Appendix B. T-REX and T-HERPS Model Output

T-REX Walnut Application (Lowest Application Rate)

Upper Bound Kenaga Residues For RQ Calculation

Chemical Name:	ODM
Use	Walnuts
Formulation	MSR 25% concentrate
Application Rate	0.375 lbs a.i./acre
Half-life	35 days
Application Interval	0 days
Maximum # Apps./Year	1
Length of Simulation	1 year

Endpoints			
Avian	Rock Pigeon	LD50 (mg/kg-bw)	7.00
	Bobwhite quail	LC50 (mg/kg-diet)	434.00
	Mallard duck	NOAEL(mg/kg-bw)	0.00
	Bobwhite quail	NOAEC (mg/kg-diet)	1.80
Mammals		LD50 (mg/kg-bw)	48.00
		LC50 (mg/kg-diet)	0.00
		NOAEL (mg/kg-bw)	0.04
		NOAEC (mg/kg-diet)	1.00

Dietary-based EECs (ppm)	Kenaga Values
Short Grass	90.00
Tall Grass	41.25
Broadleaf plants/sm Insects	50.63
Fruits/pods/seeds/lg insects	5.63

Avian Results

Avian Class	Body Weight (g)	Ingestion (Fdry) (g bw/day)	Ingestion (Fwet) (g/day)	% body wgt consumed	FI (kg-diet/day)
Small	20	5	23	114	2.28E-02
Mid	100	13	65	65	6.49E-02
Large	1000	58	291	29	2.91E-01

Avian Body Weight (g)	Adjusted LD50 (mg/kg-bw)
20	4.55
100	5.79
1000	8.18

Dose-based EECs (mg/kg-bw)	Avian Classes and Body Weights		
	small 20 g	mid 100 g	large 1000 g
Short Grass	102.50	58.45	26.17
Tall Grass	46.98	26.79	11.99
Broadleaf plants/sm Insects	57.66	32.88	14.72
Fruits/pods/seeds/lg insects	6.41	3.65	1.64

Dose-based RQs (Dose-based EEC/adjusted LD50)	Avian Acute RQs		
	20 g	100 g	1000 g
Short Grass	22.54	10.10	3.20
Tall Grass	10.33	4.63	1.47
Broadleaf plants/sm insects	12.68	5.68	1.80
Fruits/pods/seeds/lg insects	1.41	0.63	0.20

Dietary-based RQs (Dietary-based EEC/LC50 or NOAEC)	RQs	
	Acute	Chronic
Short Grass	0.21	50.00
Tall Grass	0.10	22.92
Broadleaf plants/sm Insects	0.12	28.13
Fruits/pods/seeds/lg insects	0.01	3.13

Mammalian Results

Mammalian Class	Body Weight	Ingestion (Fdry) (g bwt/day)	Ingestion (Fwet) (g/day)	% body wgt consumed	FI (kg-diet/day)
Herbivores/ insectivores	15	3	14	95	1.43E-02
	35	5	23	66	2.31E-02
	1000	31	153	15	1.53E-01
Grainvores	15	3	3	21	3.18E-03
	35	5	5	15	5.13E-03
	1000	31	34	3	3.40E-02

Mammalian Class	Body Weight	Adjusted LD50	Adjusted NOAEL
Herbivores/ insectivores	15	105.50	0.09
	35	85.36	0.08
	1000	36.92	0.03
Grainvores	15	105.50	0.09
	35	85.36	0.08
	1000	36.92	0.03

Dose-Based EECs (mg/kg-bw)	Mammalian Classes and Body weight					
	Herbivores/ insectivores			Granivores		
	15 g	35 g	1000 g	15 g	35 g	1000 g
Short Grass	85.81	59.30	13.75			
Tall Grass	39.33	27.18	6.30			
Broadleaf plants/sm Insects	48.27	33.36	7.73			
Fruits/pods/seeds/lg insects	5.36	3.71	0.86	1.19	0.82	0.19

Dose-based RQs (Dose-based EEC/LD50 or NOAEL)	15 g mammal		35 g mammal		1000 g mammal	
	Acute	Chronic	Acute	Chronic	Acute	Chronic
Short Grass	0.81	907.96	0.69	775.57	0.37	415.74
Tall Grass	0.37	416.15	0.32	355.47	0.17	190.55
Broadleaf plants/sm insects	0.46	510.73	0.39	436.26	0.21	233.85
Fruits/pods/lg insects	0.05	56.75	0.04	48.47	0.02	25.98
Seeds (granivore)	0.01	12.61	0.01	10.77	0.01	5.77

Dietary-based RQs (Dietary-based EEC/LC50 or NOAEC)	Mammal RQs	
	Acute	Chronic
Short Grass	#DIV/0!	90.00
Tall Grass	#DIV/0!	41.25
Broadleaf plants/sm insects	#DIV/0!	50.63
Fruits/pods/seeds/lg insects	#DIV/0!	5.63

T-REX Cabbage Application (Highest Application Rate)

Upper Bound Kenaga Residues For RQ Calculation

Chemical Name:	ODM
Use	Cabbage
Formulation	MSR 25% concentrate
Application Rate	0.75 lbs a.i./acre
Half-life	35 days
Application Interval	7 days
Maximum # Apps./Year	3
Length of Simulation	1 year

Endpoints

Avian	Rock Pigeon	LD50 (mg/kg-bw)	7.00
	Bobwhite quail	LC50 (mg/kg-diet)	434.00
	Mallard duck	NOAEL(mg/kg-bw)	0.00
	Bobwhite quail	NOAEC (mg/kg-diet)	1.80
Mammals		LD50 (mg/kg-bw)	48.00
		LC50 (mg/kg-diet)	0.00
		NOAEL (mg/kg-bw)	0.04
		NOAEC (mg/kg-diet)	1.00

Dietary-based EECs (ppm)	Kenaga Values
Short Grass	473.11
Tall Grass	216.84
Broadleaf plants/sm Insects	266.13
Fruits/pods/seeds/lg insects	29.57

Avian Results

Avian Class	Body Weight (g)	Ingestion (Fdry) (g bw/day)	Ingestion (Fwet) (g/day)	% body wgt consumed	FI (kg-diet/day)
Small	20	5	23	114	2.28E-02
Mid	100	13	65	65	6.49E-02
Large	1000	58	291	29	2.91E-01

Avian Body Weight (g)	Adjusted LD50 (mg/kg-bw)
20	4.55
100	5.79
1000	8.18

Dose-based EECs (mg/kg-bw)	Avian Classes and Body Weights		
	small 20 g	mid 100 g	large 1000 g
Short Grass	538.83	307.26	137.57
Tall Grass	246.96	140.83	63.05
Broadleaf plants/sm Insects	303.09	172.84	77.38
Fruits/pods/seeds/lg insects	33.68	19.20	8.60

Dose-based RQs (Dose-based EEC/adjusted LD50)	Avian Acute RQs		
	20 g	100 g	1000 g
Short Grass	118.50	53.08	16.82
Tall Grass	54.31	24.33	7.71
Broadleaf plants/sm insects	66.66	29.86	9.46
Fruits/pods/seeds/lg insects	7.41	3.32	1.05

Dietary-based RQs (Dietary-based EEC/LC50 or NOAEC)	RQs	
	Acute	Chronic
Short Grass	1.09	262.84
Tall Grass	0.50	120.47
Broadleaf plants/sm Insects	0.61	147.85
Fruits/pods/seeds/lg insects	0.07	16.43

Mammalian Results

Mammalian Class	Body Weight	Ingestion (Fdry) (g bwt/day)	Ingestion (Fwet) (g/day)	% body wgt consumed	FI (kg-diet/day)
Herbivores/ insectivores	15	3	14	95	1.43E-02
	35	5	23	66	2.31E-02
	1000	31	153	15	1.53E-01
Grainvores	15	3	3	21	3.18E-03
	35	5	5	15	5.13E-03
	1000	31	34	3	3.40E-02

Mammalian Class	Body Weight	Adjusted LD50	Adjusted NOAEL
Herbivores/ insectivores	15	105.50	0.09
	35	85.36	0.08
	1000	36.92	0.03
Grainvores	15	105.50	0.09
	35	85.36	0.08
	1000	36.92	0.03

Dose-Based EECs (mg/kg-bw)	Mammalian Classes and Body weight					
	Herbivores/ insectivores			Granivores		
	15 g	35 g	1000 g	15 g	35 g	1000 g
Short Grass	451.08	311.75	72.28			
Tall Grass	206.74	142.89	33.13			
Broadleaf plants/sm Insects	253.73	175.36	40.66			
Fruits/pods/seeds/lg insects	28.19	19.48	4.52	6.26	4.33	1.00

Dose-based RQs (Dose-based EEC/LD50 or NOAEL)	15 g mammal		35 g mammal		1000 g mammal	
	Acute	Chronic	Acute	Chronic	Acute	Chronic
Short Grass	4.28	4772.97	3.65	4077.04	1.96	2185.45
Tall Grass	1.96	2187.61	1.67	1868.64	0.90	1001.67
Broadleaf plants/sm insects	2.41	2684.79	2.05	2293.33	1.10	1229.32
Fruits/pods/lg insects	0.27	298.31	0.23	254.81	0.12	136.59
Seeds (granivore)	0.06	66.29	0.05	56.63	0.03	30.35

Dietary-based RQs (Dietary-based EEC/LC50 or NOAEC)	Mammal RQs	
	Acute	Chronic
Short Grass	#DIV/0!	473.11
Tall Grass	#DIV/0!	216.84
Broadleaf plants/sm insects	#DIV/0!	266.13
Fruits/pods/seeds/lg insects	#DIV/0!	29.57

T-HERPS Walnut Application (Lowest Application Rate)

Upper Bound Kenaga Residues For RQ Calculation

Chemical Name:	ODM
Use	Walnuts
Formulation	MSR 25% Concentrate
Application Rate	0.375 lbs a.i./acre
Half-life	35 days
Application Interval	0 days
Maximum # Apps./Year	1
Length of Simulation	1 year

Endpoints

Avian	Rock Pigeon	LD50 (mg/kg-bw)	7.00
	Bobwhite quail	LC50 (mg/kg-diet)	434.00
	Bobwhite quail	NOAEL(mg/kg-bw)	0.00
	Bobwhite quail	NOAEC (mg/kg-diet)	1.80

Dietary-based EECs (ppm)	Kenaga Values
Short Grass	90.00
Tall Grass	41.25
Broadleaf plants/sm Insects	50.63
Fruits/pods/seeds/lg insects	5.63
Small herbivore mammals	59.30
Small insectivore mammals	3.71
Small terrestrial phase amphibians	1.76

Terrestrial Herpetofauna Results

Weight Class	Body Weight (g)	Ingestion (Fdry) (g bw/day)	Ingestion (Fwet) (g/day)	% body wgt consumed	FI (kg-diet/day)
Small	1.4	0.017	0.1	3.9	5.44E-05
Mid	37	0.212	1.4	3.8	1.41E-03
Large	238	0.893	6.0	2.5	5.96E-03

Body Weight (g)	Adjusted LD50 (mg/kg-bw)
1.4	7.00
37	7.00
238	7.00

Dose-based EECs (mg/kg-bw)	Herpetofaunal Size Classes and Body Weights		
	small (g)	mid (g)	large (g)
	1.4	37	238
Short Grass	3.50	3.44	2.25
Tall Grass	1.60	1.58	1.03
Broadleaf plants/sm Insects	1.97	1.93	1.27
Fruits/pods/seeds/lg insects	0.22	0.21	0.14
Small herbivore mammals	N/A	56.10	8.72
Small insectivore mammals	N/A	3.51	0.55
Small terrestrial phase amphibian	N/A	0.07	0.04

Dose-based RQs (Dose-based EEC/adjusted LD50)	Amphibian/Reptile Acute RQs for Small, Medium, and Large Species (grams)		
	1.4	37	238
Short Grass	0.50	0.49	0.32
Tall Grass	0.23	0.23	0.15
Broadleaf plants/sm insects	0.28	0.28	0.18
Fruits/pods/seeds/lg insects	0.03	0.03	0.02
Small herbivore mammals	N/A	8.01	1.25
Small insectivore mammals	N/A	0.50	0.08
Small terrestrial phase amphibian	N/A	0.01	0.01

Dietary-based RQs (Dietary-based EEC/LC50 or	RQs	
	Acute	Chronic
Short Grass	0.21	50.00
Tall Grass	0.10	22.92
Broadleaf plants/sm Insects	0.12	28.13
Fruits/pods/seeds/lg insects	0.01	3.13
Small herbivore mammals	0.14	32.95
Small insectivore mammals	0.01	2.06
Small terrestrial phase amphibian	0.00	0.98

T-HERPS Cabbage Application (Highest Application Rate)

Upper Bound Kenaga Residues For RQ Calculation

Chemical Name:	ODM
Use	Cabbage
Formulation	MSR 25% Concentrate
Application Rate	0.75 lbs a.i./acre
Half-life	35 days
Application Interval	7 days
Maximum # Apps./Year	3
Length of Simulation	1 year

Endpoints

Avian	Rock Pigeon	LD50 (mg/kg-bw)	7.00
	Bobwhite quail	LC50 (mg/kg-diet)	434.00
	Bobwhite quail	NOAEL(mg/kg-bw)	0.00
	Bobwhite quail	NOAEC (mg/kg-diet)	1.80

Dietary-based EECs (ppm)	Kenaga Values
Short Grass	473.11
Tall Grass	216.84
Broadleaf plants/sm Insects	266.13
Fruits/pods/seeds/lg insects	29.57
Small herbivore mammals	311.75
Small insectivore mammals	19.48
Small terrestrial phase amphibians	9.24

Terrestrial Herpetofauna Results

Weight Class	Body Weight (g)	Ingestion (Fdry) (g bw/day)	Ingestion (Fwet) (g/day)	% body wgt consumed	FI (kg-diet/day)
Small	1.4	0.017	0.1	3.9	5.44E-05
Mid	37	0.212	1.4	3.8	1.41E-03
Large	238	0.893	6.0	2.5	5.96E-03

Body Weight (g)	Adjusted LD50 (mg/kg-bw)
1.4	7.00
37	7.00
238	7.00

Dose-based EECs (mg/kg-bw)	Herpetofaunal Size Classes and Body Weights		
	small (g)	mid (g)	large (g)
	1.4	37	238
Short Grass	18.38	18.06	11.84
Tall Grass	8.42	8.28	5.43
Broadleaf plants/sm Insects	10.34	10.16	6.66
Fruits/pods/seeds/lg insects	1.15	1.13	0.74
Small herbivore mammals	N/A	294.90	45.85
Small insectivore mammals	N/A	18.43	2.87
Small terrestrial phase amphibian	N/A	0.35	0.23

Dose-based RQs (Dose-based EEC/adjusted LD50)	Amphibian/Reptile Acute RQs for Small, Medium, and Large Species (grams)		
	1.4	37	238
Short Grass	2.63	2.58	1.69
Tall Grass	1.20	1.18	0.78
Broadleaf plants/sm insects	1.48	1.45	0.95
Fruits/pods/seeds/lg insects	0.16	0.16	0.11
Small herbivore mammals	N/A	42.13	6.55
Small insectivore mammals	N/A	2.63	0.41
Small terrestrial phase amphibian	N/A	0.05	0.03

Dietary-based RQs (Dietary-based EEC/LC50 or	RQs	
	Acute	Chronic
Short Grass	1.09	262.84
Tall Grass	0.50	120.47
Broadleaf plants/sm Insects	0.61	147.85
Fruits/pods/seeds/lg insects	0.07	16.43
Small herbivore mammals	0.72	173.20
Small insectivore mammals	0.04	10.82
Small terrestrial phase amphibian	0.02	5.13