

SEDAXANE (259)

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EXPLANATION

Sedaxane is a mixture of two *cis* isomers 2'-[(1*RS*,2*RS*)-bicycloprop-2-yl]-3-(difluoromethyl)-1-methylpyrazole-4-carboxanilide, and two *trans* isomers 2'-[(1*RS*,2*SR*)-bicycloprop-2-yl]-3-(difluoromethyl)-1-methylpyrazole-4-carboxanilide (IUPAC). This fungicide was first evaluated by the JMPR in 2012, the Meeting derived an ADI of 0–0.1 mg/kg bw and an ARfD of 0.3 mg/kg bw. The Meeting determined that the residue definitions for MRL compliance and the estimation of dietary intake, for both plant and animal commodities, is parent sedaxane and that the residue is fat-soluble.

Sedaxane was listed by the Forty-fifth Session of the CCPR for the evaluation of additional maximum residue levels. The 2014 Meeting received residue data reflecting use of sedaxane as a seed treatment on corn/maize, pulses, potatoes, and sorghum. In addition to evaluating those crops, the Meeting was asked to consider use on rice, without residue data, on the basis of residue data supplied to the 2012 and 2014 Meetings for other grains.

RESIDUE ANALYSIS**Analytical Methods**

The analytical method used in the residue and processing studies is the same as that reviewed and deemed acceptable for data collection and enforcement purposes by the 2012 Meeting (Specht method P-14.141). The reported LOQ is 0.005 mg/kg for the *cis* isomers and the *trans* isomers, each, with an overall LOQ of 0.01 mg/kg in plant and animal matrices.

USE PATTERN

Information on the registered uses of sedaxane for the relevant crops, along with copies of labels, were provided to the 2014 Meeting (Table 1).

Table 1 Registered uses of sedaxane for corn/maize, pulses, potatoes, rice, and sorghum

Crop	Country	Formulation		Application				PHI (days)
		g ai/L or g ai/kg	Type	Method	g ai/100 kg seed	Water L/ha	Number	
Beans (dry)	Canada	500	FS	Seed treatment	5	n/a	1	n/a
Beans (dry)	USA	500	FS	Seed treatment	5	n/a	1	n/a
Lentils	USA	500	FS	Seed treatment	5	n/a	1	n/a
Peas (dry)	Canada	500	FS	Seed treatment	5	n/a	1	n/a
Peas (dry)	USA	500	FS	Seed treatment	5	n/a	1	n/a
Potatoes	Canada	500	FS	Seed treatment	2.5	n/a	1	n/a
Maize	Argentina	500	FS	Seed treatment	10	n/a	1	n/a
Maize (corn)	Canada	500	FS	Seed treatment	12.5	n/a	1	n/a
Maize	Chile	500	FS	Seed treatment	50	n/a	1	n/a
Maize (corn)	USA	500	FS	Seed treatment	40	n/a	1	n/a
Pop corn	USA	500	FS	Seed treatment	40	n/a	1	n/a
Sweet corn	Canada	500	FS	Seed treatment	12.5	n/a	1	n/a
Sweet corn	USA	500	FS	Seed treatment	40	n/a	1	n/a
Rice	Uruguay	50	FS	Seed treatment	10	n/a	1	n/a
Sorghum	Canada	500	FS	Seed treatment	5	n/a	1	n/a
Sorghum	USA	500	FS	Seed treatment	5	n/a	1	n/a

RESIDUES RESULTING FROM SUPERVISED TRIALS ON CROPS

Residue trials were reported with sufficient details for evaluation, including field conditions, application parameters, planting dates, storage conditions and durations, and procedural recoveries. Separate residue values are reported, as measured, for the *cis* and *trans* isomers of sedaxane. Generally, two samples were collected from treated plots and one sample from control plots. Mean residue values suitable for maximum residue level and STMR estimation are underlined in the tables. For all crops and matrices except potato, residues of each isomer were < 0.005 mg/kg (i.e., < 0.01 mg/kg combined) in all samples.

Storage stability data were not submitted to the 2014 Meeting. Data evaluated by the 2012 Meeting showed that residues of sedaxane are stable under frozen conditions for at least 2 years in wheat grain and straw, spinach, potato, orange, lentils, and soya beans. The 2014 Meeting has translated those storage stability data to the pulse, potato, corn, and sorghum samples in this evaluation.

The 2014 Meeting received data from supervised trials depicting residues in the following crops grown from treated seeds:

Commodity	Group	Table No.
Sweet Corn	VO Fruiting Vegetables, other than Cucurbits	2
Beans, dry	VD Pulses	3
Pea, dry	VD Pulses	4
Potato	VR Root and tuber vegetables	5
Maize, grain	GC Cereal grains	6
Sorghum, grain	GC Cereal grains	7
Bean, forage and hay	AL Legume animal feeds	8
Pea, hay	AL Legume animal feeds	9
Maize, fodder, forage	AS Straw, fodder and forage of cereal grains and grasses	10
Sorghum, fodder, forage	AS Straw, fodder and forage of cereal grains and grasses	11

Fruiting Vegetables, other than Cucurbits

Sweet Corn (Corn-on-the-cob)

Thirteen supervised trials were conducted on corn in Canada and the USA during the 2008 (USA) and 2010 (Canada) growing seasons. Of these, six were conducted with sweet corn varieties (* in table); for the remaining seven trials, ears were harvested prior to maturity to simulate sweet corn. Sedaxane was applied as a seed treatment at a nominal rate of 40 g ai/100 kg seed. Commodities were collected at normal commercial harvest and were stored frozen for up to 10 months (0.8 years). Trials conducted in the same location and with the same variety were not considered to be independent.

Table 2 Results of residue trials on sweet corn

Country (year) location (trial ID)	Variety	Application rate (g ai/100 kg seed)	Seeding rate (kg seed/ha)	DAT	Residues (mg/kg)	Mean residue (mg/kg)	Report ID, remarks
cGAP: USA	--	40	--		--	--	--
Canada (2010) Abbotsford, BC (T802)	Peaches Cream*	& 30	19	106	< 0.01, < 0.01	< 0.01	CER 05720/10
Canada (2010) Branchton, ON (T800)	Peaches Cream*	& 30	16	79	< 0.01, < 0.01	< 0.01	CER 05720/10
Canada (2010) Taber, AB (T801)	Peaches Cream*	& 30	15	121	< 0.01, < 0.01	< 0.01	CER 05720/10
USA (2008) Aromas, (W27CA081484)	CA Jubilee*	50	n.s.	Maturi ty	< 0.01, < 0.01	<u>< 0.01</u>	T006043-07
USA (2008)	NK	47	n.s.	82	< 0.01, < 0.01	<u>< 0.01</u>	T006043-07

Country (year) location (trial ID)	Variety	Application rate (g ai/100 kg seed)	Seeding rate (kg seed/ha)	DAT	Residues (mg/kg)	Mean residue (mg/kg)	Report ID, remarks
Athens, (E12GA081463)	GA 70-C7- GT/CB/LL						
USA (2008) Fitchburg, (C08WI081469)	WI NK 40T- GT/CB/LL	41	n.s.	85	< 0.01, < 0.01	<u>< 0.01</u>	T006043-07
USA (2008) Germansville, (E04PA081461)	PA NK 40T- GT/CB/LL	41	n.s.	70	< 0.01, < 0.01	<u>< 0.01</u>	T006043-07
USA (2008) Highland, (C19KS081466)	KS 83F11- GT/CB/LL	51	n.s.	92	< 0.01, < 0.01	< 0.01	T006043-07
USA (2008) Hillsboro, (W21OR081486)	OR Jubilee*	50	n.s.	Maturi ty	< 0.01, < 0.01	<u>< 0.01</u>	T006043-07
USA (2008) Oregon, (C19MO081465)	MS 83F11- GT/CB/LL	51	n.s.	90	< 0.01, < 0.01	< 0.01	T006043-07
USA (2008) Richwood, (C01OH081468)	OH H8212- GT/CB/LL	40	n.s.	106	< 0.01, < 0.01	<u>< 0.01</u>	T006043-07
USA (2008) Rupert, (W15ID081485)	ID Jubilee* C4274MF	50	n.s.	Maturi ty	< 0.01, < 0.01	<u>< 0.01</u>	T006043-07
USA (2008) Saginaw, (C01MI081467)	MI H8212- GT/CB/LL	40	n.s.	88	< 0.01, < 0.01	<u>< 0.01</u>	T006043-07

* Sweet corn variety

Pulses

Beans, dry

Thirteen independent supervised trials were conducted in dry beans in Canada and the USA during the 2010 growing season. Sedaxane was applied as a seed treatment at a nominal rate of 5 g ai/100 kg seed, except for two trials (Fresno, CA; Parkdale, OR) in which the application rate was ca. 12 g ai/100 kg seed. Commodities were collected at normal commercial harvest and were stored frozen for up to 402 days (1.1 years).

Table 3 Results of residue trials in dry beans

Country (year) location (trial ID)	Variety	Application rate (g ai/100 kg seed)	Seeding rate (kg seed/ha)	DA T	Residues (mg/kg)	Mean residue (mg/kg)	Report remarks ID,
cGAP: USA/Canada	--	5	--		--	--	--
Canada (2010) St. George, ON (T811)	Pintoba	4.5	17	107	< 0.01, < 0.01	<u>< 0.01</u>	CER 05722/10
Canada (2010) Branchton, ON (T812)	Navy	4.5	9	101	< 0.01, < 0.01	<u>< 0.01</u>	CER 05722/10
Canada (2010) Elm Creek, MB (T813)	Envoy (Navy)	4.5	85	134	< 0.01, < 0.01	<u>< 0.01</u>	CER 05722/10
Canada (2010) St. Marc-sur-Richelieu, QC (T814)	Envoy (Navy)	4.5	41	128	< 0.01, < 0.01	<u>< 0.01</u>	CER 05722/10
Canada (2010) Taber, AB (T815)	Pintoba	5.4	53	148	< 0.01, < 0.01	<u>< 0.01</u>	CER 05722/10
USA (2010) Carrington, ND (C13- 0665)	Pinto Lapaz	4.4	62	114	< 0.01, < 0.01	<u>< 0.01</u>	TK0024902

Country (year) location (trial ID)	Variety	Application rate (g ai/100 kg seed)	Seeding rate (kg seed/ha)	DA T	Residues (mg/kg)	Mean residue (mg/kg)	Report remarks	ID,
USA (2010) Eaton, CO (W12-0666)	Pinto Lapaz	4.4	47	105	< 0.01, < 0.01	<u>< 0.01</u>	TK0024902	
USA (2010) Wellington, CO (W12-0667)	Pinto Lapaz	4.4	56	106	< 0.01, < 0.01	<u>< 0.01</u>	TK0024902	
USA (2010) Fresno, CA (E19-0668)	Foxfire LRK	13	43	106	< 0.01, < 0.01	< 0.01	TK0024902	
USA (2010) Parkdale, OR (W20-0669)	Foxfire LRK	13	88	105	< 0.01, < 0.01	< 0.01	TK0024902	
USA (2010) Parkdale, OR (W20-0672)	Banner	6.3	83	102	< 0.01, < 0.01	<u>< 0.01</u>	TK0024902	
USA (2010) Hermiston, OR (W21-0671)	Banner	6.3	98	75	< 0.01, < 0.01	<u>< 0.01</u>	TK0024902	
USA (2010) Hughson, CA (W26-0670)	Banner	6.3	41	104	< 0.01, < 0.01	<u>< 0.01</u>	TK0024902	

Pea, dry

Ten independent supervised trials were conducted in dry pea in Canada and the USA during the 2010 growing season. Sedaxane was applied as a seed treatment at a nominal rate of 5 g ai/100 kg seed. Commodities were collected at normal commercial harvest and were stored frozen for up to 401 days (1.1 years).

Table 4 Results of residue trials in dry peas

Country (year) location (trial ID)	Variety	Application rate (g ai/100 kg seed)	Seeding rate (kg seed/ha)	DA T	Residues (mg/kg)	Mean residue (mg/kg)	Report remarks	ID,
cGAP: USA/Canada	--	5	--	--	--	--	--	
Canada (2010) Portage la Prairie, MB (T803)	CDC Meadow	5	179	91	< 0.01, < 0.01	<u>< 0.01</u>	CER 05721/10	
Canada (2010) Elm Creek, MB (T804)	Golden	5	177	92	< 0.01, < 0.01	<u>< 0.01</u>	CER 05721/10	
Canada (2010) Minto, MB (T805)	Golden	5	181	88	< 0.01, < 0.01	<u>< 0.01</u>	CER 05721/10	
				95	< 0.01, < 0.01	<u>< 0.01</u>	CER 05721/10	
				102	< 0.01, < 0.01	<u>< 0.01</u>	CER 05721/10	
				110	< 0.01, < 0.01	<u>< 0.01</u>	CER 05721/10	
Canada (2010) Minto, MB (T806)	CDC Meadow	5	181	102	< 0.01, < 0.01	<u>< 0.01</u>	CER 05721/10	
Canada (2010) Boisservain, MB (T807)	CDC Meadow	5	179	98	< 0.01, < 0.01	<u>< 0.01</u>	CER 05721/10	
Canada (2010) Rosthern, SK (T808)	Golden	5	116	116	< 0.01, < 0.01	<u>< 0.01</u>	CER 05721/10	
Canada (2010) Blaine Lake, SK (T809)	CDC Meadow	5	131	128	< 0.01, < 0.01	<u>< 0.01</u>	CER 05721/10	
Canada (2010) Alvena, SK (T810)	Golden	5	225	131	< 0.01, < 0.01	<u>< 0.01</u>	CER 05721/10	
USA (2010) Gardner, ND (C12-0674)	Ariel	3.9	132	94	< 0.01, < 0.01	<u>< 0.01</u>	TK0024902	
USA (2010) Ephrata, WA (W18-0673)	Ariel	3.9	212	87	< 0.01, < 0.01	<u>< 0.01</u>	TK0024902	

*Root and Tuber Vegetables**Potato*

Thirty-one independent supervised trials were conducted in potato in Canada and the USA during the 2010 growing season. Sedaxane was applied as a seed treatment at a nominal rate of 2.5 g ai/100 kg seed, except for trials in Campbell, MN and Rupert, ID in which the application rates were 4.5 and 5.2 g ai/100 kg seed, respectively. Commodities were collected at normal commercial harvest and were stored frozen for up to 292 days (0.8 years).

Table 5 Results of residue trials in potato

Country (year) location (trial ID)	Variety	Application rate (g ai/100 kg seed)	Seeding rate (kg seed/ha)	DA T	Residues (mg/kg)	Mean residue (mg/kg)	Report remarks	ID,
cGAP: Canada	--	2.5	--		--	--	--	
Canada (2011) New Glasgow, PE (T900)	Ranger Russet	2.5	2190	95	< 0.01, < 0.01	<u>< 0.01</u>	CER 05724/11	
				97	< 0.01, < 0.01	< 0.01	CER 05724/11	
				102	< 0.01, < 0.01	< 0.01	CER 05724/11	
				106	< 0.01, < 0.01	< 0.01	CER 05724/11	
				111	< 0.01, < 0.01	< 0.01	CER 05724/11	
Canada (2011) New Glasgow, PE (T901)	Yukon Gold	2.5	1850	87	< 0.01, < 0.01	<u>< 0.01</u>	CER 05724/11	
				93	< 0.01, < 0.01	< 0.01	CER 05724/11	
Canada (2011) New Glasgow, PE (T902)	Shepody	2.5	1940	78	< 0.01, < 0.01	<u>< 0.01</u>	CER 05724/11	
				84	< 0.01, < 0.01	< 0.01	CER 05724/11	
Canada (2011) Brackley Beach, PE (T903)	Russet Burbank	2.5	1910	95	< 0.01, < 0.01	<u>< 0.01</u>	CER 05724/11	
				97	< 0.01, < 0.01	< 0.01	CER 05724/11	
				102	< 0.01, < 0.01	< 0.01	CER 05724/11	
				106	< 0.01, < 0.01	< 0.01	CER 05724/11	
Canada (2011) Brackley Beach, PE (T904)	Green Mountain	2.5	1910	95	< 0.01, < 0.01	<u>< 0.01</u>	CER 05724/11	
				102	< 0.01, < 0.01	< 0.01	CER 05724/11	
				111	< 0.01, < 0.01	< 0.01	CER 05724/11	
Canada (2011) Malden, NB (T905)	Yukon Gold	2.5	2000	85	< 0.01, < 0.01	<u>< 0.01</u>	CER 05724/11	
				86	< 0.01, < 0.01	< 0.01	CER 05724/11	
				92	< 0.01, < 0.01	< 0.01	CER 05724/11	
Canada (2011) Malden, NB (T906)	Norland	2.5	1990	86	< 0.01, < 0.01	<u>< 0.01</u>	CER 05724/11	
				92	< 0.01, < 0.01	< 0.01	CER 05724/11	
Canada (2011) St. Marc-sur-Richelieu, QC (T907)	Chieftan	2.5	2000	88	< 0.01, < 0.01	<u>< 0.01</u>	CER 05724/11	
				94	< 0.01, < 0.01	< 0.01	CER 05724/11	
Canada (2011) St. Marc-sur-Richelieu, QC (T908)	Kennebec	2.5	2000	93	< 0.01, < 0.01	<u>< 0.01</u>	CER 05724/11	
				99	< 0.01, < 0.01	< 0.01	CER 05724/11	
Canada (2011) Branchton, ON (T909)	Chieftan	2.5	2675	99	< 0.01, < 0.01	<u>< 0.01</u>	CER 05724/11	
				104	< 0.01, < 0.01	< 0.01	CER 05724/11	
Canada (2011) Branchton, ON (T910)	Gold Rush	2.5	2675	98	< 0.01, < 0.01	<u>< 0.01</u>	CER 05724/11	
				104	< 0.01, < 0.01	< 0.01	CER 05724/11	
Canada (2011)	Bintje	2.5	2240	110	< 0.01, < 0.01	<u>< 0.01</u>	CER 05724/11	

Country (year) location (trial ID)	Variety	Application rate (g ai/100 kg seed)	Seeding rate (kg seed/ha)	DA T	Residues (mg/kg)	Mean residue (mg/kg)	Report remarks	ID,
Taber, AB (T912)								
				117	< 0.01, < 0.01	< 0.01	CER 05724/11	
Canada (2011) Taber, AB (T913)	Sangre	2.5	2700	110	< 0.01, < 0.01	< 0.01	CER 05724/11	
				117	< 0.01, < 0.01	< 0.01	CER 05724/11	
USA (2011) North Rose, NY (TK0049813-01)	Genesee	2.6	2272	98	< 0.0075, < 0.005	< 0.0063	TK0049813	
USA (2011) Germansville, PA (TK0049813-02)	Chieftan	2.6	3388	83	< 0.0075, < 0.0075	< 0.0075	TK0049813	
USA (2011) Seven Springs, NC (TK0049813-03)	Red LaSoda	1.1	2380	109	< 0.0075, < 0.0075	< 0.0075	TK0049813	
USA (2011) Oviedo, FL (TK0049813- 04)	Red LaSoda	2.6	3256	82	< 0.01028, < 0.0075	< 0.0089	TK0049813	
USA (2011) Rice, MN (TK0049813- 05)	Russet Norkotah Sel 8	2.5	1074	129	< 0.0075, < 0.0075	< 0.0075	TK0049813	
USA (2011) Gardner, ND (TK0049813-06)	Red LaSoda	2.5	1307	82	< 0.0075, < 0.0075	< 0.0075	TK0049813	
USA (2011) Jerome, ID (TK0049813- 07)	Yukon Gold	2.6	4249	105	< 0.0075, < 0.0075	< 0.0075	TK0049813	
USA (2011) Madera, CA (TK0049813-08)	Dark Red Norland G3	2.2	2559	129	< 0.0082, < 0.0075	< 0.0079	TK0049813	
USA (2011) Jerome, ID (TK0049813- 09)	Ranger Russet	2.6	4019	130	< 0.0075, < 0.0085	< 0.008	TK0049813	
USA (2011) American Falls, ID (TK0049813-10)	Russet Burbank	2.5	2332	103	< 0.0075, < 0.0075	< 0.0075	TK0049813	
USA (2011) Ephrata, WA (TK0049813-11)	Russet Burbank	2.6	4032	111	< 0.0075, < 0.0075	< 0.0075	TK0049813	
USA (2011) American Falls, ID (TK0049813-12)	Dark Red Norland	2.5	2302	83	< 0.0075, < 0.0075	< 0.0075	TK0049813	
USA (2011) Campbell, MN (TK0049813-13)	Red Norland	2.6	2829	66 ^a	< 0.0195, < 0.0155	< 0.018	TK0049813	
				71	< 0.016, < 0.014	< 0.015	TK0049813	
				76	< 0.0091, < 0.0075	< 0.0083	TK0049813	
				81	< 0.0075, < 0.0075	< 0.0075	TK0049813	
USA (2011) Ephrata, WA (TK0049813-14)	Umatilla	2.6	4053	98	< 0.0075, < 0.005	< 0.0063	TK0049813	
				103	< 0.005, < 0.005	< 0.005	TK0049813	
				108	< 0.0075, < 0.0075	< 0.0075	TK0049813	
				113	< 0.0075, < 0.01	< 0.0088	TK0049813	
USA (2011) Campbell, MN (TK0049813-15(1))	Kennebec	2.6	3025	128	< 0.01, < 0.01	< 0.01	TK0049813	

Country (year) location (trial ID)	Variety	Application rate (g ai/100 kg seed)	Seeding rate (kg seed/ha)	DA T	Residues (mg/kg)	Mean residue (mg/kg)	Report remarks ID,
USA (2011) Campbell, (TK0049813-15(2))	MN Kennebec	5.2	3102	128	< 0.01, < 0.01	< 0.01	TK0049813
USA (2011) Rupert, ID (TK0049813- 16(1))	Russet Burbank	2.7	2806	115	< 0.01, < 0.01	< 0.01	TK0049813
USA (2011) Rupert, ID (TK0049813- 16(2))	Russet Burbank	4.5	3926	115	< 0.01, < 0.01	< 0.01	TK0049813

^a Immature tubers

Cereal Grains

Maize and popcorn

Twenty supervised trials were conducted in corn in Canada and the USA during the 2008 (USA) and 2010 (Canada) growing seasons. Of these, one trial was conducted with popcorn. Sedaxane was applied as a seed treatment at a nominal rate of 40 g ai/100 kg seed. Two trials were conducted at an exaggerated rate (120 g ai/100 kg seed). Commodities were collected at normal commercial harvest and were stored frozen for up to 10 months (0.8 years). Trials conducted in the same location and with the same variety were not considered to be independent.

Table 6 Results of residue trials in maize

Country (year) location (trial ID)	Variety	Application rate (g ai/100 kg seed)	Seeding rate (kg seed/ha)	DAT	Residues (mg/kg)	Mean residue (mg/kg)	Report ID, remarks
cGAP: USA	--	40	--		--	--	--
USA (2008) Athens, (E12GA081463)	GA NK 70-C7- GT/CB/LL	47	n.s.	120	< 0.01, < 0.01	< 0.01	T006043-07
USA (2008) Bagley, (C30IA081479)	IA NK 70-C7- GT/CB/LL	47	n.s.	167	< 0.01, < 0.01	< 0.01	T006043-07
		120	n.s.	167	< 0.01, < 0.01	< 0.01	T006043-07
USA (2008) Claude, (E13TX081483)	TX A3035	48	n.s.	210	< 0.01, < 0.01	< 0.01	T006043-07
USA (2008) Fitchburg, (C08WI081469)	WI NK 40T- GT/CB/LL	41	n.s.	154	< 0.01, < 0.01	< 0.01	T006043-07
USA (2008) Fitchburg, (C08WI081470)	WI NK 40T- GT/CB/LL	41	n.s.	161	< 0.01, < 0.01	< 0.01	T006043-07
USA (2008) Fitchburg, (C08WI081471)	WI NK 40T- GT/CB/LL	41	n.s.	161	< 0.01, < 0.01	< 0.01	T006043-07
USA (2008) Germansville, (E04PA081461)	PA NK 40T- GT/CB/LL	41	n.s.	133	< 0.01, < 0.01	< 0.01	T006043-07
USA (2008) Highland, (C19KS081466)	KS 83F11- GT/CB/LL	51	n.s.	147	< 0.01, < 0.01	< 0.01	T006043-07
USA (2008) Lime Springs, (E19IA081476)	IA NK 40T- GT/CB/LL	41	n.s.	149	< 0.01, < 0.01	< 0.01	T006043-07
USA (2008) Lime Springs, IA	IA NK 40T-	41	n.s.	148	< 0.01, < 0.01	< 0.01	T006043-07

Country (year) location (trial ID)	Variety	Application rate (g ai/100 kg seed)	Seeding rate (kg seed/ha)	DAT	Residues (mg/kg)	Mean residue (mg/kg)	Report ID, remarks
(E19IA081477)	GT/CB/LL						
USA (2008) Lime Springs, IA (E19MN081478)	NK 40T- GT/CB/LL	41	n.s.	143	< 0.01, < 0.01	< 0.01	T006043-07
USA (2008) Northwood, ND (C13ND081472)	N23F- GT/CB/LL	40	n.s.	177	< 0.01, < 0.01	<u>< 0.01</u>	T006043-07
USA (2008) Northwood, ND (C13ND081473)	N23F- GT/CB/LL	40	n.s.	175	< 0.01, < 0.01	< 0.01	T006043-07
		120	n.s.	175	< 0.01, < 0.01	< 0.01	T006043-07
USA (2008) Oregon, MS (C19MO081465)	83F11- GT/CB/LL	51	n.s.	153	< 0.01, < 0.01	< 0.01	T006043-07
USA (2008) Perry, IA (C30IA081480)	NK 70-C7- GT/CB/LL	47	n.s.	128	< 0.01, < 0.01	<u>< 0.01</u>	T006043-07
				135	< 0.01, < 0.01	< 0.01	T006043-07
				142	< 0.01, < 0.01	< 0.01	T006043-07
				149	< 0.01, < 0.01	< 0.01	T006043-07
				156	< 0.01, < 0.01	< 0.01	T006043-07
USA (2008) Richland, IA (C18IA081474)	H8212- GT/CB/LL	40	n.s.	130	< 0.01, < 0.01	<u>< 0.01</u>	T006043-07
				137	< 0.01, < 0.01	< 0.01	T006043-07
				144	< 0.01, < 0.01	< 0.01	T006043-07
				151	< 0.01, < 0.01	< 0.01	T006043-07
				158	< 0.01, < 0.01	< 0.01	T006043-07
USA (2008) Richland, IA (C18IA081475)	H8212- GT/CB/LL	40	n.s.	141	< 0.01, < 0.01	<u>< 0.01</u>	T006043-07
USA (2008) Richwood, OH (C01OH081468)	H8212- GT/CB/LL	40	n.s.	171	< 0.01, < 0.01	<u>< 0.01</u>	T006043-07
USA (2008) Saginaw, MI (C01MI081467)	H8212- GT/CB/LL	40	n.s.	152	< 0.01, < 0.01	<u>< 0.01</u>	T006043-07
USA (2008) Wharton, TX (W05TX081482)	83F11- GT/CB/LL	51	n.s.	113	< 0.01, < 0.01	< 0.01	T006043-07

n.s.: not specified

Sorghum

Twelve supervised trials were conducted in sorghum in the USA during the 2010 growing season. Sedaxane was applied as a seed treatment at a nominal rate of 40 g ai/100 kg seed. Commodities were collected at normal commercial harvest and were stored frozen for up to 9.5 months (0.8 years). Trials conducted in the same location and with the same variety were not considered to be independent.

Table 7 Results of residue trials in sorghum

Country (year) location (trial ID)	Variety	Application rate (g ai/100 kg seed)	Seeding rate (kg seed/ha)	DA T	Residues (mg/kg)	Mean residue (mg/kg)	Report ID, remarks
cGAP: USA/Canada	--	5	--		--	--	--
USA (2010) Bagley, IA (C30-0684)	NK6638	40	8	157	< 0.01, < 0.01	<u>< 0.01</u>	TK0024901
USA (2010) Cheneyville, LA (E17-	NK6638	40	7	114	< 0.01, < 0.01	<u>< 0.01</u>	TK0024901

Country (year) location (trial ID)	Variety	Application rate (g ai/100 kg seed)	Seeding rate (kg seed/ha)	DA T	Residues (mg/kg)	Mean residue (mg/kg)	Report ID, remarks
0682)							
USA (2010) Eaton, CO (W12-0690)	WGF	39	12	168	< 0.01, < 0.01	≤ 0.01	TK0024901
USA (2010) Elko, SC (E11-0681)	NK7829	42	4	107	< 0.01, < 0.01	≤ 0.01	TK0024901
USA (2010) Jamestown, ND (C12- 0689)	NK7829	42	5	144	< 0.01, < 0.01	≤ 0.01	TK0024901
USA (2010) LaPlata, IA (C18-0686)	NK6638	40	9	138	< 0.01, < 0.01	≤ 0.01	TK0024901
USA (2010) Levelland, TX (W39- 0692)	NK7829	42	8	124	< 0.01, < 0.01	≤ 0.01	TK0024901
USA (2010) Raymondville, TX (W08- 0688)	NK7829	42	8	149	< 0.01, < 0.01	≤ 0.01	TK0024901
USA (2010) Richland, IA (C18-0683)	NK6638	40	9	125	< 0.01, < 0.01	≤ 0.01	TK0024901
USA (2010) Richland, IA (C18-0685)	NK6638	40	9	132	< 0.01, < 0.01	< 0.01	TK0024901
USA (2010) Uvalde, TX (W07-0687)	NK7829	42	4	114	< 0.01, < 0.01	< 0.01	TK0024901
USA (2010) Uvalde, TX (W07-0691)	NK7829	42	8	147	< 0.01, < 0.01	≤ 0.01	TK0024901

Legume animal feeds

Bean (forage and hay)

Seven independent supervised trials were conducted in beans in Canada and the USA during the 2010 growing season. Sedaxane was applied as a seed treatment at a nominal rate of 5 g ai/100 kg seed, except for two trials (Fresno, CA; Parkdale, OR) in which the application rate was ca. 12 g ai/100 kg seed. Commodities were collected at normal commercial harvest and were stored frozen for up to 402 days (1.1 years). Forage was collected from only five of the seven trials.

Table 8 Results of residue trials in bean forage and hay

Country (year) location (trial ID)	Variety	Application rate (g ai/100 kg seed)	Seeding rate (kg seed/ha)	DAT	Residues (mg/kg)	Mean residue (mg/kg)	Report ID, remarks
cGAP: USA/Canada	--	5	--		--	--	--
Forage							
Canada (2010) St. George, ON (T811)	Pintoba	4.5	17	44	< 0.01, < 0.01	≤ 0.01	CER 05722/10
Canada (2010) Branchton, ON (T812)	Navy	4.5	9	38	< 0.01, < 0.01	≤ 0.01	CER 05722/10
USA (2010) Carrington, ND (C13- 0665)	Pinto Lapaz	4.4	62	56	< 0.01, < 0.01	≤ 0.01	TK0024902
USA (2010) Eaton, CO (W12-0666)	Pinto Lapaz	4.4	47	105	< 0.01, < 0.01	≤ 0.01	TK0024902
USA (2010) Fresno, CA (E19-0668)	Foxfire LRK	13	43	93	< 0.01, < 0.01	< 0.01	TK0024902
Hay							
Canada (2010) St. George, ON (T811)	Pintoba	4.5	17	76	< 0.01, < 0.01	≤ 0.01	CER 05722/10
Canada (2010) Branchton, ON (T812)	Navy	4.5	9	73	< 0.01, < 0.01	≤ 0.01	CER 05722/10

Country (year) location (trial ID)	Variety	Application rate (g ai/100 kg seed)	Seeding rate (kg seed/ha)	DAT	Residues (mg/kg)	Mean residue (mg/kg)	Report remarks ID,
USA (2010) Carrington, ND (C13- 0665)	Pinto Lapaz	4.4	62	87	< 0.01, < 0.01	<u>< 0.01</u>	TK0024902
USA (2010) Eaton, CO (W12-0666)	Pinto Lapaz	4.4	47	105	< 0.01, < 0.01	<u>< 0.01</u>	TK0024902
USA (2010) Fresno, CA (E19-0668)	Foxfire LRK	13	43	106	< 0.01, < 0.01	< 0.01	TK0024902
USA (2010) Parkdale, OR (W20- 0672)	Banner	6.3	83	102	< 0.01, < 0.01	<u>< 0.01</u>	TK0024902
USA (2010) Hughson, CA (W26- 0670)	Banner	6.3	41	87	< 0.01, < 0.01	<u>< 0.01</u>	TK0024902

Pea (hay)

Nine independent supervised trials were conducted in pea in Canada and the USA during the 2010 growing season. Sedaxane was applied as a seed treatment at a nominal rate of 5 g ai/100 kg seed. Hay was collected at normal commercial harvest and was stored frozen for up to 401 days (1.1 years).

Table 9 Results of residue trials in pea hay

Country (year) location (trial ID)	Variety	Application rate (g ai/100 kg seed)	Seeding rate (kg seed/ha)	DA T	Residues (mg/kg)	Mean residue (mg/kg)	Report remarks ID,
cGAP: USA/Canada	--	5	--	--	--	--	--
Canada (2010) Portage la Prairie, MB (T803)	CDC Meadow	5	179	61	< 0.01, < 0.01	<u>< 0.01</u>	CER 05721/10
Canada (2010) Elm Creek, MB (T804)	Golden	5	177	61	< 0.01, < 0.01	<u>< 0.01</u>	CER 05721/10
Canada (2010) Minto, MB (T805)	Golden	5	181	46	< 0.01, < 0.01	<u>< 0.01</u>	CER 05721/10
				53	< 0.01, < 0.01	< 0.01	CER 05721/10
				60	< 0.01, < 0.01	< 0.01	CER 05721/10
				67	< 0.01, < 0.01	< 0.01	CER 05721/10
				74	< 0.01, < 0.01	< 0.01	CER 05721/10
Canada (2010) Minto, MB (T806)	CDC Meadow	5	181	60	< 0.01, < 0.01	<u>< 0.01</u>	CER 05721/10
Canada (2010) Boisservain, MB (T807)	CDC Meadow	5	179	60	< 0.01, < 0.01	<u>< 0.01</u>	CER 05721/10
Canada (2010) Rosthern, SK (T808)	Golden	5	116	59	< 0.01, < 0.01	<u>< 0.01</u>	CER 05721/10
Canada (2010) Blaine Lake, SK (T809)	CDC Meadow	5	131	60	< 0.01, < 0.01	<u>< 0.01</u>	CER 05721/10
Canada (2010) Alvena, SK (T810)	Golden	5	225	59	< 0.01, < 0.01	<u>< 0.01</u>	CER 05721/10
USA (2010) Gardner, ND (C12-0674)	Ariel	3.9	132	94	< 0.01, < 0.01	<u>< 0.01</u>	TK0024902

Straw, fodder, and forage of cereal grains

Maize

Twenty-three supervised trials were conducted in maize, from which animal feeds were harvested, in Canada and the USA during the 2008 (USA) and 2010 (Canada) growing seasons. Sedaxane was applied as a seed treatment at a nominal rate of 40 g ai/100 kg seed. Commodities were collected at

normal commercial harvest and were stored frozen for up to 10 months (0.8 years). Trials conducted in the same location and with the same variety were not considered to be independent.

Table 10 Results of residue trials in maize

Country (year) location (trial ID)	Variety	Application rate (g ai/100 kg seed)	Seeding rate (kg seed/ha)	DAT	Residues (mg/kg)	Mean residue (mg/kg)	Report ID, remarks
cGAP: USA	--	40	--		--	--	--
Fodder (stover)							
USA (2008) Aromas, (W27CA081484)	CA	Jubilee	50	n.s.	Maturity	< 0.01, < 0.01 <u>< 0.01</u>	T006043-07
USA (2008) Athens, (E12GA081463)	GA	NK 70-C7- GT/CB/LL	47	n.s.	120	< 0.01, < 0.01 <u>< 0.01</u>	T006043-07
USA (2008) Bagley, (C30IA081479)	IA	NK 70-C7- GT/CB/LL	47	n.s.	167	< 0.01, < 0.01 <u>< 0.01</u>	T006043-07
USA (2008) Claude, (E13TX081483)	TX	A3035	48	n.s.	210	< 0.01, < 0.01 <u>< 0.01</u>	T006043-07
USA (2008) Fitchburg, (C08WI081469)	WI	NK 40T- GT/CB/LL	41	n.s.	154	< 0.01, < 0.01 <u>< 0.01</u>	T006043-07
USA (2008) Fitchburg, (C08WI081470)	WI	NK 40T- GT/CB/LL	41	n.s.	161	< 0.01, < 0.01 < 0.01	T006043-07
USA (2008) Fitchburg, (C08WI081471)	WI	NK 40T- GT/CB/LL	41	n.s.	161	< 0.01, < 0.01 < 0.01	T006043-07
USA (2008) Germansville, (E04PA081461)	PA	NK 40T- GT/CB/LL	41	n.s.	133	< 0.01, < 0.01 <u>< 0.01</u>	T006043-07
USA (2008) Highland, (C19KS081466)	KS	83F11- GT/CB/LL	51	n.s.	147	< 0.01, < 0.01 < 0.01	T006043-07
USA (2008) Hillsboro, (W21OR081486)	OR	Jubilee	50	n.s.	Maturity	< 0.01, < 0.01 <u>< 0.01</u>	T006043-07
USA (2008) Lime Springs, (E19IA081476)	IA	NK 40T- GT/CB/LL	41	n.s.	149	< 0.01, < 0.01 <u>< 0.01</u>	T006043-07
USA (2008) Lime Springs, (E19IA081477)	IA	NK 40T- GT/CB/LL	41	n.s.	148	< 0.01, < 0.01 < 0.01	T006043-07
USA (2008) Lime Springs, (E19MN081478)	IA	NK 40T- GT/CB/LL	41	n.s.	143	< 0.01, < 0.01 < 0.01	T006043-07
USA (2008) Northwood, (C13ND081472)	ND	N23F- GT/CB/LL	40	n.s.	177	< 0.01, < 0.01 <u>< 0.01</u>	T006043-07
USA (2008) Northwood, (C13ND081473)	ND	N23F- GT/CB/LL	40	n.s.	175	< 0.01, < 0.01 < 0.01	T006043-07
USA (2008) Oregon, (C19MO081465)	MS	83F11- GT/CB/LL	51	n.s.	153	< 0.01, < 0.01 < 0.01	T006043-07
USA (2008) Perry, (C30IA081480)	IA	NK 70-C7- GT/CB/LL	47	n.s.	128	< 0.01, < 0.01 <u>< 0.01</u>	T006043-07
					135	< 0.01, < 0.01 < 0.01	T006043-07
					142	< 0.01, < 0.01 < 0.01	T006043-07
					149	< 0.01, < 0.01 < 0.01	T006043-07
					156	< 0.01, < 0.01 < 0.01	T006043-07

Country (year) location (trial ID)	Variety	Application rate (g ai/100 kg seed)	Seeding rate (kg seed/ha)	DAT	Residues (mg/kg)	Mean residue (mg/kg)	Report ID, remarks
USA (2008) Richland, (C18IA081474)	IA H8212- GT/CB/LL	40	n.s.	130	< 0.01, < 0.01	<u>< 0.01</u>	T006043-07
				137	< 0.01, < 0.01	< 0.01	T006043-07
				144	< 0.01, < 0.01	< 0.01	T006043-07
				151	< 0.01, < 0.01	< 0.01	T006043-07
				158	< 0.01, < 0.01	< 0.01	T006043-07
USA (2008) Richland, (C18IA081475)	IA H8212- GT/CB/LL	40	n.s.	141	< 0.01, < 0.01	<u>< 0.01</u>	T006043-07
USA (2008) Richwood, (C01OH081468)	OH H8212- GT/CB/LL	40	n.s.	171	< 0.01, < 0.01	<u>< 0.01</u>	T006043-07
USA (2008) Rupert, (W15ID081485)	ID Jubilee C4274MF	50	n.s.	Maturi ty	< 0.01, < 0.01	<u>< 0.01</u>	T006043-07
USA (2008) Saginaw, (C01MI081467)	MI H8212- GT/CB/LL	40	n.s.	152	< 0.01, < 0.01	<u>< 0.01</u>	T006043-07
USA (2008) Wharton, (W05TX081482)	TX 83F11- GT/CB/LL	51	n.s.	113	< 0.01, < 0.01	< 0.01	T006043-07
Forage							
Canada (2010) Abbotsford, BC (T802)	Peaches & Cream	30	19	106	< 0.01, < 0.01	<u>< 0.01</u>	CER 05720/10
Canada (2010) Branchton, ON (T800)	Peaches & Cream	30	16	79	< 0.01, < 0.01	<u>< 0.01</u>	CER 05720/10
Canada (2010) Taber, AB (T801)	Peaches & Cream	30	15	121	< 0.01, < 0.01	<u>< 0.01</u>	CER 05720/10
USA (2008) Aneta, (C13ND081481)	ND N23F- GT/CB/LL	40	n.s.	60	< 0.01, < 0.01	<u>< 0.01</u>	T006043-07
USA (2008) Athens, (E12GA081463)	GA NK 70-C7- GT/CB/LL	47	n.s.	60	< 0.01, < 0.01	<u>< 0.01</u>	T006043-07
USA (2008) Bagley, (C30IA081479)	IA NK 70-C7- GT/CB/LL	47	n.s.	60	< 0.01, < 0.01	<u>< 0.01</u>	T006043-07
USA (2008) Fitchburg, (C08WI081469)	WI NK 40T- GT/CB/LL	41	n.s.	64	< 0.01, < 0.01	<u>< 0.01</u>	T006043-07
USA (2008) Fitchburg, (C08WI081470)	WI NK 40T- GT/CB/LL	41	n.s.	60	< 0.01, < 0.01	< 0.01	T006043-07
USA (2008) Fitchburg, (C08WI081471)	WI NK 40T- GT/CB/LL	41	n.s.	63	< 0.01, < 0.01	< 0.01	T006043-07
USA (2008) Germansville, (E04PA081461)	PA NK 40T- GT/CB/LL	41	n.s.	60	< 0.01, < 0.01	<u>< 0.01</u>	T006043-07
USA (2008) Highland, (C19KS081466)	KS 83F11- GT/CB/LL	51	n.s.	60	< 0.01, < 0.01	< 0.01	T006043-07
USA (2008) Lime Springs, (E19IA081476)	IA NK 40T- GT/CB/LL	41	n.s.	60	< 0.01, < 0.01	<u>< 0.01</u>	T006043-07
USA (2008) Lime Springs, (E19IA081477)	IA NK 40T- GT/CB/LL	41	n.s.	60	< 0.01, < 0.01	<u>< 0.01</u>	T006043-07
USA (2008) Lime Springs, (E19MN081478)	IA NK 40T- GT/CB/LL	41	n.s.	66	< 0.01, < 0.01	< 0.01	T006043-07

Country (year) location (trial ID)	Variety	Application rate (g ai/100 kg seed)	Seeding rate (kg seed/ha)	DAT	Residues (mg/kg)	Mean residue (mg/kg)	Report ID, remarks
USA (2008) Northwood, (C13ND081472)	ND N23F- GT/CB/LL	40	n.s.	59	< 0.01, < 0.01	<u>< 0.01</u>	T006043-07
USA (2008) Northwood, (C13ND081473)	ND N23F- GT/CB/LL	40	n.s.	59	< 0.01, < 0.01	< 0.01	T006043-07
USA (2008) Oregon, (C19MO081465)	MS 83F11- GT/CB/LL	51	n.s.	61	< 0.01, < 0.01	< 0.01	T006043-07
USA (2008) Perry, (C30IA081480)	IA NK 70-C7- GT/CB/LL	47	n.s.	31	< 0.01, < 0.01	<u>< 0.01</u>	T006043-07
USA (2008) Perry, (C30IA081480)	IA NK 70-C7- GT/CB/LL	47	n.s.	40	< 0.01, < 0.01	<u>< 0.01</u>	T006043-07
				50	< 0.01, < 0.01	< 0.01	T006043-07
				59	< 0.01, < 0.01	< 0.01	T006043-07
				69	< 0.01, < 0.01	< 0.01	T006043-07
USA (2008) Richland, (C18IA081474)	IA H8212- GT/CB/LL	40	n.s.	31	< 0.01, < 0.01	<u>< 0.01</u>	T006043-07
				41	< 0.01, < 0.01	< 0.01	T006043-07
				50	< 0.01, < 0.01	< 0.01	T006043-07
				61	< 0.01, < 0.01	< 0.01	T006043-07
				70	< 0.01, < 0.01	< 0.01	T006043-07
USA (2008) Richland, (C18IA081475)	IA H8212- GT/CB/LL	40	n.s.	60	< 0.01, < 0.01	<u>< 0.01</u>	T006043-07
USA (2008) Richwood, (C01OH081468)	OH H8212- GT/CB/LL	40	n.s.	61	< 0.01, < 0.01	<u>< 0.01</u>	T006043-07
USA (2008) Saginaw, (C01MI081467)	MI H8212- GT/CB/LL	40	n.s.	61	< 0.01, < 0.01	<u>< 0.01</u>	T006043-07
Plants without ears							
USA (2008) Aromas, (W27CA081484)	CA Jubilee	50	n.s.	Maturity	< 0.01, < 0.01	<u>< 0.01</u>	T006043-07
USA (2008) Athens, (E12GA081463)	GA NK 70-C7- GT/CB/LL	47	n.s.	82	< 0.01, < 0.01	<u>< 0.01</u>	T006043-07
USA (2008) Fitchburg, (C08WI081469)	WI NK 40T- GT/CB/LL	41	n.s.	85	< 0.01, < 0.01	<u>< 0.01</u>	T006043-07
USA (2008) Germansville, (E04PA081461)	PA NK 40T- GT/CB/LL	41	n.s.	70	< 0.01, < 0.01	<u>< 0.01</u>	T006043-07
USA (2008) Highland, (C19KS081466)	KS 83F11- GT/CB/LL	51	n.s.	92	< 0.01, < 0.01	< 0.01	T006043-07
USA (2008) Hillsboro, (W21OR081486)	OR Jubilee	50	n.s.	Maturity	< 0.01, < 0.01	<u>< 0.01</u>	T006043-07
USA (2008) Oregon, (C19MO081465)	MS 83F11- GT/CB/LL	51	n.s.	90	< 0.01, < 0.01	< 0.01	T006043-07
USA (2008) Richwood, (C01OH081468)	OH H8212- GT/CB/LL	40	n.s.	106	< 0.01, < 0.01	<u>< 0.01</u>	T006043-07
USA (2008) Rupert, (W15ID081485)	ID Jubilee C4274MF	50	n.s.	Maturity	< 0.01, < 0.01	<u>< 0.01</u>	T006043-07

Country (year) location (trial ID)	Variety	Application rate (g ai/100 kg seed)	Seeding rate (kg seed/ha)	DAT	Residues (mg/kg)	Mean residue (mg/kg)	Report ID, remarks
USA (2008) Saginaw, (C01MI081467)	MI H8212- GT/CB/LL	40	n.s.	88	< 0.01, < 0.01	<u>< 0.01</u>	T006043-07

Sorghum

Twelve supervised trials were conducted in sorghum in the USA during the 2010 growing season. Sedaxane was applied as a seed treatment at a nominal rate of 40 g ai/100 kg seed. Commodities were collected at normal commercial harvest and were stored frozen for up to 9.5 months (0.8 years). Trials conducted in the same location and with the same variety were not considered to be independent.

Table 11 Results of residue trials in sorghum

Country (year) location (trial ID)	Variety	Application rate (g ai/100 kg seed)	Seeding rate (kg seed/ha)	DAT	Residues (mg/kg)	Mean residue (mg/kg)	Report ID, remarks
cGAP: USA/Canada	--	5	--		--	--	--
Forage							
USA (2010) Bagley, IA (C30-0684)	NK6638	40	8	54	< 0.01, < 0.01	<u>< 0.01</u>	TK0024901
USA (2010) Cheneyville, LA (E17- 0682)	NK6638	40	7	60	< 0.01, < 0.01	<u>< 0.01</u>	TK0024901
USA (2010) Eaton, CO (W12-0690)	WGF	39	12	62	< 0.01, < 0.01	<u>< 0.01</u>	TK0024901
USA (2010) Elko, SC (E11-0681)	NK7829	42	4	62	< 0.01, < 0.01	<u>< 0.01</u>	TK0024901
USA (2010) Jamestown, ND (C12- 0689)	NK7829	42	5	61	< 0.01, < 0.01	<u>< 0.01</u>	TK0024901
USA (2010) LaPlata, IA (C18-0686)	NK6638	40	9	56	< 0.01, < 0.01	<u>< 0.01</u>	TK0024901
USA (2010) Levelland, TX (W39- 0692)	NK7829	42	8	60	< 0.01, < 0.01	<u>< 0.01</u>	TK0024901
USA (2010) Raymondville, TX (W08-0688)	NK7829	42	8	61	< 0.01, < 0.01	<u>< 0.01</u>	TK0024901
USA (2010) Richland, IA (C18-0683)	NK6638	40	9	60	< 0.01, < 0.01	<u>< 0.01</u>	TK0024901
USA (2010) Richland, IA (C18-0685)	NK6638	40	9	60	< 0.01, < 0.01	< 0.01	TK0024901
USA (2010) Uvalde, TX (W07-0687)	NK7829	42	4	81	< 0.01, < 0.01	< 0.01	TK0024901
USA (2010) Uvalde, TX (W07-0691)	NK7829	42	8	59	< 0.01, < 0.01	<u>< 0.01</u>	TK0024901
Stover							
USA (2010) Bagley, IA (C30-0684)	NK6638	40	8	157	< 0.01, < 0.01	<u>< 0.01</u>	TK0024901
USA (2010) Cheneyville, LA (E17- 0682)	NK6638	40	7	114	< 0.01, < 0.01	<u>< 0.01</u>	TK0024901
USA (2010) Eaton, CO (W12-0690)	WGF	39	12	168	< 0.01, < 0.01	<u>< 0.01</u>	TK0024901
USA (2010) Elko, SC (E11-0681)	NK7829	42	4	107	< 0.01, < 0.01	<u>< 0.01</u>	TK0024901
USA (2010) Jamestown, ND (C12-	NK7829	42	5	144	< 0.01, < 0.01	<u>< 0.01</u>	TK0024901

Country (year) location (trial ID)	Variety	Application rate (g ai/100 kg seed)	Seeding rate (kg seed/ha)	DAT	Residues (mg/kg)	Mean residue (mg/kg)	Report ID, remarks
0689)							
USA (2010) LaPlata, IA (C18-0686)	NK6638	40	9	138	< 0.01, < 0.01	< 0.01	TK0024901
USA (2010) Levelland, TX (W39- 0692)	NK7829	42	8	124	< 0.01, < 0.01	< 0.01	TK0024901
USA (2010) Raymondville, TX (W08-0688)	NK7829	42	8	149	< 0.01, < 0.01	< 0.01	TK0024901
USA (2010) Richland, IA (C18-0683)	NK6638	40	9	125	< 0.01, < 0.01	< 0.01	TK0024901
USA (2010) Richland, IA (C18-0685)	NK6638	40	9	132	< 0.01, < 0.01	< 0.01	TK0024901
USA (2010) Uvalde, TX (W07-0687)	NK7829	42	4	114	< 0.01, < 0.01	< 0.01	TK0024901
USA (2010) Uvalde, TX (W07-0691)	NK7829	42	8	147	< 0.01, < 0.01	< 0.01	TK0024901

FATE OF RESIDUES IN STORAGE AND PROCESSING

A high-temperature hydrolysis study was reviewed by the 2012 Meeting, which concluded that sedaxane is stable under conditions representative of pasteurization, baking, and sterilization. The 2014 Meeting received data showing residues of sedaxane in raw commodities and processed commodities of field corn and potato.

Corn

In the field corn study conducted at 120 g ai/100 kg seed (ca. 2.4× GAP), corn grain was randomly taken from bulk treated and untreated samples. The grain was aspirated and screened to remove impurities and then tempered in preparation for dry milling or steeped in water/sulphurous acid in preparation for wet milling. For dry milling, the kernels were cracked using a disc mill and then dried, screened, and separated into bran, germ, grits, meal, and flour. The product was again aspirated to remove bran, germ with attached hull/endosperm, and large grits. The remaining product underwent additional screening, milling, and sifting. Grits, meal, and flour were separated using a Forsberg gravity separator. An aliquot of germ collected from the dry milling process was heated, flaked, and batch extracted with hexane to produce crude oil, which was additionally processed into refined, neutral oil. For wet milling, steeped corn was passed through a disc mill and centrifuged to remove germ and hulls, which were then dried, aspirated, and screened. The cornstock was milled and screened to produce gluten and starch. Starch was dried to a final moisture content of 15%. Wet-milled germ was moisture conditioned, heated, flaked, and pressed to expel crude oil. The resulting press cake was extracted with hexane to generate more crude oil. Crude oil was refined into neutral oil.

For all samples, including the raw commodity, residues of sedaxane were < 0.01 ppm; therefore, processing factors could not be derived.

Potato

In the potato processing study, tubers from an exaggerated-rate trial (5 g ai/100 kg seed, 2× GAP) were harvested, analysed for residues, and processed into flakes, chips, and wet peel. Samples of tubers were stored for up to 8.3 months and samples of the processed commodities were stored for up to 6.2 months. All samples were stored frozen (ca. -10 °C).

Potatoes were cleaned prior to processing by soaking in 32–37 °C for 5–10 minutes to loosen foreign material. The potatoes were then brushed and rinsed, and then peeled in a mechanical peeler. The removed peel was dewatered in a basket centrifuge. Any green or bruised areas of the peeled

potatoes were removed. For granule/flake production, peeled potatoes were sliced (ca. 1 cm) and washed to remove starch. The potato slices were cooked in hot water (71–74 °C, 20 min.), cooled (32 °C, 20 min.), and then steamed (94–100°C, 35–40 min.) for final cooking. The cooked slices were then flash dried, rolled to a thickness of 0.18–0.25 mm, and adjusted to a moisture content of 8–12% as necessary. The material was then milled and screened to produce flakes and granules. For fried chip production, the peeled potatoes were sliced (1.5 mm) and rinsed to remove starch. After the surface moisture was removed, the slices were fried (177–191 °C, 45–75 sec.) in vegetable oil.

Residues of sedaxane did not concentrate in flakes/granules or in chips, but did concentrate in wet peel.

Table 12 Summary of residues and processing factors for sedaxane in potato

Commodity	Report-Trial	Residue (ppm)	Mean residue (ppm)	Processing factor	Mean processing factor
Tubers (prior to processing)	TK0049813-15	0.0131, 0.0125, 0.0100	0.012	n.a.	n.a.
	TK0049813-16	0.0138, 0.0170, 0.0138	0.015	n.a.	
Flakes/Granules	TK0049813-15	0.0124	0.012	1.0	0.83
	TK0049813-16	0.0090	0.0090	0.61	
Chips	TK0049813-15	0.0075	0.0075	0.63	0.57
	TK0049813-16	0.0075	0.0075	0.50	
Wet Peel	TK0049813-15	0.0360	0.036	3.0	4.3
	TK0049813-16	0.0819	0.082	5.5	

Residues of sedaxane are not expected to concentrate in processed potato commodities except for wet peel, for which residues increased by ca. 4.3-fold relative to the washed tuber.

APPRAISAL

Sedaxane was first evaluated by the JMPR in 2012. The 2012 Meeting concluded that the residue definition for MRL compliance and estimation of dietary intake is sedaxane. An ADI of 0–0.1 mg/kg bw and an ARfD of 0.3 mg/kg bw were established. The residue was determined to be fat-soluble. The 2012 Meeting noted that none of the uses resulted in residues in human foods and that those uses are unlikely to present a public health concern.

The Forty-fifth Session of the CCPR listed sedaxane for the evaluation of additional MRLs. The 2014 Meeting received information on GAP and supervised residue trials reflecting the use of sedaxane as a seed treatment on corn/maize, pulses, potatoes, and sorghum. In addition to evaluating those crops, the Meeting was asked to consider use on rice, without residue data, on the basis of residue data supplied to the 2012 and 2014 Meetings for other grains.

Methods of analysis

Acceptable analytical methods were developed and validated for determination of sedaxane and its metabolites in plant and animal matrices. The methods were evaluated by the 2012 Meeting. The reported LOQ for the sedaxane *cis* and *trans* isomers, each, was 0.005 mg/kg, while the LOQ for all metabolites was 0.01 mg/kg in all matrices (plant and animal).

Results of supervised residue trials on crops

Supervised residue trials submitted for evaluation were as seed treatments and were conducted in Canada and/or the USA. All of the trials submitted to the 2014 Meeting are supported by storage

stability data evaluated by the 2012 Meeting. Residue values listed below reflect the average for each field trial, unless otherwise noted.

Sweet corn

The critical GAP for sweet corn is from the USA at 40 g ai/100 kg seed. In 13 trials, conducted at rates ranging from 29.7 to 51.2 g ai/100 kg seed, residues of sedaxane were < 0.01 mg/kg in all samples.

Based on the results of previously evaluated metabolism data from wheat (2012 Meeting) and on the results of the submitted residue trials, the Meeting agreed that no sedaxane residues are expected in sweet corn (corn-on-the-cob).

The Meeting estimated a maximum residue level of 0.01* mg/kg for sedaxane on sweet corn (corn-on-the-cob), an HR of 0.01 mg/kg and a STMR of 0 mg/kg.

Pulses (Beans, dry and peas, dry)

The critical GAP for beans, dry and peas, dry is from Canada and the USA for use as a seed treatment at a rate of 5 g ai/100 kg seed.

Eleven trials were conducted on dry bean matching GAP in Canada (5) and the USA (6), with an additional two trials in the USA conducted at approximately a 2.5-fold exaggerated rate.

Ten trials were conducted on dry pea matching GAP in Canada (8) and the USA (2).

Sedaxane residues in harvested dry beans and dry peas from all trials (n=21), including the exaggerate-rate trials, were: < 0.01 mg/kg. Based on the results of previously evaluated metabolism data from soya beans (2012 Meeting) and on the results of the submitted residue trials, the Meeting agreed that no sedaxane residues are expected in pulses.

The Meeting estimated a maximum residue level of 0.01* mg/kg for sedaxane on pulses and an STMR of 0 mg/kg. The Meeting recommended that the individual MRL for soya bean, dry be withdrawn.

Potato

The critical GAP for potato is from Canada, as a seed-piece treatment, at a rate of 2.5 g ai/100 kg seed. Twenty-nine trials were conducted matching GAP in Canada (13) and the USA (16). Three additional trials were conducted in the USA; one at approximately a 0.4× rate and two at approximately a 2× exaggerated rate.

Sedaxane residues in harvested tubers from all at-GAP trials (n=29) were: ≤0.01 (28) and 0.018 mg/kg.

The Meeting estimated a maximum residue level of 0.02 mg/kg for sedaxane on potato, an STMR of 0.01 mg/kg, and an HR of 0.02 mg/kg (from a single sample).

Cereal Grains

Maize and popcorn

The critical GAPs are from Chile for maize (50 g ai/100 kg seed) and from the USA for popcorn (40 g ai/100 kg seed). No trials from Chile were provided; however, data from 15 trials with rates ranging from 40–51.2 g ai/100 kg seed were available from the USA depicting residues of sedaxane in maize. In addition, there are two trials conducted at an exaggerated rate of 120 g ai/100 kg seed.

Sedaxane residues in maize from all trials (n=15) were: < 0.01 mg/kg.

Sorghum

The critical GAP for sorghum is from Canada and the USA as a seed treatment at a rate of 5 g ai/100 kg seed. Twelve trials were conducted at an 8-fold exaggerated rate (ca. 40 g ai/100 kg seed) in the USA, of which ten were determined to be independent.

Sedaxane residues in sorghum grain from all trials (n=10) were: < 0.01 mg/kg.

The Meeting noted that while there are no GAP registrations for cereal grains as a group, there are GAPs around the world with GAPs covering the major cereal grain commodities. Based on the results of previously evaluated metabolism data from wheat (2012 Meeting) and on the results of the submitted residue trials for maize and sorghum, the Meeting agreed that no sedaxane residues are expected in cereal grains.

The Meeting estimated a maximum residue level of 0.01* mg/kg for sedaxane on cereal grains and an STMR of 0 mg/kg, and recommends that the individual MRLs for barley, oats, rye, triticale, and wheat be withdrawn.

Legume animal feeds

The critical GAP is for beans, peas, and lentils from Canada and/or the USA as a seed treatment at a rate of 5 g ai/100 kg seed. Fifteen trials were conducted matching GAP in Canada and the USA from which forage and/or hay were harvested. An additional trial was conducted in the USA at approximately a 2.5-fold exaggerated rate.

Sedaxane residues in bean and pea forage (n=5) and hay (n=16) from all trials, including the exaggerate-rate trial, were: < 0.01 mg/kg.

The Meeting estimated a maximum residue level of 0.01* mg/kg and a median residue of 0 mg/kg for sedaxane in bean fodder and pea hay or pea fodder (dry).

The Meeting estimated a highest residue of 0.01 mg/kg and a median residue of 0 mg/kg for sedaxane in bean fodder and pea vines.

Straw, fodder, and forage of cereal grains

The critical GAP for maize is from Chile as a seed treatment at a rate of 50 g ai/100 kg seed. Nineteen trials (15 independent) were conducted at GAP in Canada and the USA from which fodder (stover) and/or forage were harvested.

Sedaxane residues in maize fodder (stover; n=15) and forage (n=15) were: < 0.01 mg/kg.

The critical GAP for sorghum is from the USA and Canada as a seed treatment at a rate of 5 g ai/100 kg seed. Twelve trials were conducted at an 8-fold exaggerated rate (ca. 40 g ai/100 kg seed) in the USA, of which ten were determined to be independent.

Sedaxane residues in sorghum forage and stover (n=10) were: < 0.01 mg/kg.

The 2014 Meeting estimates for sorghum forage (dry), a highest residue of 0.01 mg/kg, and a median residue of 0 mg/kg.

The 2012 Meeting estimated residues of sedaxane in barley, oats, rye, triticale, and wheat straw and fodder, on an as-received basis at 0.075 mg/kg (HR) and 0.01 mg/kg (STMR). In estimating those residues, the 2012 meeting noted that these commodities are not always readily distinguishable in trade and the preference for having a common MRL.

Based on the rationale of the 2012 Meeting and on the results from the maize and sorghum residue trials, the 2014 Meeting agreed to estimate residues of sedaxane in straw, fodder of cereal grains and grasses (including buckwheat fodder) (straws and fodders, dry at a maximum residue level of 0.1 mg/kg).

The Meeting estimates a highest residue of 0.075 mg/kg, and a median of 0.01 mg/kg (as received).

The Meeting withdraws its previous recommendations for straw and fodder (dry) of barley, oat, rye, triticale, and wheat.

Fate of residue during food processing

Residues of sedaxane are stable to hydrolysis (2012 JMPR).

The Meeting received processing studies for corn and potato. In the corn study, residues of sedaxane were < 0.01 mg/kg in all commodities.

Raw agricultural commodity (RAC)	STMR, mg/kg	Processed commodity	Processing factor	STMR-P, mg/kg
Potato tuber	0.01	Flakes/granules	0.83	0.0083
		Chips	0.57	0.0057
		Wet peel	4.27	0.0427

Residues in animal commodities

The 2014 Meeting evaluated sedaxane residues in animal feed items from pulses, cereal grains (corn, rice, and sorghum), and potato in addition to the feed items evaluated by the 2012 Meeting (cereal grains) as listed in the OECD feeding table.

Estimated maximum and mean dietary burdens of livestock

Estimated dietary burdens for Australia, the EU, Japan, and the US/Canada are summarized below. The livestock diets are summarized in Annex 6 to the 2014 Report.

Livestock Dietary Burdens (ppm of dry matter diet) for Sedaxane.

Livestock	Australia		EU		Japan		US/Canada	
	Max	Mean	Max	Mean	Max	Mean	Max	Mean
Cattle (beef)	0.106	0.057	0.199	0.169	0.006		0.150	0.126
Cattle (dairy)	0.090	0.039	0.168	0.136	0.014		0.080	0.054
Poultry (broiler)			0.010	0.008				
Poultry (layer)			0.023	0.012				

For all livestock, the sedaxane burdens based on the EU animal diets (bold values in the table) reflect the highest burdens for both MRL estimation (maximum diet) and STMR estimation (mean diet).

Animal commodities residue level estimation

In a cattle feeding study evaluated at the 2012 Meeting, residues in all commodities were < 0.01 mg/kg at all dose levels (0.11–2.2 ppm). The 2012 Meeting estimated a maximum residue level of 0.01* mg/kg and STMR and HR values of 0 mg/kg for mammalian commodities.

The 2014 Meeting confirms the previous recommendations.

In a poultry metabolism study evaluated by the 2012 JMPR Meeting, laying hens were dosed at a rate equivalent to 20 ppm (dry matter basis) in their diet. Sedaxane was < 0.01 mg/kg in all tissues at that dose level. Based on the results of that study, the 2012 Meeting estimated a maximum residue level of 0.01* mg/kg and STMR and HR values of 0 mg/kg for poultry commodities.

The 2014 Meeting confirms the previous recommendations.

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 and for estimation of dietary intake) for plant and animal commodities: *sedaxane*.

The residue is fat-soluble.

CCN	Commodity Name	MRL, mg/kg		STMR, mg/kg	HR, mg/kg
		New	Previous		
GC 0640	Barley	W	0.01*		
AS 0640	Barley straw and fodder, dry	W	0.01*		
AL 0061	Bean fodder	0.01*		0	
GC 0080	Cereal grains	0.01*		0	
AS 0647	Oat straw and fodder, dry	W	0.01*		
GC 0647	Oats	W	0.01*		
AL 0072	Pea hay or pea fodder (dry)	0.01*		0	
VR 0589	Potato	0.02		0.01	0.018
VD 0070	Pulses	0.01*		0	
GC 0650	Rye	W	0.01*		
AS 0650	Rye straw and fodder, dry	W	0.01*		
VD 0541	Soya bean (dry)	W	0.01*		
AS 0161	Straw, fodder (dry) and hay of cereal grains and other grass-like plants	0.1		0	
VO 0447	Sweet corn (corn-on-the-cob)	0.01*		0	0.01
GC 0653	Triticale	W	0.01*		
AS 0653	Triticale straw and fodder, dry	W	0.01*		
GC 0654	Wheat	W	0.01*		
AS 0654	Wheat straw and fodder, dry	W	0.01*		

For dietary burden only

				Median, mg/kg	Highest res., mg/kg
AF 0645	Maize forage			0	
AF 0651	Sorghum forage (green)			0	
AF 5249	Corn forage			0	
AL 1030	Bean forage (green)			0	
AL 0528	Pea vines			0	
	Potato, wet peel			0.0427	

DIETARY RISK ASSESSMENT

Long-term intake

The International Estimated Daily Intakes (IEDIs) of sedaxane were calculated for the 17 GEMS/Food cluster diets using STMRs/STMR-Ps estimated by the current and previous Meetings. The ADI is 0–0.1 mg/kg bw and the calculated IEDIs were 0–0% of the maximum ADI (0.1 mg/kg bw). The Meeting concluded that the long-term intakes of residues of sedaxane, when used in ways that have been considered by the JMPR, are unlikely to present a public health concern.

Short-term intake

The International Estimated Short-Term Intakes (IESTI) of sedaxane were calculated for food commodities and their processed commodities using HRs/HR-Ps or STMRs/STMR-Ps estimated by the current Meeting. The ARfD is 0.3 mg/kg bw and the calculated IESTIs were 0% of the ARfD for all commodities. The Meeting concluded that the short-term intake of residues of sedaxane, when used in ways that have been considered by the JMPR, is unlikely to present a public health concern.

REFERENCES

Code	Author	Year	Title
CER 05720/10	Sagan K.	2012	Sedaxane 500 FS (A16148C) Residue Levels on Sweet Corn (Forage and K + CWHR) from Trials Conducted in Canada During 2010 Syngenta Crop Protection AG, Basel, Switzerland, Syngenta Canada Inc., Guelph, ON, Canada, ALS Laboratory Group, Edmonton, Alberta, Canada, ALS 11SYN281.REP
T006043-07	Hamilton L.	2010	SYN524464 - Magnitude of the Residues in Corn Following Seed Treatment Application Syngenta Crop Protection AG, Basel, Switzerland, Syngenta Crop Protection, Inc., Greensboro, USA, ADPEN Laboratories Inc., Jacksonville FL, USA, 2K9-901-T006043-07
CER 05722/10	Sagan K.	2012	Sedaxane 500 FS (A16148C) Residue Levels on Dry Beans (Seed) from Trials Conducted in Canada During 2010 Syngenta Crop Protection AG, Basel, Switzerland, Syngenta Canada Inc., Guelph, ON, Canada, ALS Laboratory Group, Edmonton, Alberta, Canada, ALS 11SYN277.REP
TK0024902	Hampton M.	2012	Sedaxane FS (A16148C) - Magnitude of the Residues in or on Dried Pea and Dried Bean (except Soybean), Subgroup 6C, and in or on Foliage of Legume Vegetables (except Soybean), Subgroup 7A, Following Seed Treatment Application Syngenta Crop Protection AG, Basel, Switzerland, Syngenta Crop Protection, LLC, Greensboro, NC, USA, SGS North America, Inc., 236 32nd Ave., Brookings, SD, USA, ABC Laboratories Missouri, Columbia, USA, G-1008BK, 66923
CER 05721/10	Sagan K.	2012	Sedaxane 500 FS (A16148C) Residue Levels on Dry Peas from Trials Conducted in Canada During 2010 Syngenta Crop Protection AG, Basel, Switzerland, Syngenta Canada Inc., Guelph, ON, Canada, ALS Laboratory Group, Edmonton, Alberta, Canada, ALS 11SYN282.REP
CER 05724/11	Sagan K.	2012	Sedaxane FS (A16148C) and Diquat SN (A12872A) - Residue Levels on Potatoes from Trials Conducted in Canada During 2011 Syngenta Crop Protection AG, Basel, Switzerland, Syngenta Canada Inc., Guelph, ON, Canada, ALS Laboratory Group, Edmonton, Alberta, Canada, 12SYN319.REP
TK0049813	Willard T.R.	2012	SYN524464 500FS (A16148C) - Magnitude of the Residues in Potato Following Seed Treatment Application USA 2011 Syngenta Crop Protection AG, Basel, Switzerland, Syngenta Crop Protection, LLC, Greensboro, NC, USA, GLP Technologies, Navasota, TX, USA, Golden Pacific Laboratories, LLC (GPL), Fresno, USA, 120420
TK0024901	Hampton M.	2012	Sedaxane FS (A16148C) - Magnitude of the Residues in or on Grain Sorghum Following Seed Treatment Application Syngenta Crop Protection AG, Basel, Switzerland, Syngenta Crop Protection, LLC, Greensboro, NC, USA, SGS North America, Inc., 236 32nd Ave., Brookings, SD, USA, ABC Laboratories Missouri, Columbia, USA, G-1005BK, 66922

