CYCLANILIPROLE (296)

First draft prepared by Ms M Thomas, Pest Management Regulatory Agency, Canada

EXPLANATION

Cyclaniliprole is an insecticide belonging to the chemical class of diamide insecticides which act at the ryanodine receptor, which is critical for muscle contraction.

Cyclaniliprole was first evaluated by the 2017 JMPR where an ADI of 0-0.04 mg/kg bw was established. An ARfD was determined to be unnecessary.

A residue definition of *cyclaniliprole* was determined for compliance with the MRL for plant and animal commodities and for dietary risk assessment for animal commodities.

For dietary risk assessment for plant commodities, the residue definition was determined to be *cyclaniliprole + 3-bromo-2-((2-bromo-4H- pyrazolo[1,5-d]pyrido[3,2-b]-[1,4]oxazin-4-ylidene)amino)-5-chloro-N(1-cyclopropylethyl)benzamide (NK-1375), expressed as cyclaniliprole equivalents.*

The residue is fat-soluble.

At the Fiftieth Session of the CCPR, a number of delegations commented that JMPR had used a model to estimate maximum residue levels for most plant commodities, and that the model needed validation to ensure that the derived MRL proposals were appropriate. Thus the Committee agreed to keep all the proposed draft MRLs at Step 4 pending the evaluation by the 2019 JMPR of new data and revised GAP information.

Cyclaniliprole was scheduled by the Fiftieth Session of the CCPR for the reassessment of the trials reviewed in 2017 and the evaluation of additional new uses. The current Meeting received new GAP information for several of the uses evaluated by the 2017 JMPR as well as new GAP information, supervised field trials on citrus fruits, berries and tuberous and corm vegetables, and orange and potato processing studies.

USE PATTERN

The registered uses of cyclaniliprole relevant to the supervised residue studies made available to the 2017 Meeting and the current Meeting are summarized in Table 1.

Table 1 Registered uses of cyclaniliprole (foliar applications; SL formulations)

Crop	Country	Application			PHI (days)
		Spray volume (L/ha)¥	Rate (g ai/ha)	Number / Interval (days)	
Citrus fruits [a]	USA	935-1870	60-80 (seasonal max 240)	3 / 7	1
Pome fruits [b]	Canada	935-1870	60-80 (seasonal max 240)	3 / 14	7
Stone fruits [c]	Canada	935-1870	60-80 (seasonal max 240)	3 / 7	7
Caneberries [d]	Canada	935-1400	60-80 (seasonal max 240)	3 / 5	1
Bushberries [e]	Canada	935-1400	60-80 (seasonal max 240)	3 / 5	1
Grapes	Canada	935-1400	60-80 (seasonal max 240)	3 / 7	7
Small fruits vine climbing, except grapes [f]	Canada	935-1400	60-80 (seasonal max 240)	3 / 5	1
Low growing berries [g]	Canada	935-1400	60-80 (seasonal max 240)	3 / 5	1
Brassica head and stem vegetables [h]	Canada		40-60 (seasonal max 180)	3 / 7	1
Cucurbit vegetables i[I]	Canada		40-60 (seasonal max 180)	3 / 7	1
Fruiting vegetables [j]	Canada		40-60 (seasonal max 180)	3 / 7	1
Leafy vegetables [k]	Canada		40-60 (seasonal max 180)	3 / 7	1

Crop	Country	Application			PHI (days)
		Spray volume (L/ha)¥	Rate (g ai/ha)	Number / Interval (days)	
Tuberous and corm vegetables [l]	Canada		40-60 (seasonal max 180)	3 / 5	7
Tree nuts [m]	Canada	935-1870	(seasonal max 240)	3 / 14	30
Tea [n]	Japan	2000-4000	2.25-4.5 g ai/hL	1 / -	3

¥ The product is to be applied in sufficient water to obtain adequate coverage of the foliage. Volume to be used will vary with crop and amount of plant growth. For ground application, spray volume will usually range from 200 to 1000 L/ha per hectare unless otherwise specified. For aerial applications, a minimum of 50 L/ha is required.

[a] Includes: Australian desert lime; Australian finger-lime; Australian round lime; Brown River finger lime; calamondin; citron; citrus hybrids; grapefruit; Japanese summer grapefruit; kumquat; lemon; lime; Mediterranean mandarin; mount white lime; New Guinea wild lime; orange, sour; orange, sweet; pummelo; Russell River lime; satsuma mandarin; sweet lime; tachibana orange; Tahiti lime; tangelo; tangerine (mandarin); tangor; trifoliate orange; uniq fruit; cultivars, varieties, and/or hybrids of these

[b] Includes: apple; azarole; crabapple; mayhaw; medlar; pear; pear, Asian; quince; quince, Chinese; quince, Japanese; tejocote; cultivars, varieties, and/or hybrids of these.

[c] Includes: apricot; apricot, Japanese; cherry, black; cherry, Nanking; cherry, sweet; cherry, tart; jujube, Chinese; nectarine; peach; plum; plum, American; plum, beach; plum, Canada; plum, cherry; plum, Chickasaw; plum, Damson; plum, Japanese; plum, Klamath; plum, prune; plumcot; sloe; cultivars, varieties, and/or hybrids of these.

[d] Includes: Blackberry (including Andean blackberry, arctic blackberry, bingleberry, black satin berry, boysenberry, brombeere, California blackberry, Chesterberry, Cherokee blackberry, Cheyenne blackberry, common blackberry, coryberry, darrowberry, dewberry, Dirksen thornless berry, evergreen blackberry, Himalayaberry, hullberry, lavacaberry, loganberry, lowberry, Lucretiaberry, mammoth blackberry, marionberry, mora, mures deronce, nectarberry, Northern dewberry, olallieberry, Oregon evergreen berry, phenomenalberry, rangeberry, ravenberry, rossberry, Shawnee blackberry, Southern dewberry, tayberry, youngberry, zarzamora, and cultivars, varieties and/or hybrids of these); raspberry, black and red; wild raspberry; cultivars, varieties, and/or hybrids of these.

[e] Includes: Aronia berry; blueberry, highbush; blueberry, lowbush; buffalo currant; Chilean guava; cranberry, highbush; currant, black; currant, red; elderberry; European barberry; gooseberry; honeysuckle, edible; huckleberry; jostaberry; Juneberry (Saskatoon berry); lingonberry; native currant; salal; sea buckthorn; cultivars, varieties, and/or hybrids of these.

[f] Includes: Amur river grape; gooseberry; kiwifruit, fuzzy; kiwifruit, hardy; maypop; schisandra berry; cultivars, varieties, and/or hybrids of these.

[g] Includes: Bearberry; bilberry; blueberry, lowbush; cloudberry; cranberry; lingonberry; muntries; partridgeberry; strawberry; cultivars, varieties, and/or hybrids of these.

[h] Includes: broccoli; Brussels sprouts; cabbage; cabbage, Chinese (napa); cauliflower; cultivars, varieties and/or hybrids of these.

[i] Includes: Chinese waxgourd (Chinese preserving melon); citron melon; cucumber; gherkin; gourd, edible (e.g., hyotan, cucuzza, hechima, Chinese okra); *Momordica spp* (e.g., balsam apple, balsam pear, bitter melon, Chinese cucumber); muskmelon, hybrids and/or cultivars of *Cucumis melo* (e.g., true cantaloupe, cantaloupe, casaba, crenshaw melon, golden pershaw melon, honeydew melon, honey balls, mango melon, Persian melon, pineapple melon, Santa Claus melon, and snake melon); pumpkin; squash, summer (e.g., crookneck squash, scallop squash, straightneck squash, vegetable marrow, zucchini); squash, winter (e.g., butternut squash, calabaza, hubbard squash, acorn squash, spaghetti squash); watermelon (includes hybrids and/or varieties of *Citrullus lanatus*)

[j] Includes: African eggplant; bell pepper; currant tomato; eggplant; garden huckleberry; goji berry; groundcherry; martynia; okra; pea eggplant; pepino; nonbell pepper; scarlet eggplant; sunberry; tomatillo; tomato; cultivars, varieties, and/or hybrids of these.

[k] Includes: amaranth, Chinese; amaranth, leafy; arugula; aster, Indian; blackjack; broccoli raab; broccoli, Chinese; cabbage, Abyssinian; cabbage, seakale; cat's whiskers; cham-chwi; cham-na-mul; chervil, fresh leaves; Chinese cabbage, bok choy; chipilin; chrysanthemum, garland; cilantro, fresh leaves; collards; corn salad; cosmos; cress, garden; cress, upland; dandelion; dang-gwi; dillweed, fresh leaves; dock; dol-nam-mul; ebolo; endive; escarole; fameflower; feather cockscomb; Good King Henry; Hanover salad; huauzontle; jute leaves; kale; lettuce, bitter; lettuce, head; lettuce, leaf (romaine); maca; mizuna; mustard greens; orach; parsley, fresh leaves; plantain, buckhorn; primrose, English; purslane, garden; purslane, winter; radicchio (red chicory); radish, leaves; rape greens; rocket, wild; shepherd's purse; spinach; spinach, Malabar; spinach, New Zealand; spinach, tree (giant lambsquarter); Swiss chard; tanier spinach; turnip greens; violet, Chinese; watercress; cultivars, varieties and/or hybrids of these.

[l] Includes: arrowroot; artichoke, Chinese; artichoke, Jerusalem; canna, edible; chufa; dasheen (taro); potato; sweet potato; yam, true

[m] Includes: almond; beechnut; bur oak; butternut; chestnut; chinquapin; ginkgo; hazelnut (filbert); heartnut; hickory nut; Japanese horse-chestnut; monkey puzzle nut; pecan; pine nut; walnut, black; walnut, English; yellowhorn; cultivars, varieties and/or hybrids of these.

[n] Based on the lowest dilution of 1000.

RESULTS OF SUPERVISED RESIDUE TRIALS ON CROPS

Table 2 Crop field trials previously considered by the 2017 JMPR as well as those considered by the current Meeting

Group/Sub-group	Commodity	Table No.
Citrus fruits [a]	Lemons	3
	Oranges	4
	Grapefruits	5
Pome fruits	Apples	6
	Pears	7
Stone fruits	Cherries	8
	Plums	9
	Peaches	10
Berries and small fruits [a]		
Cane berries	Raspberries	11
Bush berries	Blueberries	12
	Grapes	13
Low growing berries	Strawberries	14
	Kiwifruit	15
Brassica vegetables (except Brassica leafy vegetables)	Broccoli	16
	Cabbage	17
Fruiting vegetables, Cucurbits	Cucumbers	18
	Summer squash	19
	Melons	20
Fruiting vegetables, other than Cucurbits	Tomatoes (field)	21
	Peppers (field)	22
	Non-bell peppers (field)	23
Leafy vegetables (including Brassica leafy vegetables)	Lettuce (head)	24
	Lettuce (leaf)	25
	Lettuce (cos)	26
	Spinach	27
	Mustard greens	28
Tuberous and corm vegetables [a]	Potato	29
Tree nuts	Almonds	30
	Pecans	31
Miscellaneous fodder and forage	Almond hulls	32
Tea	Tea	33

[a] Crops for which trials were provided to the current (2019) Meeting. All other trials reviewed by the 2017 Meeting.

Residue data are recorded unadjusted for percentage recoveries or for residue values in control samples. Non quantifiable residues are shown as below the reported LOQ (e.g. < 0.01 mg/kg). Where multiple analyses were conducted on a single sample, the average value is reported. Where multiple samples were taken from a single plot, the individual and average values are reported. Where results from separate plots with distinguishing characteristics such as different formulations, crop varieties or treatment schedules were reported, results are listed separately for each plot. Residues

from the trials conducted according to the critical GAP, which has been used for the estimation of maximum residue levels, STMR and HR (where applicable) values are underlined.

The residues presented in the tables are given as cyclaniliprole and metabolite NK-1375, expressed as themselves. The total residues (sum of the mean of parent and NK-1375) are expressed as parent equivalents by applying a conversion factor of 1.064 to NK-1375. Levels of NK-1375 are generally not detectable if parent concentrations are < 0.01 mg/kg. Therefore, if both parent and metabolite are < 0.01 mg/kg, the total is calculated as < 0.01 mg/kg.

In some trials either single, duplicate or even triplicate field samples were taken at various time points. Results are therefore presented as single values or as duplicate/triplicate single values with the (mean) value in brackets. Sample sizes were in accordance with the FAO manual 2016 Appendix V. In the few cases where the sample size weighed less than the required 2 kg, at least 12 fruits were picked from at least 12 plants/locations on the plot. Therefore, samples were considered sufficiently representative to be used for maximum residue estimation.

The LC-MS/MS analytical method (Report JSM 0269) used for analysis of residues of cyclaniliprole and NK-1375 in plant commodities, with LOQs of 0.01 mg/kg for each analyte, was reviewed by the 2017 JMPR. All samples collected from the supervised residue trials submitted to the current Meeting were analysed using the same method, which was concurrently validated at the time of the residue trials. All recoveries were within the acceptable range of 70-120% with relative standard deviations ≤20%.

The stability of residues of cyclaniliprole and NK-1375 during frozen storage was evaluated by the 2017 JMPR. Cyclaniliprole and NK-1375 were determined to be stable for at least 18 months at -20 ºC in commodities representative of the high water, high acid, high starch, high protein and high oil commodity groups.

The periods of demonstrated stability covered the frozen storage intervals in the supervised residue trials on crops considered by the current Meeting.

Citrus fruit

Table 3 Residues of cyclaniliprole (mg/kg) in lemons (IB-2015-JAM-004-01-01) following three foliar applications of cyclaniliprole in an SL-formulation

LEMONS Location, Country; year; (variety)	No, (interval)	g ai/ha	g ai/hL	GS & last treatment day	DALT (days)	Residues, mg/kg		
						Parent	NK-1375	Total
De Leon Springs, FL, USA, 2015 (Meyer)	3 (7)	100 100 100	6 6 6	BBCH 87 Nov 17	1	0.169 / 0.170 (<u>0.170</u>)	< 0.01 / < 0.01 (<u>< 0.01</u>)	0.180 / 0.181 (<u>0.181</u>)
Woodlake, CA, USA, 2015 (Lisbon)	3 (7)	102 99 101	4 4 4	BBCH 89 Dec 14	1	0.053 / 0.042 (<u>0.048</u>)	< 0.01 / < 0.01 (<u>< 0.01</u>)	0.064 / 0.053 (<u>0.059</u>)
Blythe, CA, USA, 2015 (Eureka)	3 (7)	99 99 99	8 8 8	BBCH 89 Mar 16	1	0.013 / 0.023 (<u>0.018</u>)	< 0.01 / < 0.01 (< 0.<u>01</u>)	0.024 / 0.034 (<u>0.029</u>)
Porterville, CA, USA, 2015 (Pryor)	3 (6,8)	99 100 98	4 4 4	BBCH 89 Dec 17	1	0.130 [0.151] / 0.147 [0.137, 0.128][a] (<u>0.139</u>)[b]	[< 0.01/< 0.01] (<u>< 0.01</u>)	0.141 / 0.158 (<u>0.150</u>)

LEMONS Location, Country; year; (variety)	No, (interval)	g ai/ha	g ai/hL	GS & last treatment day	DALT (days)	Residues, mg/kg		
						Parent	NK-1375	Total
Richgrove, CA, USA, 2015 (Lisbon)	3 (6,8)	100 100 100	11 4 5	BBCH 83 Dec 2	0	0.155 / 0.135 (0.145)	< 0.01 / < 0.01 (< 0.01)	0.166 / 0.146 (0.156)
					1	0.101 / 0.138 (0.120)	< 0.01 / < 0.01 (< 0.01)	0.112 / 0.149 (0.131)
					3	0.072 / 0.077 (0.075)	< 0.01 / < 0.01 (< 0.01)	0.083 / 0.088 (0.086)
					7	0.120 / 0.147 (0.134)	< 0.01 / < 0.01 (< 0.01)	0.131 / 0.158 (0.145)

[a] Reanalysed sample in squared brackets

[b] Means of each sample used for calculation of mean value

Table 4 Residues of cyclaniliprole (mg/kg) in oranges (IB-2015-JAM-004-01-01) following three foliar applications of cyclaniliprole in an SL-formulation

ORANGES Location, Country; year; (variety)	No, (interval)	g ai/ha	g ai/hL	GS & last treatment day	DALT (days)	Residues, mg/kg		
						Parent	NK-1375	Total
De Leon Springs, FLA, USA, 2015 (Navel)	3 (7)	100 100 100	6 6 6	BBCH 87 Nov 17	1	0.118 / 0.078 (0.098)	< 0.01/< 0.01 (< 0.01)	0.129 / 0.089 (0.109)
De Leon Springs, FLA, USA, 2015 (Hamlin)	3 (7,6)	100 100 101	8 7 8	BBCH 86 Nov 5	1	0.238 / 0.147 (0.193)	0.011 / < 0.01 (0.011)	0.250 / 0.158 (0.205)
Clermont, FL, USA, 2015 (Valencia)	3 (7)	100 99 99	5 5 5	BBCH 88 May 21	1	0.119 / 0.064 (0.092)	< 0.01 / < 0.01 (< 0.01)	0.130 / 0.075 (0.103)
Vero Beach, FL, USA, 2015 (Navel)	3 (7,6)	101 100 100	8 8 8	BBCH 86 Nov 5	1	0.145 / 0.113 (0.129)	< 0.01/< 0.01 (< 0.01)	0.156 / 0.124 (0.140)
Winter Garden, FLB, USA 2015 (Valencia)	3 (7)	102 100 101	5 5 5	Fruiting May 6	1	0.126 / 0.102 (0.114)	< 0.01 / < 0.01 (< 0.01)	0.137 / 0.113 (0.125)
Winter Garden, FLB, USA 2015 (Hamlin)	3 (7, 6)	100 100 102	8 9 9	Fruiting Nov 5	1	0.355 / 0.357 (0.356)	0.030 / 0.027 (0.029)	0.387 / 0.386 (0.387)
Oviedo, FL, USA, 2015 (Valencia)	3 (7)	100 100 100	7 7 7	BBCH 89 May 8	0	0.142 / 0.127 (0.135)	0.014 / 0.012 (0.013)	0.157 / 0.140 (0.149)
					1	0.113 / 0.120 (0.117)	0.010 / 0.014 (0.012)	0.124 / 0.135 (0.130)
					3	0.095 / 0.098	0.013 / 0.010	0.109 / 0.109

ORANGES Location, Country; year; (variety)	No, (interval)	g ai/ha	g ai/hL	GS & last treatment day	DALT (days)	Residues, mg/kg		
						Parent	NK-1375	Total
						(0.097)	(0.012)	(0.109)
					7	0.113 / 0.096 (0.105)	0.015 / 0.012 (0.014)	0.129 / 0.109 (0.119)
Bithlo, FL, USA, 2015 (Valencia)	3 (7)	102 100 99	7 7 7	BBCH 89 May 8	1	0.142 / 0.142 (0.142)	0.012 / < 0.01 (0.011)	0.155 / 0.153 (0.154)
Raymondville, TX. USA, 2015 (Marrs)	3 (7)	102 104 103	4 4 4	BBCH 85-89 Dec 17	1	0.123 / 0.120 (0.122)	< 0.01 / < 0.01 (< 0.01)	0.134/0.131 (0.133)
Madera, CA, USA, 2015 (Navel)	3 (7)	102 98 100	7 7 7	Mature Nov 24	1	0.044 / 0.022 (0.033)	< 0.01 / < 0.01 (< 0.01)	0.055 / 0.033 (0.044)
Porterville, CA, USA, 2015 (Valencia)	3 (7,8)	100 100 100	5 5 5	BBCH 89 May 26	1	0.169 / 0.149 (0.159)	< 0.01 / < 0.01 (< 0.01)	0.180 / 0.160 (0.170)
Fresno, CA, USA, 2015 (Navel)	3 (7)	100 99 100	7 7 7	BBCH 89 Dec 8	0	0.112 / 0.065 (0.089)	< 0.01 / < 0.01 (< 0.01)	0.123 / 0.076 (0.100)
					1	0.077 / 0.109 (0.093)	< 0.01 / < 0.01 (< 0.01)	0.088 / 0.120 (0.104)
					3	0.075 / 0.091 (0.083)	< 0.01 / < 0.01 (< 0.01)	0.086 / 0.102 (0.094)
					7	0.070 / 0.061 (0.066)	< 0.01 / < 0.01 (< 0.01)	0.081 / 0.072 (0.077)

[a] Trials were considered independent on the basis of the different varieties and last applications being made 12 days apart.

[b] Trials considered independent on the basis of the different varieties and last applications being made 6 months apart.

Table 5 Residues of cyclaniliprole (mg/kg) in grapefruits (IB-2015-JAM-004-01-01) following three foliar applications of cyclaniliprole in an SL-formulation

GRAPEFRUITS Location, Country; year; (variety)	No, (interval)	g ai/ha	g ai/hL	GS & last treatment day	DALT (days)	Residues, mg/kg		
						Parent	NK-1375	Total
Vero Beach, FL, USA, 2015 (Ruby Red)	3 (7,6)	100 100 101	8 7 8	BBCH 87 Nov 5	1	0.113 / 0.078 (0.096)	< 0.01 / < 0.01 (< 0.01)	0.124 / 0.089 (0.107)
De Leon Springs, FL, USA, 2015 (Red Flame)	3 (7)	100 99 100	6 6 6	BBCH 87 Nov 17	1	0.059 / 0.059 (0.059)	< 0.01 / < 0.01 (< 0.01)	0.070 / 0.070 (0.070)
Umatilla, FL, USA, 2015 (Ruby Red)	3 (7)	100 99 101	5 5 5	BBCH 89 May 19	1	0.035 / 0.012 (0.024)	< 0.01 / < 0.01 (< 0.01)	0.046 / 0.023 (0.035)
Raymondville, TX, USA	3 (7)	101 104	4 4	BBCH 83 Dec17	1	0.083 / 0.073 (0.078)	< 0.01 / < 0.01 (< 0.01)	0.094 / 0.084 (0.089)

GRAPEFRUITS Location, Country; year; (variety)	No, (interval)	g ai/ha	g ai/hL	GS & last treatment day	DALT (days)	Residues, mg/kg		
						Parent	NK-1375	Total
2015 (Rio Red)		103	4					
Lindsay, CA, USA, 2015 (Star Ruby)	3 (7)	100 100 100	5 5 5	BBCH 89 Dec 30	0	0.042 / 0.040 (0.041)	< 0.01 / < 0.01 (< 0.01)	0.053 / 0.051 (0.052)
					1	0.041 / 0.043 (0.042)	< 0.01 / < 0.01 (< 0.01)	0.052 / 0.054 (0.053)
					3	0.038 / 0.027 (0.033)	< 0.01 / < 0.01 (< 0.01)	0.049 / 0.038 (0.044)
					7	< 0.01 / 0.012 (0.011)	< 0.01 / < 0.01 (< 0.01)	0.021 / 0.023 (0.022)
Porterville, CA, USA 2015 (Mellogold)	3 (7)	99 100 98	5 5 5	BBCH 83 Oct 28	1	0.098 / 0.066 (0.082)	< 0.01 / < 0.01 (< 0.01)	0.109 / 0.077 (0.093)

Pome fruits

Table 6 Residues of cyclaniliprole (mg/kg) in apples (IB-2012-JLW-020-01-01; IB-2013-JLW-004-01-01) following three foliar applications of cyclaniliprole in an SL-formulation (extracted from 2017 JMPR Monograph)

APPLES Location, Country; year; (variety)	No, (interval)	g ai/ha	g ai/hL	GS & last treatment day	DALT (days)	Residues, mg/kg		
						Parent	NK-1375	Total
North Rose, NY, USA, 2012 (Rome)	3 (14)	101 100 100	9 9 9	BBCH 85 Sept 21	7	0.059/0.077 (0.068)	< 0.01/< 0.01 (< 0.01)	0.070/ 0.089 (0.079)
North Rose, NY, USA, 2012 (Rome)	3 (14)	995 1010 999	85 85 85	BBCH 85 Sept 21	7	0.71[a]	0.078 [a]	0.79
Hereford, PA, USA, 2012 (Red delicious)	3 (14-15)	101 100 101	5 5 5	BBCH 87 Sept 07	0 3 6 10	0.11/0.13 (0.12) 0.073/0.064 (0.069) 0.047/0.061 (0.054) 0.052/0.045 (0.049)	< 0.01/< 0.01(< 0.01) < 0.01/< 0.01(< 0.01) < 0.01/< 0.01 (< 0.01) < 0.01/< 0.01 (< 0.01)	0.12/ 0.14 (0.13) 0.084/ 0.075 (0.079) 0.058/ 0.072 (0.065) 0.063/ 0.056 (0.059)
Blairsville, GA, USA, 2012 (Rome)	3 (14)	102 104 103	10 10 10	BBCH 87 Aug 06	7	0.035/0.035 (0.035)	< 0.01/< 0.01 (< 0.01)	0.046/ 0.046 (0.046)
Deerfield, MI,	3	153	9	BBCH 87	7	0.016[b]	< 0.01[b]	0.027

APPLES Location, Country; year; (variety)	No, (interval)	g ai/ha	g ai/hL	GS & last treatment day	DALT (days)	Residues, mg/kg		
						Parent	NK-1375	Total
USA, 2012 (Red delicious)	(14)	158 150	9 9	Sept 05				
Oregon, WI, USA, 2012 (Cortland)	3 (14)	100 100 100	9 8 9	5.1-7.6 cm fruit diameter Sept 12	7	0.022/0.023 (0.023)	< 0.01/< 0.01 (< 0.01)	0.033/ 0.034 (0.033)
Perry, UT, USA, 2012 (Gala)	3 (13-15)	103 101 102	5 5 5	BBCH 85 Aug 21	7	0.059/0.050 (0.055)	0.012/0.01 (0.012)	0.072/ 0.062 (0.067)
Los Molinos, CA, USA, 2012 (Summerfield)	3 (14)	99 99 99	7 7 7	BBCH 81 Aug 23	7	0.032/0.042 (0.037)	0.012/0.019 (0.016)	0.045/ 0.062 (0.053)
Ephrata, WA, USA 2012 (Gala)	3 (14)	100 101 99	5 5 5	BBCH 85 Aug 23	7	0.13/0.14 (0.13)	0.035/0.031 (0.033)	0.17/ 0.17 (0.17)
Payette, ID, USA, 2012 (Early Spur Rome)	3 (14-15)	100 101 101	11 11 11	fruit with advanced colour Sept 27	0 3 7 10	0.13/0.14 (0.14) 0.13/0.13 (0.13) 0.11/0.092 (0.10) 0.095/0.079 (0.087)	0.010/0.012 (0.011) 0.013/0.014 (0.014) 0.013/0.016 (0.015) 0.013/< 0.01 (0.012)	0.14/ 0.16 (0.15) 0.14/ 0.14 (0.14) 0.12/ 0.11 (0.12) 0.11/ 0.09 (0.10)
North Rose, NY, USA, 2013 (Ida Red)	3 (14)	100 100 100	8 9 9	BBCH 85 Sept 10	7	0.050/0.041 (0.046)	< 0.01/< 0.01 (< 0.01)	0.061/ 0.052 (0.056)
Conklin, MI, USA, 2013 (Ida Red)	3 (14)	100 100 100	8 9 9	BBCH 85 Sept 24	7	0.048/0.049 (0.049)	< 0.01/< 0.01 (< 0.01)	0.059/ 0.060 (0.059)
Wyoming, IL, USA, 2013 (Gala)	3 (14)	101 102 101	7 7 7	90% mature Aug 26	8	0.098/0.111 (0.10)	0.026/0.019 (0.023)	0.13/ 0.13 (0.13)
Oregon, WI, USA, 2013 (Paula Red)	3 (14)	99 101 100	9 9 9	5.7-7.0 cm fruit Aug 15	7	0.011/0.014 (0.013)	< 0.01/< 0.01 (< 0.01)	0.022/ 0.025 (0.023)

APPLES Location, Country; year; (variety)	No, (interval)	g ai/ha	g ai/hL	GS & last treatment day	DALT (days)	Residues, mg/kg		
						Parent	NK-1375	Total
Ephrata, WA, USA, 2013 (Gala)	3 (14)	100 100 100	8 9 9	BBCH 85 Aug 22	7	0.063/0.053 (0.058)	0.015/0.013 (0.014)	0.079/ 0.067 (0.073)
Payette, ID, USA, 2013 (Early Spur Rome)	3 (13, 15)	101 102 103	7 7 7	advanced fruit colouring Sept 26	7	0.058/0.050 (0.054)	< 0.01/< 0.01 (< 0.01)	0.069/ 0.061 (0.065)
Simcoe, Ontario, Canada, 2012 (Golden Delicious)	3 (14)	106 101 101	11 11 11	BBCH 85-87 Sept 27	7	0.066/0.070 (0.068)	0.015/0.015 (0.015)	0.082/ 0.086 (0.084)
Branchton, Ontario, Canada, 2013 (Ida Red)	3 (14)	102 102 101	7 7 7	BBCH 85-87 Sept 18	7	0.024/0.030 (0.027)	< 0.01/< 0.01 (< 0.01)	0.035/ 0.041 (0.038)

[a] mean of triplicate analyses

[b] single samples from two different plots at the same test site.

Table 7 Residues of cyclaniliprole (mg/kg) in pears (IB-2013-JLW-004-01-01) following three foliar applications of cyclaniliprole in an SL-formulation (extracted from 2017 JMPR Monograph)

PEARS Location, Country; year; (variety)	No, (interval)	g ai/ha	g ai/hL	GS & last treatment day	DALT (days)	Residues, mg/kg		
						Parent	NK-1375	Total
Oswego, NY, USA, 2013 (Bartlett)	3 (14)	99 102 102	8 9 9	BBCH 81 Aug 12	7	0.050/0.069 (0.060)	< 0.01/0.012 (0.011)	0.061/ 0.080 (0.070)
Conklin, MI, USA, 2013 (Bartlett)	3 (14)	100 100 100	6 6 6	BBCH 81-83 Aug 27	7	0.062/0.075 (0.069)	0.013/0.011 (0.012)	0.076/ 0.087 (0.081)
Blissfield, MI, USA, 2013 (not reported)	3 (14, 6)	107 59 59	8 8 8	ripening Sept 3	15	< 0.01/< 0.01 (< 0.01)	< 0.01/< 0.01 (< 0.01)	< 0.01/< 0.01 (< 0.01)
Madera, CA, USA, 2013	3 (7)	101 99 100	7 7 7	BBCH 77 Sept 05	7	0.082/0.11 (0.095)	0.012/0.011 (0.012)	0.095/0.12 (0.11)

PEARS Location, Country; year; (variety)	No, (interval)	g ai/ha	g ai/hL	GS & last treatment day	DALT (days)	Residues, mg/kg		
						Parent	NK-1375	Total
(Hosui)								
Lindsay CA, USA, 2013 (Olympic)	3 (14, 13)	99 100 100	4 4 4	BBCH 89 Sept 10	6	0.10/0.11 (0.11)	< 0.01/< 0.01 (< 0.01)	0.11/ 0.12 (0.12)
Ephrata, WA, USA, 2013 (D'Anjou)	3 (14)	98 99 99	11 11 11	BBCH 87-87 Aug 29	7	0.14/0.14 (0.14)	0.022/0.024 (0.023)	0.16/ 0.16 (0.16)
Fruitland, ID, USA, 2013 (Bartlett)	3 (14, 13)	100 103 134	9 9 9	advanced fruit ripening Aug 21	7	0.094/0.100 (0.097)	0.017/0.019 (0.018)	0.11/ 0.12 (0.12)
Hood River, OR, USA, 2013 (Star Crimson)	3 (14)	100 101 102	7 7 7	BBCH 85 Sept 15	1 4 7 10	0.048/0.057 (0.053) 0.041/0.042 (0.042) 0.037/0.036 (0.037) 0.038/0.033 (0.036)	0.010/0.015 (0.013) 0.015/0.017 (0.016) 0.014/0.014 (0.014) 0.016/0.013 (0.015)	0.059/ 0.073 (0.066) 0.057/ 0.075 (0.066) 0.052/ 0.051 (0.051) 0.055/ 0.047 (0.051)
Branchton, Ontario, Canada, 2013 (Bosc)	3 (14)	99 100 100	7 7 7	BBCH 85 Sept 18	7	0.12/0.13 (0.13)	0.016/0.016 (0.016)	0.14/ 0.15 (0.14)
Arkona, Ontario, Canada, 2013 (Bosc)	3 (14)	99 101 101	7 7 7	fruit at full size, beginning to colour	7	0.13/0.15 (0.14)	0.017/0.019 (0.018)	0.15/ 0.17 (0.16)

Stone fruit

Table 8 Residues of cyclaniliprole (mg/kg) in cherries (flesh (no stone)) (IB-2013-JLW-005-01-01) following three foliar applications of cyclaniliprole in an SL-formulation (extracted from 2017 JMPR Monograph)

CHERRIES Location, Country; year; (variety)	No, (interval)	g ai/ha	g ai/hL	GS & last treatment day	DALT (days)	Residues, mg/kg		
						Parent	NK-1375	Total
Conklin, MI, USA, 2013 (Sam) sweet cherry	3 (7)	99 99 99	10 10 10	BBCH 85-87 July 01	7	0.37/0.23 (0.30)	0.017/0.011 (0.014)	0.39/ 0.24 (0.32)
Blissfield, MI, USA,	3	97	8	Ripening	7	< 0.01/0.010	< 0.01/< 0.01	0.020/ 0.021

CHERRIES Location, Country; year; (variety)	No, (interval)	g ai/ha	g ai/hL	GS & last treatment day	DALT (days)	Residues, mg/kg		
						Parent	NK-1375	Total
2013 (variety not reported) sweet cherry	(6)	97 97	8 8	July 29		(0.010)	(< 0.01)	(0.021)
Perry, UT, USA, 2013 (Bing) sweet cherry	3 (6)	105 103 102	7 7 7	BBCH 85 June 19	7	0.10/0.15 (0.13)	< 0.01/0.013 (0.012)	0.11/ 0.17 (0.14)
Plainview, CA, USA, 2013 (Tulare) sweet cherry	3 (7)	100 102 107	11 11 11	BBCH 87 May 08	7	0.36/0.30 (0.33)	< 0.01/< 0.01 (< 0.01)	0.37/ 0.31 (0.34)
Fresno, CA, USA, 2013 (Brooks) sweet cherry	3 (7)	98 99 98	13 13 13	Mature coloured fruit, at com-mercial harvest May 03	7	0.16/0.20 (0.18)	0.011/0.016 (0.014)	0.17/ 0.21 (0.19)
Caldwell, ID, USA, 2013 (Bing) sweet cherry	3 (8)	103 104 100	8 8 8	BBCH 85 June 22	6	0.11/0.086 (0.097)	0.011/0.010 (0.011)	0.12/ 0.098 (0.11)
Weisser, ID, USA, 2013 (Benton) sweet cherry	3 (6, 8)	103 105 102	7 7 7	Fruit colour advanced June 26	7	0.12/0.14 (0.13)	< 0.01/< 0.01 (< 0.01)	0.13/ 0.15 (0.14)
Ephrata, WA, USA, 2013 (Bing) sweet cherry	3 (7)	104 99 99	11 11 11	BBCH 81 June 13	7	0.15/0.13 (0.14)	0.018/0.012 (0.015)	0.17/ 0.15 (0.16)
Hereford, PA, USA, 2013 (Mont-morency) tart cherry	3 (6)	103 102 101	12 12 12	BBCH 87 June 29	6	0.25/0.23 (0.24)	0.022/0.021 (0.022)	0.27/ 0.26 (0.26)
Conklin, MI, USA, 2013 (Mont-	3 (7)	99 99 99	10 10 10	BBCH 85-87 July 01	7	0.43/0.45 (0.44)	0.041/0.036 (0.039)	0.47/ 0.49 (0.48)

CHERRIES Location, Country; year; (variety)	No, (interval)	g ai/ha	g ai/hL	GS & last treatment day	DALT (days)	Residues, mg/kg		
						Parent	NK-1375	Total
morency) tart cherry								
Blissfield, MI, USA, 2013 (variety not reported) tart cherry	3 (7)	116 117 116	8 8 8	Ripening Aug 05	7	0.014/0.018 (0.016)	< 0.01/< 0.01 (< 0.01)	0.025/ 0.029 (0.027)
Marengo, IL,USA, 2013 (North Star) tart cherry	3 (7)	99 100 99	8 8 8	Ripe July 02	7	0.081/0.082 (0.082)	0.020/0.021 (0.021)	0.10/ 010 (0.10)
Perry, UT, USA, 2013 (Mont-morency) tart cherry	3 (6, 7)	102 102 103	8 8 8	BBCH 87 July 09	6	0.28/0.29 (0.28)	0.050/0.054 (0.052)	0.33/ 0.35 (0.34)
Branchton, Ontario, Canada, 2013 (North Star) tart cherry	3 (7, 8)	97 99 95	10 10 10	BBCH 78-79 June 18	4 7 10 14	0.34/0.28 (0.31) 0.14/0.14 (0.14) 0.090/0.081 (0.086) 0.071/0.074 (0.073)	0.064/0.064 (0.064) 0.030/0.031 (0.031) 0.025/0.020 (0.023) 0.017/0.019 (0.018)	0.40/ 0.35 (0.37) 0.17/ 0.17 (0.17) 0.12/ 0.10 (0.11) 0.089/ 0.094 (0.092)
Josephberg, Alberta, Canada, 2013 (Evans) tart cherry	3 (6, 7)	91 110 100	10 11 10	BBCH 87-89 Aug 13	7	0.57/0.56 (0.56)	0.052/0.045 (0.049)	0.62/ 0.60 (0.61)

Table 9 Residues of cyclaniliprole (mg/kg) in plums (flesh, no stone) (IB-2013-JLW-005-01-01) following three foliar applications of cyclaniliprole in an SL-formulation (extracted from 2017 JMPR Monograph)

PLUMS Location, Country; year; (variety)	No, (interval)	g ai/ha	g ai/hL	GS & last treatment day	DALT (days)	Residues, mg/kg		
						Parent	NK-1375	Total
Blissfield, MI, USA, 2013 (not reported)	3 (7)	79 79 40	8 8 8	ripe August 28	6	0.027/0.027 (0.027)	0.013/0.014 (0.014)	0.041/ 0.042 (0.042)
Conklin, MI, USA, 2013 (Stanley)	3 (7)	100 99 99	10 10 10	BBCH 83-86 August 27	7	0.089/0.093 (0.091)	0.019/0.015 (0.017)	0.11/ 0.11 (0.11)
Madera, CA, USA, 2013 (Apple Dandy)	3 (7, 8)	100 101 99	21 21 21	BBCH 79 May 23	6	0.023/0.024 (0.024)	< 0.01/< 0.01 (< 0.01)	0.034/ 0.035 (0.035)
Orland, CA, USA, 2013 (French)	3 (7)	99 100 100	11 11 11	50-60% purple August 05	7	0.018/0.019 (0.019)	< 0.01/< 0.01 (< 0.01)	0.029/ 0.030 (0.030)
Lindsay, CA, USA, 2013 (Angelina's)	3 (8,6)	100 100 99	10 10 10	BBCH 89 August 15	7	0.054/0.076 (0.065)	< 0.01/< 0.01 (< 0.01)	0.065/ 0.087 (0.076)
Madera, CA, USA, 2013 (French – prune type)	3 (7)	100 102 100	7 7 7	Mature prunes July 26	7	0.059/0.065 (0.062)	0.011/0.012 (0.012)	0.071/ 0.077 (0.075)
Payette, ID, USA, 2013 (Empress)	3 (7)	103 102 101	11 11 11	advanced colouring of fruit August 26	0 1 7 10	0.066/0.089 (0.080) 0.089/0.064 (0.077) 0.049/0.063 (0.056) 0.040/0.046 (0.043)	< 0.01/< 0.01 (< 0.01) < 0.01/< 0.01 (< 0.01) < 0.01/< 0.01 (< 0.01) < 0.01/< 0.01 (< 0.01)	0.077/ 0.10 (0.091) 0.10/ 0.075 (0.088) 0.060/ 0.074 (0.067) 0.051/ 0.057 (0.054)
Newberg, OR, USA, 2013 (Italian)	3 (7)	99 99 100	7 7 7	BBCH 85-88 Sept 02	7	0.019/0.019 (0.019)	< 0.01/< 0.01 (< 0.01)	0.030/ 0.030 (0.030)

Table 10 Residues of cyclaniliprole (mg/kg) in peaches (flesh, no stone) (IB-2013-JLW-005-01-01) following three foliar applications of cyclaniliprole in an SL-formulation (extracted from 2017 JMPR Monograph)

PEACHES Location, Country; year; (variety)	No, (interval)	g ai/ha	g ai/hL	GS & last treatment day	DALT (days)	Residues, mg/kg [a]		
						Parent	NK-1375	Total
Alton, NY, USA, 2013 (Baby Gold #5)	3 (6, 7)	100 100 101	11 11 11	BBCH 81 Aug 19	1 4 7 10	0.075/0.099 (0.087) 0.039/0.086 (0.063) 0.056/0.043 (0.050) 0.030/0.040 (0.035)	< 0.01/< 0.01 (< 0.01) < 0.01/< 0.01 (< 0.01) < 0.01/< 0.01 (< 0.01) < 0.01/< 0.01 (< 0.01)	0.086/ 0.11 (0.098) 0.050/ 0.097 (0.074) 0.067/ 0.054 (0.061) 0.041/ 0.051 (0.046)
Plains, GA, USA, 2013 (Red Skin)	3 (7)	102 102 103	8 8 11	BBCH 85 July 23	7	0.021/0.024 (0.023)	< 0.01/< 0.01 (< 0.01)	0.032/ 0.035 (0.034)
Chula, GA, USA, 2013 (Gala)	3 (7)	100 97 100	17 18 17	GS not reported June 5	7	0.083/0.078 (0.081)	< 0.01/< 0.01 (< 0.01)	0.094/ 0.089 (0.092)
Monetta, SC, USA, 2013 (Big Red)	3 (6, 7)	99 97 97	9 9 9	BBCH 81 Aug 6	7	0.057/0.050 (0.054)	< 0.01/< 0.01 (< 0.01)	0.068/0.061 (0.065)
Blissfield, MI, USA, 2013 (not reported)	3 (7)	79 79 55	8 8 8	fruits ripe Aug 28	7	0.014/0.023 (0.019)	< 0.01/< 0.01 (< 0.01)	0.025/ 0.034 (0.030)
Conklin, MI, USA, 2013 (Red Haven)	3 (7)	100 99 101	11 10 10	fruit up to 6.0 cm diameter Jul 31	6	0.16/0.22 (0.19)	< 0.01/0.012 (0.011)	0.17/ 0.23 (0.20)
D'Hanis, TX, USA, 2013 (Flamin' Fury)	3 (7)	99 99 100	11 11 8	BBCH 85 Jul 19	7	0.042/0.039 (0.041)	0.017/0.015 (0.016)	0.060/ 0.055 (0.058)
Madera, CA USA, 2013 (Spring Crest)	3 (8,6)	98 101 99	13 13 13	Medium size fruit 70-80% ripe for harvest May 30	7	0.066/0.036 (0.051)	< 0.01/< 0.01 (< 0.01)	0.077/ 0.047 (0.062)
Fresno, CA, USA, 2013 (Kaweah)	3 (7)	100 99 99	11 11 11	BBCH 85 Jul 30	7	0.043/0.046 (0.045)	< 0.01/< 0.01 (< 0.01)	0.054/ 0.057 (0.056)
Porterville, CA,	3	100	11	BBCH 81	7	0.058/0.070	0.011/0.014	0.070/ 0.085

PEACHES Location, Country; year; (variety)	No, (interval)	g ai/ha	g ai/hL	GS & last treatment day	DALT (days)	Residues, mg/kg [a]		
						Parent	NK-1375	Total
USA, 2013 (Fay Alberta)	(7)	100 99	11 11	Jul 17		(0.064)	(0.013)	(0.078)
Weiser, ID, USA, 2013 (O'Henry)	3 (7)	99 99 99	11 11 11	Advanced fruit colour Sep 02	6	0.16/0.15 (0.16)	< 0.01/< 0.01 (< 0.01)	0.17/ 0.16 (0.17)
Branchton, Ontario, Canada, 2013 (Reliance)	3 (7)	101 104 103	10 10 10	BBCH 79-85 Aug 8	6	0.091/0.096 (0.094)	< 0.01/< 0.01 (< 0.01)	0.10/ 0.11 (0.10)
Arkona area, Ontario, Canada, 2013 (Harmony)	3 (7)	101 100 101	22 22 22	fruit showing characteristic colour 90-100% of final size Aug 20	7	0.10/0.12 (0.11)	< 0.01/0.010 (0.010)	0.11/ 0.13 (0.12)

Cane berries

Table 11 Residues of cyclaniliprole (mg/kg) in raspberries (IB-2015-JAM-005-01-01) following three foliar applications of cyclaniliprole in an SL-formulation

RASPBERRIES Location, Country; year; (variety)	No, (interval)	g ai/ha	g ai/hL	GS & last treatment day	DALT (days)	Residues, mg/kg		
						Parent	NK-1375	Total
Penn Yann, NY, USA, 2015 (Encore)	3 (5,6)	104 102 101	21 21 21	BBCH 87 July 7	1	0.222 / 0.248 (0.235)	0.031 / 0.034 (0.033)	0.255 / 0.284 (0.270)
Plain City, OH, USA, 2015 (Caroline)	3 (5)	100 101 100	14 14 14	BBCH 89 Sep 21	0 1 3 7	0.869 / 0.520 (0.695) 0.513 / 0.551 (0.532) 0.202 / 0.387 (0.295) 0.261 / 0.233 (0.247)	0.047 / 0.028 (0.038) 0.041 / 0.057 (0.049) 0.023 / 0.048 (0.036) 0.027 / 0.035 (0.031)	0.919 / 0.550 (0.735) 0.557 / 0.612 (0.584) 0.226 / 0.438 (0.333) 0.290 / 0.270 (0.280)
Oregon City, OR, USA, 2015 (Heritage)	3 (5)	98 96 101	36 35 36	Mature fruit Jul 6	1	0.308 / 0.314 (0.311)	0.047 / 0.049 (0.048)	0.358 / 0.366 (0.362)
Sherwood, OR, USA, 2015 (Willamette)	3 (5)	98 98 98	35 36 36	Mature fruit Jun 18	1	0.278 / 0.312 (0.295)	0.039 / 0.037 (0.038)	0.319 / 0.351 (0.335)
Abbotsford, BC,	3	98	18	65% fruiting	1	0.129 / 0.154	0.017 / 0.017	0.147 / 0.172

RASPBERRIES Location, Country; year; (variety)	No, (interval)	g ai/ha	g ai/hL	GS & last treatment day	DALT (days)	Residues, mg/kg		
						Parent	NK-1375	Total
Canada, 2015 (Chemainus)	(6, 5)	99 103	18 18	Jul 7		(0.142)	(0.017)	(0.160)

Bush berries

Table 12 Residues of cyclaniliprole (mg/kg) in blueberries (IB-2015-JAM-005-01-01) following three foliar applications of cyclaniliprole in an SL-formulation

BLUEBERRIES Location, Country; year; (variety)	No, (interval)	g ai/ha	g ai/hL	GS & last treatment day	DALT (days)	Residues, mg/kg		
						Parent	NK-1375	Total
Penn Yann, NY, USA, 2015 (Blue Crop)	3 (4, 5)	103 98 101	21 21 21	BBCH 89 July 29	1	0.197 / 0.199 (0.198)	0.042 / 0.040 (0.041)	0.242 / .0242 (0.242)
New Tripoli, PA [a], USA, 2015 (Weymouth)	3 (6, 5)	101 105 101	13 13 13	90% berries coloured June 28	1	0.307 / 0.280 (0.294)	0.027 / 0.024 (0.026)	0.336 / 0.306 (0.321)
New Tripoli, PA [a], USA, 2015 (Dixie)	3 (4,6)	103 102 103	15 15 15	80-90% of berries true color Jul 27	1	0.394 / 0.440 (0.417)	0.140 / 0.160 (0.150)	0.543 / 0.610 (0.577)
Chula, GA USA, 2015 (Powder Blue)	3 (4,6)	97 98 100	10 10 10	Not specified Jun 4	1	0.134 / 0.148 (0.141)	0.054 / 0.055 (0.055)	0.191 / 0.207 (0.199)
Seven Springs, NC, USA, 2015 (O'Neal)	3 (5, 6)	102 101 102	34 29 30	BBCH 88 May 26	0	0.258 / 0.336 (0.297)	0.067 / 0.084 (0.076)	0.329 / 0.425 (0.377)
					1	0.276 / 0.309 (0.293)	0.070 / 0.086 (0.078)	0.350 / 0.400 (0.375)
					3	0.176 / 0.164 (0.170)	0.088 / 0.082 (0.085)	0.270 / 0.251 (0.260)
					7	0.103 / 0.116 (0.110)	0.068 / 0.079 (0.074)	0.175 / 0.200 (0.188)
Mansfield, OH, USA, 2015 (Coville)	3 (5)	99 100 97	20 14 14	BBCH 87 Jul 26	1	1.12 / 0.878 (0.999)	0.101 / 0.083 (0.092)	1.23 / 0.966 (1.10)
Upper Rawdon, NS, Canada, 2015 (Wild)	3 (4, 6)	99 97 99	21 21 21	BBCH 85-89 Aug 10	1	0.210 / 0.255 (0.233)	0.111 / 0.149 (0.130)	0.328 / 0.414 (0.371)
Ste-Madeleine, QC, Canada, 2015 (North Blue)	3 (4, 5)	103 98 102	40 40 40	BBCH 81-89 Jul 22	1	0.104 / 0.095 (0.100)	0.016 / 0.015 (0.016)	0.121 / 0.111 (0.116)

BLUEBERRIES Location, Country; year; (variety)	No, (interval)	g ai/ha	g ai/hL	GS & last treatment day	DALT (days)	Residues, mg/kg		
						Parent	NK-1375	Total
Langton, ON, Canada, 2015 (Duke)	3 (5, 6)	100 102 103	20 20 20	80-90% mature Aug 23	1	0.462 / 0.404 (0.433)	0.073 / 0.050 (0.062)	0.540 / 0.457 (0.499)
Abbotsford, BC, Canada, 2015 (Blue gold)	3 (6, 5)	99 103 102	18 18 18	BBCH 84 Jul 7	1	0.156 / 0.142 (0.149)	0.094 / 0.091 (0.093)	0.256 / 0.239 (0.248)

[a] Trials were considered independent on the basis of different varieties and the last applications being made 4 weeks apart.

Grapes

Table 13 Residues of cyclaniliprole (mg/kg) in grapes (IB-2013-JAM-002) following three foliar applications of cyclaniliprole in an SL-formulation (extracted from 2017 JMPR Monograph)

GRAPES Location, Country; year; (variety)	No, (interval)	g ai/ha	g ai/hL	GS & last treatment day	DALT (days)	Residues, mg/kg		
						Parent	NK-1375	Total
Dundee, NY, USA, 2013 (Concord)	3 (7)	100 101 100	11 11 11	BBCH 85 Sept 20	6	0.21/0.20 (0.21)	< 0.01/< 0.01 (< 0.01)	0.22/ 0.21 (0.22)
Breinigsville, PA, USA, 2013 (Corot Noir)	3 (6, 7)	100 100 100	13 13 13	BBCH 85 Sept 18	3 5 7 9	0.16/0.25 (0.21) 0.12/0.11 (0.12) 0.090/0.13 (0.11) 0.11/0.093 (0.10)	0.020/0.031 (0.026) 0.015/0.012 (0.014) 0.014/0.017 (0.016) 0.019/0.013 (0.016)	0.18/ 0.29 (0.23) 0.13/ 0.12 (0.13) 0.10/ 0.15 (0.13) 0.13/ 0.11 (0.12)
Oregon, WI, USA, 2013 (Concord)	3 (6, 8)	100 100 100	12 12 12	BBCH 87 Sept 24	7	0.12/0.11 (0.12)	< 0.01/< 0.01 (< 0.01)	0.13/ 0.12 (0.13)
Fresno, CA, USA, 2013 (Flame seedless)	3 (7)	97 99 100	13 13 13	BBCH 83 August 28	7	0.022/0.027 (0.025)	< 0.01/< 0.01 (< 0.01)	0.033/ 0.038 (0.036)
Orland, CA, USA, 2013 (Rubired)	3 (7)	100 100 100	14 14 14	BBCH 85 July 30	7	0.15/0.12 (0.14)	0.033/0.032 (0.033)	0.19/ 0.16 (0.17)
Arbuckle, CA, USA, 2013	3 (7)	100 100	14 14	BBCH 85 August 2	7	0.051/ 0.037 (0.044)	< 0.01/< 0.01 (< 0.01)	0.062/ 0.048 (0.055)

GRAPES Location, Country; year; (variety)	No, (interval)	g ai/ha	g ai/hL	GS & last treatment day	DALT (days)	Residues, mg/kg		
						Parent	NK-1375	Total
(Zinfandel)		100	14					
Kingsburg, CA, USA, 2013 (Muscat)	3 (7)	99 103 102	12 14 14	BBCH 85 Sept 5	7	0.054/ 0.042 (0.048)	< 0.01/< 0.01 (< 0.01)	0.065/ 0.053 (0.059)
Porterville, CA, USA, 2013 (Thompson)	3 (7, 6)	102 99 99	15 14 15	BBCH 85 August 8	7	0.061/ 0.091 (0.076)	0.011/0.018 (0.015)	0.072/ 0.11 (0.092)
Madera, CA, USA, 2013 (Thompson seedless)	3 (7)	105 102 102	12 12 12	mature grapes August 15	7	0.38/0.27 (0.33)	0.15/0.070 (0.11)	0.54/ 0.35 (0.44)
Kerman, CA, USA, 2013 (Thompson seedless)	3 (6,7)	103 102 102	12 12 12	BBCH 85-89 August 9	7	0.13/0.11 (0.12)	0.033/0.023 (0.028)	0.17/ 0.13 (0.15)
Creston, CA, USA, 2013 (Cabernet Sauvignon)	3 (7, 8)	100 100 100	18 18 18	BBCH 89 August 28	7	0.12/0.21 (0.17)	0.081/0.14 (0.11)	0.20/ 0.36 (0.28)
Ephrata, WA, USA, 2013 (White Riesling)	3 (7)	100 99 101	13 13 13	BBCH 85 Sept 17	7	0.37/0.41 (0.39)	0.090/0.089 (0.090)	0.46/ 0.51 (0.49)
New Plymouth, ID, USA, (Alborz)	3 (6, 7)	100 101 100	21 21 21	advanced colour of berries, August 21	7	0.13/0.14 (0.14)	< 0.01/0.020 (0.015)	0.14/ 0.16 (0.15)
Branchton, Ontario Canada, 2013 (Concord)	3 (7, 6)	98 103 98	12 12 12	BBCH 85-89 Sept 19	7	0.25/0.24 (0.24)	< 0.01/0.01 (< 0.01)	0.26/ 0.25 (0.25)
Sparta, Ontario, Canada, 2013 (Aurore)	3 (7)	100 99 100	12 12 12	Fruit turning colour, 70-95% of final size August 20	7	0.54/0.48 (0.51)	0.087/0.074 (0.081)	0.63/ 0.55 (0.59)

Low growing berries

Table 14 Residues of cyclaniliprole (mg/kg) in strawberries (IB-2015-JAM-005-01-01) following three foliar applications of cyclaniliprole in an SL-formulation

STRAWBERRIES Location, Country; year; (variety)	No, (interval)	g ai/ha	g ai/hL	GS & last treatment day	DALT (days)	Residues, mg/kg		
						Parent	NK-1375	Total
New Tripolo, PA USA, 2015 (Earliglow)	3 (4)	101 101 101	35 36 35	BBCH 87 Jun 3	1	0.055 / 0.053 (0.054)	< 0.01 / < 0.01 (< 0.01)	0.066 / 0.064 (0.065)
Lawtey, FL, USA, 2015 (Camarosa)	3 (4, 6)	99 97 100	27 25 25	BBCH 87 Apr 20	1	0.098 / 0.083 (0.091)	< 0.01 / < 0.01 (< 0.01)	0.109 / 0.094 (0.102)
Oregon, WI, USA, 2015 (Daroyal)	3 (6, 5)	100 102 102	43 42 42	BBCH 87 Jun 21	1	0.141 / 0.130 (0.136)	0.019 / 0.017 (0.018)	0.161 / 0.148 (0.155)
Hart, MI, USA, 2015 (Jewel)	3 (5)	101 101 100	11 11 11	BBCH 87 Jun 21	1	0.115 / 0.085 (0.100)	< 0.01 / < 0.01 (< 0.01)	0.126 / 0.096 (0.111)
Woodland, CA, USA, 2015 (Albion)	3 (4)	100 98 100	35 35 35	Fruiting and flowering Jun 5	0	0.647 / 0.622 (0.635)	0.056 / 0.055 (0.056)	0.707 / 0.681 (0.694)
					1	0.188 / 0.226 (0.207)	0.035 / 0.043 (0.039)	0.225 / 0.272 (0.248)
					3	0.193 / 0.177 (0.185)	0.050 / 0.048 (0.049)	0.246 / 0.228 (0.237)
					7	0.101 / 0.075 (0.088)	0.035 / 0.029 (0.032)	0.138 / 0.106 (0.122)
Fresno, CA, USA 2015 (Seascape)	3 (5)	98 99 100	35 35 35	BBCH 87 Aug 3	1	0.108 / 0.138 (0.123)	0.017 / 0.025 (0.021)	0.126 / 0.165 (0.145)
Oregon City, OR, USA, 2015 (Albion)	3 (5)	100 99 99	35 35 36	Bloom to red Fruit May 14	1	0.160 / 0.161 (0.161)	0.013 / 0.016 (0.015)	0.174 / 0.178 (0.176)
Thorndale, ON, Canada, 2015 (Albion)	3 (5)	99 101 103	40 40 40	Green to ripe berries Sep 14	1	0.157 / 0.145 (0.151)	0.014 / 0.011 (0.013)	0.172 / 0.157 (0.165)
Portage la Prairie, MB, Canada, 2015 (Gloosecap)	3 (5)	96 98 100	40 40 40	BBCH 80 Jun 25	1	0.312 / 0.362 (0.337)	0.019 / 0.022 (0.021)	0.332 / 0.385 (0.359)

Kiwifruit

Table 15 Residues of cyclaniliprole (mg/kg) in fuzzy kiwifruit (IB-2015-JAM-005-01-01) following three foliar applications of cyclaniliprole in an SL-formulation

KIWI Location, Country; year; (variety)	No, (interval)	g ai/ha	g ai/hL	GS & last treatment day	DALT (days)	Residues, mg/kg		
						Parent	NK-1375	Total
Porterville, CA USA,	3 (5)	100 101	10 11	BBCH 89 Oct 19	1	0.327 / 0.152 (0.240)	< 0.01/< 0.01 (< 0.01)	0.338 / 0.163 (0.251)

KIWI Location, Country; year; (variety)	No, (interval)	g ai/ha	g ai/hL	GS & last treatment day	DALT (days)	Residues, mg/kg		
						Parent	NK-1375	Total
2015 (Hayward)		100	10					
Gridley, CA, USA, 2015 (Chico)	3 (5)	100 99 99	11 11 11	2-3" diameter fruit Oct 19	1	0.015 / < 0.01 (0.013)	< 0.01/< 0.01 (< 0.01)	0.026 / 0.021 (0.024)
Live Oak, CA, USA, 2015 (Hayward)	3 (6, 5)	101 99 99	21 23 23	BBCH 89 Oct 12	1	0.505 / 0.477 (0.491)	< 0.01/< 0.01 (< 0.01)	0.516 / 0.488 (0.502)

Brassica vegetables (except Brassica leafy vegetables)

Table 16 Residues of cyclaniliprole (mg/kg) in broccoli (IB-2012-JLW-028-01-01) following three foliar applications of cyclaniliprole in an SL-formulation (extracted from 2017 JMPR Monograph)

BROCCOLI Location, Country; year; (variety)	No, (interval)	g ai/ha	g ai/hL	GS & last treatment day	DALT (days)	Residues, mg/kg		
						Parent	NK-1375	Total
Seymour, IL, USA, 2013 (Waltham 29)	3 (7)	79 78 77	28 28 29	BBCH 66 Aug 22	1	0.31/0.52 (0.42)	0.059/0.086 (0.073)	0.37/ 0.61 (0.49)
York, NE, USA, 2013 (Coronado Crown hybrid)	3 (6, 7)	79 79 78	38 38 38	BBCH 48 Oct 01	1	0.26/0.55 (0.41)	< 0.01/0.014 (0.012)	0.28/ 0.57 (0.42)
Hinton, OK, USA, 2013 (Calabrese)	3 (6, 8)	82 80 77	39 41 42	BBCH 49-55 May 30	1	0.40/0.54 (0.47)	0.054/0.063 (0.059)	0.46/ 0.61 (0.54)
Porterville, CA, USA, 2013 (Heritage)	3 (7)	82 82 81	27 28 27	BBCH 49 May 09	1	0.13/0.088 (0.11)	0.010/< 0.01 (0.010)	0.14/ 0.099 (0.12)
Sanger, CA, USA, 2013 (Marathon)	3 (7)	80 87 83	29 29 29	BBCH 49 Feb 21	1	0.50/0.82 (0.66)	0.042/0.057 (0.050)	0.54/ 0.88 (0.71)
Blythe, CA, USA, 2013 (Green Goliath)	3 (7)	61 61 61	32 33 33	BBCH 89 Jan 10	1	0.14/0.21 (0.18)	< 0.01/< 0.01 (< 0.01)	0.15/ 0.22 (0.19)
Madera, CA, USA, 2012 (Heritage)	3 (7)	63 61 61	22 22 22	Mature Broccoli heads 8-15 cm diameter Dec 25	1	0.11/0.12 (0.12)	< 0.01/< 0.01 (< 0.01)	0.12/ 0.13 (0.13)
Hillsboro, OR, USA, 2013 (Bay Meadows)	3 (7)	81 80 80	34 34 34	BBCH 87 Aug 02	1	0.38/0.37 (0.37)	0.010/0.011 (0.011)	0.39/ 0.38 (0.38)
Branchton, Ontario,	3	83	40	BBCH	1	0.33/0.36 (0.34)	0.035/0.043 (0.039)	0.36/ 0.40

BROCCOLI Location, Country; year; (variety)	No, (interval)	g ai/ha	g ai/hL	GS & last treatment day	DALT (days)	Residues, mg/kg		
						Parent	NK-1375	Total
CANADA, 2013 (Imperial)	(7, 8)	79 79	40 40	49-63 Sept. 04	 3 5 7	0.096/0.097 (0.097) 0.069/0.078 (0.074) 0.062/0.052 (0.057)	0.015/0.016 (0.016) 0.011/0.012 (0.012) 0.011/< 0.01 (0.011)	(0.38) 0.11/ 0.11 (0.11) 0.081/0.091 (0.087) 0.073/ 0.063 (0.068)
St-Marc-sur-Richelieu, QC CANADA 2013 (Imperial)	3 (7)	79 81 82	40 40 40	BBCH 47-49 July 25	1	0.20/0.20 (0.20)	0.031/0.029 (0.030)	0.23/ 0.23 (0.23)

Table 17 Residues of cyclaniliprole (mg/kg) in cabbage heads with outer leaves (IB-2012-JLW-028-01-01) following three foliar applications of cyclaniliprole in an SL-formulation (extracted from 2017 JMPR Monograph)

CABBAGE HEADS WITH OUTER LEAVES Location, Country; year; (variety)	No, (interval)	g ai/ha	g ai/hL	GS & last treatment day	DALT (days)	Residues, mg/kg		
						Parent	NK-1375	Total
North Rose, NY, USA, 2012 (Storage No. 4)	3 (7)	64 62 62	29 29 29	20-25 cm heads Oct 10	1	0.29/0.35 (0.32)	0.018/0.021 (0.020)	0.31/ 0.37 (0.34)
Mebane, NC, USA, 2012 (Early Jersey Wakefield)	3 (7)	80 78 87	28 29 30	BBCH 49 June 18	1	< 0.01/< 0.01 (< 0.01)	< 0.01/< 0.01 (< 0.01)	< 0.01/< 0.01 (< 0.01)
Bradenton, FL USA, 2012 (Bravo)	3 (7)	68 67 69	24 24 24	heads formed Dec 16	1	0.022/0.031 (0.027)	< 0.01/< 0.01 (< 0.01)	0.033/ 0.042 (0.038)
Verona, WI, USA, 2013 (Bobcat)	3 (7,8)	81 80 83	31 32 32	BBCH 47-49 Aug 23	1	0.016/0.012 (0.014)	< 0.01/< 0.01 (< 0.01)	0.027/ 0.023 (0.025)
Seymour, IL, USA, 2013 (Golden acre)	3 (6,8)	76 82 77	28 28 28	BBCH 49 July 23	1	0.071/0.093 (0.082)	< 0.01/0.011 (0.011)	0.082/0.10 (0.094)
Geneva, MN USA, 2013 (Golden cross)	3 (7)	99 99 102	40 39 40	heads > 5-11 cm [a] July 19	1	0.053/0.026 (0.040)	0.01/< 0.01 (0.01)	0.063/ 0.037 (0.051)
Bagley, IA, USA, 2013 (Stonehead)	3 (7, 8)	80 79 78	39 38 36	BBCH 47 July 12	0 1 3	0.36/0.32 (0.34) 0.11/0.19 (0.15) 0.14/0.13 (0.13)	0.027/0.018 (0.023) 0.014/0.023 (0.019) 0.025/0.021 (0.023)	0.39/ 0.34 (0.36) 0.12/ 0.21 (0.17) 0.16/ 0.15 (0.16)

CABBAGE HEADS WITH OUTER LEAVES Location, Country; year; (variety)	No, (interval)	g ai/ha	g ai/hL	GS & last treatment day	DALT (days)	Residues, mg/kg		
						Parent	NK-1375	Total
					7	0.032/0.065 (0.049)	0.016/0.013 (0.015)	0.049/ 0.079 (0.065)
Hinton, OK, USA, 2013 (Late Flat Dutch)	3 (6,7)	82 93 89	42 46 43	BBCH 49 June 20	1	0.032/0.017 (0.025)	< 0.01/< 0.01 (< 0.01)	0.042/ 0.027 (0.035)
Madera, CA, USA, 2012 (Golden Cross)	3 (7)	61 61 61	22 21 21	mature cabbage heads, Dec 27	1	0.40/0.39 (0.39)	0.031/0.025 (0.028)	0.43/ 0.41 (0.42)
St-Marc-sur-Richelieu, QC Canada 2013 (Bronco)	3 (7)	84 82 79	40 40 40	BBCH 47-49 July 25	1	< 0.01/< 0.01 (< 0.01)	< 0.01/< 0.01 (< 0.01)	< 0.01/< 0.01 (< 0.01)

[a] Reported growth stage (vegetative) not correct, because growth stage at second application the heads were already 5–11 cm.

Fruiting vegetables – Cucurbits

Table 18 Residues of cyclaniliprole (mg/kg) in cucumber (IB-2013-JAM-003-01-01) following three foliar applications of cyclaniliprole in an SL-formulation (extracted from 2017 JMPR Monograph)

CUCUMBER Location, Country; year; (variety)	No, (interval)	g ai/ha	g ai/hL	GS & last treatment day	DALT (days)	Residues, mg/kg		
						Parent	NK-1375	Total
Seven Springs, NC, USA, 2013 (National Pickling)	3 (7, 8)	80 80 79	27 25 25	BBCH 89 June 19	1	0.028/0.020 (0.024)	< 0.01/< 0.01 (< 0.01)	0.039/ 0.031 (0.035)
Suffolk, VA, USA, 2013 (Straight Eight)	3 (7)	82 83 84	34 35 35	0.9-1.5 m runners July 19	1	0.018/0.019 (0.019)	< 0.01/< 0.01 (< 0.01)	0.029/0.030 (0.030)
Winter Garden, FL, USA, 2013 (BOA)	3 (7)	80 79 78	21 21 21	BBCH 83 June 05	1	< 0.01/< 0.01 (< 0.01)	< 0.01/< 0.01 (< 0.01)	< 0.01/< 0.01 (< 0.01)
Northwood, ND, USA, 2013 (Marketmore 76)	3 (7)	81 81 81	28 28 28	BBCH 85 Aug 22	1	0.021/0.015 (0.018)	< 0.01/< 0.01 (< 0.01)	0.032/ 0.026 (0.029)
Seymour, IL, USA, 2013 (Bush Crop F1)	3 (7)	83 76 80	28 28 28	BBCH 87 Aug 08	1	0.016/0.012 (0.014)	< 0.01/< 0.01 (< 0.01)	0.027/ 0.023 (0.025)
Enid, OK	3	77	42	BBCH 88	1	< 0.01/0.016	< 0.01/< 0.01	< 0.01/ 0.027

CUCUMBER Location, Country; year; (variety)	No, (interval)	g ai/ha	g ai/hL	GS & last treatment day	DALT (days)	Residues, mg/kg		
						Parent	NK-1375	Total
USA, 2013 (Calypso-pickle)	(6-7)	79 81	41 32	Aug 14		(0.013)	(< 0.01)	(0.024)
Leonard, MO, USA, 2013 (Jackson Classic, F1)	3 (7)	82 82 82	30 29 29	flower to ripe fruit Aug 19	0 1 4 7	0.049/0.061 (0.055) 0.025/0.025 (0.025) 0.015/0.016 (0.016) 0.015/0.010 (0.013)	< 0.01/< 0.01 (< 0.01) < 0.01/< 0.01 (< 0.01) < 0.01/< 0.01 (< 0.01) < 0.01/< 0.01 (< 0.01)	0.060/ 0.072 (0.066) 0.036/ 0.036 (0.036) 0.026/ 0.027 (0.027) 0.026/ 0.021 (0.024)
Uvalde, TX, USA, 2013 (Cobra F1)	3 (7)	79 81 82	38 40 37	BBCH 81 Aug 30	1	< 0.01/< 0.01 (< 0.01)	< 0.01/< 0.01 (< 0.01)	< 0.01/< 0.01 (< 0.01)
St-Marc-sur-Richelieu, Quebec, CAN, 2013 (Marketmore)	3 (6-7)	83 81 80	40 40 40	BBCH 67-71 July 31	1	0.010/0.012 (0.011)	< 0.01/< 0.01 (< 0.01)	0.021/ 0.023 (0.022)

Table 19 Residues of cyclaniliprole (mg/kg) in summer squash (IB-2013-JAM-003-01-01) following three foliar applications of cyclaniliprole in an SL-formulation (extracted from 2017 JMPR Monograph)

SUMMER SQUASH Location, Country; year; (variety)	No, (interval)	g ai/ha	g ai/hL	GS & last treatment day	DALT (days)	Residues, mg/kg		
						Parent	NK-1375	Total
Germansville, PA, USA, 2013 (Super Pik)	3 (6)	81 80 80	34 34 34	full boom, fruiting, mature fruit Aug 11	1	0.028/0.029 (0.028)	< 0.01/< 0.01 (< 0.01)	0.039/ 0.039 (0.039)
Seven Spring, NC, USA, 2013 (Early Prolific Straight Neck)	3 (6, 8)	79 80 79	28 27 29	BBCH 88 June 10	0 1 4 7	0.043/0.027 (0.035) 0.011/0.017 (0.014) < 0.01/< 0.01 (< 0.01) < 0.01/< 0.01 (< 0.01)	< 0.01/< 0.01 (< 0.01) < 0.01/< 0.01 (< 0.01) < 0.01/< 0.01 (< 0.01) < 0.01/< 0.01 (< 0.01)	0.054/ 0.038 (0.046) 0.022/ 0.028 (0.025) < 0.01/< 0.01 (< 0.01) < 0.01/< 0.01 (< 0.01)
Wintergarden, FL, USA 2013 (Goldstar)	3 (7)	80 80 81	21 21 21	BBCH 83 June 05	1	< 0.01/< 0.01 (< 0.01)	< 0.01/< 0.01 (< 0.01)	< 0.01/ < 0.01 (< 0.01)
Northwood, ND, USA, 2013	3 (6, 8)	78 81 79	28 28 28	fruit have reached typical length and	1	0.024/0.027 (0.026)	< 0.01/< 0.01 (< 0.01)	0.035/ 0.038 (0.037)

SUMMER SQUASH Location, Country; year; (variety)	No, (interval)	g ai/ha	g ai/hL	GS & last treatment day	DALT (days)	Residues, mg/kg		
						Parent	NK-1375	Total
(Black Beauty)				colour Aug 16				
Seymour, IL, USA, 2013 (Sunglo F1)	3 (7)	81 81 82	28 28 29	BBCH 88 Aug 08	1	0.040/0.051 (0.046)	< 0.01/< 0.01 (< 0.01)	0.051/ 0.062 (0.057)
Enid, OK, USA, 2013 (Calabacita)	3 (7)	79 82 77	37 37 42	BBCH 76 Aug 01	1	< 0.01/< 0.01 (< 0.01)	< 0.01/< 0.01 (< 0.01)	< 0.01/< 0.01 (< 0.01)
Leonard, MO, USA, 2013 (Dunja F1)	3 (7)	79 80 80	38 40 41	51 cm tall with fruit July 16	1	0.028/0.027 (0.028)	0.012/< 0.01 (0.011)	0.041/ 0.038 (0.040)
Madera, CA, USA, 2013 (Black Beauty)	3 (7)	81 83 81	29 29 28	Mature summer squash June 20	1	0.031/0.034 (0.033)	< 0.01/< 0.01 (< 0.01)	0.042/ 0.045 (0.043)
Hillsboro, OR, USA, 2013 (Hybrid Squash – Zukes)	3 (7)	79 80 78	34 34 34	BBCH 85-88	1	0.014/0.017 (0.016)	< 0.01/< 0.01 (< 0.01)	0.025/ 0.028 (0.027)

Table 20 Residues of cyclaniliprole (mg/kg) in melon/cantaloupe (IB-2013-JAM-003-01-01) following three foliar applications of cyclaniliprole in an SL-formulation (extracted from 2017 JMPR Monograph)

MELON Location, Country; year; (variety)	No, (interval)	g ai/ha	g ai/hL	GS & last treatment day	DALT (days)	Residues, mg/kg		
						Parent	NK-1375	Total
Jeffersonville, GA, USA, 2013 (Hales Best Jumbo)	3 (7)	82 82 79	29 29 28	BBCH 87 Jul 15	1	0.074/0.100 (0.087)	< 0.01/0.011 (0.011)	0.085/ 0.11 (0.099)
Northwood, ND, USA, 2013 (Athena)	3 (7)	82 81 80	28 34 28	BBCH 88 Sep 10	1	0.036/0.042 (0.039)	< 0.01/< 0.01 (< 0.01)	0.047/ 0.053 (0.050)
Enid, OK, USA, 2013 (CPMR 45)	3 (7)	80 80 80	31 35 42	BBCH 89 Aug 28	1	0.032/0.070 (0.051)	< 0.01/0.012 (0.011)	0.043/ 0.083 (0.063)
Seymour, IL, USA, 2013 (Lil'Loupe)	3 (7)	83 76 80	28 28 29	BBCH 83 Aug 29	1	0.035/< 0.01 (0.023)	< 0.01/< 0.01 (< 0.01)	0.046/ 0.021 (0.033)

MELON Location, Country; year; (variety)	No, (interval)	g ai/ha	g ai/hL	GS & last treatment day	DALT (days)	Residues, mg/kg		
						Parent	NK-1375	Total
Leonard, MO, USA, 2013 (SC Earlichamp F1)	3 (7)	81 81 81	29 29 29	green fruit to ripe fruit Aug 19	1	0.040/0.044 (0.042)	0.012/0.011 (0.012)	0.053/ 0.056 (0.055)
Hinton, OK, USA, 2013 (Superstar)	3 (7, 8)	81 80 82	43 39 43	BBCH 83 Aug 13	1	0.012/0.015 (0.014)	< 0.01/< 0.01 (< 0.01)	0.023/ 0.026 (0.024)
Madera, CA, USA, 2013 (Hales Best Jumbo)	3 (7)	81 82 81	29 29 29	mature cantaloupe July 15	0 1 4 7	0.052/0.057 (0.055) 0.030/0.050 (0.040) 0.019/0.027 (0.023) 0.014/0.012 (0.013)	0.012/0.017 (0.015) 0.014/0.020 (0.017) 0.013/0.018 (0.016) < 0.01/< 0.01 (< 0.01)	0.065/ 0.075 (0.070) 0.045/ 0.071 (0.058) 0.032/ 0.046 (0.040) 0.025/ 0.023 (0.024)
Sanger, CA, USA, 2013 (Hybrid)	3 (6-8)	77 83 79	28 28 28	BBCH 89 Oct 08	1	0.041/ 0.047 (0.044)	< 0.01/< 0.01 (< 0.01)	0.052/ 0.058 (0.055)
Porterville, CA, USA, 2013 (Top Mark)	3 (7)	80 79 80	28 28 28	BBCH 89 July 25	1	0.013/ 0.021 (0.017)	< 0.01/< 0.01 (< 0.01)	0.024/ 0.032 (0.028)
Branchton, Ontario, CAN, 2013 (Melon Muskat Hybrid)	3 (6-7)	85 82 77	27 26 26	BBCH 84-86 Sep 17	1	0.073/ 0.068 (0.071)	< 0.01/< 0.01 (< 0.01)	0.084/ 0.079 (0.081)

Fruiting vegetables, other than Cucurbits

Table 21 Residues of cyclaniliprole (mg/kg) in field tomatoes (IB-2012-JLW-029-01-01) following three foliar applications of cyclaniliprole in an SL-formulation (extracted from 2017 JMPR Monograph)

TOMATO Location, Country; year; (variety)	No, (interval)	g ai/ha	g ai/hL	GS & last treatment day	DALT (days)	Residues, mg/kg		
						Parent	NK-1375	Total
North Rose, NY, USA, 2012 (Celebrity)	3 (7)	61 60 61	20 20 20	green and red fruit Sept 25	1	0.012/0.021 (0.017)	< 0.01/< 0.01 (< 0.01)	0.023/ 0.032 (0.028)
Mebane, NC, USA, 2013 (Sun Gold	3 (7)	81 81 81	29 29 29	BBCH 82 July 11	1	0.058/0.027 (0.043)	< 0.01/< 0.01 (< 0.01)	0.069/ 0.038 (0.053)

TOMATO Location, Country; year; (variety)	No, (interval)	g ai/ha	g ai/hL	GS & last treatment day	DALT (days)	Residues, mg/kg		
						Parent	NK-1375	Total
Cherry)								
Bradenton, FL, USA, 2013 (BHN 785)	3 (7)	88 87 84	47 47 47	fruit and flowers May 31	1	0.034/ 0.046 (0.040)	< 0.01/< 0.01 (< 0.01)	0.045/ 0.057 (0.051)
Winter Garden, FL, USA, 2013 (Amelia)	3 (6, 7)	80 80 81	21 21 21	BBCH 80-81 June 18	1	0.026/ 0.038 (0.032)	< 0.01/< 0.01 (< 0.01)	0.036/ 0.049 (0.042)
Northwood, ND, USA, 2013 (Better Boy)	3 (7)	80 79 79	28 34 28	BBCH 83 Sept 10	1	< 0.01/0.012 (0.011)	< 0.01/< 0.01 (< 0.01)	< 0.01/ 0.023 (0.022)
Verona, WI, USA, 2013 (Mountain Fresh)	3 (6, 7)	81 80 81	30 31 31	BBCH 82-84 Sept 05	1	0.035/0.041 (0.038)	< 0.01/< 0.01 (< 0.01)	0.046/ 0.051 (0.049)
Seymour, IL, USA, 2013 (Celebrity)	3 (7, 8)	80 79 80	29 29 28	BBCH 82 Sept 03	1	0.039/0.021 (0.030)	< 0.01/< 0.01 (< 0.01)	0.050/ 0.032 (0.041)
York, NE, USA, 2013 (Better Boy)	3 (7)	79 79 80	39 38 38	Not reported Sept 24	1	< 0.01/0.016 (0.013)	< 0.01/< 0.01 (< 0.01)	< 0.01/ 0.027 (0.019)
Pierron, IL, USA, 2013 (Jet Star)	3 (7)	61 61 60	22 22 23	BBCH 88 Sept 12	1	0.024/ 0.025 (0.025)	< 0.01/< 0.01 (< 0.01)	0.035/ 0.036 (0.036)
Wyoming, IL USA, 2013 (Delicious)	3 (7)	60 60 60	29 30 29	BBCH 83 Sept 10	1	0.021/0.028 (0.025)	< 0.01/< 0.01 (< 0.01)	0.032/0.039 (0.036)
Ladoga, IN, USA, 2013 (Mountain Fresh)	3 (7, 8)	79 79 79	38 38 38	some red tomatoes Aug 16	0 1 3 7	0.058/0.041 (0.049) 0.034/0.017/ 0.036/0.022 (0.027) [a] 0.024/0.042 (0.033) 0.031/0.013 (0.022)	< 0.01/< 0.01 (< 0.01) < 0.01/< 0.01/< 0.01/< 0.01 (< 0.01) < 0.01/0.015 (0.013) 0.014/< 0.01 (0.012)	0.068/ 0.052 (0.060) 0.045/ 0.027 (0.036) 0.034/ 0.058 (0.047) 0.045/ 0.024 (0.034)
Geneva, MN, USA,	3 (6,7)	79 81	39 39	fruiting Aug 30	1	0.038/ 0.030 (0.034)	< 0.01/< 0.01 (< 0.01)	0.048/ 0.041 (0.045)

TOMATO Location, Country; year; (variety)	No, (interval)	g ai/ha	g ai/hL	GS & last treatment day	DALT (days)	Residues, mg/kg		
						Parent	NK-1375	Total
2013 (Super Fantastic)		81	42					
Leonard, MO, USA, 2013 (Celebrity)	3 (7)	82 80 83	30 29 29	flower to ripe Aug 19	1	0.036/ 0.039 (0.037)	< 0.01/< 0.01 (< 0.01)	0.046/ 0.050 (0.048)
Kerman, CA, USA, 2013 (Roma)	3 (7)	78 79 79	28 28 28	BBCH 75 Aug 19	1	0.070/ 0.083 (0.076)	0.024/0.028 (0.026)	0.095/ 0.11 (0.10)
Guadalupe, CA, USA, 2012 (Quait27)	3 (7)	60 60 60	23 23 20	BBCH 81 Oct 02	0 1 3 7	< 0.01/0.014 (0.012) 0.025/0.011 (0.018) 0.016/0.017 (0.017) 0.016/< 0.01 (0.013)	< 0.01/< 0.01 (< 0.01) < 0.01/< 0.01 (< 0.01) < 0.01/< 0.01 (< 0.01) < 0.01/< 0.01 (< 0.01)	< 0.01/ 0.025 (0.023) 0.035/ 0.022 (0.029) 0.026/ 0.028 (0.027) 0.027/ < 0.01 (0.024)
Guadalupe, CA, USA, 2013 (Roma K2763)	3 (7)	79 80 80	27 27 27	BBCH 84 Oct 29	1	0.036/0.029 (0.032)	< 0.01/< 0.01 (< 0.01)	0.046/ 0.040 (0.043)
Porterville, CA, USA, 2013 (AB2)	3 (6-7)	80 80 79	27 25 25	BBCH 89 Aug 26	1	0.026/0.025 (0.026)	< 0.01/< 0.01 (< 0.01)	0.036/ 0.036 (0.036)
Sanger, CA, USA, 2013 (Q21)	3 (7)	62 97 83	16 27 22	BBCH 87 Sept 13	1	0.044/0.041 (0.042)	< 0.01/< 0.01 (< 0.01)	0.055/ 0.051 (0.053)
Dunnigan, CA, USA, 2013 (577 Heinz)	3 (7)	81 81 81	43 43 43	BBCH 89 Sept 01	1	0.025/0.028 (0.026)	< 0.01/< 0.01 (< 0.01)	0.035/ 0.039 (0.037)
Madera, CA, USA, 2013 (Quality)	3 (7)	81 81 81	29 29 29	Mature tomatoes July 15	1	0.027/0.031 (0.029)	< 0.01/0.011 (0.011)	0.038/ 0.043 (0.040)
Branchton, Ontario, CANADA, 2013 (TSH24)	3 (6, 7)	81 80 79	40 40 40	BBCH 85 Aug 29	1	0.063/0.076 (0.070)	< 0.01/< 0.01 (< 0.01)	0.074/ 0.087 (0.080)
St-Marc-sur-Richelieu,	3	81	32	BBCH 73	1	0.021/0.016	< 0.01/< 0.01	0.032/ 0.027

TOMATO Location, Country; year; (variety)	No, (interval)	g ai/ha	g ai/hL	GS & last treatment day	DALT (days)	Residues, mg/kg		
						Parent	NK-1375	Total
Quebec, CANADA, 2013 (Joker)	(6, 8)	80 73	32 32	Aug 22		(0.019)	(< 0.01)	(0.029)

[a] Mean of four replicate field samples

Table 22 Residues of cyclaniliprole (mg/kg) in field sweet bell peppers (IB-2012-JLW-029-01-01) following three foliar applications of cyclaniliprole in an SL-formulation (extracted from 2017 JMPR Monograph)

BELL PEPPERS, SWEET Location, Country; year; (variety)	No, (interval)	g ai/ha	g ai/hL	GS & last treatment day	DALT (days)	Residues, mg/kg		
						Parent	NK-1375	Total
Seven Springs, NC, USA, 2013 (California Wonder)	3 (7)	82 79 81	25 25 24	BBCH 89 June 26	1	0.019/ 0.019 (0.019)	< 0.01/< 0.01 (< 0.01)	0.029/ 0.029 (0.029)
Winter Garden, FL, USA, 2013 (New Ace)	3 (6,7)	81 81 80	21 21 21	BBCH 82 June 18	1	0.088/ 0.11 (0.098)	< 0.01/< 0.01 (< 0.01)	0.099/ 0.12 (0.11)
Northwood, ND, USA, 2013 (Bell)	3 (6,8)	78 81 80	28 29 28	fruit reached final length and colour Aug 16	1	0.048/ 0.048 (0.048)	< 0.01/< 0.01 (< 0.01)	0.059/ 0.059 (0.059)
Seymour, IL, USA, 2013 (King Arthur F1)	3 (7)	82 77 79	29 28 29	BBCH 84 Sept 24	1	0.070/ 0.074 (0.072)	< 0.01/< 0.01 (< 0.01)	0.080/ 0.085 (0.083)
Geneva, MN, USA, 2013 (California Wonder)	3 (6,8)	80 83 82	40 41 38	fruiting Sept 23	1	0.028/ 0.021 (0.025)	< 0.01/< 0.01 (< 0.01)	0.039/ 0.031 (0.035)
Uvalde TX, USA, 2012 (Taurus)	3 (7)	62 60 61	26 26 26	BBCH 84 Sept 25	1	0.045/ 0.047 (0.046)	< 0.01/< 0.01 (< 0.01)	0.055/ 0.058 (0.056)
Sanger, CA, USA,	3 (7)	60 60	16 16	BBCH 89 Oct 18	1	0.098 / 0.10 (0.10)	0.016/0.019 (0.018)	0.11/ 0.12 (0.12)

BELL PEPPERS, SWEET Location, Country; year; (variety)	No, (interval)	g ai/ha	g ai/hL	GS & last treatment day	DALT (days)	Residues, mg/kg		
						Parent	NK-1375	Total
2012 (Indra)		61	16					
Madera, CA, USA, 2013 (Cypress)	3 (7,7)	81 82 81	29 28 29	mature (medium to large) June 28	0 1 3 7	0.10/ 0.07 (0.086) 0.077/ 0.060 (0.068) 0.038/ 0.037 (0.037) 0.035/ 0.032 (0.033)	0.023/ 0.018 (0.020) 0.028/ 0.024 (0.026) 0.018/ 0.020 (0.019) 0.027/ 0.031 (0.029)	0.13/ 0.089 (0.11) 0.11/ 0.085 (0.096) 0.057/ 0.063 (0.058) 0.064/ 0.065 (0.064)
St-Marc-sur-Richelieu, Quebec, CANADA, 2013 (Patriot)	3 (6, 8)	75 80 75	32 32 32	BBCH 71-73 Aug 22	1	0.015/ 0.013 (0.014)	< 0.01/< 0.01 (< 0.01)	0.025/ 0.024 (0.025)

Table 23 Residues of cyclaniliprole (mg/kg) in field non-bell peppers (IB-2012-JLW-029-01-01) following three foliar applications of cyclaniliprole in an SL-formulation (extracted from 2017 JMPR Monograph)

NON-BELL PEPPERS, Location, Country; year; (variety)	No, (interval)	g ai/ha	g ai/hL	GS & last treatment day	DALT (days)	Residues, mg/kg		
						Parent	NK-1375	Total
Winter Garden, FL, USA, 2013 (Calica)	3 (6,7)	80 80 80	21 21 21	BBCH 82 June 18	1	0.057/0.056 (0.057)	< 0.01/< 0.01 (< 0.01)	0.068/ 0.067 (0.067)
Seymour, IL, USA, 2013 (Sopron F1)	3 (7,8)	81 77 77	29 29 29	BBCH 89 Sept 03	1	0.036/0.046 (0.041)	< 0.01/< 0.01 (< 0.01)	0.046/ 0.056 (0.051)
Porterville, CA, USA, 2013 (Jalapeno Mammoth)	3 (7,7)	80 80 80	28 28 28	BBCH 89 July 25	1	0.074/0.080 (0.077)	0.019/0.013 (0.016)	0.094/ 0.095 (0.094)

Leafy vegetables (including Brassica leafy vegetables)

Table 24 Residues of cyclaniliprole (mg/kg) in head lettuce (IB-2012-JAM-001-01-01) following three foliar applications of cyclaniliprole in an SL-formulation (extracted from 2017 JMPR Monograph)

LETTUCE, HEAD Location, Country; year; (variety)	No, (interval)	g ai/ha	g ai/hL	GS & last treatment day	DALT (days)	Portion analysed	Residues, mg/kg		
							Parent	NK-1375	Total.
North Rose, NY, USA, 2013 (Ithaca)	3 (7)	83 81 83	33 32 33	10-15 cm heads, July 25	1	WWL	1.1/1.2 (1.2)	0.19/0.20 (0.20)	1.3/ 1.4 (1.4)
						W/OWL	0.60/0.61 (0.61)	0.10/0.11 (0.11)	0.71/ 0.73 (0.72)
Bradenton, FL, USA, 2012 (Raider)	3 (7)	68 67 68	24 24 24	head formation Dec 16	1	WWL	0.37/0.27 (0.32)	0.040/0.037 (0.039)	0.41/ 0.31 (0.36)
						W/OWL	0.065/0.11 (0.088)	< 0.01/0.014 (0.012)	0.076/ 0.12 (0.098)
Guadalupe, CA, USA, 2013 (Iceberg)	3 (6, 7)	82 78 82	28 28 28	BBCH 49 July 12	1	WWL	1.2/1.5 (1.4)	0.21/0.27 (0.24)	1.4/ 1.8 (1.6)
						W/OWL	0.081/0.097 (0.089)	0.013/0.016 (0.015)	0.095/ 0.11 (0.10)
Porterville, CA, USA, 2013 (Vandenberg)	3 (6, 8)	81 80 80	29 29 29	BBCH 49 May 07	1	WWL	0.20/0.32 (0.26)	0.034/0.051 (0.043)	0.24/ 0.37 (0.31)
						W/OWL	0.012/< 0.01 (0.011)	< 0.01/< 0.01 (< 0.01)	0.023/ < 0.01 (0.017)
Sanger, CA, USA, 2012 (Tahema)	3 (7)	61 62 63	16 16 16	BBCH 49 Nov 02	1	WWL	0.55/0.57 (0.56)	0.045/0.050 (0.048)	0.60/ 0.62 (0.61)
						W/OWL	0.059/0.063 (0.061)	< 0.01/< 0.01 (< 0.01)	0.070/ 0.074 (0.072)
Madera, CA, USA, 2013 (Great lakes)	3 (7)	62 62 61	22 22 21	mature head lettuce Jan 16	1	WWL	2.1/2.3 (2.2)	0.14/0.14 (0.14)	2.2/ 2.4 (2.3)
						W/OWL	0.17/0.10 (0.14)	< 0.01/< 0.01 (< 0.01)	0.18/ 0.11 (0.15)
St-Marc-sur-Richelieu, Quebec, CANADA, 2013 (PYB 7101)	3 (7, 8)	79 78 78	40 40 40	BBCH 48, July 18	1	WWL	0.065/0.069 (0.067)	0.024/0.030 (0.027)	0.091/ 0.10 (0.096)
						W/OWL	< 0.01/ < 0.01 (< 0.01)	< 0.01/< 0.01 (< 0.01)	< 0.01/< 0.01 (< 0.01)

WWL: With wrapper leaves

W/OWL: Without wrapper leaves

Table 25 Residues of cyclaniliprole (mg/kg) in leaf lettuce (IB-2012-JAM-001-01-01) following three foliar applications of cyclaniliprole in an SL-formulation

LETTUCE, LEAFY Location, Country; year; (variety)	No, (interval)	g ai/ha	g ai/hL	GS & last treatment day	DALT (days)	Residues, mg/kg		
						Parent	NK-1375	Total
Seven Springs,	3	80	3632	BBCH 49	1	2.7/3.2	0.27/0.31	3.0/ 3.6

LETTUCE, LEAFY Location, Country; year; (variety)	No, (interval)	g ai/ha	g ai/hL	GS & last treatment day	DALT (days)	Residues, mg/kg		
						Parent	NK-1375	Total
NC, USA, 2013 (Black Seeded Simpson)	(6,7)	80 78	31	May 08		(3.0)	(0.29)	(3.3)
Seymour, IL, USA, 2013 (Black Seeded Simpson)	3 (6,9)	79 80 78	29 29 29	BBCH 49 July 23	1	2.5 / 2.4 (2.4)	0.18 / 0.19 (0.19)	2.7/ 2.6 (2.6)
Highland, IL, USA, 2013 (Oakleaf)	3 (6, 7)	81 81 81	29 29 29	BBCH 49 Nov 04	1	0.77 / 0.77 (0.77)	0.022/ 0.022 (0.022)	0.80/ 0.79 (0.79)
Glenn, CA, IUSA, 2012 (Greenleaf)	3 (6, 8)	61 61 61	32 32 32	BBCH 49 Nov 27	1	1.48/1.1 (1.2)	0.037/0.028 (0.033)	1.4/ 1.1 (1.3)
Porterville, CA, USA, 2013 (Star fighter)	3 (7)	81 80 80	29 29 29	BBCH 49 Feb 28	1	1.3/1.2 (1.3)	0.086/ 0.074 (0.080)	1.4/ 1.3 (1.4)
Sanger CA, USA, 2013 (Green Forest)	3 (7)	63 100 83	16 26 22	BBCH 48 June 03	1	0.91/0.81 (0.86)	0.16 / 0.16 (0.16)	1.1/ 0.98 (1.0)
Madera, CA, USA, 2012 (Green Star)	3 (7)	61 61 61	22 22 21	mature lettuce, Nov 01	1	1.9/2.1 (2.0)	0.19 / 0.21 (0.20)	2.1/ 2.3 (2.2)
Princeton, Ontario, CANADA, 2013 (Green leaf)	3 (6,7)	79 82 84	32 32 32	BBCH 49 June 25	0 1 3 7	1.2 / 1.3 (1.2) 0.26 / 0.23 (0.25) 0.088/0.095 (0.092) 0.031/0.031 (0.031)	0.027/0.028 (0.028) 0.024/0.020 (0.022) 0.012/0.010 (0.011) < 0.01/< 0.01 (< 0.01)	1.2/ 1.3 (1.3) 0.28/ 0.25 (0.27) 0.10/ 0.11 (0.10) 0.041/ 0.041 (0.41)
St-Marc-sur-Richelieu, QC CANADA 2013 (Salad Bowl)	3 (7,8)	80 71 85	40 40 40	BBCH 19 July 03	1	2.1 / 2.3 (2.2)	0.35/0.36 (0.36)	2.5/ 2.6 (2.6)
Princeton, Ontario, CANADA, 2013 (Butterhead)	3 (7)	74 76 86	32 32 32	BBCH 47-49 July 31	1	WWL		
						0.097/0.090 (0.094)	0.013/0.011 (0.012)	0.11/ 0.10 (0.11)
						W/OWL		
						0.037/0.042	< 0.01/< 0.01	0.048/ 0.053

LETTUCE, LEAFY Location, Country; year; (variety)	No, (interval)	g ai/ha	g ai/hL	GS & last treatment day	DALT (days)	Residues, mg/kg		
						Parent	NK-1375	Total
						(0.040)	(< 0.01)	(0.051)

WWL: With wrapper leaves

W/OWL: Without wrapper leaves

Table 26 Residues of cyclaniliprole (mg/kg) in cos lettuce (IB-2012-JAM-001-01-01) following three foliar applications of cyclaniliprole in an SL-formulation (extracted from 2017 JMPR Monograph)

LETTUCE, COS Location, Country; year; (variety)	No, (interval)	g ai/ha	g ai/hL	GS & last treatment day	DALT (days)	Residues, mg/kg		
						Parent	NK-1375	Total
Bradenton, FL, USA, 2012 (Green Tower, Romaine)	3 (7)	67 66 66	24 24 24	Heading/ flowering initiation Dec 16	1	0.71 / 0.76 (0.74)	0.10 / 0.11 (0.10)	0.82/ 0.87 (0.85)
Northwood, ND, USA, 2013 (Romaine)	3 (7)	81 79 80	32 32 32	BBCH 19+	1	0.83/0.70 (0.76)	0.084/0.070 (0.077)	0.92/ 0.77 (0.84)
Seymour, IL, USA, 2013 (Parris Island cos)	3 (7)	83 76 81	28 28 29	BBCH 60 Aug 08	1	WWL		
						0.77/1.1 (0.94)	0.096/0.12 (0.11)	0.87/ 1.2 (1.0)
						W/OWL		
						0.72/0.69 (0.71)	0.045/0.033 (0.039)	0.77/ 0.73 (0.75)

WWL: With wrapper leaves

W/OWL: Without wrapper leaves

Table 27 Residues of cyclaniliprole (mg/kg) in spinach (IB-2012-JAM-001-01-01) following three foliar applications of cyclaniliprole in an SL-formulation (extracted from 2017 JMPR Monograph)

SPINACH Location, Country; year; (variety)	No, (interval)	g ai/ha	g ai/hL	GS & last treatment day	DALT (days)	Residues, mg/kg		
						Parent	NK-1375	Tot.
Germansville, PA, USA, 2013 (Tyee)	3 (8,6)	82 80 80	39 39 39	BBCH 48-49 June 04	1	3.2/3.6 (3.4)	0.68/0.70 (0.69)	3.9/ 4.3 (4.1)
Seven Springs, NC, USA, 2012 (Baker)	3 (6,8)	61 60 60	21 20 20	BBCH 49 Oct 31	1	3.0/2.8 (2.9)	0.36/0.32 (0.34)	3.4/ 3.1 (3.3)
Dearfield, MI, USA [a], 2013 (Crocodile Hybrid)	3 (7)	61 60 61	26 26 26	Not reported Oct 23	2	< 0.01/< 0.01 (< 0.01)	< 0.01/< 0.01 (< 0.01)	< 0.01/ < 0.01 (< 0.01)
Seymour, IL,	3	82	29	BBCH 55	1	2.8/2.7	0.50/0.58	3.3/ 3.3

SPINACH Location, Country; year; (variety)	No, (interval)	g ai/ha	g ai/hL	GS & last treatment day	DALT (days)	Residues, mg/kg		
						Parent	NK-1375	Tot.
USA, 2013 (Olympia F1)	(7)	83 80	29 29	Aug 22		(2.8)	(0.54)	(3.3)
Uvalde, TX, USA, 2012 (DMC 6607)	3 (7)	62 61 62	32 33 32	BBCH 48 Dec 19	1	2.2/2.3 (2.3)	0.20/0.21 (0.21)	2.4/ 2.5 (2.5)
Jerome, ID, USA, 2012 (Unipack 151)	3 (8,6)	63 62 63	21 20 20	BBCH 49 Oct 24	1	1.9/2.1 (2.0)	0.068/0.072 (0.070)	2.0/2.2 (2.1)
Santa Maria, CA, USA, 2013 (Avenger)	3 (7,6)	80 80 82	28 28 28	BBCH 49 July 12	1	2.4/2.4 (2.4)	0.25/0.24 (0.25)	2.7/ 2.7 (2.7)
Madera, CA, USA, 2012 (Shasta)	3 (7)	61 61 61	22 22 21	mature spinach Dec 27	1	1.4/1.4 (1.4)	0.079/0.068 (0.074)	1.5/ 1.5 (1.5)
St-Marc-sur-Richelieu, QC Canada 2013 (Stanton)	3 (7,8)	80 71 85	40 40 40	BBCH 16-19 July 03	1	4.5/4.7 (4.6)	0.88/0.89 (0.89)	5.4/ 5.6 (5.5)

[a] As the residues from this trial did not follow the same trend as all other trials conducted on spinach, this trial was not considered in the estimation of the maximum residue level estimation.

Table 28 Residues of cyclaniliprole (mg/kg) in mustard greens (IB-2012-JLW-028-01-01) following three foliar applications of cyclaniliprole in an SL-formulation (extracted from 2017 JMPR Monograph)

MUSTARD GREENS Location, Country; year; (variety)	No, (interval)	g ai/ha	g ai/hL	GS & last treatment day	DALT (days)	Residues, mg/kg		
						Parent	NK-1375	Tot.
Seven Springs, NC, USA, 2012 (Tendergreen)	3 (6,7)	60 61 60	21 21 20	BBCH 49 Oct 23	0 1 3 7	4.8/5.1 (5.0) 3.1/3.0 (3.0) 2.1/2.4 (2.3) 0.80/0.82 (0.81)	0.39/0.39 (0.39) 0.42/0.40 (0.41) 0.40/0.45 (0.43) 0.16/0.17 (0.16)	5.2/ 5.5 (5.4) 3.5/ 3.4 (3.5) 2.5/ 2.9 (2.7) 0.97/ 1.0 (0.99)
Cheneyville, LA, USA, 2012 (Florida Broadleaf)	3 (7)	62 61 60	20 20 19	8-10 leaf Nov 13	1	4.0/4.2 (4.1)	0.30/0.32 (0.31)	4.3/ 4.6 (4.4)
Leonard, MO, USA, 2013 (Southern Giant Curled)	3 (7)	81 80 79	39 39 39	some plants heading June 27	1	4.1/3.8 (4.0)	0.36/0.32 (0.34)	4.5/ 4.1 (4.3)
Hinton, OK, USA,	3	80	38	BBCH 45	1	5.3/6.5	0.30/0.35	5.6/ 6.8

MUSTARD GREENS Location, Country; year; (variety)	No, (interval)	g ai/ha	g ai/hL	GS & last treatment day	DALT (days)	Residues, mg/kg		
						Parent	NK-1375	Tot.
2013 (Florida Broadleaf)	(6,7)	80 80	38 38	Nov20		(5.9)	(0.32)	(6.2)
Madera, CA, USA, 2012 (Florida Broadleaf)	3 (7)	61 61 61	22 22 21	mature mustard greens Nov 01	1	1.3/1.5 (1.4)	0.095/0.10 (0.10)	1.4/ 1.6 (1.5)

Tuberous and Corm Vegetables

Table 29 Residues of cyclaniliprole (mg/kg) in potato tubers (IB-2015-JAM-003-01-01) following three foliar applications of cyclaniliprole in an SL-formulation

POTATO Location, Country; year; (variety)	No, (interval)	g ai/ha	g ai/hL	GS & last treatment day	DALT (days)	Residues, mg/kg		
						Parent	NK-1375	Total
North Rose, NY, USA, 2015 (Red Norland)	3 (5)	100 100 99	33 33 33	Post bloom Aug 10	7	< 0.01/< 0.01 (< 0.01)	< 0.01/< 0.01 (< 0.01)	< 0.01/< 0.01 (< 0.01)
Waterloo, NY, USA, 2015 (Red Norland)	3 (5)	99 101 101	36 36 36	Post bloom Sep 8	7	< 0.01/< 0.01 (< 0.01)	< 0.01/< 0.01 (< 0.01)	< 0.01/< 0.01 (< 0.01)
Weedsport, NY, USA, 2015 (Chieftan)	3 (5)	99 99 100	36 35 36	Post bloom Sep 2	7	< 0.01/< 0.01 (< 0.01)	< 0.01/< 0.01 (< 0.01)	< 0.01/< 0.01 (< 0.01)
Germansville, PA, USA, 2015 (Reba)	3 (5)	101 100 101	42 43 43	BBCH 48-49 Aug 31	7	< 0.01/< 0.01 (< 0.01)	< 0.01/< 0.01 (< 0.01)	< 0.01/< 0.01 (< 0.01)
Baptistown, NJ, USA, 2015 (Waneta)	3 (4, 6)	101 104 103	36 35 35	BBCH 46-47 Sep 15	7	< 0.01/< 0.01 (< 0.01)	< 0.01/< 0.01 (< 0.01)	< 0.01/< 0.01 (< 0.01)
Seven Springs, NC, USA, 2015 (Red Pontiac)	3 (5, 6)	101 100 101	38 29 28	BBCH 73 Jun 1	6	< 0.01/< 0.01 (< 0.01)	< 0.01/< 0.01 (< 0.01)	< 0.01/< 0.01 (< 0.01)
Winter Garden, FL, USA, 2015 (Molli)	3 (4,5)	100 100 100	35 35 36	BBCH 48 May 6	7	< 0.01/< 0.01 (< 0.01)	< 0.01/< 0.01 (< 0.01)	< 0.01/< 0.01 (< 0.01)
Fitchburg, WI, USA, 2015 (Superior)	3 (4)	101 100 100	36 35 34	BBCH 91-95 Sep 4	7	< 0.01/< 0.01 (< 0.01)	< 0.01/< 0.01 (< 0.01)	< 0.01/< 0.01 (< 0.01)
Geneva, MN, USA, 2015 (Norlands)	3 (5)	100 99 100	46 46 46	BBCH 47-48 Sep 3	7	< 0.01/< 0.01 (< 0.01)	< 0.01/< 0.01 (< 0.01)	< 0.01/< 0.01 (< 0.01)
Northwood, ND, USA, 2015	3 (4,6)	101 101	36 36	BBCH 48 Sep 8	3	< 0.01/< 0.01 (< 0.01)	< 0.01/< 0.01 (< 0.01)	< 0.01/< 0.01 (< 0.01)

POTATO Location, Country; year; (variety)	No, (interval)	g ai/ha	g ai/hL	GS & last treatment day	DALT (days)	Residues, mg/kg		
						Parent	NK-1375	Total
(Atlantic)		100	35		5	< 0.01/< 0.01 (< 0.01)	< 0.01/< 0.01 (< 0.01)	< 0.01/< 0.01 (< 0.01)
					7	< 0.01/< 0.01 (< 0.01)	< 0.01/< 0.01 (< 0.01)	< 0.01/< 0.01 (< 0.01)
					10	< 0.01/< 0.01 (< 0.01)	< 0.01/< 0.01 (< 0.01)	< 0.01/< 0.01 (< 0.01)
Rice, MN, USA, 2015 (Cascade)	3 (6,4)	99 99 100	42 42 43	5-10 cm tubers Aug 3	7	< 0.01/< 0.01 (< 0.01)	< 0.01/< 0.01 (< 0.01)	< 0.01/< 0.01 (< 0.01)
Jerome, ID, USA, 2015 (Ranger Russet)	3 (5, 4)	101 98 102	52 53 52	BBCH 48 Sep 11	3	< 0.01/< 0.01 (< 0.01)	< 0.01/< 0.01 (< 0.01)	< 0.01/< 0.01 (< 0.01)
					7	< 0.01/< 0.01 (< 0.01)	< 0.01/< 0.01 (< 0.01)	< 0.01/< 0.01 (< 0.01)
					10	< 0.01/< 0.01 (< 0.01)	< 0.01/< 0.01 (< 0.01)	< 0.01/< 0.01 (< 0.01)
					12	< 0.01/< 0.01 (< 0.01)	< 0.01/< 0.01 (< 0.01)	< 0.01/< 0.01 (< 0.01)
Madera, CA, USA, 2015 (California white)	3 (4, 6)	102 102 102	36 35 36	Mature May 19	7	< 0.01/< 0.01 (< 0.01)	< 0.01/< 0.01 (< 0.01)	< 0.01/< 0.01 (< 0.01)
Kimberly, ID, USA, 2015 (Russet Burbank)	3 (6, 4)	98 102 100	44 46 46	BCH 48 Sep 04	7	< 0.01/< 0.01 (< 0.01)	< 0.01/< 0.01 (< 0.01)	< 0.01/< 0.01 (< 0.01)
Rupert, ID, USA, 2015(Russet Burbank)	3 (5)	98 100 99	46 47 46	BBCH 48 Aug 20	7	< 0.01/< 0.01 (< 0.01)	< 0.01/< 0.01 (< 0.01)	< 0.01/< 0.01 (< 0.01)
Minidoka, ID, USA, 2015 (Russet Norkotah)	3 (5)	98 98 102	45 45 45	BBCH 48 Aug 8	7	< 0.01/< 0.01 (< 0.01)	< 0.01/< 0.01 (< 0.01)	< 0.01/< 0.01 (< 0.01)
Ephrata, WA, USA, 2015 (Umatilla)	3 (5)	101 101 103	36 36 36	BBCH 48 Aug 24	7	< 0.01/< 0.01 (< 0.01)	< 0.01/< 0.01 (< 0.01)	< 0.01/< 0.01 (< 0.01)
Payette, ID, USA, 2015 (Ranger Russet)	3 (5)	100 99 99	43 42 42	BBCH 48 Sep 14	7	< 0.01/< 0.01 (< 0.01)	< 0.01/< 0.01 (< 0.01)	< 0.01/< 0.01 (< 0.01)
Yakima, WA, USA, 2015 (Bintje-organic)	3 (6, 4)	99 100 100	37 38 35	Post bloom Aug 19	7	< 0.01/< 0.01 (< 0.01)	< 0.01/< 0.01 (< 0.01)	< 0.01/< 0.01 (< 0.01)
Nictaux, NS, Canada, 2015 (Superior)	3 (5)	102 101 100	30 30 30	BBCH 90 Jul 31	7	< 0.01/< 0.01 (< 0.01)	< 0.01/< 0.01 (< 0.01)	< 0.01/< 0.01 (< 0.01)
Canning, NS,	3	99	31	BBCH 87	7	< 0.01/< 0.01	< 0.01/< 0.01	< 0.01/< 0.01

POTATO Location, Country; year; (variety)	No, (interval)	g ai/ha	g ai/hL	GS & last treatment day	DALT (days)	Residues, mg/kg		
						Parent	NK-1375	Total
Canada, 2015 (Dakota Pearl)	(5)	98 101	30 30	Aug 24		(< 0.01)	(< 0.01)	(< 0.01)
Broderick, SK, Canada, 2015 (E3 Wisconsin Norland)	3 (5, 4)	71 70 73	24 24 24	BBCH 81-82 Aug 21	7	< 0.01/< 0.01 (< 0.01)	< 0.01/< 0.01 (< 0.01)	< 0.01/< 0.01 (< 0.01)
Taber, AL, Canada, 2015 (Sangre)	3 (5, 4)	102 102 101	50 50 50	BBCH 45-47 Aug 21	7	< 0.01/< 0.01 (< 0.01)	< 0.01/< 0.01 (< 0.01)	< 0.01/< 0.01 (< 0.01)
Minto, MB, Canada, 2015 (Red Norland)	3 (5)	100 99 99	33 33 33	BBCH 69 Aug 24	7	< 0.01/< 0.01 (< 0.01)	< 0.01/< 0.01 (< 0.01)	< 0.01/< 0.01 (< 0.01)
Glenboro, MB, Canada, 2015 (Norland)	3 (6, 5)	100 105 99	44 44 44	BBCH 48-49 Aug 11	6	< 0.01/< 0.01 (< 0.01)	< 0.01/< 0.01 (< 0.01)	< 0.01/< 0.01 (< 0.01)

Tree Nuts

Table 30 Residues of cyclaniliprole (mg/kg) in almond nutmeats (IB-2012-JLW-019-01-01) following three foliar applications of cyclaniliprole in an SL-formulation (extracted from 2017 JMPR Monograph)

ALMONDS Location, Country; year; (variety)	No, (interval)	g ai/ha	g ai/hL	GS & last treatment day	Portion analysed	DALT (days)	Residues, mg/kg		
							Parent	NK-1375	Total
Orland, CA, USA, 2012 (Non-Pareil)	3 (14)	100 100 100	7 7 7	BBCH 85 July 26	Almond nutmeat	30	< 0.01/< 0.01 (< 0.01)	< 0.01/< 0.01 (< 0.01)	< 0.01/< 0.01 (< 0.01)
Chico, CA, USA, 2012 (Non-Pareil)	3 (14)	100 100 99	7 7 7	BBCH 85 July 24	Almond nutmeat	30	< 0.01/< 0.01 (< 0.01)	< 0.01/< 0.01 (< 0.01)	< 0.01/< 0.01 (< 0.01)
Madera, CA, USA, 2012 (Non-Pareil)	3 (13, 15)	101 99 101	10 10 10	Advanced hull split July 24	Almond nutmeat	30	0.011/ 0.018 (0.015)	< 0.01/< 0.01 (< 0.01)	0.022/ 0.030 (0.026)
Strathmore, CA, USA, 2012 (Fritz)	3 (14, 15	99 100 100	6 6 7	BBCH 81 Oct 05	Almond nutmeat	31	0.015/ < 0.01 (0.013)	< 0.01/< 0.01 (< 0.01)	0.026/ < 0.01 (0.024)
Terra Bella, CA, USA, 2012 (Monterey)	3 (14, 15)	100 100 101	6 6 6	BBCH 81 Oct 05	Almond nutmeat	20	< 0.01/ 0.012 (0.011)	< 0.01/< 0.01 (< 0.01)	< 0.01/ 0.023 (0.022)
						25	0.015/ 0.010	< 0.01/< 0.01	0.026/ 0.021

ALMONDS Location, Country; year; (variety)	No, (interval)	g ai/ha	g ai/hL	GS & last treatment day	Portion analysed	DALT (days)	Residues, mg/kg		
							Parent	NK-1375	Total
							(0.013)	(< 0.01)	(0.024)
						31	0.013/ 0.013 (0.013)	< 0.01/< 0.01 (< 0.01)	0.024/ 0.024 (0.024)
						39	< 0.01/ 0.011 (0.011)	< 0.01/< 0.01 (< 0.01)	< 0.01/0.022 (0.022)

Table 31 Residues of cyclaniliprole (mg/kg) in pecan nutmeats (IB-2012-JLW-019-01-01) following three foliar applications of cyclaniliprole in an SL-formulation (extracted from 2017 JMPR Monograph)

PECANS Location, Country; year; (variety)	No, (interval)	g ai/ha	g ai/hL	GS & last treatment day	Portion analysed	DALT (days)	Residues, mg/kg		
							Parent	NK-1375	Total
Anton, TX, USA, 2012 (Western Schley)	2 (13)	103 104	7 7	Green shuck Oct 31	Pecan nutmeat	14	< 0.01/< 0.01 (< 0.01)	< 0.01/< 0.01 (< 0.01)	< 0.01/< 0.01 (< 0.01)
Pearsall, TX, USA, 2012 (Cheyenne)	3 (14,13)	102 102 103	8 8 8	BBCH 87 Sept 20	Pecan nutmeat	29	< 0.01/< 0.01 (< 0.01)	< 0.01/< 0.01 (< 0.01)	< 0.01/< 0.01 (< 0.01)
Alexandria, LA, USA, 2012 (Creek)	3 (14)	105 102 103	9 9 11	Advanced shuck split (90-95%) Some green hulls Oct 11	Pecan nutmeat	20	< 0.01/< 0.01 (< 0.01)	< 0.01/< 0.01 (< 0.01)	< 0.01/< 0.01 (< 0.01)
						25	< 0.01/< 0.01 (< 0.01)	< 0.01/< 0.01 (< 0.01)	< 0.01/< 0.01 (< 0.01)
						29	< 0.01/< 0.01 (< 0.01)	< 0.01/< 0.01 (< 0.01)	< 0.01/< 0.01 (< 0.01)
						40	< 0.01/< 0.01 (< 0.01)	0.022/< 0.01 (0.016)	0.033/< 0.01 (0.027)
Bailey, NC, USA, 2012 (Stuart)	3 (14,12)	103 101 99	9 7 7	BBCH 79 Oct 10	Pecan nutmeat	30	< 0.01/< 0.01 (< 0.01)	< 0.01/< 0.01 (< 0.01)	< 0.01/< 0.01 (< 0.01)
Girard, GA, USA, 2012 (Desirables)	3 (15,14)	101 99 99	9 9 9	BBCH 85 Sept 29	Pecan nutmeat	17	< 0.01/< 0.01 (< 0.01)	< 0.01/0.012 (0.011)	< 0.01/0.023 (0.022)

Miscellaneous fodder and forage

Almond hulls

Table 32 Residues of cyclaniliprole (mg/kg) in almond hulls (IB-2012-JLW-019-01-01) following three foliar applications of cyclaniliprole in an SL-formulation (extracted from 2017 JMPR Monograph)

ALMOND HULLS Location, Country; year; (variety)	No, (interval)	g ai/ha	g ai/hL	GS & last treatment day	DALT (days)	Portion analysed [a]	Residues, mg/kg		
							Parent	NK-1375	Total
Orland, CA, USA, 2012 (Non-Pareil)	3 (14)	100 100 100	7 7 7	BBCH 85 July 26	30	almond hulls	1.7 / 1.2 (1.5)	0.49 / 0.30 (0.39)	2.2/ 1.5 (1.9)
						almond hulls, dry weight	2.1 / 1.4 (1.8)	0.60 / 0.36 (0.48)	2.8/ 1.8 (2.3)
Chico, CA, USA, 2012 (Non-Pareil)	3 (14,14)	100 100 99	7 7 7	BBCH 85 July 24	30	almond hulls	2.3 / 2.1 (2.2)	0.58 / 0.50 (0.54)	2.9/ 2.6 (2.8)
						almond hulls, dry weight	2.6 / 2.4 (2.5)	0.67 / 0.57 (0.62)	3.3/ 3.0 (3.2)
Madera, CA, USA, 2012 (Non-Pareil)	3 (13,15)	101 99 101	10 10 10	Advanced hull split July 24	30	almond hulls	2.7 / 2.9 (2.8)	0.69 / 0.71 (0.70)	3.4/ 3.6 (3.5)
						almond hulls, dry weight	3.2 / 3.4 (3.3)	0.81 / 0.84 (0.83)	4.1 / 4.3 (4.2)
Strathmore, CA, USA, 2012 (Fritz)	3 (14,15	99 100 100	6 6 7	BBCH 81 Oct 05	31	almond hulls	1.5 / 1.6 (1.5)	0.21 / 0.26 (0.24)	1.7/ 1.9 (1.8)
						almond hulls, dry weight	1.9/ 2.1 (2.0)	0.27 / 0.35 (0.31)	2.2/ 2.5 (2.3)
Terra Bella, CA, USA, 2012 (Monterey)	3 (14,15)	100 100 101	6 6 6	BBCH 81 Oct 05	20	almond hulls	2.1 / 1.7 (1.9)	0.37 / 0.32 (0.34)	2.5/ 2.0 (2.2)
					25		1.8 / 1.6 (1.7)	0.31 / 0.26 (0.29)	2.2/ 1.9 (2.0)
					31		1.8 / 1.8 (1.8)	0.34 / 0.31 (0.33)	2.2/ 2.1 (2.2)
					39		1.5 / 1.8 (1.6)	0.29 / 0.32 (0.31)	1.8/ 2.1 (2.0)
					20	almond hulls, dry weight	2.8 / 2.3 (2.5)	0.49 / 0.45 (0.47)	3.3/ 2.8 (3.0)
					25		2.1 / 1.8 (2.0)	0.36 / 0.30 (0.33)	2.5/ 2.2 (2.3)
					31		2.2 / 2.1 (2.1)	0.41 / 0.36 (0.38)	2.6/ 2.5 (2.5)
					39		1.8 / 2.1 (2.0)	0.36 / 0.38 (0.37)	2.2/ 2.5 (2.3)

[a] Almond hulls: residues reported on as received basis

Almond hulls, dry weight: adjusted for %DM which ranged from 72-89%

Table 33 Residues of cyclaniliprole (mg/kg) in dry tea leaves (JP2011C133 and JP2012C101) following one foliar application of cyclaniliprole in an SL-formulation (extracted from 2017 JMPR Monograph)

DRY TEA LEAVES Location, Country; year; (variety)	No, (interval)	g ai/ha	g ai/hL	GS & last treatment day	DALT (days)	Residues, mg/kg		
						Parent	NK-1375	Total
Chiba, Japan, 2011 (Yabukita)	1 (-)	199	5	Opening of third to fourth leaf Jul 10	3	8.41/8.35 (8.38)	2.13/2.08 (2.11)	10.68/10.56 (10.62)
				Opening of third to fourth leaf Jul 06	7	3.14/3.11 (3.13)	0.55/0.54 (0.55)	3.73/3.68 (3.70)
				Opening of first to second leaf Jun 29	14	0.36/0.35 (0.36)	0.12/0.12 (0.12)	0.49/0.48 (0.48)
				Date of sprouting Jun 22	21	< 0.02/< 0.02 (< 0.02)	< 0.02/< 0.02 (< 0.02)	< 0.02/< 0.02 (< 0.02)
Kochi, Japan, 2011 (Yabukita)	1 (-)	191	5	4 leaf stage Jul 04	3	4.88/4.78 (4.83)	0.09/0.09 (0.09)	4.98/4.88 (4.93)
				3-4 leaf stage Jun 30	7	3.18/3.03 (3.11)	0.11/0.11 (0.11)	3.30/3.15 (3.22)
				2-3 leaf stage Jun 23	14	0.46/0.45 (0.46)	0.31/0.30 (0.31)	0.79/0.77 (0.78)
				1-2 leaf stage Jun 15	21	< 0.02/< 0.02 (< 0.02)	< 0.02/< 0.02 (< 0.02)	< 0.02/< 0.02 (< 0.02)
Saitama, Japan, 2012 (Sayama-midori)	1 (-)	185	5	3 leaf stage, Second grade tea leaf Jul 14	3	13.0/12.9 (13.0)	1.31/1.30 (1.31)	14.39/14.28 (14.34)
Chiba, Japan, 2012 (Yabukita)	1 (-)	174	5	3-4 leaf opening stage Jul 13	3	6.84/6.66 (6.75)	0.68/0.66 (0.67)	7.56/7.36 (7.46)
Kochi, Japan, 2012 (Yabukita)	1 (-)	189	5	4 leaf stage May 07	3	28.3/27.8 (28.1)	1.46/1.36 (1.41)	29.85/29.25 (29.55)
Kagoshima, Japan, 2012 (Yamato-midori)	1 (-)	171	5	4-5 leaf stage May 07	3	16.5/16.2 (16.4)	0.62/0.62 (0.62)	17.16/16.86 (17.01)

FATE OF RESIDUES IN PROCESSING

Oranges

One processing trial in orange was conducted in 2015 in the USA where a SL formulation containing 50 g/L cyclaniliprole was applied to orange trees three times at rates of 496–500 g ai/ha, for a total seasonal application rate of 1493 g ai/ha (McDonald, 2017, IB-2015-JAM-004-01-01). Oranges were harvested 1 day after the last application and processed to orange juice, orange oil and dry pulp. Samples were analysed for cyclaniliprole and NK-1375 using the validated LC-MS/MS method JSM 0269.

Orange juice, dry pulp

Whole cleaned oranges (18.5 kg) were processed in a juicer machine. The juicer separated the oranges into juice and by-products (peel, rag and seed). Raw juice was screened, placed in a sterilised container and stored frozen.

The pulp remaining from the juice production was chopped prior to removing the water using a hydraulic press. The remaining solids were placed in an oven and dried at 64–91 °C until the moisture content was less than 12%. The resulting dried orange pulp was stored frozen.

Orange oil

To produce peel oil, cleaned oranges (113 kg) were peeled with a modified abrasion peeler. As the oranges were being peeled, a spray of water was used to collect the peel oil being released. The liquid solution was sieved to remove solids after which the liquid was placed into the cooler and allowed to separate into juice and oil/water emulsion. Peel oil was separated from the emulsion by centrifugation. The resulting peel oil fraction was stored frozen.

Residues of cyclaniliprole and NK-1375 and processing factors for the processed orange commodities are summarized in Table 34.

Table 34 Residues (mg/kg) of cyclaniliprole and NK-1375 in orange commodities after processing oranges (IB-2015-JAM-004-01-01)

Processed commodity	Cyclaniliprole [mg/kg]	NK-1375 [mg/kg]	Total residue [a] [mg/kg]	PF_{ENF} [b]	PF_{RISK} [c]
RAC	0.797 / 0.837 / 0.454 (0.696)	0.047 / 0.040 / 0.016 (0.034)	0.847 / 0.880 / 0.471 (0.733)	-	-
Orange juice	0.076 / 0.076 (0.076)	< 0.01/ < 0.01 (< 0.01)	0.087 / 0.087 (0.087)	0.11	0.12
Orange oil	78.5 / 82.8 (80.7)	4.12 / 3.80 (3.96)	82.9 / 86.8 (84.9)	116	116
Orange, dry pulp	0.838 / 0.932 (0.885)	0.036 / 0.043 (0.040)	0.876 / 0.978 (0.927)	1.27	1.27

[a] Cyclaniliprole + NK-1375 expressed as parent equivalents

[b] PF_{ENF} = residue of cyclaniliprole in processed product / residue of cyclaniliprole in RAC

[c] PF_{RISK} = residue of cyclaniliprole + NK-1375 in processed product / residue of cyclaniliprole + NK-1375 in RAC

Potato

One processing trial in potatoes was conducted in 2015 in the USA where an SL formulation containing 50 g/L cyclaniliprole was applied to potatoes three times at 1.003-1.006 kg ai/ha, for a total seasonal application rate of 3.015 kg ai/ha (McDonald, 2017, IB-2015-JAM-003-01-01). Potatoes were harvested 7 days after the last application and processed to potato chips, flakes/granules and

potato wet peels. Samples were analysed for cyclaniliprole and NK-1375 using the validated LC-MS/MS method JSM 0269.

Potato flakes/granules

Washed potatoes (35 kg) were batch steam peeled using a steam peeler. The potatoes were batch scrubbed for 30 seconds. The potato peel was collected from the peeling and scrubbing process. The peeled potatoes were inspected and hand trimmed to remove additional peel, rot, green or otherwise damaged potatoes. The trim waste was retained. The collected peel was hydraulically pressed and the pressed peel blended with the cut trim waste and collected as wet peel sample. The peeled potatoes were cut into slabs. Slabs were batch sprayed in cold tap water for 30 seconds to remove free starch. The potato slabs were precooked at 70–77 °C for 20 minutes and cooled to less than 32 °C for 20 minutes. The pre-cooked and cooled potato slabs were steam-cooked at 94–100 °C for 40–42 minutes. An aliquot of cooked potato slabs was mashed. The potato mash was mixed with an emulsion of pre-weighed food additives. The cooked mash was hand fed onto a dryer to dry the cooked mash into a thin sheet, and was initially broken into large flakes by hand. The flakes were then fed into a hammer mill for uniform milling of the potato flakes.

Potato crisps

Washed potatoes (8 kg) were batch peeled. The peel was weighed and discarded. The peeled potatoes were inspected by hand and trimmed, if necessary, to remove rot, green or otherwise damaged potato tissue. Any trim waste was weighed and discarded. The peeled potatoes were cut into thin (0.16 cm) slices. The sliced potatoes were placed in a tub of hot water to remove free starch. The slices were drained over a screen or a cloth/paper towel to remove excess water and were fried at 163–191 °C frying oil for 80–105 seconds. The fried potato crisps were drained, salted and inspected.

Residues of cyclaniliprole and NK-1375 and processing factors for the processed potato commodities are summarized in Table 35.

Table 35 Residues (mg/kg) of cyclaniliprole and NK-1375 in potato commodities after processing potatoes (IB-2015-JAM-003-01-01)

Processed commodity	Cyclaniliprole [mg/kg]	NK-1375 [mg/kg]	Total residue [a] [mg/kg]	PF_{ENF} [b]	PF_{RISK} [c]
Potato RAC	0.022 / 0.041 / 0.020 (0.028)	< 0.01/ < 0.01 (< 0.01)	0.033 / 0.052 / 0.031 (0.039)	-	-
Wet peels	0.119	0.013	0.133	4.25	3.41
Crisps	< 0.01/ < 0.01 (< 0.01)	< 0.01/ < 0.01 (< 0.01)	< 0.01/ < 0.01 (< 0.01)	< 0.36	< 0.26
Flakes/Granules	< 0.01/ < 0.01 (< 0.01)	< 0.01/ < 0.01 (< 0.01)	< 0.01/ < 0.01 (< 0.01)	< 0.36	< 0.26

[a] Cyclaniliprole + NK-1375, expressed as parent equivalents

[b] PF_{ENF} = residue of cyclaniliprole in processed product / residue of cyclaniliprole in RAC

[c] PF_{RISK} = residue of cyclaniliprole + NK-1375 in processed product / residue of cyclaniliprole + NK-1375 in RAC

In summary, residues of cyclaniliprole concentrated in orange oil, orange dry pulp and potato wet peels (Table 36).

Table 36 Summary of cyclaniliprole processing factors

Commodity	Processing fraction	PF_{ENF} [a]	PF_{RISK} [b]
Orange	Juice	0.11	0.12
	Oil	116	116
	Dry pulp	1.27	1.27

Potato	Wet peels	4.25	3.41
	Crisps	< 0.36	< 0.26
	Flakes/Granules	< 0.36	< 0.26

[a] PF_{ENF} = residue of cyclaniliprole in processed product / residue of cyclaniliprole in RAC

[b] PF_{RISK} = residue of cyclaniliprole + NK-1375 in processed product / residue of cyclaniliprole + NK-1375 in RAC

APPRAISAL

Cyclaniliprole is an insecticide belonging to the chemical class of diamide insecticides which act at the ryanodine receptor, which is critical for muscle contraction.

Cyclaniliprole was first evaluated by the 2017 JMPR where an ADI of 0–0.04 mg/kg bw was established. An ARfD was determined to be unnecessary.

A residue definition of *cyclaniliprole* was determined for compliance with the MRL for plant and animal commodities and for dietary risk assessment for animal commodities.

For dietary risk assessment for plant commodities, the residue definition was determined to be *cyclaniliprole + 3-bromo-2-((2-bromo-4H-pyrazolo[1,5-d]pyrido[3,2-b]-[1,4]oxazin-4-ylidene)amino)-5-chloro-N(1-cyclopropylethyl)benzamide (NK-1375)*, expressed as cyclaniliprole equivalents.

The residue is fat-soluble.

Cyclaniliprole was scheduled by the Fiftieth Session of the CCPR for the reassessment of the trials reviewed in 2017 and the evaluation of additional new uses. The current Meeting received revised GAP information for several of the uses evaluated by the 2017 JMPR as well as new GAP information, supervised field trials on citrus fruits, berries and tuberous and corm vegetables, and orange and potato processing studies.

Methods of analysis

The LC-MS/MS analytical method (Report JSM 0269) used for analysis of residues of cyclaniliprole and NK-1375 in plant commodities, with LOQs of 0.01 mg/kg for each analyte, was reviewed by the 2017 JMPR. All samples collected from the supervised residue trials submitted to the current Meeting were analysed using the same method.

Stability of residues in stored analytical samples

The stability of residues of cyclaniliprole and NK-1375 during frozen storage was evaluated by the 2017 JMPR. Cyclaniliprole and NK-1375 were determined to be stable when stored frozen for at least 18 months at -20 ºC in commodities representative of the high water, high acid, high starch, high protein and high oil commodity groups.

The periods of demonstrated stability adequately covered the frozen storage intervals of the samples in the supervised residue trials on crops considered by the current Meeting.

Results of supervised residue trials on crops

The current Meeting received supervised trial data for cyclaniliprole on lemons, oranges, grapefruits, raspberries, blueberries, strawberries, kiwifruit and potato. The Meeting also received revised use pattern information for pome fruits, stone fruits, *Brassica* head and stem vegetables, fruiting vegetables except cucurbits, fruiting vegetables, leafy vegetables, tree nuts and tea, previously assessed at the 2017 Meeting. Therefore, the supervised residue trials for these crops were reassessed in the framework of the revised use patterns.

Residues for maximum residue estimation are expressed in mg cyclaniliprole/kg. Residues for dietary risk assessment include parent cyclaniliprole and metabolite NK1375. The totals (sum of the mean of parent and NK-1375) are expressed as parent equivalents by applying a conversion factor of 1.064 to NK-1375.

For all crops, with the exception of tea, the number of applications, re-treatment interval and PHI approximated the critical GAPs from USA (citrus fruits only) or Canada, however, individual application rates were all greater than those of the critical GAPs. Therefore, the current Meeting agreed to utilise the proportionality approach to estimate residues matching the critical GAP for estimation of the maximum residue levels and dietary exposures. For tea, all trials were conducted within 25% of the critical GAP in Japan.

Citrus fruits

The critical GAP for citrus fruits is from the USA; 3×80 g ai/ha, 7-day RTI, 1-day PHI. The Meeting received trials from the USA on citrus fruits where 3 foliar spray applications were made at a nominal rate of 100 g ai/ha per application, 7-day RTI and 1-day PHI.

Lemons

Cyclaniliprole residues in lemons in ranked order were (n = 5): 0.018, 0.048, 0.13, 0.14 and 0.17 mg/kg. Using scaling factors of ~0.8, scaled residues in ranked order were (n = 5): 0.015, 0.038, 0.11 (2) and 0.14 mg/kg.

Total cyclaniliprole residues in lemons in ranked order were (n = 5): 0.029, 0.059, 0.14, 0.15 and 0.18 mg/kg. Using the same scaling factors, scaled total cyclaniliprole residues in ranked order were (n = 5): 0.023, 0.047, 0.12 (2) and 0.15 mg/kg.

Orange

Cyclaniliprole residues in oranges in ranked order were (n = 12): 0.033, 0.092, 0.093, 0.098, 0.11, 0.12 (2), 0.13, 0.14, 0.16, 0.19 and 0.36 mg/kg. Using scaling factors of ~0.8, scaled residues in ranked order were (n = 12): 0.026, 0.074, 0.075, 0.078, 0.090, 0.094, 0.095, 0.10, 0.11, 0.13, 0.15 and 0.28 mg/kg.

Total cyclaniliprole residues in oranges in ranked order were (n = 12): 0.044, 0.10 (2), 0.11, 0.12, 0.13 (2), 0.14, 0.15, 0.17, 0.20 and 0.39 mg/kg. Using the same scaling factors, scaled total cyclaniliprole residues in ranked order were (n = 12): 0.035, 0.083 (2), 0.087, 0.099, 0.10 (2), 0.11, 0.12, 0.14, 0.16 and 0.31 mg/kg.

Grapefruit

Cyclaniliprole residues in grapefruits in ranked order were (n = 6): 0.024, 0.042, 0.059, 0.078, 0.082 and 0.096 mg/kg. Using scaling factors of ~0.8, scaled residues in ranked order were (n = 6): 0.019, 0.034, 0.047, 0.061, 0.066 and 0.077 mg/kg.

Total cyclaniliprole residues in grapefruits in ranked order were (n = 6): 0.035, 0.053, 0.07, 0.089, 0.093 and 0.11 mg/kg. Using the same scaling factors, scaled total cyclaniliprole residues in ranked order were (n = 6): 0.028, 0.042, 0.056, 0.069, 0.075 and 0.085 mg/kg.

The Meeting noted that the GAP covers the group of citrus fruits and that median residues of lemons, oranges and grapefruits are within a 5-fold difference. Although trials were not provided for mandarins, the Meeting noted that residues in lemons/limes have been shown to be similar to or greater than residues in mandarins. The Kruskal-Wallis H-test also determined that the datasets were from the same population. Therefore, the Meeting decided to combine the three datasets of lemons, oranges and grapefruits.

Combined scaled cyclaniliprole residues in lemons, oranges and grapefruits were (n = 23): 0.015, 0.019, 0.026, 0.034, 0.038, 0.047, 0.061, 0.066, 0.074, 0.075, 0.077, 0.078, 0.090, 0.094, 0.095, 0.096, 0.11 (3), 0.13, 0.14, 0.15 and 0.28 mg/kg.

Total scaled cyclaniliprole residues in lemons, oranges and grapefruits in ranked order were (n = 23): 0.023, 0.028, 0.035, 0.042, 0.047, 0.056, 0.069, 0.075, 0.083 (2), 0.085, 0.087, 0.099, 0.10 (2), 0.11, 0.12 (3), 0.14, 0.15, 0.16 and 0.31 mg/kg.

The Meeting estimated a maximum residue level of 0.4 mg/kg and an STMR of 0.087 mg/kg for the Group of citrus fruits.

The Meeting estimated a median residue of 0.078 mg/kg (parent only) for animal dietary burden calculations.

Pome fruits

The critical GAP for pome fruit is from Canada; 3×80 g ai/ha, 14-day RTI, 7-day PHI. The Meeting received trials from Canada and the USA on pome fruits where 3 foliar spray applications were made at a nominal rate of 100 g ai/ha/application, 14-day RTI and 1-day PHI.

Apple

Cyclaniliprole residues in apples in ranked order were (n = 16): 0.013, 0.023, 0.027, 0.035, 0.037, 0.046, 0.049, 0.054 (2), 0.055, 0.058, 0.068 (2), 0.10 (2) and 0.13 mg/kg. Using scaling factors of ~0.8, scaled residues in ranked order were (n = 16): 0.01, 0.018, 0.021, 0.027, 0.030, 0.037, 0.039, 0.042, 0.043 (2), 0.046, 0.053, 0.054, 0.079 (2) and 0.10 mg/kg.

Total cyclaniliprole residues in apples in ranked order were (n = 16): 0.023, 0.033, 0.038, 0.046, 0.053, 0.056, 0.059, 0.065 (2), 0.067, 0.073, 0.079, 0.084, 0.12, 0.13 and 0.17 mg/kg. Using the same scaling factors, scaled total cyclaniliprole residues in ranked order were (n = 16): 0.018, 0.026, 0.030, 0.036, 0.043, 0.045, 0.047, 0.051, 0.052, 0.053, 0.058, 0.063, 0.065, 0.095, 0.10 and 0.14 mg/kg.

Pear

Cyclaniliprole residues in pears in ranked order were (n = 8): 0.037, 0.060, 0.069, 0.097, 0.11, 0.13 and 0.14 (2) mg/kg. Using scaling factors of 0.7–0.8, scaled residues in ranked order were (n = 8): 0.029, 0.048, 0.055, 0.078, 0.079, 0.10, 0.11 (2) mg/kg.

Total cyclaniliprole residues in pears in ranked order were (n = 8): 0.051, 0.070, 0.081, 0.12 (2), 0.14 and 0.16 (2) mg/kg. Using the same scaling factors, scaled total cyclaniliprole residues in ranked order were (n = 8): 0.040, 0.056, 0.065, 0.085, 0.097, 0.11 and 0.13 (2) mg/kg.

The Meeting noted that the scaled median residues of cyclaniliprole in apples and pears were within five-fold and that the datasets were from the same population (Mann-Whitney U-test). The Meeting decided to combine the data to estimate a maximum residue level for pome fruits. The combined cyclaniliprole scaled residues in apples and pears were (n = 24): 0.01, 0.018, 0.021, 0.027, 0.029, 0.030, 0.037, 0.039, 0.042, 0.043 (2), 0.046, 0.048, 0.053, 0.054, 0.055, 0.078, 0.079 (3), 0.10 (2) and 0.11 (2) mg/kg.

Scaled total cyclaniliprole residues in apples and pears in ranked order were (n = 24): 0.018, 0.026, 0.030, 0.036, 0.040, 0.043, 0.045, 0.047, 0.051, 0.052, 0.053, 0.056, 0.058, 0.063, 0.065 (2), 0.085, 0.095, 0.097, 0.10, 0.11, 0.13 (2) and 0.14 mg/kg.

The Meeting estimated a maximum residue level of 0.2 mg/kg and an STMR of 0.057 mg/kg for pome fruits, except Japanese persimmons, and withdraws its previous recommended maximum residue level of 0.3 mg/kg for the Group of pome fruits.

The Meeting estimated a median residue of 0.047 mg/kg (parent only) for animal dietary burden calculations.

Stone fruit

The critical GAP for stone fruit is from Canada; 3×80 g ai/ha, 7-day RTI, 7-day PHI. The Meeting received trials from Canada and the USA on stone fruits where 3 foliar spray applications were made at a nominal rate of 100 g ai/ha per application, 7-day RTI and 7-day PHI.

Cherries

Cyclaniliprole residues in cherries in ranked order were (n = 15): 0.010, 0.016, 0.082, 0.097, 0.13 (2), 0.14 (2), 0.18, 0.24, 0.28, 0.30, 0.33, 0.44 and 0.56 mg/kg. Using scaling factors of 0.7–0.8, scaled residues in ranked order were (n = 15): 0.008, 0.013, 0.063, 0.075, 0.10, 0.11 (3), 0.14, 0.19 (2), 0.24, 0.26, 0.36 and 0.45 mg/kg.

Residue levels in the field trials from Canada and the USA were reported as flesh without stone. At the 2017 Meeting, it was concluded that, based on the Japanese trials on cherries, the contribution of the pit to the weight of the whole fruit is approximately 10%. Correcting the residue levels using this weight/weight ratio would lead to the same maximum residue level.

Total cyclaniliprole residues in flesh in ranked order were (n = 15): 0.021, 0.027, 0.10, 0.11, 0.14 (2), 0.16, 0.17, 0.19, 0.26, 0.32, 0.34 (2), 0.48 and 0.61 mg/kg. Using the same scaling factors, scaled total cyclaniliprole residues in ranked order were (n = 15): 0.017, 0.022, 0.077, 0.085, 0.11 (2), 0.12, 0.14, 0.15, 0.21, 0.23, 0.26, 0.27, 0.40 and 0.49 mg/kg.

The Meeting estimated a maximum residue level of 0.7 mg/kg and an STMR of 0.14 mg/kg for the Subgroup of cherries, to replace its previous recommended maximum residue level of 0.9 mg/kg.

Plums

Cyclaniliprole residues in plums in ranked order were (n = 8): 0.019 (2), 0.024, 0.027, 0.056, 0.062, 0.065 and 0.091 mg/kg. Using scaling factors of 0.8–1.2, scaled residues in ranked order were (n = 8): 0.015 (2), 0.019, 0.033, 0.044, 0.049, 0.052 and 0.073 mg/kg.

Residue levels in the field trials from Canada and the USA were reported as flesh without stone. At the 2017 Meeting, it was concluded that, based on the ratio of the residue levels in flesh versus whole fruit which ranged between 0.86 and 0.97, an overestimation of residues of approximately 10% was anticipated. Correcting for this factor would lead to the same maximum residue level.

Total cyclaniliprole residues in plums in ranked order were (n = 8): 0.030 (2), 0.035, 0.042, 0.067, 0.075, 0.076 and 0.11 mg/kg. Using the same scaling factors, scaled total cyclaniliprole residues in ranked order were (n = 8): 0.024 (2), 0.028, 0.051, 0.053, 0.060, 0.061 and 0.089 mg/kg.

The Meeting estimated a maximum residue level of 0.15 mg/kg and an STMR value of 0.052 mg/kg for the Subgroup of plums, to replace its previous recommended maximum residue level of 0.2 mg/kg.

Peaches (including nectarines and apricots)

Cyclaniliprole residues in peaches in ranked order were (n = 13): 0.019, 0.023, 0.041, 0.045, 0.050, 0.051, 0.054, 0.064, 0.081, 0.094, 0.11, 0.16 and 0.19 mg/kg. Using scaling factors of 0.8–1.1, scaled residues in ranked order were (n = 13): 0.018, 0.021, 0.033, 0.036, 0.040, 0.041, 0.044, 0.051, 0.065, 0.073, 0.087, 0.13 and 0.15 mg/kg.

Residue levels in the field trials from Canada and the USA were reported as flesh without stone. At the 2017 Meeting, it was concluded that, based on the ratio of the residue levels in flesh versus whole fruit which ranged between 0.85 and 0.96, an overestimation of residues of approximately 10% was anticipated. Correcting for this factor would lead to the same maximum residue level.

Total cyclaniliprole residues in peaches in ranked order were (n = 13): 0.030, 0.034, 0.056, 0.058, 0.061, 0.062, 0.065, 0.078, 0.092, 0.10, 0.12, 0.17 and 0.20 mg/kg. Using the same scaling factors, scaled total cyclaniliprole residues were (n = 13): 0.027, 0.034, 0.045, 0.047, 0.049, 0.050, 0.053, 0.063, 0.074, 0.078, 0.095, 0.14 and 0.16 mg/kg.

The Meeting estimated a maximum residue level of 0.3 mg/kg and an STMR value of 0.053 mg/kg for the Subgroup of peaches, and confirms its previous recommended maximum residue level of 0.3 mg/kg.

Cane berries

The critical GAP for caneberries is from Canada; 3×80 g ai/ha, 5-day RTI, 1-day PHI. The Meeting received trials from Canada and the USA on raspberries where 3 foliar spray applications were made at a nominal rate of 100 g ai/ha per application, 5–6 day RTI and 1-day PHI.

Raspberries

Cyclaniliprole residues in raspberries in ranked order were (n = 5): 0.14, 0.24, 0.30, 0.31 and 0.53 mg/kg. Using scaling factors of ~0.8, scaled residues in ranked order were (n = 5): 0.11, 0.18, 0.24, 0.25 and 0.42 mg/kg.

Total cyclaniliprole residues in raspberries in ranked order were (n = 5): 0.16, 0.27, 0.34, 0.36 and 0.58 mg/kg. Using the same scaling factors, scaled total cyclaniliprole residues in ranked order were (n = 5): 0.13, 0.21, 0.27, 0.30 and 0.47 mg/kg.

Noting that raspberries are the representative crop of the subgroup cane berries, the Meeting estimated a maximum residue level of 0.8 mg/kg and an STMR of 0.27 mg/kg for the Subgroup of cane berries.

Bush berries

The critical GAP for bushberries is from Canada; 3×80 g ai/ha, 5-day RTI, 1-day PHI. The Meeting received trials from Canada and the USA on blueberries where 3 foliar spray applications were made at a nominal rate of 100 g ai/ha per application, 5-day RTI and 1-day PHI.

Blueberries

Cyclaniliprole residues in blueberries in ranked order were (n = 10): 0.10, 0.14, 0.15, 0.20, 0.23, 0.29 (2), 0.42, 0.43 and 1.0 mg/kg. Using scaling factors of ~0.8, scaled residues in ranked order were (n = 10): 0.079, 0.12 (2), 0.16, 0.19, 0.23 (2), 0.32, 0.34 and 0.81 mg/kg.

Total cyclaniliprole residues in blueberries in ranked order were (n = 10): 0.12, 0.20, 0.22, 0.24, 0.32, 0.37, 0.38, 0.50, 0.58 and 1.1 mg/kg. Using the same scaling factors, scaled total cyclaniliprole residues in ranked order were (n = 10): 0.092, 0.16, 0.19, 0.20, 0.25, 0.30(2), 0.39, 0.45, 0.89 mg/kg.

Noting that blueberries is the representative crop of the subgroup bush berries, the Meeting estimated a maximum residue level of 1.5 mg/kg and an STMR of 0.275 mg/kg for the Subgroup of bush berries and extrapolated these values to elderberries and Guelder rose.

Grapes

The critical GAP for grapes is from Canada; 3×80 g ai/ha, 7-day RTI, 7-day PHI. The Meeting received trials from Canada and the USA on grapes where 3 foliar spray applications were made at a nominal rate of 100 g ai/ha per application, 6-day RTI and 6–7-day PHI.

Cyclaniliprole residues in grapes in ranked order were (n = 15): 0.025, 0.044, 0.048, 0.076, 0.11, 0.12 (2), 0.14 (2), 0.17, 0.21, 0.24, 0.33, 0.39 and 0.51 mg/kg. Using scaling factors of ~0.8, scaled residues in ranked order were (n = 15): 0.020, 0.035, 0.038, 0.061, 0.088, 0.094, 0.096, 0.11(2), 0.14, 0.17, 0.19, 0.26, 0.31 and 0.41 mg/kg.

Total cyclaniliprole residues in grapes in ranked order were (n = 15): 0.036, 0.055, 0.059, 0.092, 0.13 (2), 0.15 (2), 0.17, 0.22, 0.25, 0.28, 0.44, 0.48 and 0.59 mg/kg. Using the same scaling factors, scaled total cyclaniliprole residues in ranked order were (n = 15): 0.029, 0.044, 0.047, 0.074, 0.10 (2), 0.12 (2), 0.14, 0.18, 0.20, 0.22, 0.34, 0.38 and 0.47 mg/kg.

The Meeting estimated a maximum residue level of 0.6 mg/kg and an STMR of 0.12 mg/kg for grapes to replace its previous recommended maximum residue level of 0.8 mg/kg.

The Meeting estimated a median residue of 0.11 mg/kg (parent only) for animal dietary burden calculations.

Low growing berries

The critical GAP for low growing berries is from Canada; 3×80 g ai/ha, 5-day RTI, 1-day PHI. The Meeting received trials from Canada and the USA on grapes where 3 foliar spray applications were made at a nominal rate of 100 g ai/ha per application, 4–6 day RTI and 1-day PHI.

Strawberries

Cyclaniliprole residues in strawberries in ranked order were (n = 9): 0.054, 0.091, 0.10, 0.23, 0.14, 0.15, 0.16, 0.21 and 0.34 mg/kg. Using scaling factors of ~0.8, scaled residues in ranked order were (n = 9): 0.043, 0.074, 0.079, 0.099, 0.11, 0.12, 0.13, 0.17 and 0.28 mg/kg.

Total cyclaniliprole residues in strawberries in ranked order were (n = 9): 0.065, 0.10, 0.11, 0.14, 0.16 (2), 0.18, 0.25 and 0.36 mg/kg. Using the same scaling factors, scaled total cyclaniliprole residues in ranked order were (n = 9): 0.051, 0.083, 0.088, 0.12 (2), 0.13, 0.14, 0.20 and 0.29 mg/kg.

Noting that strawberries is the representative crop of the subgroup low growing berries but that the cultural practices for cranberries are significantly different from those of the other berries within the same crop subgroup, the Meeting estimated a maximum residue level of 0.4 mg/kg and an STMR of 0.12 mg/kg for the Subgroup of low growing berries, except cranberries.

Kiwifruit

The critical GAP is from Canada for "small fruits vine climbing, except grapes" including kiwifruit; 3×80 g ai/ha, 5-day RTI, 1-day PHI. The Meeting received trials from the USA on kiwifruits where 3 foliar spray applications were made at a nominal rate of 100 g ai/ha per application, 5-day RTI and 1-day PHI.

Cyclaniliprole residues in kiwifruit in ranked order were (n = 3): 0.013, 0.24 and 0.49 mg/kg.

Total cyclaniliprole residues in kiwifruit in ranked order were (n = 3): 0.024, 0.25 and 0.50 mg/kg.

The Meeting noted that three trials are insufficient to estimate a maximum residue level and STMR for kiwifruit.

Brassica vegetables (except Brassica leafy vegetables)

The critical GAP for flowerhead brassicas is from Canada for "Brassica head and stem vegetables"; 3×60 g ai/ha, 7-day RTI, 1-day PHI. The Meeting received trials from Canada and the USA on Brassica vegetables where 3 foliar spray applications were made at a nominal rate of 80 g ai/ha/application, 6–8 day RTI and 1-day PHI.

Flowerhead Brassicas

Cyclaniliprole residues in broccoli in ranked order were (n = 10): 0.11, 0.12, 0.18, 0.20, 0.34, 0.37, 0.41, 0.42, 0.47, and 0.66 mg/kg. Using scaling factors of 0.72–0.98, scaled residues in ranked order were (n = 10): 0.08, 0.12, 0.15, 0.18, 0.25, 0.28, 0.31, 0.32, 0.35 and 0.48 mg/kg.

Total cyclaniliprole residues in broccoli in ranked order were (n = 10): 0.12, 0.13, 0.19, 0.23, 0.38 (2), 0.42, 0.49, 0.54, and 0.71 mg/kg. Using the same scaling factors, scaled total cyclaniliprole residues in ranked order were (n = 10): 0.088, 0.13, 0.17, 0.19, 0.28 (2), 0.32, 0.38, 0.41 and 0.51 mg/kg.

Noting that broccoli is the representative crop of the flowerhead brassicas subgroup, the Meeting estimated a maximum residue level of 0.8 mg/kg and an STMR of 0.28 mg/kg for the Subgroup of flowerhead brassicas to replace its previous recommended maximum residue level of 1 mg/kg.

Brussels sprouts

Residue trials performed on Brussels sprouts in Europe, reviewed by the 2017 JMPR, did not match the critical GAP from Canada nor could the proportionality approach be used. Therefore, the Meeting could not estimate a maximum residue level for Brussels sprouts.

Cabbages, head

Cyclaniliprole residues in cabbage heads with wrapper leaves in ranked order were (n = 10): < 0.01 (2), 0.014, 0.025, 0.027, 0.040, 0.082, 0.15, 0.32 and 0.39 mg/kg. Using scaling factors of 0.60–0.98, scaled residues in ranked order were (n = 10): < 0.01 (2), 0.01, 0.017, 0.024 (2), 0.063, 0.11, 0.31 and 0.38 mg/kg.

Total cyclaniliprole residues in cabbage heads with wrapper leaves in ranked order were (n = 10): < 0.01 (2), 0.025, 0.035, 0.038, 0.051, 0.094, 0.17, 0.34, and 0.42 mg/kg. Using the same scaling factors, scaled total cyclaniliprole residues in ranked order were (n = 10): < 0.01 (2), 0.018, 0.024, 0.031, 0.034, 0.072, 0.13, 0.33 and 0.41 mg/kg.

The Meeting estimated a maximum residue level of 0.7 mg/kg and an STMR of 0.0325 mg/kg for cabbage heads and withdraws its previous recommendation of 0.7 mg/kg for the Subgroup of head Brassicas.

The Meeting estimated a median residue of 0.024 mg/kg and a highest residue of 0.38 mg/kg (parent only) for animal dietary burden calculations.

Fruiting vegetables – Cucurbits

The critical GAP for fruiting vegetables-cucurbits is from Canada for "cucurbit vegetables"; 3×60 g ai/ha, 7-day RTI, 1-day PHI. The Meeting received trials from Canada and the USA on fruiting vegetables-cucurbits where 3 foliar spray applications were made at a nominal rate of 80 g ai/ha per application, 7-day RTI and 1-day PHI.

Subgroup of cucumbers and summer squashes

Cucumbers

Cyclaniliprole residues in cucumbers in ranked order were (n = 9): < 0.01 (2), 0.011, 0.013, 0.014, 0.018, 0.019, 0.024, and 0.025 mg/kg. Using scaling factors of ~0.74, scaled residues in ranked order were (n = 9): < 0.01 (3), 0.010, 0.011, 0.013, 0.014 and 0.018 (2) mg/kg.

Total cyclaniliprole residues in cucumbers in ranked order were (n = 9): < 0.01 (2), 0.022, 0.024, 0.025, 0.029, 0.030, 0.035 and 0.036 mg/kg. Using the same scaling factors, scaled total cyclaniliprole residues in ranked order were (n = 9): < 0.01 (2), 0.016, 0.018, 0.019, 0.021, 0.022 and 0.026 (2) mg/kg.

Summer squashes

Cyclaniliprole residues in summer squashes in ranked order were (n = 9): < 0.01(2), 0.014, 0.016, 0.026, 0.028(2), 0.033 and 0.046 mg/kg. Using scaling factors of ~0.75, scaled residues in ranked order were (n = 9): < 0.01 (2), 0.011, 0.012, 0.020, 0.021 (2), 0.024 and 0.034 mg/kg.

Total cyclaniliprole residues in summer squashes in ranked order were (n = 9): < 0.01 (2), 0.025, 0.027, 0.037, 0.039, 0.040, 0.043 and 0.057 mg/kg. Using the same scaling factors, scaled total cyclaniliprole residues in ranked order were (n = 9): < 0.01 (2), 0.019, 0.021, 0.028, 0.029, 0.030, 0.032 and 0.042 mg/kg.

The Meeting noted that the median residues of cucumbers and summer squashes were within 5-fold, and that the Mann-Whitney U-test determined the datasets of cucumbers and summer squashes were from the same population. Therefore, the Meeting decided to combine the two datasets of cucumbers and summer squashes.

The ranked order of the combined cyclaniliprole scaled residues in cucumbers and summer squashes were (n = 18): < 0.01(5), 0.010, 0.011 (2), 0.012, 0.013, 0.014, 0.018 (2), 0.020, 0.021 (2), 0.024 and 0.034 mg/kg.

The ranked order of total cyclaniliprole scaled residues in cucumbers and summer squashes were (n = 18): < 0.01 (4), 0.016, 0.018, 0.019 (2), 0.021 (2), 0.022, 0.026 (2), 0.028, 0.029, 0.030, 0.032 and 0.042 mg/kg.

Noting that cucumbers and summer squashes are the representative crops for the crop subgroup cucumbers and summer squashes, the Meeting estimated a maximum residue level of 0.05 mg/kg and an STMR of 0.021 mg/kg for the Subgroup of cucumbers and summer squashes to replace its previous recommended maximum residue level of 0.06 mg/kg.

Melons, pumpkins and winter squashes

Melons

The critical GAP for melons is from Canada for "cucurbit vegetables": 3×60 g ai/ha, 7-day RTI, 1-day PHI. The Meeting received trials from Canada and the USA on melons where 3 foliar spray applications were made at a nominal rate of 80 g ai/ha per application, 6–8 day RTI and 1-day PHI.

Cyclaniliprole residues in melons in ranked order were (n = 10): 0.014, 0.017, 0.023, 0.039, 0.040, 0.042, 0.044, 0.051, 0.071 and 0.087 mg/kg. Using scaling factors of ~0.75, the scaled residues in ranked order were (n = 10): 0.010, 0.013, 0.017, 0.029, 0.030, 0.031, 0.033, 0.038, 0.052 and 0.064 mg/kg.

In the absence of data on melons without peel, residues used for the estimation of the STMR are based on whole fruit. Total cyclaniliprole residues in whole melon in ranked order were (n = 10): 0.024, 0.028, 0.033, 0.050, 0.055 (2), 0.058, 0.063, 0.081, and 0.099 mg/kg. Using the same scaling factors, scaled total cyclaniliprole residues in ranked order were (n = 10): 0.018, 0.021, 0.025, 0.037, 0.041 (2), 0.043, 0.047, 0.060 and 0.073 mg/kg for whole melon.

Noting that melons is the representative crop of the melons, pumpkins and winter squashes crop subgroup, the Meeting estimated a maximum residue level of 0.1 mg/kg and an STMR of 0.041 mg/kg for the Subgroup of melons, pumpkins and winter squashes to replace its previous recommended maximum residue level of 0.15 mg/kg.

Fruiting vegetables, other than Cucurbits

The critical GAP for fruiting vegetables, other than cucurbits is from Canada for "fruiting vegetables"; 3×60 g ai/ha, 7-day RTI, 1-day PHI. The Meeting received trials from Canada and the USA on cherry tomatoes, tomatoes, sweet bell peppers and non-bell peppers where 3 foliar spray applications were made at a nominal rate of 80 g ai/ha per application, 6–8 day RTI and 1-day PHI.

Tomatoes

Cyclaniliprole residues in field tomatoes (including cherry tomatoes) in ranked order were (n = 22): 0.011, 0.013, 0.017, 0.018, 0.019, 0.025 (2), 0.026 (2), 0.029, 0.030, 0.032 (2), 0.033, 0.034, 0.037, 0.038, 0.040, 0.042, 0.043, 0.070 and 0.076 mg/kg. Using scaling factors of 0.72–0.99, scaled residues in ranked order were (n = 22): 0.008, 0.010, 0.015, 0.017, 0.018, 0.019, 0.020, 0.021, 0.023, 0.024 (3), 0.025 (3), 0.027, 0.028, 0.029, 0.031, 0.032, 0.053, and 0.058 mg/kg.

Total cyclaniliprole residues in tomatoes (including cherry tomatoes) in ranked order were (n = 22): 0.019, 0.022, 0.028, 0.029 (2), 0.036 (3), 0.037, 0.040, 0.041, 0.042, 0.043, 0.045, 0.047, 0.048, 0.049, 0.051, 0.053 (2), 0.08 and 0.1 mg/kg. Using the same scaling factors, scaled total cyclaniliprole residues in ranked order were (n = 22): 0.014, 0.017, 0.022, 0.027 (2), 0.028, 0.029, 0.030, 0.031 (2), 0.032, 0.034, 0.035 (2), 0.036 (3), 0.037, 0.039 (2), 0.060 and 0.076 mg/kg.

The Meeting estimated a maximum residue level of 0.08 mg/kg and an STMR of 0.033 mg/kg for the Subgroup of tomatoes and withdraws its previous recommendations of 0.1 mg/kg for tomato and cherry tomato.

The Meeting estimated a median residue of 0.024 mg/kg (parent only) for animal dietary burden calculations.

Peppers

Cyclaniliprole residues in bell peppers and non-bell peppers [NB] in ranked order were (n = 12): 0.014, 0.019, 0.025, 0.041[NB], 0.046, 0.048, 0.057[NB], 0.068, 0.072, 0.077[NB], 0.098, and 0.10 mg/kg. Using scaling factors of 0.74–0.99, scaled residues in ranked order were (n = 12): 0.011, 0.014, 0.018, 0.031[NB], 0.036, 0.043[NB], 0.045, 0.050, 0.054, 0.058[NB], 0.073 and 0.099 mg/kg.

Total cyclaniliprole residues in sweet bell and non-bell peppers in ranked order were (n = 12): 0.025, 0.029, 0.035, 0.051[NB], 0.056, 0.059, 0.067[NB], 0.083, 0.094[NB], 0.096, 0.11, and 0.12 mg/kg. Using the same scaling factors, scaled total cyclaniliprole residues were (n = 12): 0.020, 0.022, 0.026, 0.039[NB], 0.044, 0.050[NB], 0.055, 0.063, 0.071, 0.071[NB], 0.082 and 0.119 mg/kg.

The Meeting estimated a maximum residue level of 0.15 mg/kg and an STMR of 0.0525 mg/kg for the Subgroup of peppers (excluding martynia, okra and roselle), to replace its previous recommended maximum residue level of 0.2 mg/kg.

The Canadian critical GAP for fruiting vegetables, other than cucurbits, also covers eggplants. The Meeting decided the pepper data could be used to extrapolate the maximum residue level of 0.15 mg/kg and the STMR of 0.0525 mg/kg for peppers to the Subgroup of eggplants to replace its previous recommended maximum residue level of 0.1 mg/kg.

Chili peppers, dried

Based on the estimated maximum residue level of 0.15 mg/kg for the Subgroup of peppers (excluding Martynia, okra and Roselle) and applying a default processing factor of 10, the Meeting estimated a maximum residue level of 1.5 mg/kg for peppers, chili, dried, together with an STMR of 0.525 mg/kg parent equivalents (0.0525 mg/kg ×10), to replace its previous recommended maximum residue level of 2.0 mg/kg.

Leafy vegetables (including Brassica leafy vegetables)

The critical GAP for leafy vegetables (including Brassica leafy vegetables) is from Canada for “leafy vegetables”; 3 × 60 g ai/ha, 7 day-RTI, 1-day PHI. The Meeting received trials from Canada and the USA on leafy vegetables where 3 foliar spray applications were made at a nominal rate of 80 g ai/ha per application, 6–9 day RTI and 1-day PHI.

Head lettuce

Cyclaniliprole residues in head lettuce with wrapper leaves, in ranked order were (n = 7): 0.067, 0.26, 0.32, 0.56, 1.2, 1.4 and 2.2 mg/kg. Using scaling factors of 0.74–0.97, scaled residues in head lettuce with wrapper leaves in ranked order were (n = 7): 0.051, 0.19, 0.28, 0.54, 0.87, 1.04 and 2.14 mg/kg.

Total cyclaniliprole residues in head lettuce with wrapper leaves were in ranked order (n = 7): 0.096, 0.31, 0.36, 0.61, 1.4, 1.6 and 2.3 mg/kg. Using the same scaling factors, scaled total cyclaniliprole residues in head lettuce with wrapper leaves were in ranked order (n = 7): 0.074, 0.23, 0.32, 0.59, 1.02, 1.19 and 2.24 mg/kg.

Leaf lettuce

Cyclaniliprole residues in leaf lettuce in ranked order were (n = 10): 0.094, 0.25, 0.77, 0.86, 1.2, 1.3, 2.0, 2.2, 2.4 and 3.0 mg/kg. Using scaling factors of 0.73–0.98, scaled residues in ranked order were (n = 10): 0.072, 0.18, 0.57, 0.63, 0.97, 1.18, 1.82, 1.68, 1.97 and 2.27 mg/kg.

Total cyclaniliprole residues in leaf lettuce in ranked order were (n = 10): 0.11, 0.27, 0.79, 1.0, 1.3, 1.4, 2.2, 2.6 (2) and 3.3 mg/kg. Using the same scaling factors, scaled total cyclaniliprole residues were in ranked order (n = 10): 0.084, 0.20, 0.58, 0.73, 1.05, 1.28, 1.98 (2), 2.16 and 2.50 mg/kg.

Cos lettuce

In trials from the USA matching the critical GAP, cyclaniliprole residues in cos lettuce were (n = 3): 0.74, 0.76 and 0.94 mg/kg. Using scaling factors of 0.8–0.9, scaled residues were (n = 3): 0.57, 0.67 and 0.70 mg/kg.

Total cyclaniliprole residues in cos lettuce in ranked order were (n = 3): 0.84, 0.85 and 1.0 mg/kg. Using the same scaling factors, scaled total cyclaniliprole residues were (n = 3): 0.63, 0.75 and 0.77 mg/kg.

Spinach

Cyclaniliprole residues in spinach in ranked order were (n = 8): 1.4, 2.0, 2.3, 2.4, 2.8, 2.9, 3.4 and 4.6 mg/kg. Using scaling factors of 0.73–0.99, scaled residues in ranked order were (n = 8): 1.4, 1.8, 1.9, 2.1, 2.2, 2.5, 2.9 and 3.5 mg/kg.

Total cyclaniliprole residues in spinach in ranked order were (n = 8): 1.5, 2.1, 2.5, 2.7, 3.3 (2), 4.1 and 5.5 mg/kg. Using the same scaling factors, scaled total cyclaniliprole residues in ranked order were (n = 8): 1.5, 2.0 (2), 2.4 (2), 3.0, 3.3 and 4.2 mg/kg.

The Meeting noted that the scaled median residues of cyclaniliprole in head lettuce (with wrapper leaves), leaf lettuce, cos lettuce and spinach were within a 5-fold range. From the Kruskal-Wallis H-test, the datasets of head lettuce (with wrapper leaves), leaf lettuce, cos lettuce and spinach were not from the same population. Therefore, using the spinach dataset, the Meeting estimated a maximum residue level of 7 mg/kg and an STMR of 2.4 mg/kg for the Subgroup of Leafy greens.

Subgroup of Leaves of Brassicaceae

Mustard greens

Cyclaniliprole residues in mustard greens in ranked order were (n = 5): 1.4, 3.0, 4.0, 4.1, and 5.9 mg/kg. Using scaling factors of 0.75–0.98, scaled residues in ranked order were (n = 5): 1.4, 3.0 (2), 4.0 and 4.4 mg/kg.

Total cyclaniliprole residues in mustard greens in ranked order were (n = 5): 1.5, 3.5, 4.3, 4.4 and 6.2 mg/kg. Using the same scaling factors, scaled total cyclaniliprole residues in ranked order were (n = 5): 1.5, 3.2, 3.5, 4.3 and 4.6 mg/kg.

Noting that mustard greens is the representative crop of the leaves of brassicaceae subgroup, the Meeting estimated a maximum residue level of 10 mg/kg and an STMR of 3.5 mg/kg for the Subgroup of leaves of brassicaceae to replace its previous recommended maximum residue level of 15 mg/kg.

The Meeting estimated a median residue value of 3.0 mg /kg and a highest residue of 4.4 mg/kg, both for parent only, for the Subgroup of leaves of brassicaceae for livestock dietary burden calculations.

Tuberous and Corm Vegetables

The critical GAP for tuberous and corm vegetables is from Canada; 3×60 g ai/ha, 5 day RTI, 7-day PHI. The Meeting received trials from Canada and the USA on potatoes where 3 foliar spray applications were made at a 100 g ai/ha per application, 4–6-day RTI and 6–7-day PHI.

Cyclaniliprole residues in potatoes were all < 0.01 mg/kg (n = 25) when treated at seasonal application rates of 214-308 g ai/ha, equivalent to 1.2–1.7-fold the critical GAP in Canada. Therefore, when treated in accordance with the critical GAP from Canada, residues of cyclaniliprole in potatoes are not expected to be quantifiable.

Total cyclaniliprole residues in potatoes were all < 0.01 mg/kg (n = 25) following treatment at exaggerated rates (1.2–1.7-fold the critical GAP in Canada). Therefore, when treated in accordance with the critical GAP from Canada, total residues of cyclaniliprole in potatoes are not expected to be quantifiable.

The Meeting estimated a maximum residue level of 0.01(*) mg/kg and an STMR of 0 mg/kg parent equivalents for the Subgroup of Tuberous and corm vegetables .

The Meeting estimated a median residue value of 0 mg/kg (parent only) for potatoes for livestock dietary burden calculations.

Tree Nuts

The critical GAP for tree nuts is from Canada: 3 × 80 g ai/ha, 14 day-RTI, 30-day PHI. The Meeting received trials from the USA on tree nuts where 3 foliar spray applications were made at a nominal rate of 100 g ai/ha per application, 12–15 day RTI and 30-day PHI for almonds and 14–30 days for pecans.

Almonds

Cyclaniliprole residues in almond nutmeats in ranked order were (n = 5): < 0.01 (2), 0.013 (2) and 0.015 mg/kg. Using scaling factors of ~0.8, scaled residues in ranked order were (n = 5): < 0.01 (2), 0.010 (2) and 0.012 mg/kg.

Total cyclaniliprole residues in almond nutmeats in ranked order were (n = 5): < 0.01 (2), 0.024 (2) and 0.026 mg/kg. Using the same scaling factors, scaled total cyclaniliprole residues in ranked order were (n = 5): < 0.01 (2), 0.019 (2) and 0.021 mg/kg.

The Meeting estimated a maximum residue level of 0.03 mg/kg and an STMR of 0.019 mg/kg for almonds.

Pecans

Two of the five pecan field trials from the USA differed from the critical GAP with regard to the pre-harvest interval. Therefore, due to the insufficient number of trials, conducted in accordance with the critical GAP, the Meeting did not estimate a maximum residue level and STMR for pecans.

Tea

The critical GAP for tea is from Japan: 1 × 4.5 g ai/hL and a 3-day PHI.

In trials from Japan matching the critical GAP, cyclaniliprole residues in dried tea leaves in ranked order were (n = 6): 4.8, 6.8, 8.4, 13, 16 and 28 mg/kg.

The total cyclaniliprole residues in dried tea leaves in ranked order were (n = 6): 4.9, 7.5, 11, 14, 17 and 30 mg/kg.

The Meeting estimated a maximum residue level of 50 mg/kg and an STMR of 12.5 mg/kg for tea, green, black (black, fermented and dried).

Miscellaneous fodder and forage

Almond hulls

The critical GAP for tree nuts is from Canada: 3×80 g ai/ha, 14 day-RTI, 30-day PHI. The Meeting received trials from the USA on almonds where 3 foliar spray applications were made at a nominal rate of 100 g ai/ha/application, 13–15 day RTI and 30–31 day PHI.

Cyclaniliprole residues in almond hulls, on a dry weight basis, in ranked order were (n = 5): 1.8, 2.0, 2.1, 2.5 and 3.3 mg/kg. Using scaling factors of ~0.8, scaled residues in ranked order were (n = 5): 1.4, 1.6, 1.7, 2.0 and 2.6 mg/kg.

The Meeting estimated a maximum residue level of 6 mg/kg and median residue of 1.7 mg/kg for almond hulls.

Residues in processed commodities

At the current Meeting, processing studies were reviewed for oranges and potatoes, while at the 2017 Meeting processing studies were reviewed for apples, peaches, tomatoes, plums, grapes, and tea. Maximum residue levels in processed commodities are only proposed where they are higher than the maximum residue levels in the raw commodity. For maximum residue level derivation the processing factors are based on parent only. For estimation of the dietary exposure, STMR-P's were based on the processing factors for parent + metabolite NK-1375 (separate table).

Table 36 Maximum Residue Level Derivation for Processed Commodities

Raw Agricultural Commodity (RAC)	Processed Commodity	PF (parent only)	PF (best estimate)	MRL × PF (mg/kg)
Citrus fruit [MRL = 0.4 mg/kg]	Citrus, oil	116[a]	116 (n = 1)	50
Plum [MRL = 0.15]	Prunes	3.7	3.7 (n = 1)	0.6
Tomato [MRL = 0.08]	Tomato, dried	3.33, 3.75, 3.8, 4, 5.5	3.8 (median, n = 5)	0.35

[a] Noting that the Meeting is recommending a maximum residue level for the Group of citrus fruits, the processing factor for orange was extrapolated to the entire citrus fruit crop group.

Cyclaniliprole residues were shown to concentrate in citrus oil, prunes, and tomato, dried.

The Meeting estimated a maximum residue level of 50 mg/kg (0.4 mg/kg × 116 = 46.4 mg/kg) for citrus oil. The Meeting also estimated maximum residue levels of 0.6 mg/kg (0.15 mg/kg × 3.7 = 0.56 mg/kg) for prunes and 0.35 mg/kg (0.08 mg/kg × 3.8 = 0.30 mg/kg) for tomato, dried to replace its previous recommended maximum residue levels of 0.8 mg/kg and 0.4 mg/kg, respectively, for these processed commodities.

Table 37 Derivation of STMR-Ps for dietary exposure estimation

Commodity	PF (parent + NK-1375)	PF (best estimate)	RAC STMR (mg/kg)	STMR-P (mg/kg)
Citrus fruit			0.087	

Commodity	PF (parent + NK-1375)	PF (best estimate)	RAC STMR (mg/kg)	STMR-P (mg/kg)
- juice	0.12	0.12 (n = 1)		0.01
- oil	116	116 (n = 1)		10.1
Apples			0.057	
- juice, pasteurised	0.13, < 0.33, < 0.5	< 0.33 (median, n = 3)		0.019
Plums			0.052	
- dried	3.7 [a]	3.7 (n = 1)		0.19
Grapes			0.12	
- must	0.63, 0.63, 0.71, 0.86	0.67 (median n = 4)		0.08
- juice, pasteurised	0.20, 0.12, 0.33, 0.38, 0.50, 0.71	0.36 (median, n = 6)		0.04
- wine, stored	0.14, 0.20, < 0.33, 0.38, 0.040, 0.50	0.355 (median, n = 6)		0.04
Tomatoes			0.033	
- canned	< 0.14, < 0.17, < 0.2, < 0.5, < 0.5	0.14 (median, n = 5)		0.005
- paste	0.49, 0.50, 0.67, 1.57, 1.8, 2.5	1.12 (median, n = 6)		0.04
- juice, pasteurised	< 0.5, 0.17, 0.8, 1.14, 1.5	0.8 (median, n = 6)		0.03
- dried	3, 3.2, 3.3, 5, 6	3.3 (median, n = 5)		0.11
Potatoes			0	
-crisps	< 0.26	< 0.26 (n = 1)		0
-flakes/granules	< 0.26	< 0.26 (n = 1)		0
Tea			13	
- -infusion	0.09 (3), 0.13 (2), 0.14, 0.17 (3), 0.19	0.14 (median)		1.8

PF based on total cyclaniliprole; cyclaniliprole + NK-1375 expressed as parent equivalents

STMR-P is used for the dietary exposure estimates and is based on the residue definition for dietary risk assessment: cyclaniliprole + NK-1375 expressed as parent equivalents

Livestock dietary burden

The Meeting estimated the livestock dietary burden for cyclaniliprole on the basis of the diets (USA/Canada, EU, Australia and Japan) listed in the OECD Feed Table 2018. Calculation from highest residue and median values (some bulk commodities) provide the levels in feed suitable for estimating maximum and highest residue levels while calculation from median values for feed is suitable for estimating STMR values for animal commodities.

The commodities used in estimating livestock dietary burdens are included in the table below and capture both the feed items assesssed at the 2017 Meeting together with the new feed items assessed by the current Meeting. In the rotational crop studies, reviewed by the 2017 Meeting, residues of cyclaniliprole were detected in wheat straw and forage. For the dietary burden calculation, these levels were extrapolated to the straw/hay (dry feed commodities) and forage (wet feed commodities) of the whole group of cereal grain crops. The input was based on the intake of parent only.

Table 38 Commodities for consideration in dietary burden calculations

Codex Classification	Commodity	Median residue (-P) (mg/kg)	Highest residue (-P) (mg/kg)
AB 0001	Citrus pulp, dry (median 0.078 mg/kg × PF 1.27)	0.099	
AB 0226	Apple pomace, wet (median 0.047 mg/kg ×PF 3.2)	0.15	-
AB 0269	Grape pomace, wet (median 0.11 mg/kg ×PF 1.7)	0.19	-
VL 0054	Leaves of Brassicaceae, (based on mustard greens dataset)	3.0	4.4

Codex Classification	Commodity	Median residue (-P) (mg/kg)	Highest residue (-P) (mg/kg)
VB 0041	Cabbages, head	0.024	0.38
AB – no code	Tomato pomace, wet (median of 0.024×PF 0.67)	0.02	-
	Potato, wet peels (median of 0 × PF 4.25)	0	
AF – no code	Barley, forage (30% DM)	0.01	0.026
AS 0640	Barley, hay (88% DM)	0.0475	0.18
AS 0641	Barley, straw (89% DM)	0.0475	0.18
AF/AS – no code	Corn, field, forage/silage (40% DM)	0.01	0.026
AS 0645	Corn, field, stover (83% DM)	0.0475	0.18
AF – no code	Corn, pop, stover (83% DM)	0.0475	0.18
AF – no code	Corn, sweet, forage (48% DM)	0.01	0.026
AF – no code	Corn, sweet, stover (83% DM)	0.0475	0.18
AF – no code	Millet, forage (30% DM)	0.01	0.026
AF – no code	Millet, hay (85% DM)	0.0475	0.18
AF 0646	Millet, straw (90% DM)	0.0475	0.18
AF 0647	Oat, forage (30% DM)	0.01	0.026
AS 0647	Oat, hay (90% DM)	0.0475	0.18
AF – no code	Oat, straw (90% DM)	0.0475	0.18
AS0469	Rice, straw (90% DM)	0.0475	0.18
AF0650	Rye, forage (30% DM)	0.01	0.026
AS0650	Rye, straw (88% DM)	0.0475	0.18
AF0651	Sorghum, grain, forage (35% DM)	0.01	0.026
AS – no code	Sorghum, grain, stover (88% DM)	0.0475	0.18
AF – no code	Triticale, forage (30% DM)	0.01	0.026
AF – no code	Triticale, hay (88% DM)	0.0475	0.18
AF – no code	Triticale, straw (90% DM)	0.0475	0.18
AF 0654	Wheat forage (25% DM)	0.01	0.026
AS 0654	Wheat, hay (88% DM)	0.0475	0.18
AS 0654	Wheat, straw (88% DM	0.0475	0.18
AM 0660	Almond hulls	1.7	-

Note: levels for cereal straw, hay, and forage are presented on as received basis.

The dietary burden calculations for cyclaniliprole for beef cattle, dairy cattle, broilers and laying poultry are provided in Annex 6 of the 2019 JMPR Report and summarized below.

Table 39 Livestock dietary burden for cyclaniliprole

		Livestock dietary burden for cyclaniliprole (based on cyclaniliprole parent only) ppm of dry matter diet			
		USA/Canada	EU	Australia	Japan
Max	beef cattle	0.06	9.0	14.7[A]	0.11
	dairy cattle	4.52	6.0	12.1[B]	0.07
	poultry – broiler	-	0.005	-	-
	poultry – layer	-	1.49[C]	-	-
Mean	beef cattle	0.021	6.10	10.0[D]	0.03

	dairy cattle	3.06	4.07	8.3[E]	0.02
	poultry – broiler	-	-	-	-
	poultry – layer	-	1.00[F]	-	-

[A] Highest maximum beef cattle dietary burden suitable for maximum residue level estimates for mammalian meat.

[B] Highest maximum dairy cattle dietary burden suitable for maximum residue level estimates for milk.

[c] Highest maximum poultry-layer dietary burden suitable for maximum residue level estimates for poultry meat and eggs.

[D] Highest mean beef cattle dietary burden suitable for STMR estimates for mammalian meat.

[E] Highest mean dairy cattle dietary burden suitable for STMR estimates for milk.

[F] Highest mean poultry-layer dietary burden suitable for STMR estimates for poultry meat and eggs.

Animal commodity maximum residue levels

Table 40 Animal commodity residue levels for mammalian matrices

	Feeding level (ppm) for milk residues	Residues (mg/kg) in milk cream [a]	Feed level (ppm) for tissue residues	Residues (mg/kg) in			
				Muscle	Liver	Kidney	Fat
MRL beef or dairy cattle							
Feeding study [b]	3.5	0.02	3.5	< 0.01	0.040	0.045	0.045
	11.6	0.078	11.6	0.032	0.141	0.114	0.199
Dietary burden and high residue estimate	12.1	0.078	14.7	0.032	0.141	0.114	0.199
STMR beef or dairy cattle							
Feeding study [c]	3.5	0.02	3.5	< 0.01	0.021	0.022	0.023
	11.6	0.078	11.6	0.018	0.071	0.059	0.074
Dietary burden and mean residue estimate	8.3	0.054	10.0	0.016	0.061	0.052	0.064

[a] No residues were found in skimmed milk, all residues were detected in milk cream which contains 50% milk fat, therefore residues in milk fat are 0.156 mg/kg (0.078 mg/kg ÷ 0.50). Based on the default milk fat content of 4% for whole milk, the maximum residue level and STMR for mammalian milk were estimated at 0.01 mg/kg (0.156 × 0.04 = 0.006) and 0.004 mg/kg ((0.054 ÷ 0.5) × 0.04 = 0.004), respectively.

[b] Highest residue for tissues and milk cream

[c] Mean residues for tissues and milk cream

The Meeting estimated maximum residue levels of 0.01 mg/kg for milks, 0.2 mg/kg for milk fats, 0.25 mg/kg for meat, based on fat (from mammals other than marine mammals) and mammalian fats (except milk fats) and 0.2 mg/kg for edible offal (mammalian). The Meeting estimated STMRs of 0.004 mg/kg for milks, 0.108 mg/kg for milk fats, 0.016 mg/kg for meat (muscle), 0.061 mg/kg for liver, 0.052 mg/kg for kidney and 0.064 mg/kg for mammalian fat. These recommendations are intended to replace all previous recommendations for all ruminant matrices.

Poultry

In the absence of a poultry feeding study, the Meeting relied on the laying hen metabolism study to determine the maximum residue levels and STMRs in poultry commodities.

Table 41 Animal commodity residue levels for poultry matrices

	Dose level (ppm) for egg	Cyclaniliprole TRRs in eggs (mg eq/kg)	Dose level (ppm) for tissue TRRs	TRRs (mg eq/kg) in

	TRRs						
				Fat	Skin	Muscle	Liver
Dose level from metabolism study	10.8	0.156	10.8	0.158	0.09	0.006	0.17
Dietary burden and high residue estimate	1.49	0.0004	1.49	0.0004	0.0002	0.00001	0.0004
Dietary burden and mean residue estimate	1.0	0.00027	1.0	0.00027	0.00013	0.000007	0.00027

The Meeting estimated maximum residue levels of 0.01(*) mg/kg for eggs and poultry fats, meat and edible offal and STMRs of 0 for these poultry commodities.

RECOMMENDATIONS

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

Definition of the residue for compliance with the MRL for plant and animal commodities: *cyclaniliprole.*

Definition of the residue for dietary risk assessment for plant commodities: *cyclaniliprole + 3-bromo-2-((2-bromo-4H- pyrazolo[1,5-d]pyrido[3,2-b]-[1,4]oxazin-4-ylidene)amino)-5-chloro-N-(1-cyclopropylethyl)benzamide (NK-1375), expressed as cyclaniliprole equivalents.* The molecular weight conversion factor to express NK-1375 in cyclaniliprole equivalents = 1.064.

Definition of the residue for dietary risk assessment for animal commodities: *cyclaniliprole*

The residue is fat-soluble.

The Meeting maintained its previous recommendation for the maximum residue level of 0.45 mg/kg (dw) in straw and fodder, dry of cereal grains (AS 0081).

Table 42 Residue levels suitable for establishing maximum residue limits and for IEDI and IESTI assessments

CCN	Commodity name	Maximum residue levels (mg/kg)		STMR (-P) (mg/kg)	HR (-P) (mg/kg)
		New	Previous		
TN 0660	Almonds	0.03		0.019	
AM 0660	Almond hulls	6		Median: 1.7	
FB 2006	Subgroup of Bush berries	1.5		0.275	
FB 0267	Elderberries	1.5		0.275	
FB 2254	Guelder rose	1.5		0.275	
FB 2005	Subgroup of Cane berries	0.8		0.27	
FS 0013	Subgroup of Cherries	0.7	0.9	0.14	-
VB 0041	Cabbages, head	0.7		0.0325	
VO 2700	Cherry Tomato	W	0.1		-
FC 0001	Group of Citrus fruit	0.4	-	0.087	

CCN	Commodity name	Maximum residue levels (mg/kg)		STMR (-P) (mg/kg)	HR (-P) (mg/kg)
		New	Previous		
OR 0001	Citrus oil, edible	50		10.1	
VC 2039	Subgroup of Cucumbers and summer squashes	0.05	0.06	0.021	-
DV 0448	Tomato, dried	0.35	0.4	0.11	-
MO 0105	Edible offal (mammalian)	0.2	0.01(*)	Kidney: 0.052 Liver: 0.061	-
VO 2046	Subgroup of Eggplants	0.15	0.1	0.0525	-
PE 0112	Eggs	0.01(*)		0	
VB 0042	Subgroup of Flowerhead Brassicas	0.8	1	0.28	-
FB 0269	Grapes	0.6	0.8	0.12	-
VB 2036	Subgroup of Head Brassicas	W	0.7		-
VL 2050	Subgroup of Leafy greens	7		2.4	
VL 0054	Subgroup of Leaves of Brassicaceae	10	15	3.5	-
MM 0095	Meat (from mammals other than marine mammals)	0.25 (fat)	0.01(*) (fat)	Muscle: 0.016 Fat: 0.064	-
FB 2009	Subgroup of Low growing berries, except cranberries	0.4		0.12	
VC 2040	Subgroup of Melons, pumpkins and winter squashes	0.1	0.15	0.041	-
MF 0100	Mammalian fats (except milk fats)	0.25	0.01(*)	0.064	-
ML 0106	Milks	0.01	0.01(*)	0.004	
FM 0183	Milk fats	0.2	0.01(*)	0.108	-
VO 0051	Subgroup of Peppers (excluding Martynia, Okra and Roselle)	0.15	0.2	0.0525	-
HS 0444	Peppers, Chili, dried	1.5	2	0.525	-
FS 2001	Subgroup of Peaches (including Apricots and Nectarines)	0.3	0.3	0.053	
FP 0009	Group of Pome fruits	W	0.3		-
FP 0009	Group of Pome fruits (excluding Japanese persimmons)	0.2	-	0.057	
FS 0014	Subgroup of Plums	0.15	0.2	0.052	-
PO 0111	Poultry, edible offal	0.01(*)	0		
PF 0111	Poultry, fats	0.01(*)	0		
PM 0110	Poultry, meat	0.01(*)	0		
DT 1114	Tea, green, black (black, fermented and dried)	50		12.5	
VO 2045	Subgroup of Tomatoes	0.08		0.033	
VR 2071	Subgroup of Tuberous and corm vegetables	0.01(*)		0	
DF 0014	Prunes	0.6	0.8	0.19	-
VO 0448	Tomato	W	0.1		-

Table 43 Recommendations for dietary intake only

CCN	Commodity name	New MRL (mg/kg)	Previous MRL (mg/kg)	STMR-P (mg/kg)	HR-P (mg/kg)
	Citrus juice	-	-	0.01	
JF 0226	Apple, juice	-	-	0.019	-
-	Grape, must	-	-	0.08	-
JF 0269	Grape, juice	-	-	0.04	-
-	Grape, wine	-	-	0.04	-
	Potato crisps	-	-	0	-
	Potato flakes/granules	-	-	0	-
	Tea infusion	-	-	1.8	-
-	Tomato, canned	-	-	0.005	-
VW 0448	Tomato, paste	-	-	0.04	-
JF 0448	Tomato, juice	-	-	0.03	-

Table 44 Additional recommendations for feed commodities for calculation of the dietary burdens

CNN	Commodity	MRL (mg/kg)	Previous MRL (mg/kg)	Median (-P) residue (mg/kg)	Highest residue (mg/kg)
AB 0001	Citrus pulp, dry	-	-	0.099	-
AB 0226	Apple pomace, wet (as received)	-	-	0.15	-
AB 0269	Grape pomace, wet (as received)	-	-	0.19	-
AB 0448	Tomato pomace, wet (as received)	-	-	0.02	-
VB 0041	Cabbages, head			0.024	0.38
AV 0480	Leaves of Brassicaceae, (based on mustard greens dataset)	-	-	3.0	4.4
	Potato, wet peels	-	-	0	-

dw-dry weight

[ar] Based on as received basis.

DIETARY RISK ASSESSMENT

Long-term dietary exposure

The ADI for cyclaniliprole is 0–0.04 mg/kg bw. The International Estimated Daily Intakes (IEDIs) for cyclaniliprole were estimated for the 17 GEMS/Food Consumption Cluster Diets using the STMR or STMR-P values estimated by the JMPR. The results are shown in Annex 3 of the 2019 JMPR Report.

The IEDIs ranged from 1–10% of the maximum ADI. The Meeting concluded that long-term dietary exposure to residues of cyclaniliprole from uses considered by the JMPR is unlikely to present a public health concern.

Acute dietary exposure

The 2017 JMPR decided that an ARfD for cyclaniliprole was unnecessary. The Meeting therefore concluded that the acute dietary exposure to residues of cyclaniliprole from the uses considered is unlikely to present a public health concern.

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