

**The generation of chlorantraniliprole
residue data in beans, peas
and sweet corn**

Phillip Frost
Peracto Pty Ltd

Project Number: VG08170

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FINAL REPORT

The Generation of chlorantraniliprole Residue data in beans, peas and sweet corn

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1 July 2010

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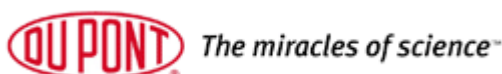
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CONTENTS

MEDIA SUMMARY	4
TECHNICAL SUMMARY	5
<i>Table 1. Results of Residue Analysis in peas & beans.....</i>	<i>5</i>
<i>Table 2. Results of Residue Analysis in sweet corn</i>	<i>5</i>
INTRODUCTION	6
MATERIALS AND METHODS.....	7
<i>Table 3. Test substance</i>	<i>7</i>
<i>Table 4. Trial sites</i>	<i>7</i>
<i>Table 5. Treatment information for beans and peas.....</i>	<i>8</i>
<i>Table 6. Treatment information for sweet corn.....</i>	<i>8</i>
<i>Table 7. Sampling Timings for Site 1 (snow or sugar snap peas)</i>	<i>9</i>
<i>Table 8. Sample Timings for Sites 2 and 5 (snow or sugar snap peas)</i>	<i>9</i>
<i>Table 9. Sample Timings for Sites 3 and 4 (green and processing peas)</i>	<i>9</i>
<i>Table 10. Sample Timings for Site 6 (beans)</i>	<i>10</i>
<i>Table 11. Sample Timings for Sites 7 (beans)</i>	<i>10</i>
<i>Table 12. Sampling Information for Sites 8 and 10 (sweet corn).....</i>	<i>10</i>
<i>Table 13. Sampling Information for Sites 9 and 11 (sweet corn).....</i>	<i>10</i>
RESULTS AND DISCUSSION	11
<i>Table 14. Results of Residue Analysis in peas & beans (All Sites)</i>	<i>11</i>
<i>Table 15. Results of Residue Analysis in sweet corn (All Sites).....</i>	<i>11</i>
TECHNOLOGY TRANSFER	18
RECOMMENDATIONS.....	18
ACKNOWLEDGEMENTS.....	18

MEDIA SUMMARY

In Australia, before an agrochemical product can be sold or used, the Australian Pesticides and Veterinary Medicines Authority (APVMA) must first register it. In order for a manufacturer to register a product they are required to submit a comprehensive data package to the APVMA. The costs for generating and collating such data are high and unfortunately many horticultural crops are too small individually for agrochemical manufacturers to bear the high cost of registering products for use. As a result, horticulturalists are often placed in situations where they risk severe crop losses from insects, weeds and diseases. On the other hand, they risk buyers rejecting their produce and other penalties if they are detected using products that are not registered.

This is an international problem, not just isolated to Australia. The IR-4 program from the United States of America addresses this issue through a coordinated, prioritised and well funded approach to the generation of essential data for pesticide manufacturers to register specific uses. HAL has been discussing the opportunities to collaborate with the IR-4 program which will potentially share useable data to both (and other) countries, thus reducing the overall cost for accessing these minor uses.

A total of 11 residue trials were conducted, from 2009 to 2010, in specified regions throughout Australia. The data generated through this set of GLP trials will help set withholding periods and maximum residue limits (MRLs) for Dupont Coragen Insecticide (chlorantraniliprole) in beans, peas and sweet corn and improve access to domestic and export markets. All the data from this project has been presented to HAL in two detailed GLP reports encompassing the field and analytical phase. This data will be used to support an application to the Australian Pesticides and Veterinary Medicines Authority (APVMA) for registration purposes in Australia.

TECHNICAL SUMMARY

In Australia, before an agrochemical product can be sold or used, the Australian Pesticides and Veterinary Medicines Authority (APVMA) must first register it. In order for a manufacturer to register a product they are required to submit a comprehensive data package to the APVMA. The costs for generating and collating such data are high and unfortunately many horticultural crops are too small individually for agrochemical manufacturers to bear the high cost of registering products for use. As a result, horticulturalists are often placed in situations where they risk severe crop losses from insects, weeds and diseases. On the other hand, they risk buyers rejecting their produce and other penalties if they are detected using products that are not registered.

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The field investigation phases of this study were conducted using Peracto Pty Ltd's Standard Operating Procedures, which comply with the OECD Principles of Good Laboratory Practice Number 1 (revised 1997), Paris 1998 and Number 13, June 2002, GLP Facility No: 14609. All specimens were analysed by AgriSolutions Australia at their laboratory at Deception Bay in Brisbane, Facility No: 14951.

The levels of chlorantraniliprole residues in beans, peas and sweet corn samples was determined following 3 applications of Coragen at 20 g a.i./ha at 14 and 7 day intervals or 4 applications of Coragen at 112 g a.i./ha at 5 day intervals (Table 1 & 2).

Table 1. Results of Residue Analysis in peas & beans

Days after last application		0	1	3	7	14
Coragen @ 20 g ai/ha Residue level (mg/kg)	Pods & peas	0.11 - <0.01	0.08 - <0.01	0.04 - <0.01	0.06 - <0.01	0.47 - <0.01
	foliage ¹	N/A	0.31 - 0.23	N/A	0.60 - 0.12	2.15 - 0.11
Coragen @ 112 g ai/ha Residue level (mg/kg)	Pods & peas	0.31 - <0.01	0.14 - <0.01	0.14 - <0.01	0.29 - <0.01	1.32 - <0.01
	foliage ¹	N/A	1.49 - 0.16	N/A	2.77 - 0.48	N/A

¹Residue levels for foliage are for fresh weight

Table 2. Results of Residue Analysis in sweet corn

Days after last application		0	1	7	14
Coragen @ 20 g ai/ha Residue level (mg/kg)	cobs	<0.01	N/A	<0.01	<0.01
	foliage ¹	N/A	N/A	0.52 - 0.27	0.53 - 0.36
Coragen @ 112 g ai/ha Residue level (mg/kg)	cobs	0.01 - <0.01	0.01 - <0.01	0.01 - <0.01	N/A
	foliage ¹	N/A	5.10 - 3.44	N/A	2.22 - 1.47

¹Residue levels for foliage are for fresh weight

INTRODUCTION

In Australia, before an agrochemical product can be sold or used, the Australian Pesticides and Veterinary Medicines Authority (APVMA) must first register it. In order for a manufacturer to register a product they are required to submit a comprehensive data package to the APVMA. The costs for generating and collating such data are high and unfortunately many horticultural crops are too small individually for agrochemical manufacturers to bear the high cost of registering products for use. As a result, horticulturalists are often placed in situations where they risk severe crop losses from insects, weeds and diseases. On the other hand, they risk buyers rejecting their produce and other penalties if they are detected using products that are not registered.

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A total of 11 residue trials were conducted, from 2009 to 2010, in specified regions throughout Australia. The data generated through this set of GLP trials will help set withholding periods and maximum residue limits (MRLs) for Dupont Coragen Insecticide (chlorantraniliprole) in beans, peas and sweet corn and improve access to domestic and export markets. All the data from this project has been presented to HAL in two detailed GLP reports encompassing the field and analytical phase. This data will be used to support an application to the Australian Pesticides and Veterinary Medicines Authority (APVMA) for registration purposes in Australia.

MATERIALS AND METHODS

The field investigation phases of this study were conducted using Peracto Pty Ltd's Standard Operating Procedures, which comply with the OECD Principles of Good Laboratory Practice Number 1 (revised 1997), Paris 1998 and Number 13, June 2002, GLP Facility No: 14609. All specimens were analysed by AgriSolutions Australia at their laboratory at Deception Bay in Brisbane, Facility No: 14951.

The formulation of the pesticide used in the study was as follows:

Table 3. Test substance

Product name	Active ingredient (ai)	Concentration of active ingredient	Formulation
Dupont Coragen Insecticide	chlorantraniliprole	200 g/L	Suspension Concentrate

This study was conducted at eleven field sites; Walla Walla, NSW, Sheldon, QLD, Fletcher, QLD, Cressy, Tasmania, Cuprona, Tasmania, Merseylea, Tasmania, Cudgen, NSW, Stanthorpe, QLD, Mooroopna, Victoria and two sites at Bowen, QLD.

The list of trials undertaken and completed is as follows:

Table 4. Trial sites

Site #	Crop	State
1	Sugar snap peas	NSW
2	Snow peas	QLD
3	Green peas	QLD
4	Processing peas	TAS
5	Snow peas	TAS
6	Beans	QLD
7	Beans	TAS
8	Sweet corn	NSW
9	Sweet corn	QLD
10	Sweet corn	QLD
11	Sweet corn	VIC

The treatment information for each crop was as follows:

Table 5. Treatment information for beans and peas

Trt	Formulated Test Substance	Active Ingredient	Rates of Test Substance (mL/ha)	Rates of Active (g a.i./ha)	Rate of Agral (mL/100 L)	Application Timings
T1	Untreated control	Nil	N/A	N/A	N/A	N/A
T2	Coragen	chlorantraniliprole	100	20	25	22, 8 & 1DBH
T3	Coragen	chlorantraniliprole	560	112	N/A	6 & 1DBH

DBH= Days Before Harvest

Table 6. Treatment information for sweet corn

Trt	Formulated Test Substance	Active Ingredient	Rates of Test Substance (mL/ha)	Rates of Active (g a.i./ha)	Rate of Agral (mL/100 L)	Application Timings
T1	Untreated control	Nil	N/A	N/A	N/A	N/A
T2	Coragen	chlorantraniliprole	100	20	25	28, 14 & 7DBH
T3	Coragen	chlorantraniliprole	560	112	N/A	16, 11, 6 & 1DBH

DBH= Days Before Harvest

The sampling timings were as follows:

Table 7. Sampling Timings for Site 1 (snow or sugar snap peas)

Treatment Number	Test Item	Rate of Active (g a.i./ha)	Specimen Type	Sampling Timing	Specimen Quantity
T1	Untreated control	Nil	Whole pods	1DALA	Minimum of 1 kg of whole pods or 1 kg of foliage
			Foliage		
T2	Coragen	20	Whole pods	0*, 1, 3, 7 & 14DALA	
			Foliage	1, 7 & 14DALA	
T3	Coragen	112	Whole pods	0*, 1, 3, 7 & 14DALA	
			Foliage	1 & 7DALA	

DALA = Days After the Last Application

*The 0DALA samples should be taken immediately after the last application has dried

Table 8. Sample Timings for Sites 2 and 5 (snow or sugar snap peas)

Treatment Number	Test Item	Rate of Active (g a.i./ha)	Specimen Type	Sampling Timing	Specimen Quantity
T1	Untreated control	Nil	Whole pods	1DALA	Minimum of 1 kg of whole pods
T2	Coragen	20		0*, 1, 3, 7 & 14DALA	
T3	Coragen	112			

DALA = Days After the Last Application

*The 0DALA samples should be taken immediately after the last application has dried

Table 9. Sample Timings for Sites 3 and 4 (green and processing peas)

Treatment Number	Test Item	Rate of Active (g a.i./ha)	Specimen Type	Sampling Timing	Specimen Quantity
T1	Untreated control	Nil	Shelled peas and empty pods	1DALA	1 kg of shelled peas and 1 kg of empty pods or 1 kg of foliage
			Foliage		
T2	Coragen	20	Shelled peas and empty pods	0*, 1, 3, 7 & 14DALA	
			Foliage	1, 7 & 14DALA	
T3	Coragen	112	Shelled peas and empty pods	0*, 1, 3, 7 & 14DALA	
			Foliage	1 & 7DALA	

DALA = Days After the Last Application

*The 0DALA samples should be taken immediately after the last application has dried

Table 10. Sample Timings for Site 6 (beans)

Treatment Number	Test Item	Rate of Active (g a.i./ha)	Specimen Type	Sampling Timing	Specimen Quantity
T1	Untreated control	Nil	Pods	1DALA	Minimum of 1 kg of pods or 1 kg of foliage
			Foliage		
T2	Coragen	20	Pods	0*, 1, 3, 7 & 14DALA	
			Foliage	1, 7 & 14DALA	
T3	Coragen	112	Pods	0*, 1 & 7DALA	
			Foliage	1 & 7DALA	

DALA = Days After the Last Application

*The 0DALA samples should be taken immediately after the last application has dried

Table 11. Sample Timings for Sites 7 (beans)

Treatment Number	Test Item	Rate of Active (g a.i./ha)	Specimen Type	Sampling Timing	Specimen Quantity
T1	Untreated control	Nil	Pods	1DALA	Minimum of 1 kg of pods
T2	Coragen	20		0*, 1, 3, 7 & 14DALA	
T3	Coragen	112		0*, 1 & 7DALA	

DALA = Days After the Last Application

*The 0DALA samples should be taken immediately after the last application has dried

Table 12. Sampling Information for Sites 8 and 10 (sweet corn)

Treatment Number	Test Item	Rate of Active (g a.i./ha)	Specimen Type	Sampling Timing	Specimen Quantity
T1	Untreated control	Nil	Cobs	7DALA	12 cobs or a minimum of 2 kg or 2 kg of foliage
			Foliage		
T2	Coragen	20	Cobs	0*, 7 & 14DALA	
			Foliage	7 & 14DALA	
T3	Coragen	112	Cobs	0*, 1 & 7DALA	
			Foliage	1 & 14DALA	

DALA = Days After the Last Application

*The 0DALA samples should be taken immediately after the last application has dried

Table 13. Sampling Information for Sites 9 and 11 (sweet corn)

Treatment Number	Test Item	Rate of Active (g a.i./ha)	Specimen Type	Sampling Timing	Specimen Quantity
T1	Untreated control	Nil	Cobs	7DALA	12 cobs or a minimum of 2 kg
T2	Coragen	20		0*, 7 & 14DALA	
T3	Coragen	112		0*, 1 & 7DALA	

DALA = Days After the Last Application

*The 0DALA samples should be taken immediately after the last application has dried

RESULTS AND DISCUSSION

A GLP compliant field trial report and analytical report, to GLP standard was prepared and submitted to Horticulture Australia Ltd. The results are summarised below.

Table 14. Results of Residue Analysis in peas & beans (All Sites)

Days after last application		0	1	3	7	14
T2 pods & peas Residue level (mg/kg)		0.11 - <0.01	0.08 - <0.01	0.04 - <0.01	0.06 - <0.01	0.47 - <0.01
T2 foliage Residue level (mg/kg)	Fresh weight	N/A	0.31 - 0.23	N/A	0.60 - 0.12	2.15 - 0.11
	Dry weight		2.24 - 1.21		3.29 - 0.73	5.55 - 0.50
T3 pods & peas Residue level (mg/kg)		0.31 - <0.01	0.14 - <0.01	0.14 - <0.01	0.29 - <0.01	1.32 - <0.01
T3 foliage Residue level (mg/kg)	Fresh weight	N/A	1.49 - 0.16		2.77 - 0.48	N/A
	Dry weight		11.66 - 1.04		17.23 - 2.85	

Table 15. Results of Residue Analysis in sweet corn (All Sites)

Days after last application		0	1	7	14
T2 cobs Residue level (mg/kg)		<0.01	N/A	<0.01	<0.01
T2 foliage Residue level (mg/kg)	Fresh weight	N/A	N/A	0.52 - 0.27	0.53 - 0.36
	Dry weight			4.34 - 2.43	3.83 - 2.39
T3 cobs Residue level (mg/kg)		0.01 - <0.01	0.01 - <0.01	0.01 - <0.01	N/A
T3 foliage Residue level (mg/kg)	Fresh weight	N/A	5.10 - 3.44	N/A	2.22 - 1.47
	Dry weight		41.78 - 32.45		14.79 - 10.53

Table 16 – Residue results for analyses of chlorantraniliprole – Trial site 1, New South Wales – Sugar snap peas

Specimen Number	Sample Timing	Formulation Rate chlorantraniliprole (g a.i./ha)	Specimen Type	Chlorantraniliprole residues ¹ (mg/kg)	
				Fresh weight basis	Dry weight basis
HAL0802/S1/T1/1DALA/pods	1DALA	Nil	Pods	<LOQ	N/A
HAL0802/S1/T1/1DALA/foilage	1DALA	Nil	Foliage	<LOQ	<LOQ
HAL0802/S1/T2/0DALA/pods	0DALA	20	Pods	0.02	N/A
HAL0802/S1/T2/1DALA/pods	1DALA	20	Pods	0.01	N/A
HAL0802/S1/T2/1DALA/foilage	1DALA	20	Foliage	0.29	1.21
HAL0802/S1/T2/3DALA/pods	3DALA	20	Pods	0.02	N/A
HAL0802/S1/T2/7DALA/pods	6DALA ²	20	Pods	0.03	N/A
HAL0802/S1/T2/7DALA/foilage	6DALA ²	20	Foliage	0.60	3.29
HAL0802/S1/T2/14DALA/pods	14DALA	20	Pods	0.47	N/A
HAL0802/S1/T2/14DALA/foilage	14DALA	20	Foliage	2.15	5.09
HAL0802/S1/T3/0DALA/pods	0DALA	112	Pods	0.09	N/A
HAL0802/S1/T3/1DALA/foilage	1DALA	112	Foliage	0.16	1.04
HAL0802/S1/T3/1DALA/pods	1DALA	112	Pods	0.10	N/A
HAL0802/S1/T3/3DALA/pods	3DALA	112	Pods	0.14	N/A
HAL0802/S1/T3/7DALA/pods	6DALA ²	112	Pods	0.29	N/A
HAL0802/S1/T3/7DALA/foilage	6DALA ²	112	Foliage	2.77	17.23
HAL0802/S1/T3/14DALA/pods	14DALA	112	Pods	1.32	N/A

DALA = Days After Last Application

LOQ = 0.01 mg/kg for chlorantraniliprole residues in shelled peas, pods and foliage specimens

Note 1: Where no quantifiable levels were found. i.e. the result on a fresh weight is <LOQ the associated result on a dry weight basis is also expressed as <LOQ. This approach was implemented to avoid the magnification of error that would be associated with multiplying an estimated level below the limit of quantitation

Note 2: 7DALA samples collected at 6DALA (See MD-HAL0802-05)

Table 17 – Residue results for analyses of chlorantraniliprole – Trial site 2, Southern Queensland – Snow peas

Specimen Number	Sample Timing	Formulation Rate chlorantraniliprole (g a.i./ha)	Specimen Type	Chlorantraniliprole residues (mg/kg)
HAL0802/S2/T1/1DALApods	1DALA	Nil	Pods	<LOQ
HAL0802/S2/T2/0DALApods	0DALA	20	Pods	0.09
HAL0802/S2/T2/1DALApods	1DALA	20	Pods	0.03
HAL0802/S2/T2/3DALApods	3DALA	20	Pods	0.03
HAL0802/S2/T2/7DALApods	7DALA	20	Pods	0.06
HAL0802/S2/T2/14DALApods	14DALA	20	Pods	0.01
HAL0802/S2/T3/0DALApods	0DALA	112	Pods	0.24
HAL0802/S2/T3/1DALApods	1DALA	112	Pods	0.10
HAL0802/S2/T3/3DALApods	3DALA	112	Pods	0.08
HAL0802/S2/T3/7DALApods	7DALA	112	Pods	0.08
HAL0802/S2/T3/14DALApods	14DALA	112	Pods	0.07

DALA = Days After Last Application

LOQ = 0.01 mg/kg for chlorantraniliprole residues in shelled peas, pods and foliage specimens

Please see section 14.2 Precision, for %C.V. as applicable to the final results

Table 18 – Residue results for analyses of chlorantraniliprole – Trial site 3, Southern Queensland – Green peas

Specimen Number	Sample Timing	Formulation Rate chlorantraniliprole (g a.i./ha)	Specimen Type	Chlorantraniliprole residues ¹ (mg/kg)	
				Fresh weight basis	Dry weight basis
HAL0802/S3/T1/1DALA/pods	1DALA	Nil	Empty pods	<LOQ	N/A
HAL0802/S3/T1/1DALA/peas	1DALA	Nil	Peas	<LOQ	N/A
HAL0802/S3/T1/1DALA/foilage	1DALA	Nil	Foliage	<LOQ	<LOQ
HAL0802/S3/T2/0DALA/pods	0DALA	20	Empty pods	0.03	N/A
HAL0802/S3/T2/0DALA/peas	0DALA	20	Peas	<LOQ	N/A
HAL0802/S3/T2/1DALA/pods	1DALA	20	Empty pods	0.02	N/A
HAL0802/S3/T2/1DALA/peas	1DALA	20	Peas	<LOQ	N/A
HAL0802/S3/T2/1DALA/foilage	1DALA	20	Foliage	0.23	1.53
HAL0802/S3/T2/3DALA/pods	3DALA	20	Empty pods	<LOQ	N/A
HAL0802/S3/T2/3DALA/peas	3DALA	20	Peas	<LOQ	N/A
HAL0802/S3/T2/7DALA/pods	7DALA	20	Empty pods	0.05	N/A
HAL0802/S3/T2/7DALA/peas	7DALA	20	Peas	<LOQ	N/A
HAL0802/S3/T2/7DALA/foilage	7DALA	20	Foliage	0.12	0.77
HAL0802/S3/T2/14DALA/pods	12DALA ²	20	Empty pods	0.04	N/A
HAL0802/S3/T2/14DALA/peas	12DALA ²	20	Peas	<LOQ	N/A
HAL0802/S3/T2/14DALA/foilage	12DALA ²	20	Foliage	0.86	5.55
HAL0802/S3/T3/0DALA/pods	0DALA	112	Empty pods	0.39	N/A
HAL0802/S3/T3/0DALA/peas	0DALA	112	Peas	<LOQ	N/A
HAL0802/S3/T3/1DALA/foilage	1DALA	112	Foliage	0.88	6.20
HAL0802/S3/T3/1DALA/pods	1DALA	112	Empty pods	0.15	N/A
HAL0802/S3/T3/1DALA/peas	1DALA	112	Peas	<LOQ	N/A
HAL0802/S3/T3/3DALA/pods	3DALA	112	Empty pods	0.16	N/A
HAL0802/S3/T3/3DALA/peas	3DALA	112	Peas	<LOQ	N/A
HAL0802/S3/T3/7DALA/pods	7DALA	112	Empty pods	0.19	N/A
HAL0802/S3/T3/7DALA/peas	7DALA	112	Peas	<LOQ	N/A
HAL0802/S3/T3/7DALA/foilage	7DALA	112	Foliage	0.52	3.20
HAL0802/S3/T3/14DALA/pods	12DALA ²	112	Empty pods	0.30	N/A
HAL0802/S3/T3/14DALA/peas	12DALA ²	112	Peas	<LOQ	N/A

DALA = Days After Last Application

LOQ = 0.01 mg/kg for chlorantraniliprole residues in shelled peas, pods and foliage specimens

Note 1: Where no quantifiable levels were found. i.e. the result on a fresh weight is <LOQ the associated result on a dry weight basis is also expressed as <LOQ. This approach was implemented to avoid the magnification of error that would be associated with multiplying an estimated level below the limit of quantitation

Note 2: 14DALA samples collected at 12DALA (See MD-HAL0802-02)

Table 19 – Residue results for analyses of chlorantraniliprole – Trial site 4, Tasmania – Processing peas

Specimen Number	Sample Timing	Formulation Rate chlorantraniliprole (g a.i./ha)	Specimen Type	Chlorantraniliprole residues ¹ (mg/kg)	
				Fresh weight basis	Dry weight basis
HAL0802/S4/T1/1DALA/pods	1DALA	Nil	Empty pods	<LOQ	N/A
HAL0802/S4/T1/1DALA/peas	1DALA	Nil	Peas	<LOQ	N/A
HAL0802/S4/T1/1DALA/foilage	1DALA	Nil	Foliage	<LOQ	<LOQ
HAL0802/S4/T2/0DALA/pods	0DALA	20	Empty pods	0.07	N/A
HAL0802/S4/T2/0DALA/peas	0DALA	20	Peas	<LOQ	N/A
HAL0802/S4/T2/1DALA/pods	1DALA	20	Empty pods	0.04	N/A
HAL0802/S4/T2/1DALA/peas	1DALA	20	Peas	<LOQ	N/A
HAL0802/S4/T2/1DALA/foilage	1DALA	20	Foliage	0.26	2.08
HAL0802/S4/T2/3DALA/pods	3DALA	20	Empty pods	0.04	N/A
HAL0802/S4/T2/3DALA/peas	3DALA	20	Peas	<LOQ	N/A
HAL0802/S4/T2/7DALA/pods	7DALA	20	Empty pods	0.10	N/A
HAL0802/S4/T2/7DALA/peas	7DALA	20	Peas	<LOQ	N/A
HAL0802/S4/T2/7DALA/foilage	7DALA	20	Foliage	0.13	0.73
HAL0802/S4/T2/14DALA/pods	14DALA	20	Empty pods	0.20	N/A
HAL0802/S4/T2/14DALA/peas	14DALA	20	Peas	<LOQ	N/A
HAL0802/S4/T2/14DALA/foilage	14DALA	20	Foliage	0.78	2.66
HAL0802/S4/T3/0DALA/pods	0DALA	112	Empty pods	0.28	N/A
HAL0802/S4/T3/0DALA/peas	0DALA	112	Peas	<LOQ	N/A
HAL0802/S4/T3/1DALA/foilage	1DALA	112	Foliage	0.92	7.15
HAL0802/S4/T3/1DALA/pods	1DALA	112	Empty pods	0.24	N/A
HAL0802/S4/T3/1DALA/peas	1DALA	112	Peas	0.01	N/A
HAL0802/S4/T3/3DALA/pods	3DALA	112	Empty pods	0.24	N/A
HAL0802/S4/T3/3DALA/peas	3DALA	112	Peas	<LOQ	N/A
HAL0802/S4/T3/7DALA/pods	7DALA	112	Empty pods	0.26	N/A
HAL0802/S4/T3/7DALA/peas	7DALA	112	Peas	<LOQ	N/A
HAL0802/S4/T3/7DALA/foilage	7DALA	112	Foliage	0.48	2.85
HAL0802/S4/T3/14DALA/pods	14DALA	112	Empty pods	0.39	N/A
HAL0802/S4/T3/14DALA/peas	14DALA	112	Peas	<LOQ	N/A

DALA = Days After Last Application

LOQ = 0.01 mg/kg for chlorantraniliprole residues in shelled peas, pods and foliage specimens

Note 1: Where no quantifiable levels were found. i.e. the result on a fresh weight is <LOQ the associated result on a dry weight basis is also expressed as <LOQ. This approach was implemented to avoid the magnification of error that would be associated with multiplying an estimated level below the limit of quantitation

Table 20 – Residue results for analyses of chlorantraniliprole – Trial site 5, Tasmania – Snow peas

Specimen Number	Sampling Timing	Formulation Rate chlorantraniliprole (g a.i./ha)	Specimen Type	Chlorantraniliprole residues (mg/kg)
HAL0802/S5/T1/1DALApods	1DALA	Nil	Pods	<LOQ
HAL0802/S5/T2/0DALApods	0DALA	20	Pods	0.03
HAL0802/S5/T2/1DALApods	1DALA	20	Pods	0.02
HAL0802/S5/T2/3DALApods	3DALA	20	Pods	0.01
HAL0802/S5/T2/7DALApods	7DALA	20	Pods	0.02
HAL0802/S5/T2/14DALApods	14DALA	20	Pods	0.04
HAL0802/S5/T3/0DALApods	0DALA	112	Pods	0.11
HAL0802/S5/T3/1DALApods	1DALA	112	Pods	0.07
HAL0802/S5/T3/3DALApods	3DALA	112	Pods	0.05
HAL0802/S5/T3/7DALApods	7DALA	112	Pods	<LOQ
HAL0802/S5/T3/14DALApods	14DALA	112	Pods	0.09

DALA = Days After Last Application

LOQ = 0.01 mg/kg for chlorantraniliprole residues in shelled peas, pods and foliage specimens

Table 21 – Residue results for analyses of chlorantraniliprole – Trial site 6, North Queensland – Green beans

Specimen Number	Sampling Timing	Formulation Rate chlorantraniliprole (g a.i./ha)	Specimen Type	Chlorantraniliprole residues ¹ (mg/kg)	
				Fresh weight basis	Dry weight basis
HAL0802/S6/T1/1DALA/pods	1DALA	Nil	Pods	<LOQ	N/A
HAL0802/S6/T1/1DALA/foliage	1DALA	Nil	Foliage	<LOQ	<LOQ
HAL0802/S6/T2/0DALA/pods	0DALA	20	Pods	0.09	N/A
HAL0802/S6/T2/1DALA/pods	1DALA	20	Pods	0.05	N/A
HAL0802/S6/T2/1DALA/foliage	1DALA	20	Foliage	0.31	2.24
HAL0802/S6/T2/3DALA/pods	3DALA	20	Pods	0.04	N/A
HAL0802/S6/T2/7DALA/pods	7DALA	20	Pods	0.04	N/A
HAL0802/S6/T2/7DALA/foliage	7DALA	20	Foliage	0.15	0.90
HAL0802/S6/T2/14DALA/pods	14DALA	20	Pods	0.08	N/A
HAL0802/S6/T2/14DALA/foliage	14DALA	20	Foliage	0.11	0.50
HAL0802/S6/T3/0DALA/pods	0DALA	112	Pods	0.31	N/A
HAL0802/S6/T3/1DALA/foliage	1DALA	112	Foliage	1.49	11.66
HAL0802/S6/T3/1DALA/pods	1DALA	112	Pods	0.11	N/A
HAL0802/S6/T3/7DALA/pods	7DALA	112	Pods	0.09	N/A
HAL0802/S6/T3/7DALA/foliage	7DALA	112	Foliage	0.81	4.45

DALA = Days After Last Application

LOQ = 0.01 mg/kg for chlorantraniliprole residues in shelled peas, pods and foliage specimens

Note 1: Where no quantifiable levels were found, i.e. the result on a fresh weight is <LOQ the associated result on a dry weight basis is also expressed as <LOQ. This approach was implemented to avoid the magnification of error that would be associated with multiplying an estimated level below the limit of quantitation

Table 22 – Residue results for analyses of chlorantraniliprole – Trial site 7, Tasmania – Beans

Specimen Number	Sampling Timing	Formulation Rate chlorantraniliprole (g a.i./ha)	Specimen Type	Chlorantraniliprole residues (mg/kg)
HAL0802/S7/T1/1DALApods	1DALA	Nil	Pods	<LOQ
HAL0802/S7/T2/0DALApods	0DALA	20	Pods	0.11
HAL0802/S7/T2/1DALApods	1DALA	20	Pods	0.08
HAL0802/S7/T2/3DALApods	3DALA	20	Pods	0.02
HAL0802/S7/T2/7DALApods	7DALA	20	Pods	0.03
HAL0802/S7/T2/14DALApods	14DALA	20	Pods	Not sampled ¹
HAL0802/S7/T3/0DALApods	0DALA	112	Pods	0.24
HAL0802/S7/T3/1DALApods	1DALA	112	Pods	0.14
HAL0802/S7/T3/7DALApods	7DALA	112	Pods	0.04

DALA = Days After Last Application

¹Refer to MD-HAL0802-08

LOQ = 0.01 mg/kg for chlorantraniliprole residues in shelled peas, pods and foliage specimens

Table 23 – Residue results for analyses of chlorantraniliprole – Trial site S8, New South Wales – Sweet corn

Specimen Number	Sampling Timing	Formulation Rate chlorantraniliprole (g a.i./ha)	Specimen Type	Chlorantraniliprole residues (mg/kg)	
				Fresh weight basis	Dry weight basis
HAL0803/S8/T1/1DALA/cobs	1DALA	Nil	Cobs	<LOQ	N/A
HAL0803/S8/T1/1DALA/foilage	1DALA	Nil	Foliage	<LOQ	<LOQ
HAL0803/S8/T2/0DALA/cobs	0DALA	20	Cobs	<LOQ	N/A
HAL0803/S8/T2/7DALA/cobs	7DALA	20	Cobs	<LOQ	N/A
HAL0803/S8/T2/7DALA/foilage	7DALA	20	Foliage	0.27	2.43
HAL0803/S8/T2/14DALA/cobs	14DALA	20	Cobs	<LOQ	N/A
HAL0803/S8/T2/14DALA/foilage	14DALA	20	Foliage	0.53	3.83
HAL0803/S8/T3/0DALA/cobs	0DALA	112	Cobs	<LOQ	N/A
HAL0803/S8/T3/1DALA/foilage	1DALA	112	Foliage	5.10	41.78
HAL0803/S8/T3/1DALA/cobs	1DALA	112	Cobs	0.01	N/A
HAL0803/S8/T3/7DALA/cobs	7DALA	112	Cobs	0.01	N/A
HAL0803/S8/T3/14DALA/foilage	14DALA	112	Foliage	2.22	14.79

Table 24 – Residue results for analyses of chlorantraniliprole – Trial site S9, North Queensland – Sweet corn

Specimen Number	Sampling Timing	Formulation Rate chlorantraniliprole (g a.i./ha)	Specimen Type	Chlorantraniliprole residues (mg/kg)
HAL0803/S9/T1/1DALA	1DALA	Nil	Cobs	<LOQ
HAL0803/S9/T2/0DALA	0DALA	20	Cobs	<LOQ
HAL0803/S9/T2/7DALA	7DALA	20	Cobs	<LOQ
HAL0803/S9/T2/14DALA	14DALA	20	Cobs	<LOQ
HAL0803/S9/T3/0DALA	0DALA	112	Cobs	<LOQ
HAL0803/S9/T3/1DALA	1DALA	112	Cobs	<LOQ
HAL0803/S9/T3/7DALA	7DALA	112	Cobs	0.01

Table 25 – Residue results for analyses of chlorantraniliprole – Trial site S10, Southern Queensland – Sweet corn

Specimen Number	Sampling Timing	Formulation Rate chlorantraniliprole (g a.i./ha)	Specimen Type	Chlorantraniliprole residues (mg/kg)	
				Fresh weight basis	Dry weight basis
HAL0803/S10/T1/1DALA/cobs	1DALA	Nil	Cobs	<LOQ	N/A
HAL0803/S10/T1/1DALA/foilage	1DALA	Nil	Foliage	<LOQ	<LOQ
HAL0803/S10/T2/0DALA/cobs	0DALA	20	Cobs	<LOQ	N/A
HAL0803/S10/T2/7DALA/cobs	7DALA	20	Cobs	<LOQ	N/A
HAL0803/S10/T2/7DALA/foilage	7DALA	20	Foliage	0.52	4.34
HAL0803/S10/T2/14DALA/cobs	14DALA	20	Cobs	<LOQ	N/A
HAL0803/S10/T2/14DALA/foilage	14DALA	20	Foliage	0.36	2.39
HAL0803/S10/T3/0DALA/cobs	0DALA	112	Cobs	<LOQ	N/A
HAL0803/S10/T3/1DALA/cobs	1DALA	112	Foliage	3.44	32.45
HAL0803/S10/T3/1DALA/cobs	1DALA	112	Cobs	0.01	N/A
HAL0803/S10/T3/7DALA/foilage	7DALA	112	Cobs	<LOQ	N/A
HAL0803/S10/T3/14DALA/foilage	14DALA	112	Foliage	1.47	10.53

Table 26 – Residue results for analyses of chlorantraniliprole – Trial site S11, Victoria – Sweet corn

Specimen Number	Sampling Timing	Formulation Rate chlorantraniliprole (g a.i./ha)	Specimen Type	Chlorantraniliprole residues (mg/kg)
HAL0803/S11/T1/1DALA	1DALA	Nil	Cobs	<LOQ
HAL0803/S11/T2/0DALA	0DALA	20	Cobs	<LOQ
HAL0803/S11/T2/7DALA	7DALA	20	Cobs	<LOQ
HAL0803/S11/T2/14DALA	14DALA	20	Cobs	<LOQ
HAL0803/S11/T3/0DALA	0DALA	112	Cobs	0.01
HAL0803/S11/T3/1DALA	1DALA	112	Cobs	0.01
HAL0803/S11/T3/7DALA	7DALA	112	Cobs	0.01

TECHNOLOGY TRANSFER

The data generated through this set of GLP trials will help set withholding periods and maximum residue limits (MRLs) for Dupont Coragen Insecticide (chlorantraniliprole) in beans, peas and sweet corn for registration purposes and improve access to domestic and export markets.

RECOMMENDATIONS

None applicable at this time.

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