kg.

Supervised trial in Chile

One trial was conducted in Chile during 2008, in which two applications of 250 WG spinetoram were made at 60 g ai/ha and samples collected 0, 1, 3, 5, 7, and 14 days after the last treatment. There is no GAP for grapes in Chile and no other available GAPs match the trial.

Table 13-1 Residues of spinetoram from supervised trials on grapes in France, Italy and Chile (for estimation of maximum residue level)

GRAPE Country, year (Variety)	Form	Application/ treatment			Total/ season, g ai/ha	PHI, days	Residue, mg/kg			Report No.
		g ai/ hL	g ai/ha	No			XDE-175-J	XDE-175-L	Total	
GAP, Turkey	250 WG	4–6				7				

GRAPE Country, year (Variety)	Form	Application/ treatment			Total/ season, g ai/ha	PHI, days	Residue, mg/kg			Report No.
		g ai/ hL	g ai/ha	No			XDE-175-J	XDE-175-L	Total	
GAP, Turkey	250 WG	4–6				7				
TRIALS IN FRANCE										
Carpentras Provence Alpes C6te d ' Azur France, 2007 (Cardinal)	120 SC	7	41	4	164	7	0.138	0.032	0.17	259851
Carpentras Provence Alpes Cote d' Azur France, 2007 (Muscat de Hambourg)	120 SC	7	42	4	168	0* 0 3 7 10 14	0.027 0.033 0.044 0.039 0.019 0.027	< 0.01 < 0.01 0.01 < 0.01 < 0.01 < 0.01	0.027 0.033 0.054 0.039 0.019 0.027	259851
Mazon, Paca France, 2008 (Muscat Hamburg)	120 SC	6	37	3	111	0 3 7 11 14	0.077 0.040 0.029 0.026 0.028	0.02 < 0.01 < 0.01 < 0.01 < 0.01	0.092 0.040 0.029 0.026 0.028	2007533
Thor, Paca France, 2008 (Centennial)	120 SC	6	38	3	114	7	< 0.01	ND	< 0.01	2007533
TRIALS IN ITALY										
Capurso, 700 10 Puglia Italy, 2007 (Italia)	120 SC	5	42	4	168	7	0.067	0.014	0.081	259851
Capurso, Puglia Italy, 2008 (Italia)	120 SC	4.5	36	3	108	0* 0 3 7 10 14	0.08 0.145 0.113 0.083 0.054 0.038	0.016 0.034 0.023 0.013 < 0.01 < 0.01	0.096 0.179 0.136 0.096 0.054 0.038	2007533
Moladibari, PugIia Italy, 2008 (Red Globe)	120 SC	4.5	37	3	111	7	0.018	ND	0.018	2007533

GRAPE Country, year (Variety)	Form	Application/ treatment			Total/ season, g ai/ha	PHI, days	Residue, mg/kg			Report No.
		g ai/ hL	g ai/ha	No			XDE-175-J	XDE-175-L	Total	
GAP, Turkey	250 WG	4–6				7				
Bitonto, Puglia Italy, 2008 (Italia)	120 SC	4.5	37	3	111	0* 0 3 7 10 14	0.065 0.116 0.139 0.081 0.055 0.080	0.013 0.027 0.033 0.016 < 0.01 0.013	0.078 0.143 0.172 0.097 0.055 0.093	2007533
TRIAL IN CHILE										
Calera de Tango, Chile 2008 (Flame-seedless)	250 WG	15	60	2	122	0 1 3 5 7 14	0.270 0.237 0.230 0.171 0.150 0.114	0.062 0.049 0.049 0.039 0.030 0.024	0.332 0.286 0.279 0.210 0.180 0.138	259332

Table 13-2 Residues of spinetoram from supervised trials on grapes in France, Italy and Chile (for estimation of STMR)

GRAPE Country, year (Variety)	Form	Application/ treatment			Total/ season g ai/ha	PHI, days	Residue, mg/kg					Report No.
		g ai/ hL	g ai/ha	No			XDE-175-J	XDE-175-L	N-demethyl-J	N-formyl-J	Total	
GAP, Turkey	250 WG	4-6				7						
TRIALS IN FRANCE												
Carpentras Provence Alpes Cote d ' Azur France, 2007 (Cardinal)	120 SC	7	41	4	164	7	0.138	0.032	0.018	0.045	0.233	259851
Carpentras Provence Alpes Cote d' Azur France, 2007 (Muscat de Hambourg	120 SC	7	42	4	168	0* 0 3 7 10 14	0.027 0.033 0.044 0.039 0.019 0.027	< 0.01 < 0.01 0.01 < 0.01 < 0.01 < 0.01	< 0.01 < 0.01 < 0.01 < 0.01 < 0.01 < 0.01	ND ND < 0.01 ND ND ND	0.028 0.043 0.064 0.049 0.029 0.037	259851

GRAPE Country, year (Variety)	Form	Application/ treatment			Total/ season g ai/ha	PHI, days	Residue, mg/kg					Report No.
		g ai/ hL	g ai/ha	No			XDE-175-J	XDE-175-L	N-demethyl-J	N-formyl-J	Total	
Mazon, Paca France, 2008 (Muscat Hamburg)	120 SC	6	37	3	111	0 3 7 11 14	0.077 0.040 0.029 0.026 0.028	0.02 < 0.01 < 0.01 < 0.01 < 0.01	0.012 < 0.01 < 0.01 < 0.01 < 0.01	< 0.01 < 0.01 < 0.01 < 0.01 < 0.01	0.109 0.05 0.039 0.036 0.038	2007533
Thor, Paca France, 2008 (Centennial)	120 SC	6	38	3	114	7	< 0.01	ND	< 0.01	< 0.01	< 0.02	2007533
TRIALS IN ITALY												
Capurso, 700 10 Puglia Italy, 2007 (Italia)	120 SC	5	42	4	168	7	0.067	0.014	0.017	< 0.01	0.098	259851
Capurso, Puglia Italy, 2008 (Italia)	120 SC	4.5	36	3	108	0* 0 3 7 10 14	0.08 0.145 0.113 0.083 0.054 0.038	0.016 0.034 0.023 0.013 < 0.01 < 0.01	0.015 0.021 0.020 0.027 0.016 0.013	< 0.01 < 0.01 0.014 0.014 < 0.01 < 0.01	0.111 0.200 0.170 0.137 0.070 0.051	2007533
Moladibari, PugIia Italy, 2008 (Red Globe)	120 SC	4.5	37	3	111	7	0.018	ND	< 0.01	ND	0.028	2007533
Bitonto, Puglia Italy, 2008 (Italia)	120 SC	4.5	37	3	111	0* 0 3 7 10 14	0.065 0.116 0.139 0.081 0.055 0.080	0.013 0.027 0.033 0.016 < 0.01 0.013	< 0.01 0.022 0.020 0.014 < 0.01 0.013	< 0.01 < 0.01 0.015 < 0.01 < 0.01 < 0.01	0.098 0.165 0.207 0.111 0.065 0.106	2007533
TRIAL IN CHILE												
Calera de Tango, Chile 2008 (Flame-seedless)	250 WG	15	60	2	122	0 1 3 5 7 14	0.270 0.237 0.230 0.171 0.150 0.114	0.062 0.049 0.049 0.039 0.030 0.024	0.011 0.011 0.01 < 0.01 < 0.01 < 0.01	0.018 0.014 0.020 0.012 0.010 < 0.01	0.361 0.311 0.309 0.222 0.190 0.148	259332

Bulb vegetables

Onion, Bulb

Supervised trials in Brazil

Eight trials were conducted on bulb onions during 2007 in different locations in Brazil (Report 257916, amended by Report 257269). Onion plants were treated four times with 250 WG spinetoram at the rate of 62.5 g ai/ha for a seasonal total of 250 g ai/ha. The trials were carried out according to the US GAP (applicable also to Puerto Rico in the Caribbean) as the proposed label for Brazil had not yet been approved.

Residues of spinetoram determined by method GRM 05.04 were all non-detectable. The LOQ for the method was < 0.01 mg/kg.

Table 14-1 Residues of spinetoram from supervised trials on onion in Brazil (for estimation of maximum residue level)

ONION Country, year (Variety)	Form	Application/ treatment			Total (g ai/ha/ season)	PHI, days	Residue, mg/kg			Report No.
		g ai/hL	g ai/ha	No			XDE-175-J	XDE-175-L	Total	
GAP, USA (Bulb vegetables)	60 or120 SC		44–88	5	263	1				
Trial #1 Monte Alto, Sao Paolo, Brazil, 2007 (Princesa)	250 WG	12.5	62.5	4	250	1	ND	ND	< 0.01	257916
Trial # 2 Piedade, Sao Paolo, Brazil, 2007 (Hibrida Optima)	250 WG	12.5	62.5	4	250	0 1 3 7 10 14	< 0.01 < 0.01 ND ND ND ND	ND ND ND ND ND ND	< 0.01 < 0.01 < 0.01 < 0.01 < 0.01 < 0.01	257916
Trial #3 Capão, Sao Paolo, Brazil, 2007 (Boreal)	250 WG	12.5	62.5	4	250	0 1 3 7 10 14	ND ND ND ND ND ND	ND ND ND ND ND ND	< 0.01 < 0.01 < 0.01 < 0.01 < 0.01 < 0.01	257916
Trial #4 Irati, Paraná Brazil, 2007 (Cioula)	250 WG	12.5	62.5	4	250	1	ND	ND	< 0.01	257916

ONION Country, year (Variety)	Form	Application/ treatment			Total (g ai/ha/ season)	PHI, days	Residue, mg/kg			Report No.
		g ai/hL	g ai/ha	No			XDE-175-J	XDE-175-L	Total	
Trial #5 Mogi Mirim, Sao Paolo, Brazil, 2007 (Baia Periforme)	250 WG	6.25	62.5	4	250	0 1 3 7 10 14	ND ND ND ND ND ND	ND ND ND ND ND ND	< 0.01 < 0.01 < 0.01 < 0.01 < 0.01 < 0.01	257916/ 258269
Trial #6 Campinas, Sao Paolo, Brazil, 2007 (Baia Periforme)	250 WG	6.25	62.5	4	250	0 1 3 7 10 14	< 0.01 < 0.01 ND ND ND ND	ND ND ND ND ND ND	< 0.01 < 0.01 < 0.01 < 0.01 < 0.01 < 0.01	257916/ 258269
Trial #7 Sao Sebastiáo da Grama, SP Brazil, 2007 (Superex)	250 WG	6.25	62.5	4	250	1	ND	ND	< 0.01	257916/ 258269
Trial #8 Sao Jose do Rio Pardo, SP Brazil, 2007 (Optma)	250 WG	6.25	62.5	4	250	1	< 0.01	ND	< 0.01	257916/ 258269

ND = < LOD (< 0.003 mg/kg)

Table 14-2 Residues of spinetoram from supervised trials on onion in Brazil (for estimation of STMR)

ONION Country, year (Variety)	Form	Application/ treatment			Total (g ai/ha/ season)	PHI days	Residue, mg/kg					Report No.
		g ai/hL	g ai/ha	No			XDE-175-J	XDE-175-L	N-demethyl-J	N-formyl-J	Total	
GAP, USA (Bulb vegetables)	60 or120 SC		44–88	5	262	1						
Trial #1 Monte Alto, Sao Paolo, Brazil, 2007 (Princesa)	250 WG	12.5	62.5	4	250	1	ND	ND	ND	ND	< 0.02	257916

ONION Country, year (Variety)	Form	Application/ treatment			Total (g ai/ha/ season)	PHI days	Residue, mg/kg					Report No.
		g ai/hL	g ai/ha	No			XDE-175-J	XDE-175-L	N-demethyl-J	N-formyl-J	Total	
Trial # 2 Piedade, Sao Paolo, Brazil, 2007 (Hibrida Optima)	250 WG	12.5	62.5	4	250	0	< 0.01	ND	ND	ND	< 0.02	257916
						1	< 0.01	ND	ND	ND	< 0.02	
						3	ND	ND	ND	ND	< 0.02	
						7	ND	ND	ND	ND	< 0.02	
						10	ND	ND	ND	ND	< 0.02	
						14	ND	ND	ND	ND	< 0.02	
Trial #3 Capão, Sao Paolo, Brazil, 2007 (Boreal)	250 WG	12.5	62.5	4	250	0	ND	ND	ND	ND	< 0.02	257916
						1	ND	ND	ND	ND	< 0.02	
						3	ND	ND	ND	ND	< 0.02	
						7	ND	ND	ND	ND	< 0.02	
						10	ND	ND	ND	ND	< 0.02	
						14	ND	ND	ND	ND	< 0.02	
Trial #4 Irati, Paraná Brazil, 2007 (Cioula)	250 WG	12.5	62.5	4	250	1	ND	ND	ND	ND	< 0.02	257916
Trial #5 Mogi Mirim, Sao Paolo, Brazil, 2007 (Baia Periforme)	250 WG	6.25	62.5	4	250	0	ND	ND	ND	ND	< 0.02	257916/ 258269
						1	ND	ND	ND	ND	< 0.02	
						3	ND	ND	ND	ND	< 0.02	
						7	ND	ND	ND	ND	< 0.02	
						10	ND	ND	ND	ND	< 0.02	
						14	ND	ND	ND	ND	< 0.02	
Trial #6 Campinas, Sao Paolo, Brazil, 2007 (Baia Periforme)	250 WG	6.25	62.5	4	250	0	< 0.01	ND	ND	ND	< 0.02	257916/ 258269
						1	< 0.01	ND	ND	ND	< 0.02	
						3	ND	ND	ND	ND	< 0.02	
						7	ND	ND	ND	ND	< 0.02	
						10	ND	ND	ND	ND	< 0.02	
						14	ND	ND	ND	ND	< 0.02	
Trial #7 Sao Sebastiáo da Grama, SP Brazil, 2007 (Superex)	250 WG	6.25	62.5	4	250	1	ND	ND	ND	ND	< 0.02	257916/ 258269
Trial #8 Sao Jose do Rio Pardo, SP Brazil, 2007 (Optma)	250 WG	6.25	62.5	4	250	1	< 0.01	ND	ND	ND	< 0.02	257916/ 258269

ND = <LOD (< 0.003 mg/kg)

Green onions

Supervised trials in Japan on Welsh onion

Two supervised trials on Welsh onions were conducted in the experimental stations in Japan during 2006 (Report 2002673). Each treated plot received two applications of 120 WP spinetoram formulation, at the spray concentration of 4.8 g ai/hL resulting in the rate of 96 g ai/ha (20 hL/ha). Samples were harvested 1, 7, 14 and 21 days after the last application and maintained frozen until analysis. The GAP in Japan allows up to two applications at the maximum spray concentration of 4.8 g ai/hL with the volume of 10–30 hL/ha and a PHI of 1 day.

Residues of spinetoram and its main metabolites were determined by LC/MS/MS. The LOQ for the method was 0.01 mg/kg.

Table 15-1 Residues of spinetoram from supervised trials on Welsh onion in Japan (for estimation of maximum residue level)

WELSH ONION Country, year (Variety)	Form	Application/ treatment			PHI, days	Residue, mg/kg			Report No.
		G ai/hL	hL/ ha	No		XDE-175-J	XDE-175-L	Total[1]	
GAP, Japan	120 SC	4.8	10-30	2	1				
Nigata Japan, 2006 (Welsh onion –Motokura)	120 WP	4.8	20	2	1 7 14 21	0.08 < 0.01 < 0.01 < 0.01	0.02 < 0.01 < 0.01 < 0.01	0.10 < 0.01 < 0.01 < 0.01	2002673
Shiga, Japan, 2006 (Welsh onion – Kujyo)	120 WP	4.8	20	2	1 7 14 21	0.10 < 0.01 < 0.01 < 0.01	0.03 < 0.01 < 0.01 < 0.01	0.13 < 0.01 < 0.01 < 0.01	2002673

Table 15-2 Residues of spinetoram from supervised trials on Welsh onion in Japan (for estimation of STMR)

WELSH ONION Country, year (Variety)	Form	Application/ treatment			PHI, days	Residue, mg/kg					Report No.
		G ai/hL	hL/ha	No		XDE-175-J	XDE-175-L	N-demethyl-J	N-formyl-J	Total	
GAP, Japan	120 SC	4.8	10–30	2	1						
Nigata Japan, 2006 (Welsh onion –Motokura)	120 WP	4.8	20	2	1 7 14 21	0.08 < 0.01 < 0.01 < 0.01	0.02 < 0.01 < 0.01 < 0.01	0.011 < 0.011 < 0.011 < 0.011	0.01 < 0.01 < 0.01 < 0.01	0.121 < 0.021 < 0.021 < 0.021	2002673

WELSH ONION Country, year (Variety)	Form	Application/ treatment			PHI, days	Residue, mg/kg					Report No.
		G ai/hL	hL/ha	No		XDE-175-J	XDE-175-L	N-demethyl-J	N-formyl-J	Total	
Shiga, Japan, 2006 (Welsh onion – Kujyo)	120 WP	4.8	20	2	1 7 14 21	0.10 < 0.01 < 0.01 < 0.01	0.03 < 0.01 < 0.01 < 0.01	0.051 < 0.011 < 0.011 < 0.011	0.02 < 0.01 < 0.01 < 0.01	0.201 < 0.021 < 0.021 < 0.021	2002673

Supervised trials in the USA on spring onion

Six field trials were conducted within the principal green onion growing regions of the United States during 2010 and 2011 (Report 2009869). The trials were carried out according to the GAP in the US for bulb vegetables (up to five applications (4 day interval) at the rate of 44–88 g ai/ha per treatment, up to a seasonal maximum of 263 g ai/ha with a PHI of 1 day).

Each trial included one untreated control plot and one treated plot. Each treated plot received three applications of a 250 WG formulation of spinetoram at the target rate of 96 g ai/ha. All applications were made at 4 day intervals with the final application occurring 1 day prior to typical harvest. One sample was collected from the untreated control plot and duplicate samples were collected independently from the treated plot at normal harvest, 1 day after the last application. At the decline sites, sampling occurred on day 0 immediately following the third application, 1 day prior to normal harvest, and then at 1, 3, 7, 14 and 21 days after the last application. Samples were immediately frozen and maintained frozen until analysis. The maximum period of frozen storage was 298 days prior to analysis.

Analysis of spinetoram and metabolite residues in green onion samples proceeded according to the previously validated method GRM 05.04.

Table 16-1 Residues of spinetoram from supervised trials on spring onions in the USA (for estimation of maximum residue level)

GREEN ONION Country, year (Variety)	Form	Application/ treatment			Total (g ai/ha/ season)	PHI, days	Residue, mg/kg			Report No.
		g ai/hL	g ai/ha	No			XDE-175-J	XDE-175-L	Total	
GAP, USA (Bulb vegetables)	60 or120 SC		44–88	5	262	1				
NY-1 Alton, NY, USA, 2010 (Gallop Bunching)	120 SC		87–88	3	263	0	0.172	0.035	0.207	2009869
						1	0.042	< 0.01	0.042	
						3	0.040	< 0.01	0.040	
						7	0.015	ND	0.015	
						14	< 0.01	ND	< 0.01	
						21	ND	ND	< 0.01	

GREEN ONION Country, year (Variety)	Form	Application/ treatment			Total (g ai/ha/ season)	PHI, days	Residue, mg/kg			Report No.
		g ai/hL	g ai/ha	No			XDE-175-J	XDE-175-L	Total	
TX-1 East Bernard, TX, USA, 2011 (Evergreen White Bunching)	120 SC		87	3	262	1	0.085	0.017	0.102	2009869
TX-2 Levelland, TX, USA, 2010 (Evergreen White Bunching)	120 SC		87	3	262	1	0.378	0.048	0.426	2009869
CA-1 Porterville, CA, USA 2010 (Bunching)	120 SC		88	3	264	1	0.029	< 0.01	0.029	2009869
CA-2 Fresno, CA, USA, 2010 (White Spear)	120 SC		88–92	3	268	0	0.260	0.063	0.323	2009869
						1	0.080	0.014	0.094	
						3	0.051	< 0.01	0.051	
						7	0.033	< 0.01	0.033	
						14	< 0.01	ND	< 0.01	
						21	0.012	ND	0.012	
ID-1 Payette, IN, USA. 2010 (Green Banner)	120 SC		88	4	264	1	0.066	< 0.01	0.066	2009869

Table 16-2 Residues of spinetoram from supervised trials on spring onion in the USA (for estimation of STMR)

GREEN ONION Country, year (Variety)	Form	Application/ treatment			Total (g ai/ha/ season)	PHI days	Residue, mg/kg					Report No.
		g ai/hL	g ai/ha	No			XDE-175-J	XDE-175-L	N-demethyl-J	N-formyl-J	Total	
GAP, USA (Bulb vegetables)	120 SC		44–88	5	262	1						
NY-1 Alton, NY,	120 SC		87–88	3	263	0	0.172	0.035	0.073	0.228	0.508	2009869
						1	0.042	< 0.01	0.038	0.102	0.182	

GREEN ONION Country, year (Variety)	Form	Application/ treatment			Total (g ai/ha/ season)	PHI days	Residue, mg/kg					Report No.
		g ai/hL	g ai/ha	No			XDE-175-J	XDE-175-L	N-demethyl-J	N-formyl-J	Total	
USA, 2010 (Gallop Bunching)						3	0.040	< 0.01	0.039	0.098	0.177	
						7	0.015	ND	0.011	0.021	0.047	
						14	< 0.01	ND	< 0.01	< 0.01	< 0.02	
						21	ND	ND	ND	ND	< 0.02	
TX-1 East Bernard, TX, USA, 2011 (Evergreen White Bunching)	120 SC		87	3	262	1	0.085	0.016	0.112	0.187	0.40	2009869
TX-2 Levelland, TX, USA, 2010 (Evergreen White Bunching)	120 SC		87	3	262	1	0.378	0.048	0.098	0.339	0.863	2009869
CA-1 Porterville, CA, USA 2010 (Bunching)	120 SC		88	3	264	1	0.029	< 0.01	0.019	0.077	0.125	2009869
CA-2 Fresno, CA, USA, 2010 (White Spear)	120 SC		88–92	3	268	0	0.260	0.063	0.103	0.203	0.629	2009869
						1	0.080	0.014	0.064	0..261	0.419	
						3	0.051	< 0.01	0.047	0.229	0.327	
						7	0.033	< 0.01	0.029	0.139	0.201	
						14	< 0.01	ND	0.010	0.017	0.027	
						21	0.012	ND	0.012	0.041	0.065	
ID-1 Payette, IN, USA. 2010 (Green Banner)	120 SC		88	4	264	1	0.066	< 0.01	0.040	0.109	0.216	2009869

Brassica vegetables

Supervised trials on broccoli, cauliflower, cabbage and Brussels sprouts in Australia and New Zealand

Numerous trials on Brassica vegetables were conducted during 2009 in Australia (10 on broccoli, 10 on cabbage, and one each on cauliflower and Brussels sprouts) (Reports 2008174 and 2008175).

One trial each for broccoli, cauliflower, cabbage, and Brussels sprouts were conducted in New Zealand. In one set of trials (Report 2008174), spinetoram as a 120 SC formulation was applied once at a target rate of 35 g ai/ha, followed by three applications at 7-day intervals at a target rate of 88 g ai/ha, for a seasonal total of about 300 g ai/ha. The other set of trials (Report 2008175) used four applications at target rates of 18, 24, and 36 g ai/ha. The GAP in Australia consists of four applications of spinetoram at the rate of 24 to 48 g ai/ha and a PHI of 3 days.

GAP in Australia allows up to four applications at a rate of 24–48 g ai/ha with a PHI of 3 days.

Samples of mature commodities were harvested 3 days after the last treatment. For decline trials, additional samples were taken 0, 1, 5–7, and 10 days after the final application. All samples were immediately frozen and kept in frozen storage until analysis. The maximum period of storage was 192 days.

Residues of spinetoram and metabolite were analysed with method GRM 05.03, which had been validated with an LOQ of 0.01 mg/kg. The summaries of Australian trials reflect calculations for total residues exactly as provided in the studies. Data on individual analytes were not reported, although the total residues indicated conformity to the current residue definition.

Supervised trials on cabbage in Japan

Two supervised trials on cabbage were conducted in Japanese experimental stations during 2006 (Report 2002097). Each treated plot received two applications of 120 WP spinetoram formulation, at the rate of 96 g ai/ha. Samples were harvested 1, 7 and 14 days after the last application and maintained frozen until analysis, 13 and 23 days after harvest. GAP in Japan allows up to four applications at a spray concentration of 2.4–4.8 g ai/hL (10–30 hL/ha) with a PHI of 1 day.

Residues of spinetoram and its main metabolites were determined by LC/MS/MS. The LOQ for the method was 0.01 mg/kg.

The residue values to which the proportionality approach is applied are underlined with a dotted line.

Table 17-1 Residues of spinetoram from supervised trials on Broccoli in Australia and New Zealand (for estimation of maximum residue level)

BROCCOLI Country, year (Variety)	Form	Application/ treatment			PHI, days	Residue, mg/kg	Report No.
		g ai/hL	g ai/ha	No		XDE-175-J + XDE-175-L	
GAP, Australia	120 SC		24–48	4	3		
Site 1 Boneo, Victoria Australia, 2009 (Ironman)	120 SC	6.1	18 (×4)	4	0 1 3 7 10	0.11 0.04 0.03 0.01 < 0.01	2008175
		8.2	24 (×4)	4	0 1 3 7 10	0.16 0.14 0.08 0.01 0.02	

BROCCOLI Country, year (Variety)	Form	Application/ treatment			PHI, days	Residue, mg/kg	Report No.
		g ai/hL	g ai/ha	No		XDE-175-J + XDE-175-L	
		12.3	36 (×4)	4	0 1 3 7 10	0.21 0.10 0.04 0.01 < 0.01	
Site 5 Cambooya, Queensland, Australia, 2009 (Booster)	120 SC	7.2	19 (×4)	4	3	0.01	2008175
		9.6	25 (×4)	4	3	0.02	
		14.4	37 (×4)	4	3	0.02	
Site 10 Little Rakaia, New Zealand, 2009 (Medley)	120 SC	6.1	19 (×4)	4	0 1 3 7 10	0.06 0.06 0.02 0.01 < 0.01	2008175
		8.2	26 (×4)	4	0 1 3 7 10	0.13 0.06 0.09 0.02 ND	
		12.3	38 (×4)	4	0 1 3 7 10	0.15 0.10 0.04 0.01 0.01	
Site 1 Cambooya, Queensland, Australia, 2009 (Booster)	120 SC	14 36 36 36	35 92 89 91	4	0 1 3 5	0.37 0.18 0.09 0.03	2008174
Site 2 Boneo, Victoria, Australia, 2009 (Ironman)	120 SC	12 30 30 30	33 92 88 86	4	0 1 3 5	0.22 0.12 0.04 0.01	2008174
Site 3 Boneo, Victoria, Australia, 2009 (Bridge)	120 SC	12 30 30 30	36 87 93 92	4	0 1 3 5	0.19 0.10 0.06 0.02	2008174

BROCCOLI Country, year (Variety)	Form	Application/ treatment			PHI, days	Residue, mg/kg	Report No.
		g ai/hL	g ai/ha	No		XDE-175-J + XDE-175-L	
Site 4 Moriarty, Tasmania Australia, 2009 (Ironman)	120 SC	12 30 30 30	35 94 91 92	4	0 1 3 5	0.60 0.21 0.10 0.05	2008174
Site 9 Cambooya, Queensland, Australia, 2009 (Booster)	120 SC	14 36 36 36	37 87 87 89	4	1	0.08	2008174
Site 10 Boneo, Victoria, Australia, 2009 (Viper)	120 SC	12 30 30 30	36 91 87 91	4	1	0.12	2008174
Site 11 Boneo, Victoria, Australia, 2009 (Viper)	120 SC	12 30 30 30	34 93 84 93	4	1	0.09	2008174
Site 12 Moriarty, Tasmania, Australia, 2009 (Ironman)	120 SC	12 30 30 30	36 94 91 92	4	1	0.13	2008174

Table 17-2 Residues of spinetoram from supervised trials on Broccoli in Australia and New Zealand (for estimation of STMR)

BROCCOLI Country, year (Variety)	Form	Application/ treatment			PHI, days	Residue, mg/kg	Report No.
		g ai/hL	g ai/ha	No		XDE-175-J + XDE-175-L + N-demethyl-J + N-formyl-J	
GAP, Australia	120 SC		24–48	4	3		
Site No.1 Boneo, Victoria Australia, 2009 (Ironman)	120 SC	6.1	18 (×4)	4	0 1 3 7 10	0.11 0.05 0.03 0.01 ND	2008175

BROCCOLI Country, year (Variety)	Form	Application/ treatment			PHI, days	Residue, mg/kg	Report No.
		g ai/hL	g ai/ha	No		XDE-175-J + XDE-175-L + N-demethyl-J + N-formyl-J	
		8.2	24 (×4)	4	0 1 3 7 10	0.18 0.14 0.08 0.01 0.02	
		12.3	36 (×4)	4	0 1 3 7 10	0.22 0.11 0.05 0.02 < 0.01	
Site 5 Cambooya, Queensland, Australia, 2009 (Booster)	120 SC	7.2	19 (×4)	4	3	0.01	2008175
		9.6	25 (×4)	4	3	0.03	
		14.4	37 (×4)	4	3	0.02	
Site 10 Little Rakaia, New Zealand, 2009 (Medley)	120 SC	6.1	19 (×4)	4	0 1 3 7 10	0.09 0.07 0.03 0.01 < 0.01	2008175
		8.2	26 (×4)	4	0 1 3 7 10	0.14 0.08 0.10 0.02 < 0.01	
		12.3	38 (×4)	4	0 1 3 7 10	0.19 0.12 0.06 0.01 0.01	
Site 1 Cambooya, Queensland, Australia, 2009 (Booster)	120 SC	14 36 36 36	35 92 89 91	4	0 1 3 5	0.42 0.22 0.12 0.05	2008174

BROCCOLI Country, year (Variety)	Form	Application/ treatment			PHI, days	Residue, mg/kg	Report No.
		g ai/hL	g ai/ha	No		XDE-175-J + XDE-175-L + N-demethyl-J + N-formyl-J	
Site 2 Boneo, Victoria, Australia, 2009 (Ironman)	120 SC	12 30 30 30	33 92 88 86	4	0 1 3 5	0.24 0.15 0.06 0.02	2008174
Site 3 Boneo, Victoria, Australia, 2009 (Bridge)	120 SC	12 30 30 30	36 87 93 92	4	0 1 3 5	0.22 0.13 0.10 0.04	2008174
Site 4 Moriarty, Tasmania Australia, 2009 (Ironman)	120 SC	12 30 30 30	35 94 91 92	4	0 1 3 5	0.68 0.25 0.14 0.09	2008174
Site 9 Cambooya, Queensland, Australia, 2009 (Booster)	120 SC	14 36 36 36	37 87 87 89	4	1	0.10	2008174
Site 10 Boneo, Victoria, Australia, 2009 (Viper)	120 SC	12 30 30 30	36 91 87 91	4	1	0.13	2008174
Site 11 Boneo, Victoria, Australia, 2009 (Viper)	120 SC	12 30 30 30	34 93 84 93	4	1	0.10	2008174
Site 12 Moriarty, Tasmania, Australia, 2009 (Ironman)	120 SC	12 30 30 30	36 94 91 92	4	1	0.18	2008174

Table 18-1 Residues of spinetoram from supervised trials on Cauliflower in Australia and New Zealand (for estimation of maximum residue level)

CAULIFLOWER Country, year (Variety)	Form	Application/ treatment			PHI, days	Residue, mg/kg	Report No.
		g ai/hL	g ai/ha	No		XDE-175-J + XDE-175-L	
GAP, Australia	120 SC		24–48	4	3		

CAULIFLOWER Country, year (Variety)	Form	Application/ treatment			PHI, days	Residue, mg/kg	Report No.
		g ai/hL	g ai/ha	No		XDE-175-J + XDE-175-L	
Site 4 Werribee, Australia, 2009 (Discovery)	120 SC	6.1	18	4	3	ND	2008175
		8.2	25	4	3	< 0.01	
		12.3	36	4	3	0.01	
Site 8 Little Racaia, New Zealand, 2009 (Galiote)	120 SC	6.1	19	4	0 1 3 7 10	0.07 0.02 0.03 0.01 < 0.01	2008175
		8.2	26	4	0 1 3 7 10	0.06 0.10 0.03 0.04 < 0.01	
		12.3	38	4	0 1 3 7 10	0.16 0.09 0.10 0.03 0.02	

Table 18-2Residues of spinetoram from supervised trials on Cauliflower in Australia and New Zealand (for estimation of STMR)

CAULIFLOWER Country, year (Variety)	Form	Application/ treatment			PHI, days	Residue, mg/kg	Report No.
		G ai/hL	g ai/ha	No		XDE-175-J + XDE-175-L + N-demethyl-J + N-formyl-J	
GAP, Australia	120 SC		24–48	4	3		
Site 4 Werribee, Australia, 2009 (Discovery)	120 SC	6.1	18	4	3	< 0.01	2008175
		8.2	25	4	3	< 0.01	
		12.3	36	4	3	0.01	
Site 8 Little Racaia, New Zealand, 2009 (Galiote)	120 SC	6.1	19	4	0 1 3 7 10	0.07 0.03 0.03 0.01 < 0.01	2008175

CAULIFLOWER Country, year (Variety)	Form	Application/ treatment			PHI, days	Residue, mg/kg	Report No.
		G ai/hL	g ai/ha	No		XDE-175-J + XDE-175-L + N-demethyl-J + N-formyl-J	
		8.2	26	4	0 1 3 7 10	0.06 0.10 0.03 0.04 < 0.01	
		12.3	38	4	0 1 3 7 10	0.18 0.10 0.11 0.03 0.02	

Table 19-1 Residues of spinetoram from supervised trials on Cabbage in Australia, New Zealand and Japan (for estimation of maximum residue level)

CABBAGE Country, year (Variety)	Form	Application/ treatment			PHI, days	Residue, mg/kg	Report No.
		g ai/hL	g ai/ha	No		XDE-175-J + XDE-175-L	
GAP, Australia	120 SC		24–48	4	3		
Site 2 Boneo, Victoria Australia, 2009 (Surprise)	120 SC	6.1	18 (×4)	4	0 1 3 7 10	0.04 0.04 0.01 0.02 < 0.01	2008715
		8.2	24 (×4)	4	0 1 3 7 10	0.05 0.06 0.02 0.01 ND	
		12.3	37 (×4)	4	0 1 3 7 10	0.08 0.06 0.02 0.01 ND	
Site 6 Cambooya, Queensland, Australia, 2009	120 SC	7.3	19 (×4)	4	3	ND	2008175
		9.8	24 (×4)	4	3	< 0.01	
		14.7	37 (×4)	4	3	< 0.01	

CABBAGE Country, year (Variety) (Warrior)	Form	Application/ treatment			PHI, days	Residue, mg/kg	Report No.
		g ai/hL	g ai/ha	No		XDE-175-J + XDE-175-L	
Site 9 Little Rakaia, New Zealand 2009 (Ducati and Cabaret)	120 SC	6.1	21 (×4)	4	3	< 0.01	2008175
		8.2	27 (×4)	4	3	< 0.01	
		12.3	43 (×4)	4	3	0.01	
Site 5 Cambooya, Queensland, Australia, 2009 (Warrior)	120 SC	14	35	4	0	0.02	2008174
		36	91		1	0.01	
		36	92		3	0.02	
		36	90		5	0.01	
Site 6 Boneo, Victoria, Australia, 2009 (Surprise)	120 SC	12	31	4	0	0.07	2008174
		30	102		1	0.05	
		30	100		3	0.03	
		30	88		5	0.02	
Site 7 Boneo, Victoria, Australia, 2009 (Field Glory)	120 SC	12	38	4	0	0.11	2008174
		30	92		1	0.08	
		30	96		3	0.06	
		30	84		5	0.02	
Site 8 Kindred, Tasmania, Australia, 2009 (Beverly Hills)	120 SC	12	38	4	0	0.22	2008174
		30	89		1	0.15	
		30	96		3	0.12	
		30	92		5	0.07	
Site 13 Cambooya, Queensland, Australia, 2009 (Warrior)	120 SC	12	36	4	1	0.02	2008174
		30	89				
		30	89				
		30	89				
Site 14 Boneo, Victoria, Australia, 2009 (Field Glory)	120 SC	12	34	4	1	0.05	2008174
		30	85				
		30	92				
		30	85				
Site 15 Boneo, Victoria, Australia, 2009 (Megaton)	120 SC	12	33	4	1	0.03	2008174
		30	87				
		30	85				
		30	94				
Site 16	120 SC	12	37	4	1	0.10	2008174

CABBAGE Country, year (Variety)	Form	Application/ treatment			PHI, days	Residue, mg/kg	Report No.
		g ai/hL	g ai/ha	No		XDE-175-J + XDE-175-L	
Kindred, Tasmania, Australia, 2009 (Beverly Hills)		30 30 30	82 97 86				
GAP Japan	120 SC	2.4-4.8	10-30	2	1		
Mie, Japan, 2006 (Matsunami)	120 WP	4.8	20	2	1 7 14	0.14, 0.07 < 0.01, < 0.01 < 0.01, < 0.01	0.04, 0.02 < 0.01, < 0.01 < 0.01, < 0.01
Miyazaki, Japan, 2006 (YR Kinshu Kyouryoku 152)	120 WP	4.8	20	2	1 7 14	0.02, 0.04 < 0.01, < 0.01 < 0.01, < 0.01	< 0.01, < 0.01 < 0.01, < 0.01 < 0.01, < 0.01

Table 19-2 Residues of spinetoram from supervised trials on Cabbage in Australia, New Zealand and Japan (for estimation of STMR)

CABBAGE Country, year (Variety)	Form	Application/ treatment			PHI, days	Residue, mg/kg	Report No.
		g ai/hL	g ai/ha	No		XDE-175-J + XDE-175-L + N-demethyl-J + N-formyl-J	
GAP, Australia	120 SC		24–48	4	3		
Site 2 Boneo, Victoria Australia, 2009 (Surprise)	120 SC	6.1	18 (×4)	4	0 1 3 7 10	0.05 0.05 0.03 0.02 < 0.01	2008175
		8.2	24 (×4)	4	0 1 3 7 10	0.04 0.07 0.02 0.01 ND	
		12.3	37 (×4)	4	0 1 3 7 10	0.09 0.07 0.04 0.02 ND	
Site 6	120 SC	7.3	19 (×4)	4	3	ND	2008175

CABBAGE Country, year (Variety)	Form	Application/ treatment			PHI, days	Residue, mg/kg	Report No.
		g ai/hL	g ai/ha	No		XDE-175-J + XDE-175-L + N-demethyl-J + N-formyl-J	
Cambooya, Queensland, Australia, 2009 (Warrior)		9.8	24 (×4)	4	3	< 0.01	
		14.7	37 (×4)	4	3	0.02	
Site 9 Little Rakaia, New Zealand 2009 (Ducati and Cabaret)	120 SC	6.1	21 (×4)	4	3	< 0.01	2008175
		8.2	27 (×4)	4	3	0.02	
		12.3	43 (×4)	4	3	0.03	
Site 5 Cambooya, Queensland, Australia, 2009 (Warrior)	120 SC	14	35	4	0	0.03	2008174
		36	91		1	0.01	
		36	92		3	0.02	
		36	90		5	0.02	
Site 6 Boneo, Victoria, Australia, 2009 (Surprise)	120 SC	12	31	4	0	0.09	2008174
		30	102		1	0.07	
		30	100		3	0.04	
		30	88		5	0.03	
Site 7 Boneo, Victoria, Australia, 2009 (Field Glory)	120 SC	12	38	4	0	0.12	2008174
		30	92		1	0.10	
		30	96		3	0.09	
		30	84		5	0.05	
Site 8 Kindred, Tasmania, Australia, 2009 (Beverly Hills)	120 SC	12	38	4	0	0.26	2008174
		30	89		1	0.21	
		30	96		3	0.20	
		30	92		5	0.17	
Site 13 Cambooya, Queensland, Australia, 2009 (Warrior)	120 SC	12	36	4	1	0.02	2008174
		30	89				
		30	89				
		30	89				
Site 14 Boneo, Victoria, Australia, 2009 (Field Glory)	120 SC	12	34	4	1	0.08	2008174
		30	85				
		30	92				
		30	85				

CABBAGE Country, year (Variety)	Form	Application/ treatment			PHI, days	Residue, mg/kg	Report No.
		g ai/hL	g ai/ha	No		XDE-175-J + XDE-175-L + N-demethyl-J + N-formyl-J	
Site 15 Boneo, Victoria, Australia, 2009 (Megaton)	120 SC	12 30 30 30	33 87 85 94	4	1	0.05	2008174
Site 16 Kindred, Tasmania, Australia, 2009 (Beverly Hills)	120 SC	12 30 30 30	37 82 97 86	4	1	0.15	2008174
GAP, Japan	120 SC	2.4–4.8	10–30	2	1		
Mie Japan, 2006 (Matsunami)	120 WP	4.8	20	2	1 7 14 	0.14 0.07 < 0.01 < 0.01 < 0.01 < 0.01	0.04 0.02 < 0.01 < 0.01 < 0.01 < 0.01
Miyazaki, Japan, 2006 (YR Kinshu Kyouryoku 152)	120 WP	4.8	20	2	1 7 14 	0.02 0.04 < 0.01 < 0.01 < 0.01 < 0.01	< 0.01 < 0.01 < 0.01 < 0.01 < 0.01 < 0.01

Table 20-1 Residues of spinetoram from supervised trials on Brussels sprout in Australia and New Zealand (for estimation of maximum residue level)

BRUSSELS SPROUT Country, year (Variety)	Form	Application/ treatment			PHI, days	Residue, mg/kg	Report No.
		g ai/hL	g ai/ha	No		XDE-175-J + XDE-175-L	
GAP, Australia	120 SC		24–48	4	3		
Site 3 Fort Tasmania, Tasmania, Australia, 2009 (Abacus)	120 SC	4.6	19	4	0 1 3 7 10	0.01 0.01 0.01 < 0.01 < 0.01	2008175

BRUSSELS SPROUT Country, year (Variety)	Form	Application/ treatment			PHI, days	Residue, mg/kg	Report No.
		g ai/hL	g ai/ha	No		XDE-175-J + XDE-175-L	
		6.1	24	4	0 1 3 7 10	0.02 0.01 0.02 < 0.01 ND	
		9.2	37	4	0 1 3 7 10	0.02 0.02 0.01 < 0.01 < 0.01	
Site 7 Southbridge, New Zealand, 2009 (Diablo)	120 SC	6.1	20	4	3	0.01	2008175
		8.2	26	4	3	0.02	
		12.3	38	4	3	0.02	

Table 20-2 Residues of spinetoram from supervised trials on Brussels sprout in Australia and New Zealand (for estimation of STMR)

BRUSSELS SPROUT Country, year (Variety)	Form	Application/ treatment			PHI, days	Residue, mg/kg	Report No.
		g ai/hL	g ai/ha	No		XDE-175-J + XDE-175-L + N-demethyl-J + N-formyl-J	
GAP, Australia	120 SC		24–48	4	3		
Site 3 Fort Tasmania, Tasmania, Australia, 2009 (Abacus)	120 SC	4.6	19	4	0 1 3 7 10	0.01 0.01 0.01 < 0.01 < 0.01	2008175
		6.1	24	4	0 1 3 7 10	0.03 0.01 0.02 < 0.01 < 0.01	

BRUSSELS SPROUT Country, year (Variety)	Form	Application/ treatment			PHI, days	Residue, mg/kg	Report No.
		g ai/hL	g ai/ha	No		XDE-175-J + XDE-175-L + N-demethyl-J + N-formyl-J	
		9.2	37	4	0 1 3 7 10	0.02 0.03 0.01 < 0.01 < 0.01	
Site 7 Southbridge, New Zealand, 2009 (Diablo)	120 SC	6.1	20	4	3	0.02	2008175
		8.2	26	4	3	0.03	
		12.3	38	4	3	0.03	

Leafy vegetables

Spinach

Six supervised field trials were conducted during 2010 across the United States in regions where spinach is grown commercially (Report 2009867). Each trial consisted of two plots; an untreated control plot and a treated plot that received four applications of a 120 SC formulation of spinetoram at the target rate of 35 g ai/ha for the first application and 87 g ai/ha for the second through fourth applications. The applications were made at 4 day intervals with the final application occurring 1 day prior to typical harvest. GAP in the USA allows up to fix applications at a rate of 44–88 g ai/ha with a seasonal maximum rate of 300 g ai/ha and a PHI of 1 day.

Duplicate spinach samples were collected from the treated plot and a single sample was collected from the untreated control plot at a PHI of 1 day. For the decline trials, samples were also collected at 0, 3, 7, and 14 days after the last application. Two trials yielded residues that appear as outliers (2.59 and 2.67 mg/kg). A review of the study showed that the trials were valid and followed the same protocol and methods as the other trials. The results of these trials were therefore included in the estimation of the maximum residue level and STMR. Samples were stored frozen from collection to analysis. The maximum period of frozen storage was 212 days.

Residues of spinetoram and metabolites were analysed by method GRM 05.04, which had been validated with an LOQ of 0.01 mg/kg.

Table 21-1 Residues of spinetoram from supervised trials on spinach in the USA (for estimation of maximum residue level)

SPINACH Country, year (Variety)	Form	Application/ treatment			Total (g ai/ha/ season)	PHI, days	Residue, mg/kg			Report No.
		g ai/hL	g ai/ha	No			XDE-175-J	XDE-175-L	Total	
GAP, USA (Leafy vegetables)	120 SC		44–88	6	300	1				
NY-1 Alton, NY	120 SC		35 + 88 (3×)	4	299	0	2.25	1.34	3.59	2009867
						1	0.237	0.040	0.277	

SPINACH Country, year (Variety)	Form	Application/ treatment			Total (g ai/ha/ season)	PHI, days	Residue, mg/kg			Report No.
		g ai/hL	g ai/ha	No			XDE-175-J	XDE-175-L	Total	
USA, 2010 (Santorini)						3	0.163	0.023	0.186	
						7	0.110	0.013	0.123	
						14	0.087	< 0.01	0.087	
SC-1 Elko, SC, USA, 2011 (Bloomsdale Long Standing)	120 SC		32 + 81 (3×)	4	275	1	0.325	0.039	0.364	2009867
TX-1 East Bernard, TX, USA 2010 (Noble Giant)	120 SC		35 + 88 (3×)	4	299	1	2.39	1.30	3.69	2009867
ID-1 Jerome, ID, USA, 2010 (Unipack 151)	120 SC		35 + 87 (3×)	4	296	2	2.29	1.28	3.57	2009867
CA-1 Fresno, CA, USA, 2010 (Tyee)	120 SC		35 + 89 (3x)	4	302	0	2.84	1.53	4.37	2009867
						1	0.622	0.129	0.751	
						3	0.297	0.047	0.344	
						7	0.180	0.025	0.205	
						14	0.086	< 0.01	0.086	
						21	0.053	< 0.01	0.053	
CA-2 Porterville, CA USA, 2010 (Shasta)	120 SC		35 + 87 (3×)	4	296	1	0.635	0.149	0.802	2009867

Table 21-2 Residues of spinetoram from supervised trials on spinach in the USA (for estimation of STMR)

SPINACH Country, year (Variety)	Form	Application/ treatment			Total (g ai/ha/ season)	PHI days	Residue, mg/kg					Report No.
		g ai/hL	g ai/ha	No			XDE-175-J	XDE-175-L	N-demethyl-J	N-formyl-J	Total	
GAP, USA (Leafy vegetables)	120 SC		44–88	6	300	1						
NY-1 Alton, NY	120 SC		35 + 88	4	299	0	2.25	1.34	1.36	1.11	6.06	2009867
						1	0.237	0.040	0.157	0.087	0.521	

SPINACH Country, year (Variety)	Form	Application/ treatment			Total (g ai/ha/ season)	PHI days	Residue, mg/kg					Report No.
		g ai/hL	g ai/ha	No			XDE-175-J	XDE-175-L	N-demethyl-J	N-formyl-J	Total	
USA, 2010 (Santorini)			(3×)			3	0.163	0.023	0.114	0.064	0.364	
						7	0.110	0.013	0.084	0.048	0.255	
						14	0.087	< 0.01	0.063	0.027	0.177	
SC-1 Elko, SC, USA, 2011 (Bloomsdale Long Standing)	120 SC		32 + 81 (3×)	4	275	1	0.325	0.039	0.296	0.163	0.823	2009867
TX-1 East Bernard, TX, USA 2010 (Noble Giant)	120 SC		35 + 88 (3×)	4	299	1	2.39	1.30	1.64	1.93	7.26	2009867
ID-1 Jerome, ID, USA, 2010 (Unipack 151)	120 SC		35 + 87 (3×)	4	296	2	2.29	1.28	1.68	1.37	6.62	2009867
CA-1 Fresno, CA, USA, 2010 (Tyee)	120 SC		35 + 89 (3×)	4	302	0	2.84	1.53	1.49	1.20	7.02	2009867
						1	0.622	0.129	0.322	0.455	1.53	
						3	0.297	0.047	0.233	0.361	0.938	
						7	0.180	0.025	0.165	0.268	0.638	
						14	0.086	< 0.01	0.076	0.064	0.226	
						21	0.053	< 0.01	0.051	0.050	0.154	
CA-2 Porterville, CA USA, 2010 (Shasta)	120 SC		35 + 87 (3×)	4	296	1	0.635	0.149	0.437	0.432	1.65	2009867

Legume vegetables

Common beans

Supervised trials in Brazil

Eight greenhouse trials were conducted in various sites in Brazil during 2006 (Reports 246852, 246853, 246854, 246855, 246856, 246857, 246858, and 246859). The GAP has not yet been approved. The closest GAP that matched these trials is the GAP in the USA which is also applicable to Puerto Rico, Autonomous Territory of the USA (total seasonal rate of 245 g ai/ha and a PHI of 3 days).

For each of the sites, four applications of a 250 WG formulation of spinetoram were made to French beans at the rate of 50 g ai/ha or a seasonal total of 200 g ai/ha. Applications were made at 7-day intervals. Samples of mature beans were harvested 3 days after the last application. For the decline trials, samples were collected at 0, 1, 3, 7, 10, and 14 days after the final application. Samples were immediately frozen and kept in frozen storage until analysis. The maximum period of storage was 272 days.

Residues of spinetoram and metabolites were analysed by method GRM 05.04, validated with an LOQ of 0.01 mg/kg.

Supervised trials in Southern Europe

Four reverse-decline trials were conducted, one each in Italy, Spain, Southern France and Greece, in 2009 (2007581). Two applications of a 120 SC formulation of spinetoram were made at the rate of 50 g ai/ha and targeted at the following timing: 42 and 35 days before normal harvest (T2); 35 and 28 days before normal harvest **(**T3**);** 28 and 22 days before normal harvest (T4); and 21 and 14 days before normal harvest (T5).

All samples were immediately frozen and maintained at < -18°C until analysis. The maximum period of storage was 321 days. Residues of spinetoram in French beans were analysed by method GRM 05.04, with a limit of quantification of 0.01 mg/kg**.**

The GAP for spinetoram on beans has not yet been approved in Europe and there are no available GAPs that can be applied at this time; nonetheless the trials are summarized below.

Table 22-1 Residues of spinetoram from greenhouse trials on French beans in Brazil, (for estimation of maximum residue level)

FRENCH BEAN Country, year (Variety)	Form	Application/ treatment			Total g ai/ha/ season	PHI, days	Residue, mg/kg			Report No.
		G ai/hL	g ai/ha	No			XDE-175-J	XDE-175-L	Total[1]	
TRIALS IN BRAZIL										
GAP, USA incl. Puerto Rico	120 SC		26–70	6	245	3				
Campinas, Sao Paolo, Brazil, 2006 (Itatiba II)	250 WP		50	4	200	0 1 3 7 10 14	ND ND ND ND ND ND	ND ND ND ND ND ND	< 0.01 < 0.01 < 0.01 < 0.01 < 0.01 < 0.01	242715/ 246852 (Addendum)
Mogi Mirim, Sao Paolo, Brazil, 2006 (Itatiba II)	250 WP		50	4	200	0 1 3 7 10 14	0.022 0.010 < 0.01 < 0.01 ND ND	< 0.01 < 0.01 ND < 0,01 ND ND	0.022 0.010 < 0.01 < 0.01 < 0.01 < 0.01	242644/ 246853 (Addendum)

FRENCH BEAN Country, year (Variety)	Form	Application/ treatment			Total g ai/ha/ season	PHI, days	Residue, mg/kg			Report No.
		G ai/hL	g ai/ha	No			XDE-175-J	XDE-175-L	Total[1]	
Jaboticabal, Sao Paolo, Brazil, 2006 (Macarrã0 favorito)	250 WP		50	4	200	3	0.014	ND	0.014	243277/ 246854 (addendum)
Mogi Mirim, Sao Paolo, Brazil, 2006 (Itatiba II)	250 WP		50	4	200	0 1 3 7 10 14	0.031 0.031 0.016 0.032 0.028 0.020	< 0.01 < 0.01 < 0.01 < 0.01 < 0.01 ND	0.031 0.031 0.016 0.032 0.028 0.020	242714/ 246855 and 256518 (Addenda)
Elias Fausto, Sao Paolo Brazil, 2006 (Itatiba II)	250 WP		50	4	200	3	0.014	< 0.01	0.014	242643// 246856 (addendum)
Piracicaba, Sao Paolo, Brazil, 2006 (Itatiba II)	250 WG		50	4	200	3	0.017	< 0.01	0.017	242713/ 246857 (addendum)
Mogi Mirim, Sao Paolo, Brazil, 2006 (Bragança)	250 WP		50	4	200	1	0.014	ND	0.014	242716/ 246858 (addendum)
Campinas, Sao Paolo, Brazil, 2006 (Itatiba II)	250 WP		50	4	200	0 1 3 7 10 14	0.023 0.031 0.030 0.016 0.026 < 0.01	< 0.01 ND ND < 0.01 ND ND	0.023 0.031 0.030 0.016 0.026 < 0.01	242941/ 246859 (addendum)

Table 22-2 Residues of spinetoram from greenhouse trials on French beans in Brazil (for estimation of STMR)

FRENCH BEAN Country, year (Variety)	Form	Application/ treatment			Total g ai/ha/ season	PHI, days	Residue, mg/kg					Report No.
		g ai/hL	g ai/ha	No			XDE-175-J	XDE-175-L	N-demethyl -J	N-formyl-J	Total[1]	
GAP, USA incl. Puerto Rico	120 SC		26-70	6	245	3						

FRENCH BEAN Country, year (Variety)	Form	Application/ treatment			Total g ai/ha/ season	PHI, days	Residue, mg/kg					Report No.
		g ai/hL	g ai/ha	No			XDE-175-J	XDE-175-L	N-demethyl-J	N-formyl-J	Total[1]	
Campinas, Sao Paolo, Brazil, 2006 (Itatiba II)	250 WG		50	4	200	0 1 3 7 10 14	ND ND ND ND ND ND	ND ND ND ND ND ND	ND ND ND ND ND ND	ND ND ND ND ND ND	< 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02	242715/ 246852 (Addendum)
Mogi Mirim, Sao Paolo, Brazil, 2006 (Itatiba II)	250 WG		50	4	200	0 1 3 7 10 14	0.022 0.010 < 0.01 < 0.01 ND ND	< 0.01 < 0.01 ND < 0,01 ND ND	< 0.01 ND ND ND ND ND	< 0.01 < 0.01 < 0.01 ND ND ND	0.032 0.02 < 0.02 < 0.02 < 0.02 < 0.02	242644/ 246853 (addendum)
Jaboticabal, Sao Paolo, Brazil, 2006 (Macarrã0 favorito)	250 WG		50	4	200	3	0.014	ND	ND	< 0.01	0.024	243277/ 246854 (addendum)
Mogi Mirim, Sao Paolo, Brazil, 2006 (Itatiba II)	250 WG		50	4	200	0 1 3 7 10 14	0.031 0.031 0.016 0.032 0.028 0.020	< 0.01 < 0.01 < 0.01 < 0.01 < 0.01 ND	< 0.01 < 0.01 < 0.01 < 0.01 ND < 0.01	< 0.01 < 0.01 ND ND < 0.01 < 0.01	0.041 0.041 0.026 0.042 0.038 0.030	242714/ 246855 and256518 (Addenda)
Elias Fausto Sao Paolo Brazil, 2006 (Itatiba II)	250 WG		50	4	200	3	0.014	< 0.01	ND	ND	0.024	242634/ 246856 (addendum)
Piracicaba, Sao Paolo, Brazil, 2006 (Itatiba II)	250 WG		50	4	200	3	0.017	< 0.01	< 0.01	ND	0.027	242713/ 246857 (addendum)
Mogi Mirim, Sao Paolo, Brazil, 2006 (Bragança)	250 WG		50	4	200	1	0.014	ND	< 0.01	< 0.01	0.024	242716/ 246858 (addendum)

FRENCH BEAN Country, year (Variety)	Form	Application/ treatment			Total g ai/ha/ season	PHI, days	Residue, mg/kg					Report No.
		g ai/hL	g ai/ha	No			XDE-175-J	XDE-175-L	N-demethyl-J	N-formyl-J	Total[1]	
Campinas, Sao Paolo, Brazil, 2006 (Itatiba II)	250 WG		50	4	200	0	0.023	< 0.01	ND	ND	0.033	242941/ 246859 (addendum)
						1	0.031	ND	< 0.01	ND	0.041	
						3	0.030	ND	< 0.01	< 0.01	0.040	
						7	0.016	< 0.01	ND	< 0.01	0.026	
						10	0.026	ND	ND	ND	0.036	
						14	< 0.01	ND	ND	ND	< 0.02	

Pulses

Common beans

Supervised trials in Southern Europe

Four reverse-decline trials were conducted, one each in Italy, Spain, Southern France and Greece, in 2009 (2007581). Two applications of a 120 SC formulation of spinetoram were made at the rate of 50 g ai/ha and targeted at the following timing: 42 and 35 days before normal harvest (T2); 35 and 28 days before normal harvest **(**T3**);** 28 and 22 days before normal harvest (T4); and 21 and 14 days before normal harvest (T5).

All samples were immediately frozen and maintained at < -18 °C until analysis. The maximum period of storage was 321 days. Residues of spinetoram in French beans were analysed by method GRM 05.04, with a limit of quantification of 0.01 mg/kg.

The GAP for spinetoram on beans has not yet been approved in Europe and there are no available GAPs that can be applied at this time; nonetheless the trials are summarized below.

Table 23-1 Residues of spinetoram from greenhouse trials on French beans in France, Greece, Italy and Spain (for estimation of maximum residue level)

FRENCH BEAN Country, year (Variety)	Form	Application/ treatment			PHI, days	Residue, mg/kg			Report No.
		g ai/hL	g ai/ha	No		XDE-175-J	XDE-175-L	Total[1]	
TRIALS IN SOUTHERN EUROPE									
Emilia Romagna, Italy, 2009 (Slenderette)	120 SC	12.5	53	2	28	0.011	ND	0.011	2007581
			53		35	< 0.01	ND	< 0.01	
					42	ND	ND	< 0.01	
			53	2	21	< 0.01	ND	< 0.01	
			54		28	< 0.01	ND	< 0.01	
					35	< 0.01	ND	< 0.01	
			48	2	14	0.023	ND	0.023	
			52		21	< 0.01	ND	< 0.01	
					28	< 0.01	ND	< 0.01	

FRENCH BEAN Country, year (Variety)	Form	Application/ treatment			PHI, days	Residue, mg/kg			Report No.
		g ai/hL	g ai/ha	No		XDE-175-J	XDE-175-L	Total[1]	
			54	2	7	0.014	ND	0.014	
			51		14	0.022	ND	0.022	
					21	< 0.01	ND	< 0.01	
Navarra, Spain, 2009 (Pocha Rastrojera)	120 SC	17	53	2	28	ND	ND	< 0.01	2007581
			51		35	ND	ND	< 0.01	
					42	ND	ND	< 0.01	
			51	2	20	ND	ND	< 0.01	
			52		27	ND	ND	< 0.01	
					35	ND	ND	< 0.01	
			49	2	14	ND	ND	< 0.01	
			50		21	ND	ND	< 0.01	
					28	ND	ND	< 0.01	
			51	2	8	ND	ND	< 0.01	
			52		15	ND	ND	< 0.01	
					22	ND	ND	< 0.01	
Midi-Pyrénées, France, 2009 (Bravo)	120 SC	25	51	2	28	ND	ND	< 0.01	2007581
			49		35	ND	ND	< 0.01	
					42	ND	ND	< 0.01	
			51	2	21	ND	ND	< 0.01	
			52		28	ND	ND	< 0.01	
					35	ND	ND	< 0.01	
			53	2	14	ND	ND	< 0.01	
			49		21	ND	ND	< 0.01	
					28	ND	ND	< 0.01	
			51	2	7	ND	ND	< 0.01	
			52		14	ND	ND	< 0.01	
					21	ND	ND	< 0.01	
Thessaloniki, Greece, 2009 (Magiulis)	120 SC	8	50	2	28	ND	ND	< 0.01	2007581
			50		35	ND	ND	< 0.01	
					42	ND	ND	< 0.01	
			49	2	21	ND	ND	< 0.01	
			50		28	ND	ND	< 0.01	
					35	ND	ND	< 0.01	
			49	2	14	ND	ND	< 0.01	
			49		21	ND	ND	< 0.01	
					28	ND	ND	< 0.01	

FRENCH BEAN Country, year (Variety)	Form	Application/ treatment			PHI, days	Residue, mg/kg			Report No.
		g ai/hL	g ai/ha	No		XDE-175-J	XDE-175-L	Total[1]	
			50	2	7	< 0.01	ND	< 0.01	
			50		14	ND	ND	< 0.01	
					21	ND	ND	< 0.01	

Table 23-2 Residues of spinetoram from greenhouse trials on French beans in France, Greece, Italy and Spain (for estimation of STMR)

FRENCH BEAN Country, year (Variety)	Form	Application/ treatment			PHI, days	Residue, mg/kg					Report No.
		g ai/hL	g ai/ha	No		XDE-175-J	XDE-175-L	N-demethyl-J	N-formyl-J	Total	
TRIALS IN SOUTHERN EUROPE											
Emilia Romagna, Italy, 2009 (Slenderette)	120 SC	12.5	53	2	28	0.011	ND	ND	< 0.01	0.021	2007581
			53		35	< 0.01	ND	ND	ND	< 0.02	
					42	ND	ND	ND	ND	< 0.02	
			53	2	21	< 0.01	ND	ND	ND	< 0.02	
			54		28	< 0.01	ND	ND	ND	< 0.02	
					35	< 0.01	ND	ND	ND	< 0.02	
			48	2	14	0.023	ND	< 0.01	< 0.01	0.033	
			52		21	< 0.01	ND	ND	ND	< 0.02	
					28	< 0.01	ND	ND	ND	< 0.02	
			54	2	7	0.014	ND	< 0.01	ND	0.024	
			51		14	0.022	ND	< 0.01	< 0.01	0.032	
					21	< 0.01	ND	ND	ND	< 0.02	
Navarra, Spain, 2009 (Pocha Rastrojera)	120 SC	17	53	2	28	ND	ND	ND	ND	< 0.02	2007581
			51		35	ND	ND	ND	ND	< 0.02	
					42	ND	ND	ND	ND	< 0.02	
			51	2	20	ND	ND	ND	ND	< 0.02	
			52		27	ND	ND	ND	ND	< 0.02	
					35	ND	ND	ND	ND	< 0.02	
			49	2	14	ND	ND	ND	ND	< 0.02	
			50		21	ND	ND	ND	ND	< 0.02	
					28	ND	ND	ND	ND	< 0.02	
			51	2	8	ND	ND	ND	ND	< 0.02	
			52		15	ND	ND	ND	ND	< 0.02	
					22	ND	ND	ND	ND	< 0.02	
Midi-Pyrénées, France, 2009	120 SC	25	51	2	28	ND	ND	ND	ND	< 0.02	2007581
			49		35	ND	ND	ND	ND	< 0.02	
					42	ND	ND	ND	ND	< 0.02	

FRENCH BEAN Country, year (Variety)	Form	Application/ treatment			PHI, days	Residue, mg/kg					Report No.
		g ai/hL	g ai/ha	No		XDE-175-J	XDE-175-L	N-demethyl-J	N-formyl-J	Total	
(Bravo)			51	2	21	ND	ND	ND	ND	< 0.02	
			52		28	ND	ND	ND	ND	< 0.02	
					35	ND	ND	ND	ND	< 0.02	
			53	2	14	ND	ND	ND	ND	< 0.02	
			49		21	ND	ND	ND	ND	< 0.02	
					28	ND	ND	ND	ND	< 0.02	
			51	2	7	ND	ND	ND	ND	< 0.02	
			52		14	ND	ND	ND	ND	< 0.02	
					21	ND	ND	ND	ND	< 0.02	
Thessaloniki, Greece, 2009 (Magiulis)	120 SC	8	50	2	28	ND	ND	ND	ND	< 0.02	2007581
			50		35	ND	ND	ND	ND	< 0.02	
					42	ND	ND	ND	ND	< 0.02	
			49	2	21	ND	ND	ND	ND	< 0.02	
			50		28	ND	ND	ND	ND	< 0.02	
					35	ND	ND	ND	ND	< 0.02	
			49	2	14	ND	ND	ND	ND	< 0.02	
			49		21	ND	ND	ND	ND	< 0.02	
					28	ND	ND	ND	ND	< 0.02	
			50	2	7	< 0.01	ND	ND	ND	< 0.02	
			50		14	ND	ND	ND	ND	< 0.02	
					21	ND	ND	ND	ND	< 0.02	

Stalk and stem vegetables

Celery

Eight supervised field trials on celery were conducted within the principal growing regions of the USA following the GAP (up to six applications at a rate of 44–88 g ai/ha with a total seasonal application of 300 g ai/ha and a PHI of 1 day)(Report 2009868). Each trial included one untreated control plot and one treated plot. Each treated plot received four applications of a 120 SC formulation of spinetoram at the target rate of 35 g ai/ha for the first application and 87 g ai/ha for the second through fourth applications. The four applications were made at 4 day intervals with the final application occurring 1 day prior to typical harvest.

Duplicate samples of celery were collected from each field trial at normal crop maturity, 1 day after the last application. At the decline sites, sampling occurred on day 0 immediately following the final application, 1 day prior to normal harvest, and then at 1, 3, 7, and 14 days after the last application, with an extra sampling at 21 days in one decline site. Two replicate celery samples were collected independently from each treated plot, and one sample was collected from control plots at all sites. Samples were immediately frozen and maintained in frozen storage until analysis. A maximum of approximately 10 months (304 days) elapsed between harvest and final analysis of the raw agricultural commodity for spinetoram and metabolites.

Residues of spinetoram and metabolites from untrimmed celery stalks were analysed by method GRM 05.04, which had been validated with an LOQ of 0.01 mg/kg.

Table 24-1 Residues of spinetoram from supervised trials on celery (untrimmed stalks) in the USA (for estimation of maximum residue level)

Country, year (Variety)	Form	Application/ treatment			Total (g ai/ha/ season)	PHI, days	Residues, mg/kg			Report No.
		g ai/hL	g ai/ha	No			XDE-175-J	XDE-175-L	Total	
GAP, USA	120 SC		44–88	6	300	1				
FL-1 Clermont, FL, USA 2011 (Sonora)	120 SC		36 + 89 (3×)	4	303	0	2.52	1.32	7.42	2009868
						1	1.92	1.10	3.02	
						3	0.025	< 0.01	0.025	
						7	0.013	ND	0.013	
						14	< 0.01	ND	< 0.01	
						21	ND	ND	< 0.01	
FL-2 Hobe Sound, FL, USA 2011 (Walts Pride)	120 SC		38 + 87 (3×)	4	299	1	0.024	< 0.01	0.024	2009868
IA-1 Richmond, IA, USA, 2010 (Conquistador	120 SC		36 + 89 (3×)	4	302	1	1.51	1.07	2.58	2009868
CA-1 San Luis Obispo, CA, 2010 (Mission)	120 SC		35 + 87 (3×)	4	296	0	0.674	0.196	0.870	2009868
						1	0.153	0.034	0.187	
						3	0.124	0.027	0.151	
						7	0.018	ND	0.018	
						14	0.012	ND	0.012	
CA-2 Santa Maria, CA, USA 2010 (Command)	120 SC		35 + 88 (3×)	4	299	1	0.149	0.033	0.182	2009868
CA-3 Fresno, CA, USA, 2010 (Sonora)	120 SC		35 + 88 (3×)	4	299	1	0.072	0.014	0.086	2009868
CA-4 Porterville, CA, USA, 2010 (Conquistador	120 SC		35 + 88 (3×)	4	299	1	0.125	0.032	0.157	2009868

Country, year (Variety)	Form	Application/ treatment			Total (g ai/ha/ season)	PHI, days	Residues, mg/kg			Report No.
		g ai/hL	g ai/ha	No			XDE-175-J	XDE-175-L	Total	
CA-5 King City, CA, USA 2010 (SSCI)	120 SC		35 + 89 (3×)	4	302	1	0.083	0.020	0.103	2009868

Table 24-2 Residues of spinetoram from supervised trials on untrimmed celery stalks in the USA (for estimation of STMR)

Country, year (Variety)	Form	Application/ treatment			Total (g ai/ha/ season)	PHI days	Residue, mg/kg					Report No.
		g ai/hL	g ai/ha	No			XDE-175-J	XDE-175-L	N-demethyl-J	N-formyl-J	Total	
GAP, USA	120 SC		43–87	6	300	1						
FL-1 Clermont, FL, USA 2011 (Sonora)	120 SC		36 + 89 (3×)	4	303	0	2.52	1.32	1.15	0.861	5.85	2009868
						1	1.92	1.10	1.10	0.857	4.98	
						3	0.025	< 0.01	0.016	< 0.01	0.041	
						7	0.013	ND	< 0.01	< 0.01	0.023	
						14	< 0.01	ND	< 0.01	ND	< 0.02	
						21	ND	ND	ND	ND	< 0.02	
FL-2 Hobe Sound, FL, USA 2011 (Walts Pride)	120 SC		38 + 87 (3×)	4	299	1	0.024	< 0.01	0.010	0.063	0.097	2009868
IA-1 Richmond, IA, USA, 2010 (Conquistador	120 SC		36 + 89	4	302	1	1.51	1.07	1.30	1.44	5.32	
CA-1 San Luis Obispo, CA, 2010 (Mission)	120 SC		35 + 87 (3×)	4	296	0	0.674	0.196	0.096	0.253	1.22	2009868
						1	0.153	0.034	0.048	0.490	0.725	
						3	0.124	0.027	0.021	0.345	0.517	
						7	0.018	ND	< 0.01	0.065	0.083	
						14	0.012	ND	< 0.01	0.035	0.047	

Country, year (Variety)	Form	Application/ treatment			Total (g ai/ha/ season)	PHI days	Residue, mg/kg					Report No.
		g ai/hL	g ai/ha	No			XDE-175-J	XDE-175-L	N-demethyl-J	N-formyl-J	Total	
CA-2 Santa Maria, CA, USA 2010 (Command)	120 SC		35 + 88 (3×)	4	299	1	0.149	0.033	0.072	0.055	0.309	2009868
CA-3 Fresno, CA, USA, 2010 (Sonora)	120 SC		35 + 88 (3×)	4	299	1	0.072	0.014	0.038	0.049	0.173	2009868
CA-4 Porterville, CA, USA, 2010 (Conquistador	120 SC		35 + 88 (3×)	4	299	1	0.125	0.032	0.043	0.024	0.224	2009868
CA-5 King City, CA, USA 2010 (SSCI)	120 SC		35 + 89 (3×)	4	302	1	0.083	0.020	0.041	0.146	0.290	2009868

APPRAISAL

Spinetoram belongs to the class of spinosyn insecticides obtained from chemical modification of the fermentation product of *Saccharopolyspora spinosa.* It consists of two closely related active ingredients (XDE-175-J and XDE-175-L) present approximately in a three to one ratio.

It was first evaluated by the 2008 JMPR which established an ADI of 0–0.05 mg/kg bw and decided that an ARfD is unnecessary. The 2008 Meeting estimated 11 maximum residue levels on a basis of the following residue definition.

Definition of the residue (for compliance with the MRL): *Spinetoram*.

Definition of the residue (for estimation of dietary intake): *Spinetoram and N-demethyl and N-formyl metabolites of the major spinetoram component*.

The residue is fat-soluble.

Note: Spinetoram consists of two related components.

At the Forty-third Session, the CCPR included spinetoram in the Priority List for additional MRLs. The current Meeting received information on supervised trials on additional crops in support of additional maximum residue levels.

Methods of analysis

The analytical methods used in the supervised trials provided to the current Meeting were already reviewed by the 2008 JMPR to be satisfactorily validated. These methods had been developed for the determination of residues of XDE-175-J and XDE-175-L and their metabolites N-demethyl-175-J and -L, N-formyl-175-J and -L in plant matrices using HPLC with positive-ion electron-spray (ESI) tandem mass spectrometry (LC-MS/MS).

Procedural recoveries in the analysis of commodities for which supervised trial data were submitted to the current Meeting were available. The mean recovery ranged from 73% to 111% except that the mean recovery of N-formyl-J in blueberry which was 64%. The relative standard deviations were all < 20%, where it could be calculated.

Stability of pesticide residues in stored analytical samples

The 2008 JMPR concluded that at -20 ºC, spinetoram and its N-demethyl and N-formyl metabolites were stable for about 12 months (372 days) in orange, sugar beet, soya bean and wheat. The storage periods of samples in the supervised trial studies were mostly within 372 days or only slightly longer.

Results of supervised residue trials on crops

The Meeting received information on supervised field trials of spinetoram on citrus fruits, stone fruits, berries and other small fruits, bulb vegetables, Brassica vegetables, common beans, spinach and celery.

For all analytes and matrices, the LOQ was 0.01 mg/kg. The LOD was reported to be 0.003 mg/kg for trials conducted in the USA and 0.005 mg/kg for trials conducted in Australia.

The OECD MRL calculator was used as a tool to assist in the estimation of maximum residue levels from the selected residue data set obtained from the supervised residue trials. As a first step, the Meeting reviewed trial conditions and other relevant factors related to each data set to arrive at a best estimate of the maximum residue level using expert judgement. Then, the OECD calculator was employed. If the statistical calculation spreadsheet suggested a different value, a brief explanation of the derivation was supplied.

Citrus fruits

There is an existing CXL of 0.07 mg/kg for oranges (sweet, sour) estimated by the 2008 JMPR on the basis of supervised trials in the USA conducted according to US GAP (3 applications of a maximum rate of 103 g ai/ha for a total seasonal rate of 210 g ai/ha and a PHI of 1 day). Additional trials conducted on oranges and tangerines in Brazil were submitted in support of a group MRL on citrus fruits.

Orange

Twelve supervised trials on oranges were conducted in the USA between 2004 and 2007 following the US GAP for citrus fruits (maximum rate of 103 g ai/ha, three applications, maximum seasonal rate of 210 g ai/ha, PHI one day). They were reviewed by the 2008 JMPR and regarded as six valid trials. While there were six valid trial results, the 2008 Meeting concluded that since each of the trials was conducted using low (approximately 700 L/ha) and high (approximately 3300 L/ha) spray volume and resulting in similar residue situation, two data sets from the two different spray volume applications were considered mutually supportive.

Residues of spinetoram in oranges from trials in the USA conducted following US GAP for citrus fruits were re-evaluated by the current Meeting. In rank order they were: < 0.01, 0.011, 0.018, 0.021, 0.027 and 0.029 mg/kg.

Corresponding total residues of spinetoram and the two metabolites for estimation of STMR in ranked order were: 0.022, 0.038, 0.039, 0.046, 0.061 and 0.062 mg/kg.

Four supervised trials on oranges were carried out in Brazil in 2004 with three applications at the spray concentration of 2.3–14 g ai/hL, corresponding to the application rate of 70 g ai/ha or 140 g ai/ha for a total seasonal rate of 210 g ai/ha. The registered use in Brazil for citrus fruits allows the maximum of three applications of 20–40 hL/ha at 1.25–2.5 g ai/hL with a PHI of 1 day.

Residues of spinetoram in oranges from one trial in Brazil conducted following GAP in Brazil were < 0.01 mg/kg and corresponding total residues were < 0.02 mg/kg.

Tangerine

A total of eight supervised trials on tangerines were carried out in Brazil in 2006 with 3 applications at the spray concentration of 3.5–7 g ai/hL, corresponding to the application rate of 70 g ai/ha for a total of 210 g ai/ha per season.

No trials conducted in Brazil matched the GAP of Brazil.

As for the trials conducted on oranges in Brazil, only one trial matched the GAP in Brazil. The Meeting decided to maintain the previous recommendation of 0.07 mg/kg for oranges, sweet, sour.

Stone fruits

The 2008 JMPR reviewed information on the supervised field trial data on apricot, cherries, nectarine and peach conducted in Australia and New Zealand and decided that since no approved GAP was available, no maximum residue level could be recommended for spinetoram in stone fruits. The GAPs in Australia and New Zealand have since been approved.

In addition, supervised trials on stone fruits were also available from Chile, Argentina, Japan and Europe.

A total of 23 supervised trials were conducted in Australia during the 2005–2006 season (four on apricot, eight on cherry, four on nectarine and seven on peaches). Each plot was treated with 4 or 7 applications at a spray concentration of 5 g or 7.5 g ai/hL. The registered use of spinetoram in Australia for stone fruits allows a maximum of four applications at a spray concentration of 2.5–5 g ai/hL with a PHI of 3 days. However, in all of the trials conducted, samples were not taken 3 days after the last application (taken 0 day, 7 days and later after the last application). Therefore, the results of these trials could not be used for estimating maximum residue levels.

A total of 28 supervised trials were conducted in New Zealand during the 2005-2006 season (eight on apricot, 12 on cherry and eight on peach). Four applications were made to each plot at rates of 2.5 g ai/hL, 3.7 g ai/hL, 5 g ai/hL or 7.6 g ai/ha.

Apricot

Residues of spinetoram in apricot from trials in New Zealand conducted in accordance with GAP in Australia in ranked order were: 0.078 and 0.11 mg/kg.

Corresponding total residues of spinetoram and the two metabolites in ranked order were: 0.11 and 0.14 mg/kg.

One trial was conducted in Chile in which two applications were made to apricot trees at the spray concentration of 3.6 g ai/hL corresponding to the application rate of 75–79 g ai/ha. There was no GAP available for apricot in Chile or Argentina.

Cherries

Residues of spinetoram in cherries from trials in New Zealand conducted in accordance with GAP in Australia in ranked order were: 0.036, 0.055 and 0.067 mg/kg.

Corresponding total residues of spinetoram and the two metabolites in rank order were: 0.062, 0.078 and 0.10 mg/kg.

One trial was conducted in Chile during 2007. In this trial, cherry trees were treated with two applications at the spray concentration of 3.6 g ai/hL corresponding to the rate of 78 g ai/ha. There is no GAP in Chile or in Argentina for cherries.

Nectarine

Two supervised trials were conducted in Argentina during 2008, and one trial in Chile in 2007. The trials in Argentina used 3 applications at a spray concentration of 4 g ai/hL resulting in a rate of 71–75 g ai/ha and a PHI of 1 day. The registered use in Argentina for nectarine allows a maximum of 3 applications at a spray concentration of 3.75–5 g ai/hL with the minimum application rate of 60 g ai/ha and a PHI of 1 day.

The trial in Chile used two applications at a spray concentration of 4 g ai/hL corresponding to a rate of 72 g ai/ha. There is no current GAP for nectarine in Chile. However, the trial was conducted at the same rate as the trials in Argentina with 2 applications instead of three applications. As the decline studies on stone fruits indicate that the contribution of earlier applications (interval of 14 days between applications) to the residues of spinetoram in harvested fruits was insignificant (on average no more than 20%), the Meeting decided to use the residue result from this trial.

Residues of spinetoram in nectarine from trials in Argentina and Chile conducted in accordance with GAP in Argentina in rank order were: 0.012, 0.013 and 0.072 mg/kg.

Corresponding total residues of spinetoram and the two metabolites in ranked order were: 0.022, 0.023 and 0.082 mg/kg.

Peach

Four trials were conducted in Argentina and two in Japan. Trials were also conducted on peaches in Spain (4), France (6), but no registration has yet been granted in Europe.

Residues of spinetoram in peach from trials in New Zealand conducted in accordance with GAP in Australia in ranked order were: 0.026 and 0.084 mg/kg.

Corresponding total residues of spinetoram and the two metabolites in ranked order were: 0.041 and 0.12 mg/kg.

In four supervised trials conducted in Argentina during 2007 and 2008, 3 applications were made at a spray concentration of 3.75 g ai/ hL resulting in the rate of 75 g ai/ha. The registered use in Argentina for peach is identical to that for nectarine, i.e., a maximum of 3 applications at a spray concentration of 3.75–5 g ai/ha with the minimum application rate of 60 g ai/ha and a PHI of 1 day.

The trial in Chile used 3 applications at the spray concentration of 6 g ai/hL resulting in a rate of 108 g ai/ha. There is no current GAP for peach in Chile but this trial was matching GAP in Argentina.

Residues of spinetoram in peach from trials in Argentina and Chile conducted in accordance with GAP in Argentina in ranked order were: 0.021, 0.039, 0.050, 0.068 and 0.14 mg/kg.

Corresponding total residues of spinetoram and the two metabolites in ranked order were: 0.031, 0.049, 0.060, 0.078 and 0.17 mg/kg.

Two supervised trials were conducted in Japan during 2006 with 2 applications at the spray concentration of 5 g ai/ha. The registered use in Japan for peach allows two applications at 2.5–5 g ai/hL and 20–70 hL/ha and a PHI of 1 day.

Residues of spinetoram in peach from trials in Japan conducted in accordance with GAP in Japan in ranked order were: 0.20 and 0.27 mg/kg.

Corresponding total residues of spinetoram and the two metabolites in ranked order were: 0.27 and 0.35 mg/kg.

A total of ten supervised trials were conducted in Southern Europe on different varieties of peaches during 2006 and 2007 with 3 or 4 applications at the spray concentration of 8–11 g ai/hL corresponding to 97–102 g ai/ha. Spinetoram is yet to be registered in Europe.

Plum

Eleven supervised trials were carried out in France (6), Germany (4) and Italy (1) during 2007 and 2008. Each treated plot received 3 or 4 applications at the spray concentrations of 10–13 g ai/hL resulting in rates of 98–109 g ai/ha. Spinetoram is yet to be registered in Europe.

One trial was conducted in Chile. Two applications at spray concentration of 4 g ai/hL corresponding to 72 g ai/ha were made. There is no GAP in Chile or in Argentina for plum.

Summary for stone fruits

Data sets for individual stone fruits from trials matching GAP were not sufficient for estimating individual maximum residue levels for them as shown below.

Commodity	Trials conducted in	Residues, mg/kg
Trials matching GAP of Australia		
Apricot	New Zealand	0.078, 0.11
Cherries	New Zealand	0.036, 0.055, 0.067
Peach	New Zealand	0.026, 0.084
Trials matching GAP of Argentina		
Nectarine	Argentina/Chile	0.012, 0.013, 0.072
Peach	Argentina/Chile	0.021, 0.039, 0.050, 0.068, 0.14
Trials matching GAP of Japan		
Peach	Japan	0.20, 0.27

Among these data sets from four different countries, residues in the Japanese trials on peach were significantly higher than those from the trials conducted in other countries. However, the data from Japanese trials were considered insufficient to estimate a maximum level.

While GAP in Australia was for stone fruits, the number of trials on each crop matching Australian GAP was not sufficient to estimate a maximum residue level for individual commodities or for the stone fruit group.

The Meeting decided to use the results of trials conducted on nectarine and peach in Argentina and Chile matching GAP of Argentina to estimate maximum residue levels for nectarine and peach.

Combined residues, in rank order, were (n = 8): 0.012, 0.013, 0.021, 0.039, 0.050, 0.068, 0.072 and 0.14 mg/kg.

Corresponding total residues of spinetoram and the two metabolites in ranked order were: 0.022, 0.023, 0.031, 0.049, 0.060, 0.078, 0.082 and 0.17 mg/kg.

The Meeting estimated a maximum level of 0.3 mg/kg and an STMR of 0.055 mg/kg for both nectarine and peach.

Berries and other small fruits

Raspberries

Six supervised trials were conducted in the USA during 2010. Each treated plot received 4 applications at 25–105 g ai/ha of a 250 WG formulation of spinetoram. The total treatment for the season was 324–330 g ai/ha. The registered use in the USA for caneberries including raspberry allows up to 6 applications at 53–105 g ai/ha for a seasonal maximum of 342 g ai/ha and PHI of 1 day. Although the number of applications in the trials was four while the GAP allows up to six applications, the decline data show that contribution of the two earlier applications to the residues in harvested fruits was negligible.

Residues of spinetoram in raspberry from trials in the USA conducted in accordance with US GAP, in ranked order, were: 0.034, 0.17, 0.18, 0.26, 0.32 and 0.42 mg/kg.

Corresponding total residues of spinetoram and the two metabolites in ranked order were: 0.057, 0.21, 0.32, 0.51, 0.55 and 0.78 mg/kg.

The Meeting estimated a maximum residue level of 0.8 mg/kg and STMR of 0.42 mg/kg for raspberries, red, black.

Blueberries

Six supervised trials were conducted on blueberries during 2010 in the USA. Each treated plot received 4 applications at 25–104 g ai/ha of a 250 WG formulation of spinetoram. The total treatment for the season was 327–330 g ai/ha. The registered use in the USA for blueberry allows up to 6 applications at 53–105 g ai/ha for a seasonal maximum of 342 g ai/ha and PHI of 3 days. Although the number of applications in the trials was four while the GAP allows up to six applications, the decline data show that contribution of the two extra earlier applications to the residues in harvested fruits was insignificant.

Residues of spinetoram in blueberry from trials in the USA conducted in accordance with US GAP, in ranked order, were: 0.049, 0.050, 0.053, 0.056, 0.069 and 0.080 mg/kg.

Corresponding total residues of spinetoram and the two metabolites in ranked order were: 0.10, 0.11, 0.11, 0.13, 0.16, and 0.19 mg/kg.

The Meeting estimated a maximum residue level of 0.2 mg/kg and STMR of 0.12 mg/kg for blueberries.

Grapes

Eight supervised trials, four in France and four in Italy, were conducted during 2007 and 2008. The trials in Italy used 3 applications at 6–7 g ai/hL while those in France 4 applications from 4.5 to 5 g ai/hL. While registration of spinetoram is yet to be granted in these countries, the registered use in Turkey for grapes allows spray concentration of 4–6 g ai/hL with a PHI of 7 days. There was no description of maximum number of applications on the label.

One trial was conducted in Chile during 2008, in which 2 applications of 250 WG spinetoram were made at 60 g ai/ha. There is no GAP for grapes in Chile.

Residues of spinetoram in grapes from trials in France and Italy conducted in accordance with the GAP in Turkey, in ranked order, were: < 0.01, 0.018, 0.029, 0.039, 0.081, 0.096, 0.097 and 0.17 mg/kg.

Corresponding total residues of spinetoram and the two metabolites in ranked order were: < 0.02, 0.028, 0.039, 0.049, 0.098, 0.11, 0.14 and 0.23 mg/kg.

The Meeting estimated a maximum residue level of 0.3 mg/kg and STMR of 0.074 mg/kg for grapes.

Bulb vegetables

Onion, Bulb

Eight trials were conducted on bulb onions during 2007 in Brazil. Onion plants were treated 4 times with spinetoram at the rate of 62.5 g ai/ha for a seasonal total of 250 g ai/ha. The trials were carried out according to the US GAP as the proposed label for Brazil had not yet been approved. The US GAP for bulb vegetables allows up to five applications at 44–88 g ai/ha for a maximum seasonal rate of 263 g ai/ha with a PHI of 1 day. As there was no residue expected to be found in onion bulb and there was no significant translocation of spinetoram occurring in plant, the Meeting agreed to evaluate the residue data of onion bulb from trials in Brazil against US GAP.

Residues of spinetoram in onion bulb from trials in Brazil conducted in accordance with US GAP in ranked order were: < 0.01 (8) mg/kg.

Corresponding total residues of spinetoram and the two metabolites in ranked order were: < 0.02 (8) mg/kg. However, as residues of the four components were below the limit of detection except that the major component of spinetoram (XDE-175-J) was found < 0.01 mg/kg on 1 day after the last application in two trials only, the Meeting concluded that in the case of onion, bulb, it was more appropriate to use < 0.01 mg/kg rather than < 0.02 mg/kg for total residue concentrations.

The Meeting therefore estimated a maximum residue level of 0.01* mg/kg and STMR of 0.01 mg/kg for onion, bulb.

Welsh onions and spring onion

Two supervised trials on Welsh onions were conducted in Japan during 2006. Each treated plot received 2 applications of spinetoram of 20 hL/ha at the spray concentration of 4.8 g ai/hL resulting in the application rate of 96 g ai/ha. The registered use in Japan for Welsh onion allows 2 applications of 10–30 hL/ha at the spray concentration of 4.8 g ai/hL with a PHI of 1 day.

Residues of spinetoram in Welsh onion from trials in Japan complying with GAP in Japan, in ranked order were: 0.10 and 0.13 mg/kg.

Corresponding total residues of spinetoram and the two metabolites in ranked order were: 0.12 and 0.20 mg/kg.

Six field trials were conducted in the USA on green onion during 2010 and 2011. Each treated plot received three applications of spinetoram at the rate of 87–92 g ai/ha (total seasonal rate of 262–268 g ai/ha). The registered use in the USA for bulb vegetables allows up to 5 applications at 44–87 g ai/ha with the maximum seasonal rate of 262 g ai/ha with a PHI of 1 day.

Residues of spinetoram in green onion from trials in the USA conducted in accordance with US GAP, in ranked order were: 0.029, 0.042, 0.066, 0.094, 0.10 and 0.43 mg/kg.

Corresponding total residues of spinetoram and the two metabolites in ranked order were: 0.13, 0.18, 0.22, 0.40, 0.42 and 0.86 mg/kg.

Based on the results of trials conducted in the USA, the Meeting estimated a maximum residue level of 0.8 mg/kg and STMR of 0.33 mg/kg for spring onion and Welsh onion.

Brassica vegetables

Numerous trials on Brassica vegetables were conducted during 2009 in Australia (10 on broccoli, 10 on cabbage, and one each on cauliflower and Brussels sprouts). One trial each for broccoli, cauliflower, cabbage, and Brussels sprouts were conducted in New Zealand. In one set of trials, spinetoram was applied once at a target rate of 35 g ai/ha, followed by three applications at 7 day intervals at a target rate of 88 g ai/ha, for a seasonal total of about 300 g ai/ha. The other set of trials used 4 applications at target rates of 18, 24, and 36 g ai/ha. The GAP in Australia allows 4 applications of spinetoram at the rate of 24–48 g ai/ha and a PHI of 3 days.

In the trials conducted in Australia and New Zealand, concentrations of spinetoram and total concentrations of spinetoram and the two metabolites were reported. As for the latter, the calculation method was clearly different from that of JMPR as the value of 0.01 mg/kg was reported.

Broccoli

In three trials the actual application rates were up to on average 77% of the maximum GAP rate. In other trials the application rates of last three applications were on average 1.9 times the maximum GAP rate. As the number of trials conducted with the application rate within ± 25% of the maximum GAP rate was three, the Meeting decided to use proportionality approach for estimating residues at the maximum GAP rate; i.e., multiplying the highest residue at PHI in each trial by a relevant scaling factor.

Scaled residues of spinetoram in broccoli from trials in Australia and New Zealand, in ranked order were (n = 7)(residues found in the trials and scaling factor in parentheses): 0.022 (0.04 × 48/86), 0.026 (0.02 × 48/37) , 0.031 (0.06 × 48/92), 0.045 (0.09 × 48/91), 0.052 (0.10 × 48/92), 0.16 (0.08 × 48/24) and 0.17 (0.09 × 48/26) mg/kg.

Corresponding total residues of spinetoram and the two metabolites in ranked order were: 0.033 (0.06 × 48/86), 0.052 (0.10 × 48/92), 0.058 (0.03 × 48/25), 0.063 (0.12 × 48/91), 0.073 (0.14 × 48/92), 0.16 (0.08 × 48/24) and 0.18 (0.10 × 48/26) mg/kg.

Cauliflower

Residues of spinetoram in cauliflower from trials in Australia and New Zealand conducted in accordance with GAP in Australia in ranked order were: 0.01 and 0.10 mg/kg.

Corresponding total residues of spinetoram and the two metabolites in ranked order were: 0.01 and 0.11 mg/kg.

Cabbages, Head

In three trials the application rates were on average 81% of the maximum GAP rate. In other trials the application rates of last three applications were on average 1.9 times the maximum GAP rate. As the number of trials conducted with the application rate within ± 25% of the maximum GAP rate was three, the Meeting decided to use proportionality approach for estimating residues at the maximum GAP rate; i.e., multiplying the highest residue at PHI in each trial by a relevant scaling factor.

Scaled residues of spinetoram in broccoli from trials in Australia and New Zealand in ranked order were (n = 7)(residues found in the trials and scaling factor in parentheses): < 0.013 (< 0.01 × 48/37), 0.011 (0.02 × 48/90), 0.011 (0.01 × 48/43), 0.016 (0.03 × 48/88), 0.026 (0.02 × 48/37), 0.034 (0.06 × 48/84) and 0.063 (0.12 × 48/92) mg/kg.

Corresponding total residues of spinetoram and the two metabolites in ranked order were: 0.011 (0.02 × 48/90), 0.022 (0.04 × 48/88), 0.026 (0.02 × 48/37), 0.033 (0.03 × 48/43), 0.051 (0.09 × 48/84), 0.052 (0.04 × 48/37) and 0.10 (0.20 × 48/92) mg/kg.

Two supervised trials on cabbage were conducted in Japan during 2006. Each treated plot received 2 applications of 20 hL/ha at the spray concentration of 4.8 g ai/hL resulting in the rate of 96 g ai/ha.

Residues of spinetoram in cabbage from trials in Japan conducted in accordance with GAP in Japan in ranked order were: 0.03 and 0.14 mg/kg.

Corresponding total residues of spinetoram and the two metabolites in ranked order were: 0.05 and 0.15 mg/kg.

Brussels sprouts

Residues of spinetoram in Brussels sprout from trials in Australia and New Zealand conducted in accordance with GAP in Australia in ranked order were: 0.02 (2) mg/kg.

Corresponding total residues of spinetoram and the two metabolites in ranked order were: 0.02 and 0.03 mg/kg.

Summary for Brassica vegetables

Data sets for individual brassica vegetable commodities from trials matching GAP were not sufficient for estimating individual maximum residue levels for them.

Residues in these commodities from trials conducted in Australia and New Zealand matching GAP of Australia, and scaled residues are as follows for these commodities.

Commodity	Trials conducted in	Residues, mg/kg
Broccoli	Australia, New Zealand (scaled)	0.022, 0.026, 0.031, 0.045, 0.052, 0.16, 0.17
Cauliflower	Australia, New Zealand	0.01, 0.10
Cabbage	Australia, New Zealand (scaled)	< 0.013, 0.011, 0.011, 0.016, 0.026, 0.034, 0.063
Brussels sprout	Australia, New Zealand	0.02, 0.02

As the residue concentrations in broccoli, cauliflower, cabbage and Brussels sprout from trials in Australia and New Zealand were not significantly different, and the GAP in Australia is for Brassica vegetables, the Meeting considered estimating a maximum residue level for Brassica vegetables.

The residues in broccoli, cauliflower, cabbage and Brussels sprout from trials in Australia and New Zealand were considered together.

The combined residues of spinetoram in broccoli, cauliflower, cabbage and Brussels sprout from trials in Australia and New Zealand in ranked order were (n = 18): < 0.01, 0.01, 0.01, 0.01, 0.02, 0.02, 0.02, 0.022, 0.03, 0.03, 0.03, 0.03, 0.04, 0.05, 0.06, 0.10, 0.16 and 0.17 mg/kg.

Corresponding total residues of spinetoram and the two metabolites in ranked order were (n = 18): 0.01, 0.01, 0.02, 0.02, 0.03, 0.03, 0.03, 0.03, 0.05, 0.05, 0.05, 0.06, 0.06, 0.07, 0.10, 0.11, 0.16 and 0.18 mg/kg.

The Meeting estimated a maximum residue level of 0.3 mg/kg and STMR of 0.05 mg/kg for Brassica vegetables.

For the purpose of calculating animal dietary burden on a basis of spinetoram residues in cabbage leaves, the Meeting estimated a highest residue of 0.063 mg/kg and median residue of 0.016 mg/kg.

Spinach

Six supervised field trials were conducted during 2010 in the USA. Each treated plot received four applications of spinetoram at the target rate of 35 g ai/ha for the first application and 87 g ai/ha for the second through fourth applications. The registered use in the USA for leafy vegetables allows up to 6 applications at the rate of 43–87 g ai/ha with the maximum seasonal rate of 300 g ai/ha and a PHI of 1 day.

Residues of spinetoram in spinach from trials in the USA conducted in accordance with US GAP, in ranked order were: 0.28, 0.36, 0.75, 0.80, 3.6 and 3.7 mg/kg.

Corresponding total residues of spinetoram and the two metabolites in ranked order were: 0.52, 0.82, 1.5, 1.7, 6.6 and 7.3 mg/kg.

The Meeting estimated a maximum residue level of 8 mg/kg and STMR of 1.6 mg/kg for spinach.

Common beans

Eight greenhouse trials were conducted in Brazil during 2006. For each of the sites, four applications of a 250 WG formulation of spinetoram were made to French beans at the rate of 50 g ai/ha for a seasonal total of 200 g ai/ha.

The GAP has not yet been approved in Brazil. The closest GAP that matched these trials is the GAP in USA (total seasonal rate of 245 g ai/ha and a PHI of 3 days). Since the label in the USA does not preclude greenhouse use, the Meeting decided to evaluate the results of greenhouse trials conducted in Brazil against the US GAP.

Residues of spinetoram in French beans from trials in Brazil matching US GAP, in ranked order were: < 0.01 (2), 0.014, 0.014, 0.016, 0.017 and 0.030 mg/kg.

Corresponding total residues of spinetoram and the two metabolites in ranked order were: < 0.02 (2), 0.024, 0.024, 0.026, 0.027 and 0.040 mg/kg.

The Meeting estimated a maximum residue level of 0.05 mg/kg and STMR of 0.024 mg/kg for common bean (pods and/or immature seeds). The Meeting agreed to extend the maximum residue level and STMR to beans, except broad bean and soya bean (green pods and immature seeds).

Celery

Eight supervised field trials on celery were conducted in the USA. Each treated plot received four applications of spinetoram at the target rate of 35 g ai/ha for the first application and 87 g ai/ha for the second through fourth applications. The registered use in the USA for celery allows up to six applications at the rate of 44–88 g ai/ha with the maximum total seasonal application of 300 g ai/ha and a PHI of 1 day. In trials the number of application was four, different from six specified as the maximum in GAP. The decline data indicate that only the last application contributes significantly to residues in harvested celery.

Residues of spinetoram in celery from trials in the USA conducted in accordance with US GAP in ranked order were: 0.024, 0.086, 0.10, 0.16, 0.18, 0.19, 2.6 and 3.0 mg/kg.

Corresponding total residues of spinetoram and the two metabolites in ranked order were: 0.097, 0.17, 0.22, 0.29, 0.31, 0.73, 5.0 and 5.3 mg/kg.

The Meeting estimated a maximum residue level of 6 mg/kg and STMR of 0.30 mg/kg for celery.

Residues in animal commodities

Farm animal dietary burden

The commodities for which maximum residues were estimated by the current Meeting include cabbage which can be used as feed. Since the contribution of cabbage in feed of cattle or other mammals is insignificant, the Meeting did not re-calculate dietary burden for cattle.

Calculated dietary burdens for layer are shown below.

Summary of livestock dietary burdens (ppm of dry matter diet)

	US-Canada		EU		Australia		Japan	
	max	mean	max	Mean	max	mean	Max	mean
Layers	0	0	0.043 [a]	0.029 [b]	0	0	0	0

[a] Suitable for estimating maximum residue levels for meat, fat and edible offal of poultry and eggs.

[b] Suitable for estimating STMRs for meat, fat and edible offal of poultry and eggs.

Residues in poultry tissues and eggs

No information was available on a poultry feeding study.

The maximum burden for layers was calculated to be 0.043 ppm and mean burden was 0.029 ppm. The dose level used in the metabolism study on laying hens was 10 ppm in the diet. The concentration of spinetoram found was the highest in abdominal fat at 1.37 mg/kg, followed by 0.78 mg/kg in skin with fat, 0.11 mg/kg in eggs, 0.11 mg/kg in liver and 0.048 mg/kg in muscle. The metabolites included in the residue definition were not identified or found at lower concentrations than the parent.

At 0.043 ppm dietary burden, the concentration of spinetoram was calculated to be 0.005 mg/kg in abdominal fat and significantly lower in muscle, liver and eggs. The Meeting estimated a maximum residue level of 0.01* mg/kg for poultry meat, poultry fats, edible offal of poultry, and eggs; and an STMR of 0.01 mg/kg for poultry fats, poultry meat, edible offal of poultry and eggs.

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 assessment.

Definition of the residue (for compliance with the MRL): *Spinetoram*.

Definition of the residue (for estimation of dietary intake): *Spinetoram and N-demethyl and N-formyl metabolites of the major spinetoram component.*

The residue is fat-soluble.

Note: Spinetoram consists of two related components.

Commodity		Recommended MRL, mg/kg		STMR or STMR-P
CCN	Name	New	Previous	(mg/kg)
VP 0061	Beans, except broad bean and soya bean (green pods and immature seeds)	0.05	-	0.024
FB 0020	Blueberries	0.2	-	0.12
VB 0040	Brassica (cole or cabbage) vegetables, Head cabbages, Flowerhead brassicas	0.3	-	0.05
VS 0624	Celery	6		0.30
PE 0112	Eggs	0.01 *	-	0.01
FB 0269	Grapes	0.3	-	0.074
FS 0245	Nectarine	0.3	-	0.055
VA 00385	Onion, Bulb	0.01 *	-	0.01
VA 0387	Onion, Welsh	0.8	-	0.33
FS 0247	Peach	0.3	-	0.055
PF 0111	Poultry fats	0.01 *	-	0.01
PM 0110	Poultry meat	0.01 *	-	0.01 (fat) 0.01 (muscle)
PO 0111	Poultry, edible offal of	0.01 *	-	0.01
FB 0272	Raspberries, Red, Black	0.8	-	0.42
VL 0502	Spinach	8	-	1.6

Commodity		Recommended MRL, mg/kg		STMR or STMR-P
CCN	Name	New	Previous	(mg/kg)
VA 0389	Spring onion	0.8	-	0.33
	Cabbages, Head, leaves	-		0.016 [a] 0.63 [b]

[a] For dietary burden calculation. Based on spinetoram residues only.

[b] Highest residue for dietary burden calculation. Based on spinetoram residues only.

DIETARY RISK ASSESSMENT

Long-term intake

The International Estimated Daily Intakes (IEDIs) of spinetoram were calculated for the 13 GEMS/Food cluster diets using STMRs estimated by the Meeting in 2009 and 2012 (See Annex 3 of the 2012 JMPR REport). The ADI is 0–0.05 mg/kg bw and the calculated IEDIs were 0–1 % of the maximum ADI. The Meeting concluded that the long-term intake of residues of spinetoram resulting from the uses considered by the 2009 and current JMPR is unlikely to present a public health concern.

Short-term intake

The 2008 JMPR decided that an ARfD is unnecessary. The Meeting therefore concluded that the short-term intake of residues of spinetoram is unlikely to present a public health concern.

REFERENCES

Code	Author(s)	Year	Title, Institute, Report reference
	FAO/WHO	2008	Pesticide residues in food—2008, Report 2008, FAO Plant production and protection paper [ ]
	FAO/WHO	2008	Pesticide residues in food—2008, Evaluation 2008, Part I, FAO Plant production and protection paper [ ]
246796	Pinheiro, AC, Pavan, LA, De Vito, R, Kalvan, HC and Faria, FP	2007	Residues of XDE-175 Insecticide in Tangerines after Multiple Applications of 250 WG Formulation, Brazil, 2006. Report No. GHB-P 1428S1m Dow AgroSciences, Sao Paolo, Brazil. Dow AgroSciences Ref ID: DERBI No. 246796. 10 July 2007 GLP. Unpublished
246801	Pinheiro, AC, Pavan, LA, De Vito, R, Kalvan, HC and Faria, F P	2007	Residues of XDE-175 Insecticide in Tangerines after Multiple Applications of 250 WG Formulation, Brazil, 2006. Report No. GHB-P 1429S1, Dow AgroSciences, Sao Paolo, Brazil. Dow AgroSciences Ref ID: DERBI No. 246801 10 July 2007 GLP. Unpublished
246802	Pinheiro, AC, Carvalho, JC, De Vito, R, Kalvan, HC and Faria, F P	2007	Residues of XDE-175 Insecticide in Tangerines after Multiple Applications of 250 WG Formulation, Brazil, 2006. Report No. GHB-P 1425S1m Dow AgroSciences, Sao Paolo, Brazil. Dow AgroSciences Ref ID: DERBI No. 246802. 06 July 2007 GLP. Unpublished
246803	Pinheiro, AC, Pavan, LA, De Vito, R, Kalvan, HC and Faria, F P	2007	Residues of XDE-175 Insecticide in Tangerines after Multiple Applications of 250 WG Formulation, Brazil, 2006. Report No. GHB-P 1426S1, Dow AgroSciences, Sao Paolo, Brazil. Dow AgroSciences Ref ID: DERBI No. 246803. 06 July 2007 GLP. Unpublished
246806	Pinheiro, AC, Pavan, LA, Vito, R, Kalvan, HC and Faria, FP	2007	Residues of XDE-175 Insecticide in Tangerines after Multiple Applications of 250 WG Formulation, Brazil, 2006. Report No. GHB-P 1430S1, Dow AgroSciences, Sao Paolo, Brazil. Dow AgroSciences Ref ID: DERBI No. 246806. 10 July 2007, GLP. Unpublished
246807	Pinheiro, AC, Pavan, LA, De Vito, R, Kalvan, HC and Faria, FP	2007	Residues of XDE-175 Insecticide in Tangerines after Multiple Applications of 250 WG Formulation, Brazil, 2006. Report No. GHB-P 1431S1. Dow AgroSciences, Sao Paolo, Brazil. Dow AgroSciences Ref ID: DERBI No. 246807. 10 July 2007 GLP. Unpublished

Code	Author(s)	Year	Title, Institute, Report reference
246809	Pinheiro, AC, Faria, FP, De Vito, R and Kalvan, HC	2007	Residues of XDE-175 Insecticide in Tangerines after Multiple Applications of 250 WG Formulation, Brazil, 2006. Report No. GHB-P 1424S1, Dow AgroSciences, Sao Paolo, Brazil. Dow AgroSciences Ref ID: DERBI No. 246809. 06 July 2007 GLP. Unpublished
246811	Pinheiro, AC, Pavan, LA, De Vito, R, Kalvan, HC and Faria, FP	2007	Residues of XDE-175 Insecticide in Tangerines after Multiple Applications of 250 WG Formulation, Brazil, 2006. Report No. GHB-P 1427S1, Dow AgroSciences, Sao Paolo, Brazil. Dow AgroSciences Ref ID: DERBI No. 246811. 07 July 2007 GLP. Unpublished
246845	Pinheiro, AC, De Vito, R, Faria, FP, Santos, AC and Kalvan, HC	2007	Residues of XDE-175 Insecticide in Citrus after Multiple Applications of 250 WG Formulation, Brazil, 2006. Report No. GHB-P 1507S1, Dow AgroSciences, Sao Paolo, Brazil. .Dow AgroSciences Ref ID: DERBI No. 246845. 16 July 2007 GLP. Unpublished
246849	Pinheiro, AC, Pavan, LA, De Vito, R, Kalvan, HC and Faria, FP	2007	Residues of XDE-175 Insecticide in Citrus after Multiple Applications of 250 WG Formulation, Brazil, 2006. Report No. GHB-P 1508S1, Dow AgroSciences, Sao Paolo, Brazil. Dow AgroSciences Ref ID: DERBI No. 246849. 16 July 2007 GLP. Unpublished
246850	Pinheiro, AC, Pavan, LA, De Vito, R, Kalvan, HC and Faria, FP	2007	Residues of XDE-175 Insecticide in Citrus after Multiple Applications of 250 WG Formulation, Brazil, 2006. Report No. GHB-P 1509S1, Dow AgroSciences, Sao Paolo, Brazil. Dow AgroSciences Ref ID: DERBI No. 246850. 16 July 2007, GLP. Unpublished
246851	Pinheiro, AC Pavan, LA, De Vito, R, Kalvan, HC and Faria, FP	2007	Residues of XDE-175 Insecticide in Citrus after Multiple Applications of 250 WG Formulation, Brazil, 2006. Report No. GHB-P 1510S1, Dow AgroSciences, Sao Paolo, Brazil. Dow AgroSciences Ref ID: DERBI No. 246851. 16 July 2007 GLP. Unpublished
247091	Pinheiro, AC Pavan, LA, De Vito, R, Kalvan, HC and Faria, FP	2007	Residues of XDE-175 Insecticide in Tangerines after Multiple Applications of 250 WG Formulation, Brazil, 2006. Report No. GHB-P 1428S1, Dow AgroSciences, Sao Paolo, Brazil. Dow AgroSciences Ref ID: DERBI No. 246796. 10 July 2007, GLP. Unpublished
263602	Dorschner, KW	2009	Spinetoram: Magnitude of the Residue on Citrus. Report No. IR-4 PR No. 10145, IR-4 Project, New Jersey, USA. Dow AgroSciences Ref ID: DERBI No. 263602. 22 September 2009 , GLP. Unpublished
239322	Cowles, J	2007	Residues of DE-175 in New Zealand Stone Fruit after Four Applications of GF-1587 in the 2005–2006 Season. Report No. DN0022546, Dow AgroSciences Australia, New South Wales, Australia, Dow AgroSciences Ref ID: DERBI No. 239322. 02 February 2007, GLP. Unpublished
240988	Cowles, J	2006	Residues of DE-175 in Australian Stone Fruit after Multiple Applications of GF-1640 in the 2005–2006 Season. Report No. DN0021858, Dow AgroSciences Australia, New South Wales, Australia, Dow AgroSciences Ref ID: DERBI No. 240988. 04 December 2006, GLP. Unpublished
244912	Dolder, SC and Schelle, GE	2007	Magnitude of the Residues of XDE-175 in Peaches from Europe – 2006, Report No. 060066, Dow AgroSciences, Indiana, USA. Dow AgroSciences Ref ID: DERBI No. 244912. 29 May 2007, GLP. Unpublished
259245	Pinheiro, AC, Faria, FP and Curkovic, T	2008	Residues of DE-175 Insecticide in Cherry after Multiple Applications of 250 WG Formulation, Chile, 2007, Report No. GHB-P 1743, Dow AgroSciences, Santiago, Chile, Dow AgroSciences Ref ID: DERBI No. 259245, 18 April 2008,, GLP. Unpublished
259246	Pinheiro, AC, Faria, FP and Curkovic, T	2008	Residues of DE-175 Insecticide in Apricot after Multiple Applications of 250 WG Formulation, Chile, 2007, Report No. GHB-P 1741, Dow AgroSciences, Santiago, Chile, Dow AgroSciences Ref ID: DERBI No. 259246, 22 April 2008, GLP. Unpublished
259247	Pinheiro, AC, Faria, FP and Curkovic, T	2008	Residues of DE-175 Insecticide in Plum After Multiple Applications of 250 WG Formulation, Chile, 2007, Report No. GHB-P 1740, Dow AgroSciences, Santiago, Chile, Dow AgroSciences Ref ID: DERBI No. 259247, 17 April 2008, GLP. Unpublished
259328	Pinheiro, AC, Faria, FP and Curkovic, T	2008	Residues of DE-175 Insecticide in Peach after Multiple Applications of 250 WG Formulation, Chile, 2007, Report No. GHB-P 1752. Dow AgroSciences, Santiago, Chile, Dow AgroSciences Ref ID: DERBI No. 259328, 13 May 2008, GLP. Unpublished

Code	Author(s)	Year	Title, Institute, Report reference
259331	Pinheiro, AC, Faria, FP and Curkovic, T	2008	Residues of DE-175 Insecticide in Nectarine after Multiple Applications of 250 WG Formulation, Chile, 2007. Report No. GHB-P 1751, Dow AgroSciences, Santiago, Chile. Dow AgroSciences Ref ID: DERBI No. 259311. 07 May 2008, GLP. Unpublished
259788	Rawle, NW	2008	Residues of Spinetoram in Plums and Peaches at Intervals and Harvest Following Multiple Applications of GF-1640—Northern and Southern Europe – 2007, Report No. GHE-P-11733. Dow AgroSciences, Norfolk, United Kingdom. 13 August 2008, GLP. Unpublished
2000698	Pinheiro, AC, Becerra, V, Ruberti, D, De Vito, R, Rampazzo, PE and Ambrosio, LC	2008	Residues of DE-175 Insecticide in Peach After Multiple Applications of 250 WG Formulation, Argentina, 2007. Report No. GHB-P 1779, Dow AgroSciences, Buenos Aires, Argentina, Dow AgroSciences Ref ID: DERBI No. 2000698. 12 December 2008, GLP. Unpublished
2002671	Sumitomo	2007	Sumitomo Japanese Magnitude of Residue for Spinetoram (XDE-175) Wettable Powder Formulation in Fresh Peach. Report No. SUM Peach FR MOR 07, Sumitomo Chemical Co., Hyogo, Japan, Dow AgroSciences Ref ID: DERBI No. 2002671. 28 November 2007, GLP unspecified. Unpublished
2002672	Sumitomo	2007	Sumitomo Japanese Magnitude of Residue for Spinetoram (XDE-175) Wettable Powder Formulation in Peach Peel, Report No. SUM Peach Peel MOR 07m Sumitomo Chemical Co., Hyogo, Japan. Dow AgroSciences Ref ID: DERBI No. 2002672, 28 November 2007. GLP unspecified. Unpublished
2003238	Gehl, J	2009	Determination of Residues of Spinetoram (XDE-175) after Multiple Applications of GF-1640 in Open Field Nectarines, Argentina 2008–2009. Report No. S08-02640, Dow AgroSciences, Buenos Aires, Argentina, Dow AgroSciences Ref ID: DERBI No. 2003238. 10 November 2009, GLP. Unpublished
2003242	Gehl, J	2009	Determination of Residues of Spinetoram (XDE-175) after Multiple Applications of GF-1640 in Open Field Peaches, Argentina 2008–2009. Report No. S08-02641 Dow AgroSciences, Buenos Aires, Argentina. Dow AgroSciences Ref ID: DERBI No. 2003242. 10 November 2009, GLP. Unpublished
2007541	Rawle, NW	2009	Residues of Spinetoram in Plums at Intervals and Harvest Following Multiple Applications of GF-1640–Northern and Southern Europe—2008, Report No. GHE-P-120933, Dow AgroSciences, Norfolk, United Kingdom, Dow AgroSciences Ref ID: DERBI No. 2007541. 17 August 2009m GLP. Unpublished
2009870	Belcher, TI and Riley, ME	2011	Magnitude and Decline of the Residue of Spinetoram Following Application of DelegateTM WG to Raspberries. Report No. 101644 / S10-01992 Dow AgroSciences, Indiana, USA. Dow AgroSciences Ref ID: DERBI No. 2009870. 12 September 2011. GLP. Unpublished
2009871	Belcher, TI and Riley, ME	2011	Magnitude and Decline of the Residue of Spinetoram Following Application of DelegateTM WG to Blueberries, Report No. 101641 / S10-01993, Dow AgroSciences, Indiana, USA. Dow AgroSciences Ref ID: DERBI No. 2009871. 12 September 2011, GLP. Unpublished
259332	Pinheiro, AC, Faria, FP and Curkovic, T	2008	Residues of DE-175 Insecticide in Table Grape after Multiple Applications of 250 WG Formulation, Chile, 2007. Report No. GHB-P 1755, Dow AgroSciences, Santiago, Chile. Dow AgroSciences Ref ID: DERBI No. 259332. 15 May 2008, GLP. Unpublished
259851	Rawle, NW	2008	Residues of Spinetoram in Table Grapes from Covered Vines at Intervals and Harvest Following Multiple Applications of GF-1587—Southern Europe—2007, Report No. GHE-P-11732. Dow AgroSciences, Norfolk, United Kingdom. Dow AgroSciences Ref ID: DERBI No. 259851. 26 August 2008, GLP. Unpublished
2007533	Rawle, NW	2009	Residues of Spinetoram in Table Grapes from Covered Vines at Intervals and Harvest Following Multiple Application of GF-1587—Southern Europe—2008, Report No. GHE-P-12092 Dow AgroSciences, Norfolk, United Kingdom, Dow AgroSciences Ref ID: DERBI No. 2007533, 17 August 2009, GLP. Unpublished

Code	Author(s)	Year	Title, Institute, Report reference
2009869	Belcher, TI and Riley, ME	2011	Magnitude and Decline of the Residue of Spinetoram Following Application of RadiantTM SC to Green Onions, Report No. 101639 / S10-01991, Dow AgroSciences, Indiana, USA, Dow AgroSciences Ref ID: DERBI No. 2009869, 12 September 2011, GLP. Unpublished
257916	Rampazzo, PE, Meneghel, D, Pavan, LA and De Vito, R	2008	Residues of DE-175 Insecticide in Onion after Multiple Applications of 250WG Formulation, Brazil, 2007 Report No. GHB-P 1718. Dow AgroSciences, Sao Paulo, Brazil, Dow AgroSciences Ref ID: DERBI No. 257916, 08 January 2008, GLP. Unpublished
258269	Rampazzo, PE, Meneghel, D, Pavan, LA and De Vito, R	2008	Residues of DE-175 Insecticide in Onion after Multiple Applications of 250WG Formulation, Brazil, 2007, Report No. GHB-P 1718S1. Dow AgroSciences, Sao Paulo, Brazil, Dow AgroSciences Ref ID: DERBI No. 258269, 08 January 2008, GLP. Unpublished
2002673	Sumitomo	2007	Sumitomo Japanese Magnitude of Residue for Spinetoram (XDE-175) Wettable Powder Formulation in Welsh Onion, Report No. SUM WEL ON MOR 07, Sumitomo Chemical Co., Hyogo, Japan. Dow AgroSciences Ref ID: DERBI No. 2002673. 28 November 2007, GLP unspecified. Unpublished
2008174	Keats, A	2010	Magnitude of Residues of Spinetoram in Brassica Vegetable Crops for EU Import Tolerance, Report No. 090002. Dow AgroSciences Australia Limited, New South Wales, Australia. Dow AgroSciences Ref ID: DERBI No. 2008174. 12 January 2010. GLP. Unpublished
2008175	Keats, A	2010	Residues of Spinetoram in Brassica Crops in ANZ. Report No. 090004. Dow AgroSciences Australia Limited, New South Wales, Australia. Dow AgroSciences Ref ID: DERBI No. 2008175. 12 January 2010, GLP. Unpublished
2002097	Sumitomo	2007	Sumitomo Japanese Magnitude of Residue for Spinetoram (XDE-175) Wettable Powder Formulation in Cabbage, Report No. SUM Cabbage MOR 07, Sumitomo Chemical Co., Hyogo, Japan. Dow AgroSciences Ref ID: DERBI No. 2002097. 28 November 2007, GLP unspecified. Unpublished
2009867	Belcher, TI and Riley, ME	2011	Magnitude and Decline of the Residue of Spinetoram Following Application of RadiantTM SC to Spinach Report No. 101640 / S10-01989, Dow AgroSciences, Indiana, USA. Dow AgroSciences Ref ID: DERBI No. 2009867. 12 September 2011, GLP. Unpublished
246852	Pinheiro, AC Pavan, LA, De Vito, R, Kalvan, HC and Faria, FP	2007	Residues of DE-175 Insecticide in French Beans after Multiple Applications of 250WG Formulation, Brazil, 2006. Report No. GHB-P 1423S1, Dow AgroSciences, Sao Paulo, Brazil. Dow AgroSciences Ref ID: DERBI No. 246852. 06 July 2007, GLP. Unpublished
246853	Pinheiro, AC Pavan, LA, De Vito, R, Kalvan, HC and Faria, FP	2007	Residues of DE-175 Insecticide in French Beans after Multiple Applications of 250WG Formulation, Brazil, 2006. Report No. GHB-P 1421S1, Dow AgroSciences, Sao Paulo, Brazil. Dow AgroSciences Ref ID: DERBI No. 246853, 05 July 2007. GLP. Unpublished
246854	Pinheiro, AC, Santos, AC, De Vito, R, Kalvan, HC and Faria, FP	2007	Residues of XDE-175 Insecticide in French Beans after Multiple Applications of 250WG Formulation, Brazil, 2006. Report No. GHB-P 1416S1, Dow AgroSciences, Sao Paulo, Brazil. Dow AgroSciences Ref ID: DERBI No. 246854. 05 July 2007, GLP. Unpublished
246855	Pinheiro, AC Pavan, LA, De Vito, R, Kalvan, HC and Faria, FP	2007	Residues of XDE-175 Insecticide in French Beans after Multiple Applications of 250WG Formulation, Brazil, 2006. Report No. GHB-P 1420S1, Dow AgroSciences, Sao Paulo, Brazil. Dow AgroSciences Ref ID: DERBI No. 246855. 05 July 2007, GLP. Unpublished
246856	Pinheiro, AC, Meneghel, D, De Vito, R, Kalvan, HC and Faria, FP	2007	Residues of XDE-175 Insecticide in French Beans after Multiple Applications of 250WG Formulation, Brazil, 2006. Report No. GHB-P 1419S1, Dow AgroSciences, Sao Paulo, Brazil. Dow AgroSciences Ref ID: DERBI No. 246856. 06 July 2007, GLP. Unpublished
246857	Pinheiro, AC, Meneghel, D, De Vito, R, Kalvan, HC and Faria, FP	2007	Residues of XDE-175 Insecticide in French Beans after Multiple Applications of 250WG Formulation, Brazil, 2006. Report No. GHB-P 1418S1, Dow AgroSciences, Sao Paulo, Brazil. Dow AgroSciences Ref ID: DERBI No. 246857. 05 July 2007, GLP. Unpublished
246858	Pinheiro, AC, Rosseto, J, De Vito, R, Kalvan, HC and Faria, FP	2007	Residues of XDE-175 Insecticide in French Beans after Multiple Applications of 250WG Formulation, Brazil, 2006. Report No. GHB-P 1417S1, Dow AgroSciences, Sao Paulo, Brazil. Dow AgroSciences Ref ID: DERBI No. 246858. 05 July 2007, GLP. Unpublished

Code	Author(s)	Year	Title, Institute, Report reference
246859	Pinheiro, AC Pavan, LA, De Vito, R, Kalvan, HC and Faria, FP	2007	Residues of DE-175 Insecticide in French Beans after Multiple Applications of 250WG Formulation, Brazil, 2006. Report No. GHB-P 1422S1, Dow AgroSciences, Sao Paulo, Brazil. Dow AgroSciences Ref ID: DERBI No. 246859. 06 July 2007, GLP. Unpublished
256518	Pinheiro, AC Pavan, LA, De Vito, R, Kalvan, HC and Faria, FP	2007	Residues of XDE-175 Insecticide in French Beans after Multiple Applications of 250WG Formulation, Brazil, 2006. Report No. GHB-P 1420S2, Dow AgroSciences, Sao Paulo, Brazil. Dow AgroSciences Ref ID: DERBI No. 256518. 30 November 2007, GLP. Unpublished
2006401	Rawle, NW	2010	Residues of Spinetoram in French Beans at Intervals and Harvest Following Multiple Applications of GF-1587—Southern Europe —2009, Report No. GHE-P-12480, Dow AgroSciences, Norfolk, United Kingdom, Dow AgroSciences Ref ID: DERBI No. 2006401. 16 August 2010, GLP. Unpublished
2007581	Rawle, NW	2010	Residues of Spinetoram in French Beans at Intervals and Harvest Following Multiple Applications of GF-1587—Southern Europe—2009. Report No. GHE-P-12480, Dow AgroSciences, Norfolk, United Kingdom, Dow AgroSciences Ref ID: DERBI No. 2007581. 16 August 2010, GLP. Unpublished
2009868	Belcher, TI and Riley, ME	2011	Magnitude and Decline of the Residue of Spinetoram Following Application of RadiantTM SC to Celery, Report No. 101642 / S10-01990. Dow AgroSciences, Indiana, USA, Dow AgroSciences Ref ID: DERBI No. 2009868, 12 September 2011, GLP. Unpublished