In partnership with AHDB HORTICULTURE THE UNIVERSITY OF WARWICK ROTHAMSTED RESEARCH

LETTUCE APHIDS

30 July 2020

Introduction

Lettuce crops may be infested by currant- lettuce aphid (*Nasonovia ribisnigri*), lettuce root aphid (*Pemphigus bursarius*), peach-potato aphid (*Myzus persicae*) and potato aphid (*Macrosiphum euphorbiae*).

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Rothamsted Insect Survey and SASA suction trap captures 2020

The tables below summarise suction trap captures for 2020. Cells shaded in grey indicate that information is not available yet from these traps due to COVID-19. Currant-lettuce aphid is 'trap shy' and is only ever caught in low numbers.

Nasonovia ribisnigri	Inverness	Dundee	Edinburgh	Ayr	Newcastle	FERA, York	Preston	Kirton	Broom's Barn	Wellesbourne	Hereford	Rothamsted	Writtle	Ascot	East Malling	Starcross	Total
Week ending																	**0**
05-Apr					0	0		0	0	0	0	0	0	0	0	0	**0**
12-Apr					0	0		0	0	0	0	0	0	0	0	0	**0**
19-Apr					0	0		0	0	0	0	0	0	0	0	0	**0**
26-Apr					0	0		0	0			0	0	0	0	0	**0**
03-May					0	0	0	0	0			1	0	1	0	0	**2**
10-May								0	0			0		0	0	0	**0**
17-May						0	0	0	0	0	0	0		0		0	**0**
24-May	0		0					0	1			1			0	1	**3**
31-May	0	0	0			0		0	1	0		0		0	0	0	**1**
07-Jun	0	0	0			0	0	0	0	0		0	0		0	0	**0**
14-Jun						0	0	0	0	0		0			0	0	**0**
21-Jun			0			0	0	1	0	1		0		0	0	0	**2**
28-Jun		0	0			2	0	2	0	2	0	2		0	1	0	**9**
05-Jul	0	0	0		0	0	0	0	0	1	0	0	0	0	0	0	**1**
12-Jul	0	0	0		0	1	0	1	0	2	0	0	0	0	1	0	**5**
19-Jul	0	1	0		0	1	0	0	1	0	0	1	0	0	1	0	**5**

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Macrosiphum euphorbiae	Inverness	Dundee	Edinburgh	Ayr	Newcastle	FERA, York	Preston	Kirton	Broom's Barn	Wellesbourne	Hereford	Rothamsted	Writtle	Ascot	East Malling	Starcross	Total
Week ending																	**0**
22-Mar					0	0		0	0	0	0	0	0	0	0	1	**1**
29-Mar					0	0		0	0	0	0	0	0	0	0	**0**	**0**
05-Apr					0	0		0	0	0	0	0	1	0	0	1	**2**
12-Apr					0	0		0	0	0	1	1	13	0	1	1	**17**
19-Apr					0	0		1	1	0	1	0	0	5	2	1	**11**
26-Apr					0	0		5	8			3	**2**	**5**	9	4	**36**
03-May					0	0	0	1	1			0	2	0	0	0	**4**
10-May								4	1			2		2	4	4	**17**
17-May						0	0	0	0	0	0	0		0		2	**2**
24-May	0		0					3	5			3			10	5	**26**
31-May	0	1	2			0		11	4	7		8		15	21	6	**75**
07-Jun	0	1	11			1	0	9	0	5		6	12		19	10	**74**
14-Jun						4	9	16	14	6		13			10	19	**91**
21-Jun			5			4	10	6	30	34		12		7	4	0	**112**
28-Jun		2	1			19	3	1	5	6	2	4		3	2	0	**48**
05-Jul	0	2	0		2	2	1	1	5	2	3	0	1	0	0	0	**19**
12-Jul	0	1	2		4	0	0	0	1	0	3	2	0	0	1	1	**15**
19-Jul	0	0	0		0	0	0	0	0	2	0	0	2	0	0	0	**4**

Myzus persicae	Inverness	Dundee	Edinburgh	Ayr	Newcastle	FERA, York	Preston	Kirton	Broom's Barn	Wellesbourne	Hereford	Rothamsted	Writtle	Ascot	East Malling	Starcross	Total
Week ending																	**0**
05-Apr					0	0		0	0	0	0	0	0	0	0	0	**0**
12-Apr					0	0		0	2	2	0	2	1	0	0	1	**8**
19-Apr					0	0		2	2	0	0	1	2	0	0	29	**36**
26-Apr					0	0		0	1			8	**1**	**3**	3	6	**22**
03-May					0	0	1	2	40			6	33	0	0	2	**84**
10-May								63	9			9		2	5	0	**88**
17-May						0	0	4	12	53		33		14		4	**120**
24-May	0		0					103	781			120			66	4	**1074**
31-May	0	0	7			0		338	1764	75		281		176	144	20	**2805**
07-Jun	0	0	1			39	43	92	173	251		301	284		296	50	**1530**
14-Jun						267	93	25	48	149		63			121	15	**781**
21-Jun			2			46	232	50	209	210		40		7	29	2	**827**
28-Jun		3	6			376	102	26	39	44	119	10		1	10	0	**736**
05-Jul	1	1	2		1	30	1	7	5	14	44	8	1	0	2	0	**117**
12-Jul	0	5	1		0	6	0	31	3	2	21	2	2	0	1	1	**75**
19-Jul	0	3	0		0	2	2	6	2	0	1	1	2	0	1	2	**22**

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AHDB yellow water trap data

AHDB supports the provision of aphid count data from a network of yellow water traps. The aphids are identified by staff at Fera.

All the individual counts are available at: https://secure.fera.defra.gov.uk/aphmon/. You can click on a region on the map to see the counts in more detail.

Although the focus of the commentary on the site is on aphids that transmit potato viruses, there are graphs to show the weekly counts of individual aphid species. The most recent counts for aphids of interest are summarised below:

Region	No. of samples taken between 15/07/2020 to 23/07/2020	Average Macrosiphum euphorbiae per sample	Average Myzus persicae per sample	Average Nasonovia ribisnigri per sample	Average Pemphigus spp. per sample
North Scotland	17	0.1	0.1	-	-
Grampian	18	0.2	1.3	-	-
Angus & Perthshire	11	-	0.1	-	-
Borders	10	-	0.1	-	-
Northern England	16	-	0.8	-	-
East Anglia	8	-	0.1	-	-
Midlands	10	-	0.7	-	-
South-West	7	-	0.3	0.1	-
Total	**97**	**0**	**0.5**	**0**	**-**

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Rothamsted Insect Survey long-term forecasts

The Rothamsted Insect Survey long-term forecasts for 2020 can be found here.

Spring 2020 commentary

The 2020/21 winter was the fifth wettest on record in Britain, with several Atlantic storms. Relatively mild conditions resulted in average January–February air temperatures being above the 30-year average: Scotland and Northern England (+0.5–1.5 °C), Kirton southwards (+2 °C) and Silwood (+2.5 °C).

In the absence of abnormal conditions this spring, generally, aphids will fly about 1–3 weeks earlier in Scotland and Northern England and about 4 weeks earlier over much of the rest of England (from the Wash southwards) than average, with Silwood potentially being about 5 weeks earlier.

Long-term (56 years in 2020) aphid data (from the suction-trap network) and weather data (Met Office and others) is used to forecast the date of the first aphid flights, as well as aphid abundance in spring and early summer. The best predictor of the timing and size of aphid migration is the mean temperature in January and February. Temperatures in November/December and March/April have little apparent impact.

Although there is considerable uncertainty associated with actual first flight dates at specific sites, the forecasts provide an indication of how early or late flights will take place, compared with an 'average' season. Confidence is greatest for aphid species that pass the winter in the active stages (rather than as cold-hardy eggs in diapause), as they are more susceptible to low winter temperatures and can take advantage of warm conditions. The peach–potato aphid (*Myzus persicae*) and potato aphid (*Macrosiphum euphorbiae*) pass winter in the active stages.

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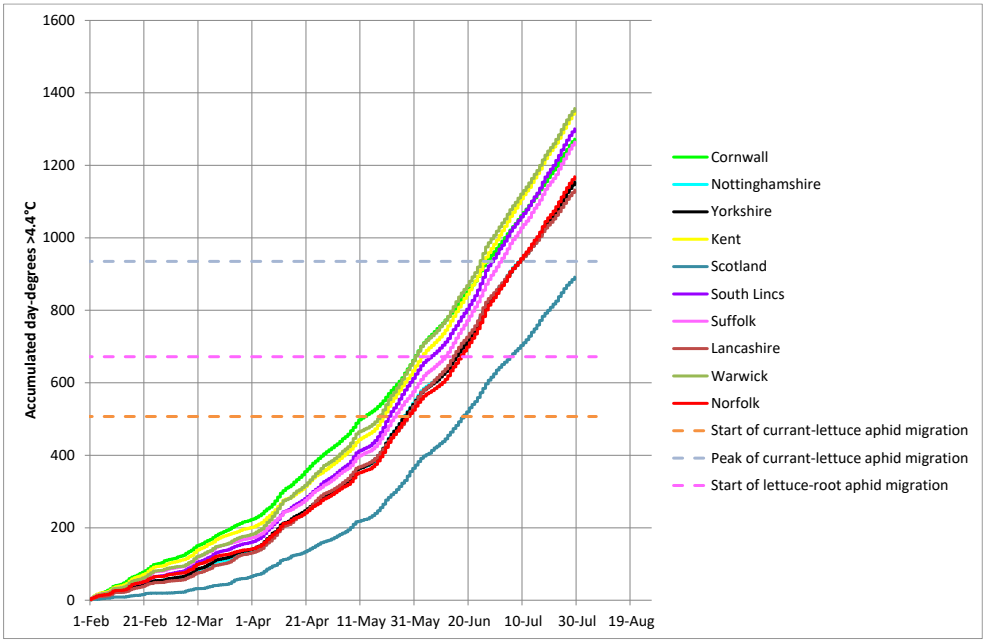
Day-degree forecasts 2020

The graph below shows 'day-degree forecasts' for currant-lettuce aphid (*Nasonovia ribisnigri*) and lettuce-root aphid (*Pemphigus bursarius*). The forecasts for both aphid species are based on accumulated day-degrees (D°) from 1 February (base 4.4°C). The information was collected in projects funded by the AHDB, Defra and LINK.

In the study on **currant-lettuce aphid**, the mean numbers of day-degrees accumulated until the first aphid was found and until peak numbers of aphids were found were **507D°** and **935D°** respectively. Comparisons between observed and predicted dates showed that this forecast is likely to be accurate to within a 2-3 week period.

In the study on the **lettuce-root aphid**, the start of the migration of winged aphids from poplar to lettuce occurred after **672D°** had been accumulated since 1 February. Monitoring data collected during the project were compared with this forecast, which was shown to give adequate early warning of the start of aphid migration.

The weather data are provided by Plantsystems and funded by Syngenta.



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Historical information from 2019

Captures in the network of suction traps in 2019 are shown below. Currant-lettuce aphids are 'trap shy' and relatively few are captured in suction traps or water traps. Thus it is best to keep checking crops.

Nasonovia ribisnigri	Inverness	Dundee	Edinburgh	Ayr	Newcastle	FERA, York	Preston	Kirton	Broom's Barn	Wellesbourne	Hereford	Rothamsted	Writtle	Ascot	East Malling	Starcross	Total
Week ending																	**0**
31-Mar																	**0**
07-Apr																	**0**
14-Apr																	**0**
21-Apr																	**0**
28-Apr																	**0**
05-May									1			1	2	1			**5**
12-May										1				1			**2**
19-May		1										2					**3**
26-May												1					**1**
02-Jun					2												**2**
09-Jun									4								**4**
16-Jun												1				1	**2**
23-Jun		1	1									4		1			**7**
30-Jun		1						4									**5**
07-Jul						2											**2**
14-Jul	1			1													**2**
21-Jul													1			1	**2**
28-Jul	2																**2**
04-Aug	1	1														1	**3**
11-Aug																	**0**
18-Aug										1							**1**
25-Aug																	**0**
01-Sep																	**0**
08-Sep	1																**1**
15-Sep																	**0**
22-Sep																	**0**
29-Sep																	**0**
06-Oct																2	**2**
13-Oct							2										**2**
20-Oct									1						1		**2**

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Myzus persicae	Inverness	Dundee	Edinburgh	Ayr	Newcastle	FERA, York	Preston	Kirton	Broom's Barn	Wellesbourne	Hereford	Rothamsted	Writtle	Ascot	East Malling	Starcross	Total
Week ending																	**0**
31-Mar																	**0**
07-Apr																	**0**
14-Apr																	**0**
21-Apr						1			2	1		5	4	1		2	**16**
28-Apr						1		1	2		1	3	6	2			**16**
05-May		2				5		2	28	2	1	4	20	1		1	**66**
12-May						1		1	32	13	2	5	9	9		1	**73**
19-May				1	1	9	1		74	18	13	26	2	10		5	**160**
26-May		1						8	116	54		96	2	8		6	**291**
02-Jun			1			4	4	61	244	27	9	32		2		9	**393**
09-Jun	1	5			1	42	6	71	558	60	57	21	61	4		13	**900**
16-Jun		12	2	1	6	94	10	57	95	84	16	6	46	3		14	**446**
23-Jun		14	8		3	65		172	72	162	46	58	36	4		26	**666**
30-Jun	2	14	6			104	36	8	5	34	3	6	9			45	**272**
07-Jul		17	5	1	1	24		6	3	5	29	5		2		8	**106**
14-Jul	3	66	27	2	8	10	6	2		5						6	**135**
21-Jul	1	43	7	1	6	2			1	1	3	1				3	**69**
28-Jul	2	9	4		3	1		3			1	1				1	**25**
04-Aug	13	7	4														**24**
11-Aug	1															2	**3**
18-Aug		2															**2**
25-Aug		1											1			1	**3**
01-Sep						2											**2**
08-Sep		1	2		1	1			1		2						**8**
15-Sep		1	1			1	1			1							**5**
22-Sep	1	1	2		1	14		6	2	3	1	1	1	1		4	**38**
29-Sep		8	3			38		15	1	6			1		1	3	**76**
06-Oct		2		1	1	28		6	3	8	1		2		6	4	**62**
13-Oct						70	4	12	1	2	2		4		1	2	**98**
20-Oct			1		1	7		35	6	5	1	1	5	1	8	2	**73**

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Macrosiphum euphorbiae	Inverness	Dundee	Edinburgh	Ayr	Newcastle	FERA, York	Preston	Kirton	Broom's Barn	Wellesbourne	Hereford	Rothamsted	Writtle	Ascot	East Malling	Starcross	Total
Week ending																	**0**
31-Mar																1	**1**
07-Apr							1										**1**
14-Apr													1				**1**
21-Apr							3						**4**	**2**		5	**14**
28-Apr			2				1			1		1	1			1	**7**
05-May		1	1				1		2	1	1		3	8			**18**
12-May				1				1	5	5	3		2	2			**19**
19-May	1	1	2	1	3	1	8	1	3	5	5	7		5		5	**48**
26-May							2	1	8	4	8	13		5		2	**43**
02-Jun	2		1	3			20	1	6	14	8	1		10		13	**79**
09-Jun	4		2	4		8	37	4	6	18	29	15	17	14		21	**179**
16-Jun		1	1		4	4	9	7	2	19	20	4	5	3		19	**98**
23-Jun		3	3		1		11	8		48	43	22	8	14		13	**174**
30-Jun	4	4	8						8	12	21		2			13	**72**
07-Jul		3			1					1	16					2	**23**
14-Jul		3	3		1		2				6						**15**
21-Jul	2	5	1									2				1	**11**
28-Jul																	**0**
04-Aug	2																**2**
11-Aug							4								1		**5**
18-Aug																	**0**
25-Aug																	**0**
01-Sep																	**0**
08-Sep																	**0**
15-Sep													1				**1**
22-Sep																	**0**
29-Sep																	**0**
06-Oct																	**0**
13-Oct																	**0**
20-Oct		1															**1**

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