



CARROT FLY – 15 October 2020

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Introduction

The forecast outputs below are based on weather data collected by Plantsystems Limited and funded by Syngenta. The forecasts predict the timing of fly activity. They do not predict the number of insects present in the crop, as this depends on the size of the local fly population. For control purposes, we consider that the pest has become active when 10% of the insects have emerged/laid eggs and that the peak of activity has occurred when 50% have emerged/laid eggs. The predictions will change over time depending on weather conditions.

Third generation carrot flies will be emerging in warm locations like Wellesbourne. These may go on to lay some eggs but as temperatures decline in the autumn it is increasingly unlikely that any eggs laid will hatch into larvae that subsequently cause damage. However, with climate change it is important to keep an eye on what is happening with the third generation in warmer locations.



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Carrot fly forecasts 2020

N.B. the forecast for Lancashire looks unusually late. There has been a problem with the soil temperature sensor.

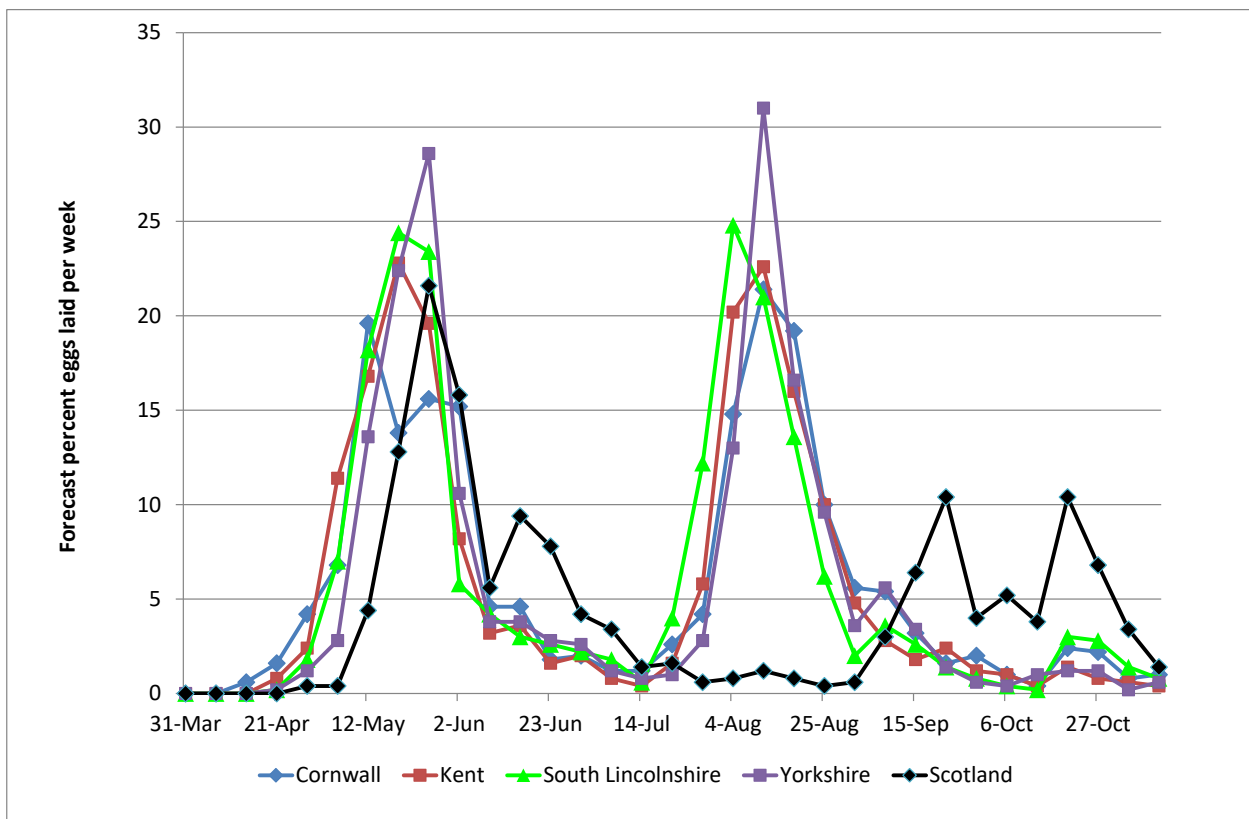
Region	First generation Forecast 50% EGG-LAYING in 2020	Second generation Forecast 10% EMERGENCE in 2020	Second generation Forecast 10% EGG-LAYING in 2020	Second generation Forecast 50% EGG-LAYING in 2020	Third generation Forecast 10% EMERGENCE in 2020
Cornwall (Newquay)	16 May	20 Jul	30 Jul	11 Aug	1 Oct
Kent (Sittingbourne)	17 May	18 Jul	27 Jul	7 Aug	27 Sep
Suffolk (Woodbridge)	19 May	16 Jul	24 Jul	3 Aug	17 Sep
Wellesbourne (Warwick)	7 May	5 Jul	15 Jul	27 Jul	12 Sep
Norfolk (Norwich)	19 May	22 Jul	28 Jul	9 Aug	27 Sep
South Lincolnshire (Boston)	16 May	18 Jul	24 Jul	11 Aug	22 Sep
Nottingham (Bilsthorpe)	20 May	28 Jul	31 Jul	15 Aug	18 Oct
Lancashire (Ormskirk)	25 May	11 Aug	28 Aug	10 Sep	-
York (Market Weighton)	19 May	22 Jul	30 Jul	10 Aug	14 Oct
Scotland (Blairgowrie)	25 May	20 Aug	9 Sep	19 Sep	-



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The graph below shows the forecast pattern of egg-laying in 2020 by carrot fly at 5 of sites in the table above.





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Carrot fly monitoring 2020

Trap captures at Wellesbourne in 2020 are summarised below. The traps have been out all winter.

Date	Adult carrot flies (overwintered then new carrots) (total on 3 traps)
8 Jan – 17 Mar	0
24 Mar	1
31 Mar	1
7 Apr	0
14 Apr	5
21 Apr	46
28 Apr	504
1 May	59
5 May	493
8 May	90
12 May	432
15 May	66
19 May	46 – moved to new carrot plot
22 May	140
26 May	56
29 May	60
2 June	45
5 June	15
9 June	14
12 June	8
16 June	15
19 June	4
23 June	2
26 June	1
30 June	13
3 July	11
7 July	60



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Date	Adult carrot flies (new carrots) (total on 3 traps)
10 July	39
14 July	50
17 July	37
21 July	56
24 July	20 (2 traps)
28 July	42
31 July	31
4 August	21
7 August	17
11 August	10
14 August	2
18 August	0
21 August	0
25 August	3
28 August	1
1 September	0
4 September	3
8 September	25
11 September	30
15 September	65
18 September	62
22 September	102
25 September	114
29 September	367



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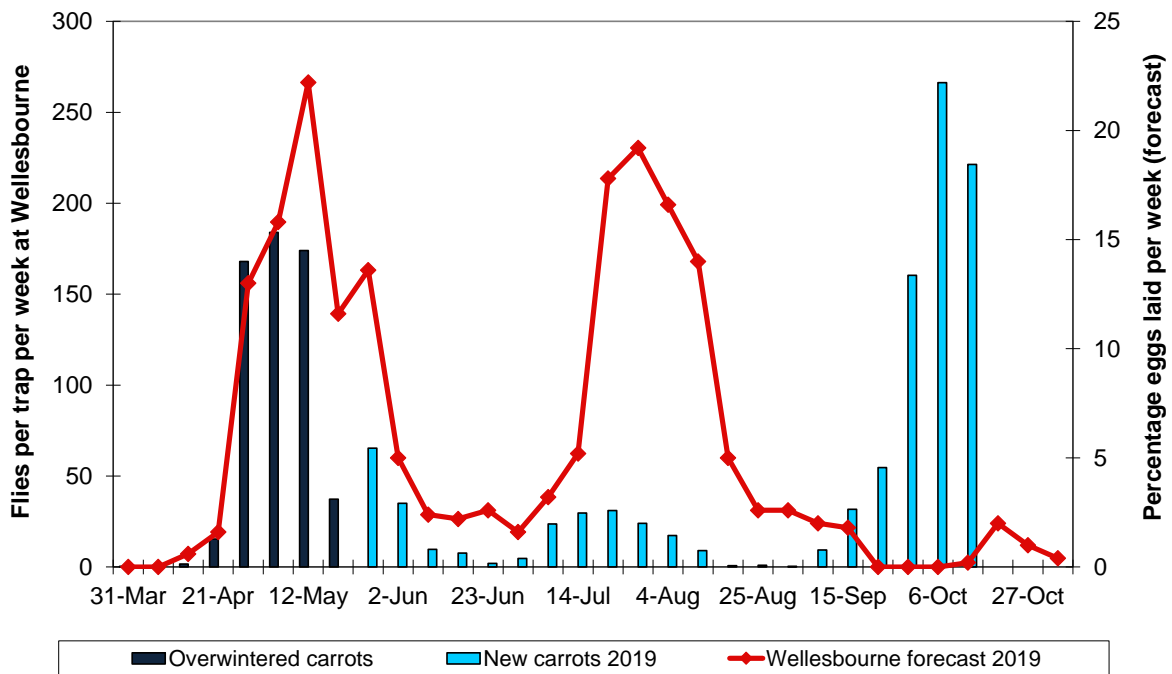
Date	Adult carrot flies (total on 3 traps)
2 October	174
6 October	624
9 October	325
13 October	339



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The graph below compares trap captures at Wellesbourne with forecast egg-laying for 2020. The third generation is now emerging. The forecast is predicting that some of these flies will lay eggs. There will be a lag between emergence and egg-laying as the flies need time to feed and mate before they lay eggs and this period will be longer when the weather is cooler.



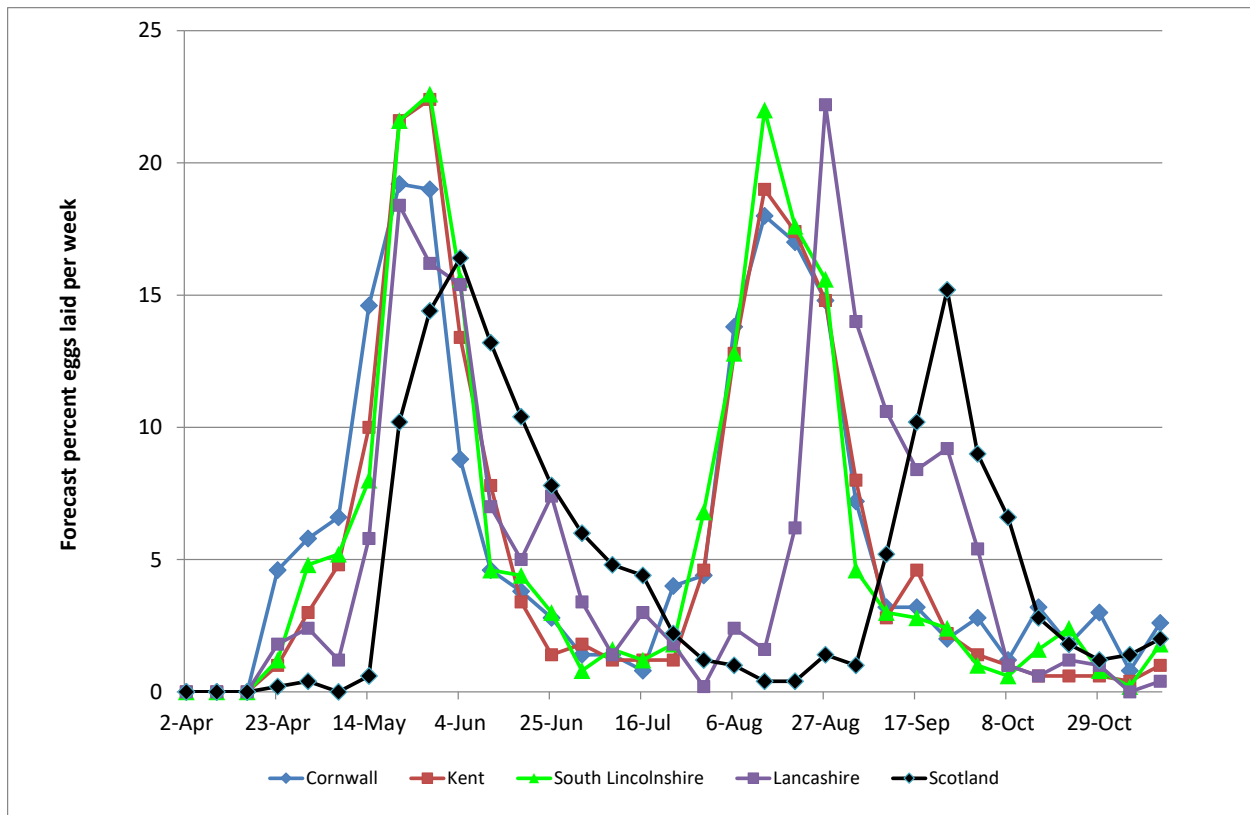


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Historical information from 2019

This graph shows the forecast pattern of egg-laying in 2019 for 5 sites from the table above.



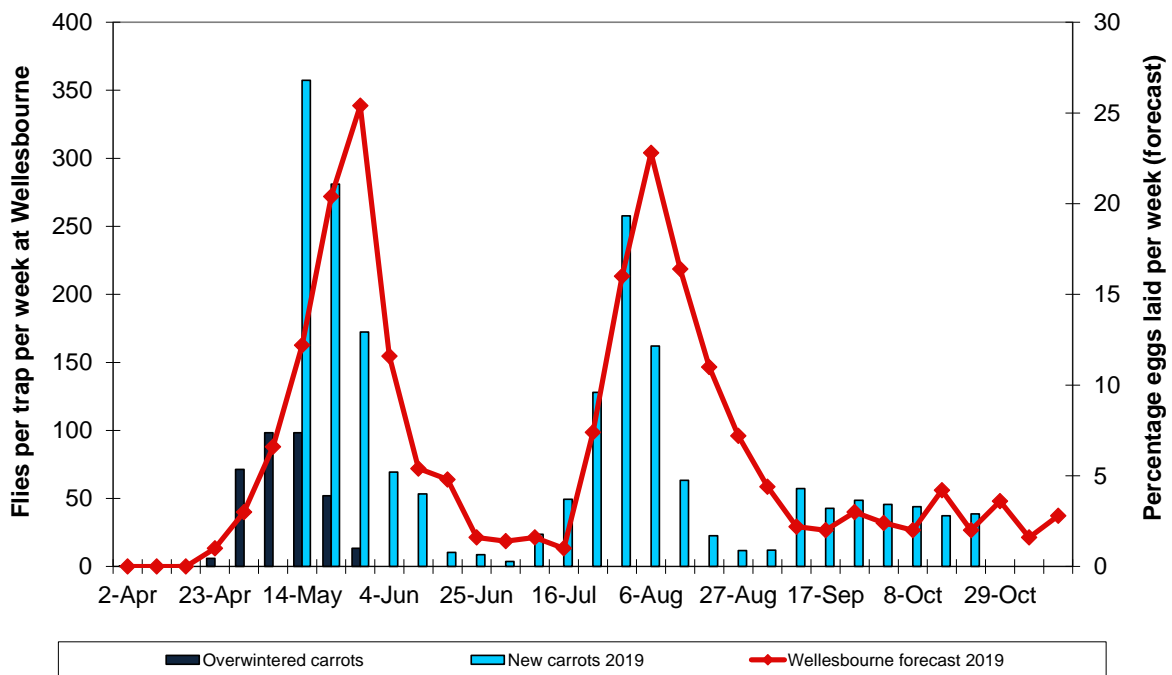


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This graph shows the forecast pattern of **egg-laying in 2019** at Wellesbourne compared with fly captures on sticky traps in a plot of overwintered carrots and, later on, in a newly-sown plot of carrots.





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Trap captures at Wellesbourne in 2019 are summarised below. The traps have been out all winter.

Date	Adult carrot flies (overwintered carrots) (total on 3 traps)	Adult carrot flies (new carrots) (total on 3 traps)
8 Jan	0	
5 Mar	0	
12 Mar	0	
19 Mar	0	
26 Mar	0	
2 April	1	
9 April	0	
16 April	4	
23 April	18	
26 April	36	
30 April	178	
3 May	89	
7 May	206	-
10 May	91	374
14 May	204	698
17 May	88	555
21 May	68	288
24 May	19	380
28 May	21	137
31 May	-	92
4 June		116
7 June		133
11 June		27



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Trap captures at Wellesbourne in 2019 are summarised below. The traps have been out all winter.

Date	Adult carrot flies (overwintered carrots) (total on 3 traps)	Adult carrot flies (new carrots) (total on 3 traps)
14 June		4
18 June		27
21 June		15
25 June		11
28 June		5
2 July		6
5 July		8
9 July		63
12 July		59
16 July		89
19 July		58
23 July		326
26 July		360
30 July		413
2 August		232
6 August		254
9 August		133
13 August		57
16 August		22
20 August		46
23 August		27
27 August		8
30 August		10
3 September		26
6 September		50
10 September		122
13 September		58
17 September		70



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Trap captures at Wellesbourne in 2019 are summarised below. The traps have been out all winter.

Date	Adult carrot flies (overwintered carrots) (total on 3 traps)	Adult carrot flies (new carrots) (total on 3 traps)
20 September	-	63
24 September		83
27 September		48
1 October		89
4 October		36
7 October		96
11 October		49
15 October		63
18 October		74
22 October		42
25 October		36
29 October		25