Aphid Monitor NORTHERN IRELAND

Department of Agriculture, Environment and Rural Affairs

afbi Agri-Food and Biosciences Institute

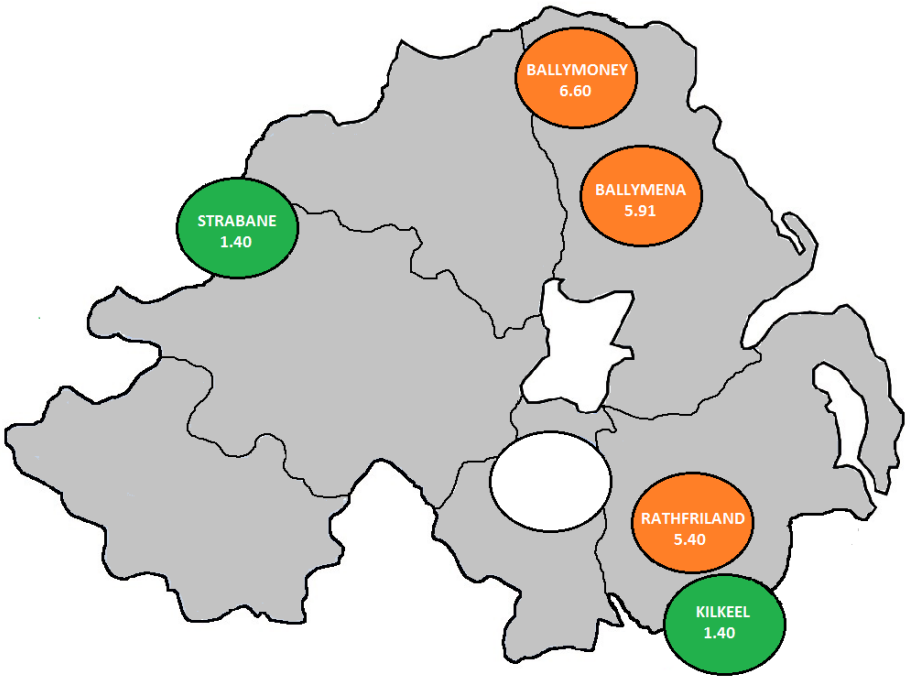
cafre College of Agriculture Food & Rural Enterprise

WEEK ENDING

3rd August 2018 - Week 10

Site	Activity report
Ballymena	Moderate risk: 28 *Macrosiphum euphorbiae* (Potato Aphid), 1 *Metopolophium dirhodum* (Rose-Grain Aphid) and 1 *Brevicoryne brassicae* (Cabbage Aphid) recorded at this site.
Ballymoney	Moderate risk: 10 *Rhopalosiphum padi* (Bird Cherry-Oat Aphid), 4 *Sitobion avenae* (Grain Aphid) and 1 *Macrosiphum euphorbiae* (Potato Aphid) recorded at this site.
Kilkeel	Low risk: 1 *Rhopalosiphum padi* (Bird Cherry-Oat Aphid) and 1 *Myzus persicae* (Peach-potato Aphid) recorded at this site.
Loughgall	No Sample Received
Rathfriland	Moderate risk: 1 *Sitobion avenae* (Grain Aphid), 7 *Macrosiphum euphorbiae* (Potato Aphid), 7 *Metopolophium dirhodum* (Rose-Grain Aphid), 12 *Aphis fabae* (Black-bean Aphid) and 10 *Brevicoryne brassicae* (Cabbage Aphid) recorded at this site.
Strabane	Low risk: 1 *Sitobion avenae* (Grain Aphid) and 4 *Macrosiphum euphorbiae* (Potato Aphid) recorded at this site.

Current status:



Key		
	LOW RISK	Low virus vector activiy, no action required
	MODERATE RISK	Increased vigilance and monitoring of aphid populations required
	HIGH RISK	Severe risk of PVY transmission by aphids
	NO SAMPLE	No sampe received for this location

Ballymena

Week ending:

Aphid Species	Common Name	PVY Index	01-Jun		08-Jun		15-Jun		22-Jun		29-Jun		06-Jul		13-Jul		20-Jul		27-Jul		03-Aug		10-Aug		17-Aug		24-Aug		31-Aug		07-Sep		14-Sep		21-Sep		28-Sep		Total PVY Index
Cavariella aegopodii	**Willow-carrot Aphid**	**0.50**							**1**	**0.50**																													**0.50**
Rhopalosiphum padi	**Bird Cherry-Oat Aphid**	**0.40**																																					
Sitobion avenae	**Grain Aphid**	**0.60**																	**1**	**0.60**																			**0.60**
Myzus persicae	**Peach-potato Aphid**	**1.00**																																					
Cavariella pastinacea		0.00															1	0.00	1	0.00	1	0.00																	
Acyrthosiphon pisum	**Pea Aphid**	**0.70**													**1**	**0.70**	**1**	**0.70**																					**1.40**
Brachycaudus helichrysi	**Leaf-Curling Plum Aphid**	**0.21**																																					
Microlophium evansi		0.00																																					
Hyperomyzus lactucae	**Currant-sowthistle Aphid**	**0.16**																																					
Macrosiphum euphorbiae	**Potato Aphid**	**0.20**							**1**	**0.20**			**1**	**0.20**			**8**	**1.60**	**6**	**1.20**	**28**	**5.60**																	**8.80**
Drepanosiphum platanoides	Sycamore Aphid	0.00							2	0.00	1	0.00			2	0.00			1	0.00																			
Sitobion fragariae	Blackberry-cereal Aphid	0.00																																					
Metopolophium dirhodum	**Rose-Grain Aphid**	**0.30**													**1**	**0.30**			**2**	**0.60**	**1**	**0.30**																	**1.20**
Aphis fabae	**Black-bean Aphid**	**0.10**																																					
Aphis rumicus		0.00													1	0.00																							
Brevicoryne brassicae	**Cabbage Aphid**	**0.01**																			**1**	**0.01**																	**0.01**
Capitophorus horni		0.00																																					
Capitophorus similis		0.00																																					
Phyllaphis fagi		0.00																																					
Chaitophorus populeti		0.00																																					
Rhopalosiphoninus staphyleae		0.00																																					
Cavariella theobaldi		0.00									1	0.00																											
Euceraphis punctipennis		0.00																	2	0.00																			
Tuberculatus borealis		0.00																																					
Uromelan spp.		0.00																																					
Hyadaphis foeniculi		0.00									1	0.00																											
Ovatus insitus		0.00																																					
Macrosiphum rosae		0.00							1	0.00																													
Rhopalomyzus lonicerae		0.00							1	0.00																													
Lipamyzodes matthiolae		0.00									1	0.00																											
Elatobium Abietinum		0.00									1	0.00																											
Cavariella konoi		0.00									1	0.00																											
Thecabius affinis		0.00															1	0.00																					
Capitophorus hippophaes		0.00															1	0.00	2	0.00																			
Cryptomyzus galeopsidis		0.00																	2	0.00	1	0.00																	
Metopolophium festucae		0.00																			2	0.00																	
Rhopalosiphum insertum		0.00																			2	0.00																	
Others		0.00																																					
Weekly Index				**0.00**		**0.00**		**0.00**		**0.70**		**0.00**		**0.20**		**1.00**		**2.30**		**2.40**		**5.91**		**0.00**		**0.00**		**0.00**		**0.00**		**0.00**		**0.00**		**0.00**		**0.00**	**12.51**
Cumulative Index				**0.00**		**0.00**		**0.00**		**0.70**		**0.70**		**0.90**		**1.90**		**4.20**		**6.60**		**12.51**		**12.51**		**12.51**		**12.51**		**12.51**		**12.51**		**12.51**		**12.51**		**12.51**	

Ballymoney

Week ending:

Aphid Species	Common Name	PVY Index	01-Jun		08-Jun		15-Jun		22-Jun		29-Jun		06-Jul		13-Jul		20-Jul		27-Jul		03-Aug		10-Aug		17-Aug		24-Aug		31-Aug		07-Sep		14-Sep		21-Sep		28-Sep		Total PVY Index
Cavariella aegopodii	**Willow-carrot Aphid**	**0.50**					**8**	**4.00**																															**4.00**
Rhopalosiphum padi	**Bird Cherry-Oat Aphid**	**0.40**											**1**	**0.40**			**1**	**0.40**	**1**	**0.40**	**10**	**4.00**																	**5.20**
Sitobion avenae	**Grain Aphid**	**0.60**																			**4**	**2.40**																	**2.40**
Myzus persicae	**Peach-potato Aphid**	**1.00**													**2**	**2.00**																							**2.00**
Cavariella pastinacea		0.00							1	0.00																													
Acyrthosiphon pisum	**Pea Aphid**	**0.70**					**2**	**1.40**					**1**	**0.70**																									**2.10**
Brachycaudus helichrysi	**Leaf-Curling Plum Aphid**	**0.21**																																					
Microlophium evansi		0.00																																					
Hyperomyzus lactucae	**Currant-sowthistle Aphid**	**0.16**					**1**	**0.16**																															**0.16**
Macrosiphum euphorbiae	**Potato Aphid**	**0.20**					**6**	**1.20**	**1**	**0.20**							**2**	**0.40**	**3**	**0.60**	**1**	**0.20**																	**2.60**
Drepanosiphum platanoides	Sycamore Aphid	0.00					1	0.00	6	0.00							1	0.00																					
Sitobion fragariae	Blackberry-cereal Aphid	0.00																																					
Metopolophium dirhodum	**Rose-Grain Aphid**	**0.30**					**2**	**0.60**							**2**	**0.60**																							**1.20**
Aphis fabae	**Black-bean Aphid**	**0.10**									**1**	**0.10**																											**0.10**
Aphis rumicus		0.00													1	0.00					1	0.00																	
Brevicoryne brassicae	**Cabbage Aphid**	**0.01**																																					
Capitophorus horni		0.00																																					
Capitophorus similis		0.00																																					
Phyllaphis fagi		0.00					1	0.00																															
Chaitophorus populeti		0.00																																					
Rhopalosiphoninus staphyleae		0.00																																					
Cavariella theobaldi		0.00																																					
Euceraphis punctipennis		0.00																																					
Tuberculatus borealis		0.00																																					
Uromelan spp.		0.00																																					
Hyadaphis foeniculi		0.00					1	0.00																															
Ovatus insitus		0.00																																					
Sitobion eastopi		0.00					2	0.00																															
Sipha glyceriae		0.00					5	0.00																															
Utamphorophora humboldti		0.00																	1	0.00																			
Wahigreniella arbuti		0.00																			1	0.00																	
Others		0.00													2	0.00			1	0.00																			
Weekly Index				**0.00**		**0.00**		**7.36**		**0.20**		**0.10**		**1.10**		**2.60**		**0.80**		**1.00**		**6.60**		**0.00**		**0.00**		**0.00**		**0.00**		**0.00**		**0.00**		**0.00**		**0.00**	**19.76**
Cumulative Index				**0.00**		**0.00**		**7.36**		**7.56**		**7.66**		**8.76**		**11.36**		**12.16**		**13.16**		**19.76**		**19.76**		**19.76**		**19.76**		**19.76**		**19.76**		**19.76**		**19.76**		**19.76**	

Kilkeel

Week ending:

Aphid Species	Common Name	PVY Index	01-Jun		08-Jun		15-Jun		22-Jun		29-Jun		06-Jul		13-Jul		20-Jul		27-Jul		03-Aug		10-Aug		17-Aug		24-Aug		31-Aug		07-Sep		14-Sep		21-Sep		28-Sep		Total PVY Index
Cavariella aegopodii	**Willow-carrot Aphid**	**0.50**																																					
Rhopalosiphum padi	**Bird Cherry-Oat Aphid**	**0.40**											**2**	**0.80**							**1**	**0.40**																	**1.20**
Sitobion avenae	**Grain Aphid**	**0.60**																																					
Myzus persicae	**Peach-potato Aphid**	**1.00**							**1**	**1.00**									**2**	**2.00**	**1**	**1.00**																	**4.00**
Cavariella pastinacea		0.00																			1	0.00																	
Acyrthosiphon pisum	**Pea Aphid**	**0.70**													**1**	**0.70**																							**0.70**
Brachycaudus helichrysi	**Leaf-Curling Plum Aphid**	**0.21**															**1**	**0.21**																					**0.21**
Microlophium evansi		0.00							1	0.00																													
Hyperomyzus lactucae	**Currant-sowthistle Aphid**	**0.16**																																					
Macrosiphum euphorbiae	**Potato Aphid**	**0.20**							**1**	**0.20**	**2**	**0.40**	**13**	**2.60**	**7**	**1.40**	**3**	**0.60**	**4**	**0.80**																			**6.00**
Drepanosiphum platanoides	Sycamore Aphid	0.00									1	0.00																											
Sitobion fragariae	Blackberry-cereal Aphid	0.00																	1	0.00																			
Metopolophium dirhodum	**Rose-Grain Aphid**	**0.30**							**2**	**0.60**	**1**	**0.30**	**1**	**0.30**	**5**	**1.50**	**6**	**1.80**	**1**	**0.30**																			**4.80**
Aphis fabae	**Black-bean Aphid**	**0.10**																																					
Capitophorus similis		0.00																																					
Aphis rumicus		0.00																																					
Brevicoryne brassicae	**Cabbage Aphid**	**0.01**																	**6**	**0.06**																			**0.06**
Hyadahis foeniculi		0.00																																					
Rhopalomyzus poae		0.00																																					
Uromelan spp.		0.00																																					
Acyrthosiphon primulae		0.00																																					
Rhopalosiphoninus staphyleae		0.00																																					
Hyalopterus pruni		0.00																																					
Tetraneura ulmi		0.00																																					
Anoecia spp.		0.00																																					
Acyrthosiphon loti		0.00					1	0.00																															
Utamphorophora humboldti		0.00							1	0.00									1	0.00																			
Lipamyzodes matthiolae		0.00							1	0.00																													
Eriosoma ulmi		0.00							2	0.00																													
Phyllaphis fagi		0.00									1	0.00																											
Metopolophium festucae		0.00											1	0.00																									
Nasonovia ribisnigri		0.00																			1	0.00																	
Others		0.00													4	**0.00**																							
Weekly Index				**0.00**		**0.00**		**0.00**		**1.80**		**0.70**		**3.70**		**3.60**		**2.61**		**3.16**		**1.40**		**0.00**		**0.00**		**0.00**		**0.00**		**0.00**		**0.00**		**0.00**		**0.00**	**16.97**
Cumulative Index				**0.00**		**0.00**		**0.00**		**1.80**		**2.50**		**6.20**		**9.80**		**12.41**		**15.57**		**16.97**		**16.97**		**16.97**		**16.97**		**16.97**		**16.97**		**16.97**		**16.97**		**16.97**	

Loughgall

Week ending:

Aphid Species	Common Name	PVY Index	01-Jun		08-Jun		15-Jun		22-Jun		29-Jun		06-Jul		13-Jul		20-Jul		27-Jul		03-Aug		10-Aug		17-Aug		24-Aug		31-Aug		07-Sep		14-Sep		21-Sep		28-Sep		Total PVY Index
Cavariella aegopodii	**Willow-carrot Aphid**	**0.50**																																					
Rhopalosiphum padi	**Bird Cherry-Oat Aphid**	**0.40**																																					
Sitobion avenae	**Grain Aphid**	**0.60**													**2**	**1.20**	**2**	**1.20**	**1**	**0.60**																			**3.00**
Myzus persicae	**Peach-potato Aphid**	**1.00**											**6**	**6.00**	**17**	**17.00**																							**23.00**
Cavariella pastinacea		0.00													1	0.00			2	0.00																			
Acyrthosiphon pisum	**Pea Aphid**	**0.70**													**1**	**0.70**																							**0.70**
Brachycaudus helichrysi	**Leaf-Curling Plum Aphid**	**0.21**											**1**	**0.21**																									**0.21**
Microlophium evansi		0.00											1	0.00																									
Hyperomyzus lactucae	**Currant-sowthistle Aphid**	**0.16**																																					
Macrosiphum euphorbiae	**Potato Aphid**	**0.20**											**1**	**0.20**			**4**	**0.80**	**1**	**0.20**																			**1.20**
Drepanosiphum platanoides	Sycamore Aphid	0.00																																					
Sitobion fragariae	Blackberry-cereal Aphid	0.00																	1	0.00																			
Metopolophium dirhodum	**Rose-Grain Aphid**	**0.30**											**1**	**0.30**	**1**	**0.30**	**3**	**0.90**	**1**	**0.30**																			**1.80**
Aphis fabae	**Black-bean Aphid**	**0.10**											**2**	**0.20**																									**0.20**
Capitophorus similis		0.00																																					
Aphis rumicus		0.00																																					
Brevicoryne brassicae	**Cabbage Aphid**	**0.01**																																					
Cavariella theobaldi		0.00									1	0.00																											
Tuberculatus annulatus	Common-Oak Aphid	0.00									1	0.00																											
Amphorophora rubi	Large Blackberry Aphid	0.00																																					
Dactynotus spp.		0.00																																					
Capitophorus hippophaes		0.00															1	0.00																					
Cryptomyzus ribis		0.00															1	0.00																					
Cryptomyzus galeopsidis		0.00															1	0.00	1	0.00																			
Thecabius affinis		0.00																	1	0.00																			
Utamphorophora humboldti		0.00																	1	0.00																			
Others		0.00													4	0.00			1	0.00																			
Weekly Index				**0.00**		**0.00**		**0.00**		**0.00**		**0.00**		**6.91**		**19.20**		**2.90**		**1.10**		**0.00**		**0.00**		**0.00**		**0.00**		**0.00**		**0.00**		**0.00**		**0.00**		**0.00**	**30.11**
Cumulative Index				**0.00**		**0.00**		**0.00**		**0.00**		**0.00**		**6.91**		**26.11**		**29.01**		**30.11**		**30.11**		**30.11**		**30.11**		**30.11**		**30.11**		**30.11**		**30.11**		**30.11**		**30.11**	

Rathfriland

Week ending:

Aphid Species	Common Name	PVY Index	01-Jun		08-Jun		15-Jun		22-Jun		29-Jun		06-Jul		13-Jul		20-Jul		27-Jul		03-Aug		10-Aug		17-Aug		24-Aug		31-Aug		07-Sep		14-Sep		21-Sep		28-Sep		Total PVY Index
Cavariella aegopodii	**Willow-carrot Aphid**	**0.50**			**4**	**2.00**	**5**	**2.50**			**3**	**1.50**																											**6.00**
Rhopalosiphum padi	**Bird Cherry-Oat Aphid**	**0.40**					**1**	**0.40**	**2**	**0.80**	**2**	**0.80**																											**2.00**
Sitobion avenae	**Grain Aphid**	**0.60**															**1**	**0.60**	**3**	**1.80**	**1**	**0.60**																	**3.00**
Myzus persicae	**Peach-potato Aphid**	**1.00**			**1**	**1.00**	**3**	**3.00**	**2**	**2.00**			**3**	**3.00**	**1**	**1.00**	**1**	**1.00**	**9**	**9.00**																			**20.00**
Cavariella pastinacea		0.00	1	0.00											6	0.00			1	0.00	1	0.00																	
Acyrthosiphon pisum	**Pea Aphid**	**0.70**					**1**	**0.70**											**1**	**0.70**																			**1.40**
Brachycaudus helichrysi	**Leaf-Curling Plum Aphid**	**0.21**																																					
Microlophium evansi		0.00					1	0.00	7	0.00					**1**	**0.00**																							
Hyperomyzus lactucae	**Currant-sowthistle Aphid**	**0.16**					**1**	**0.16**	**1**	**0.16**									**10**	**1.60**																			**1.92**
Macrosiphum euphorbiae	**Potato Aphid**	**0.20**	**1**	**0.20**	**4**	**0.80**	**4**	**0.80**	**2**	**0.40**			**1**	**0.20**	**3**	**0.60**	**1**	**0.20**	**1**	**0.20**	**7**	**1.40**																	**4.80**
Drepanosiphum platanoides	Sycamore Aphid	0.00					1	0.00	4	0.00	6	0.00									1	0.00																	
Sitobion fragariae	Blackberry-cereal Aphid	0.00																																					
Metopolophium dirhodum	**Rose-Grain Aphid**	**0.30**	**1**	**0.30**	**4**	**1.20**	**4**	**1.20**							**3**	**0.90**			**18**	**5.40**	**7**	**2.10**																	**11.10**
Aphis fabae	**Black-bean Aphid**	**0.10**															**2**	**0.20**	**10**	**1.00**	**12**	**1.20**																	**2.40**
Aphis rumicus		0.00													4	0.00			7	0.00	1	0.00																	
Brevicoryne brassicae	**Cabbage Aphid**	**0.01**													**1**	**0.01**			**13**	**0.13**	**10**	**0.10**																	**0.24**
Myzus ornatus		0.00																																					
Macrosiphum rosae		0.00																																					
Cavariella theobaldi		0.00							1	0.00									1	0.00																			
Hyadaphis foeniculi		0.00																																					
Sipha glyceriae		0.00																																					
Pemphigus spp.		0.00																																					
Sitobion eastopi		0.00			1	0.00																																	
Rhopalomyzus poae		0.00			1	0.00																																	
Macrosiphoniella Spp		0.00			1	0.00																																	
Phyllaphis fagi		0.00					1	0.00	1	0.00																													
Sitobion eastopi		0.00					1	0.00																															
Uromelan spp.		0.00					1	0.00																															
Macrosiphoniella persequens		0.00					1	0.00																															
Cryptomyzus Ribis		0.00					1	0.00																															
Capitophorus similis		0.00							1	0.00																													
Myzocallis castanicola		0.00									1	0.00																											
Wahigreniella vaccinii		0.00									1	0.00																											
Phorodon humuli		0.00									1	0.00																											
Elatobium Abietinum		0.00									1	0.00																											
Thecabius affinis		0.00																	5	0.00																			
Cryptomyzus galeopsidis		0.00																	1	0.00																			
Capitophorus hippophaes		0.00																	1	0.00	1	0.00																	
Rhopalosiphum insertum		0.00																			1	0.00																	
Others		0.00			1	0.00									1	0.00			1	0.00																			
Weekly Index				**0.50**		**5.00**		**8.76**		**3.36**		**2.30**		**3.20**		**2.51**		**2.00**		**19.83**		**5.40**		**0.00**		**0.00**		**0.00**		**0.00**		**0.00**		**0.00**		**0.00**		**0.00**	**52.86**
Cumulative Index				**0.50**		**5.50**		**14.26**		**17.62**		**19.92**		**23.12**		**25.63**		**27.63**		**47.46**		**52.86**		**52.86**		**52.86**		**52.86**		**52.86**		**52.86**		**52.86**		**52.86**		**52.86**	

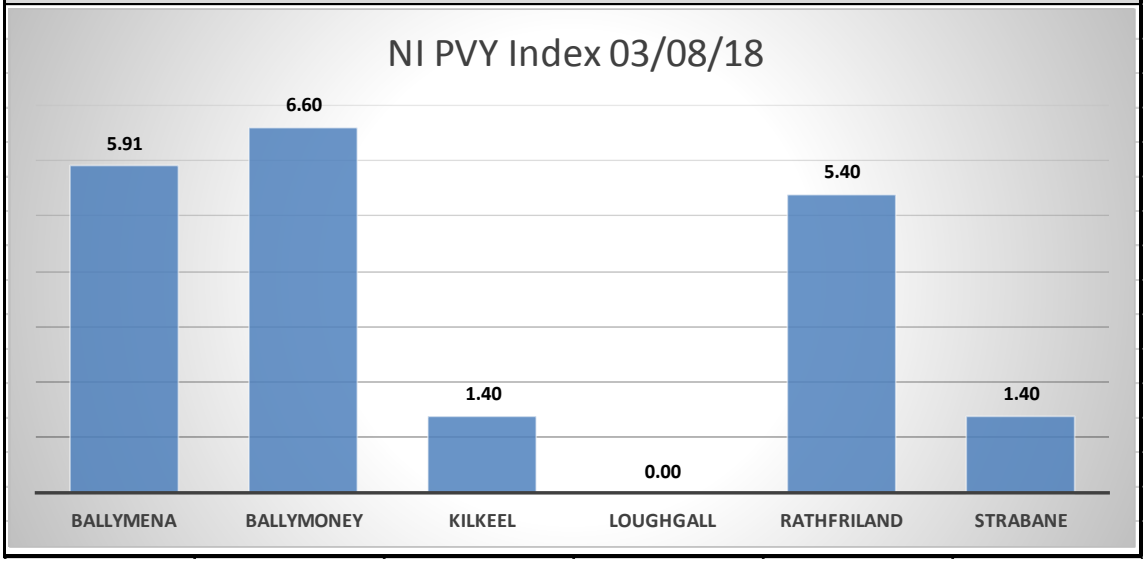
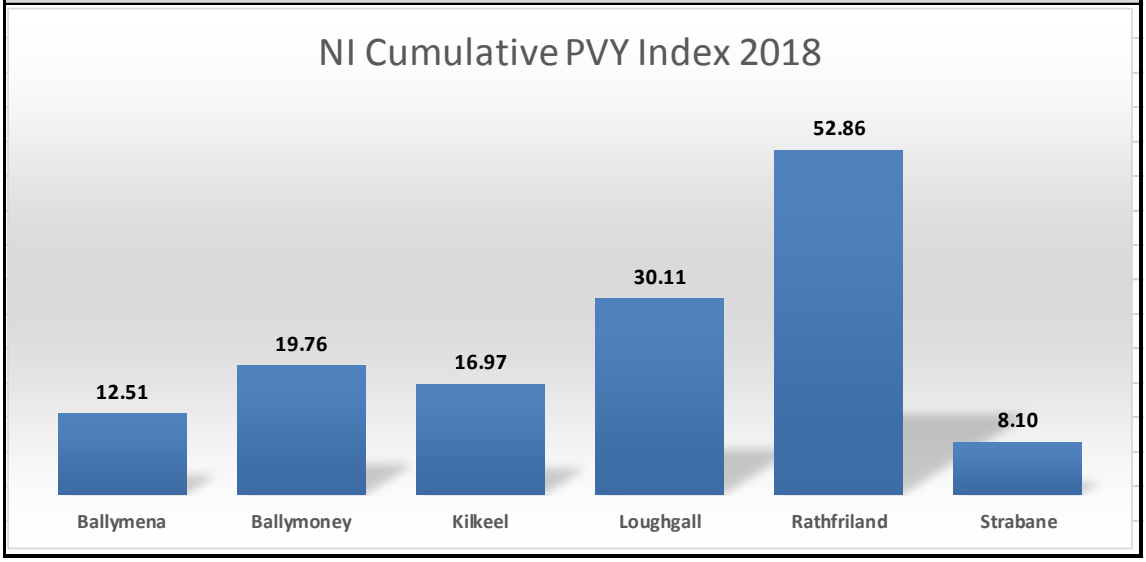
Strabane

Week ending:

Aphid Species	Common Name	PVY Index	01-Jun		08-Jun		15-Jun		22-Jun		29-Jun		06-Jul		13-Jul		20-Jul		27-Jul		03-Aug		10-Aug		17-Aug		24-Aug		31-Aug		07-Sep		14-Sep		21-Sep		28-Sep		Total PVY Index
Cavariella aegopodii	**Willow-carrot Aphid**	**0.50**			**2**	**1.00**																																	**1.00**
Rhopalosiphum padi	**Bird Cherry-Oat Aphid**	**0.40**													**2**	**0.80**																							**0.80**
Sitobion avenae	**Grain Aphid**	**0.60**					**1**	**0.60**					**1**	**0.60**					**1**	**0.60**	**1**	**0.60**																	**2.40**
Myzus persicae	**Peach-potato Aphid**	**1.00**																																					
Cavariella pastinacea		0.00																	1	0.00	2	0.00																	
Acyrthosiphon pisum	**Pea Aphid**	**0.70**					**1**	**0.70**																															**0.70**
Brachycaudus helichrysi	**Leaf-Curling Plum Aphid**	**0.21**																																					
Microlophium evansi		0.00																																					
Hyperomyzus lactucae	**Currant-sowthistle Aphid**	**0.16**																																					
Macrosiphum euphorbiae	**Potato Aphid**	**0.20**			**1**	**0.20**							**2**	**0.40**	**1**	**0.20**	**2**	**0.40**	**1**	**0.20**	**4**	**0.80**																	**2.20**
Drepanosiphum platanoides	Sycamore Aphid	0.00							1	0.00									4	0.00	1	0.00																	
Sitobion fragariae	Blackberry-cereal Aphid	0.00																																					
Metopolophium dirhodum	**Rose-Grain Aphid**	**0.30**											**1**	**0.30**	**2**	**0.60**																							**0.90**
Aphis fabae	**Black-bean Aphid**	**0.10**											**1**	**0.10**																									**0.10**
Aphis rumicus		0.00					1	0.00					1	0.00	1	0.00																							
Brevicoryne brassicae	**Cabbage Aphid**	**0.01**																																					
Phyllaphis fagi		0.00					1	0.00																															
Cavariella theobaldi		0.00																																					
Megoura viciae		0.00																																					
Ovatus insitus		0.00																																					
Amphorophora rubi	Large Blackberry Aphid	0.00																																					
Uromelan spp.		0.00																																					
Acyrthosiphon primulae		0.00																																					
Sipha glyceriae		0.00							1	0.00																													
Myzocallis castanicola		0.00							1	0.00																													
Tuberculatus borealis		0.00											1	0.00																									
Sitobion eastopi		0.00													1	0.00	1	0.00																					
Thecabius affinis		0.00															1	0.00	2	0.00	1	0.00																	
Rhopalosiphum insertum		0.00															1	0.00																					
Others		0.00													1	0.00																							
Weekly Index				**0.00**		**1.20**		**1.30**		**0.00**		**0.00**		**1.40**		**1.60**		**0.40**		**0.80**		**1.40**		**0.00**		**0.00**		**0.00**		**0.00**		**0.00**		**0.00**		**0.00**		**0.00**	**8.10**
Cumulative Index				**0.00**		**1.20**		**2.50**		**2.50**		**2.50**		**3.90**		**5.50**		**5.90**		**6.70**		**8.10**		**8.10**		**8.10**		**8.10**		**8.10**		**8.10**		**8.10**		**8.10**		**8.10**	

Summary for the seven days up to and including 03/08/18					
Region	**Samples**	**Mean PVY Index per Sample**	**Mean Colonising Aphids per Sample**	**Mean Aphids per Sample**	**Total Aphids Species**
Northern Ireland	**5**	**4.14**	**17.80**	**21.60**	**17**
North Scotland	5	1.4	0.2	7.6	12
Grampian	10	8.01	4.2	33	32
Angus & Perthshire	6	4.57	0.83	26	19
Borders	5	5.12	2.6	22.6	17
Northern England	8	138.97	109.75	396.38	25
Midlands	4	1.07	0.75	6.75	7
East Anglia	4	0.58	0	9.75	5
South-West	8	0.74	0	6.5	7
TOTAL	**55**	**18.29**	**15.13**	**58.91**	**141**

Northern Ireland WEEKLY Virus Threat 2018



Northern Ireland TOTAL Virus Threat 2018