



CABBAGE ROOT FLY – 25 June 2020

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Introduction

The forecasts in the table below are for ‘early-emerging’ cabbage root flies. There are some areas of the UK where a proportion of the cabbage root flies emerge later in the spring than would be expected. We call these ‘late emerging’ flies and they are genetically different from ‘early-emerging’ flies. Relatively large numbers of late-emerging flies occur in some parts of Devon and south-west Lancashire. **The first generation of late-emerging flies is predicted to have started laying eggs in Devon (10% 25 May) and to start laying eggs in early July in Lancashire (10% 1 July).**

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.

Once they have emerged, female cabbage root flies require some time to feed, mate and mature their eggs. This is equivalent to about 80 day-degrees above 6°C.



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Cabbage root fly forecasts 2020 – N.B. the Lancashire forecast looks unusually late.

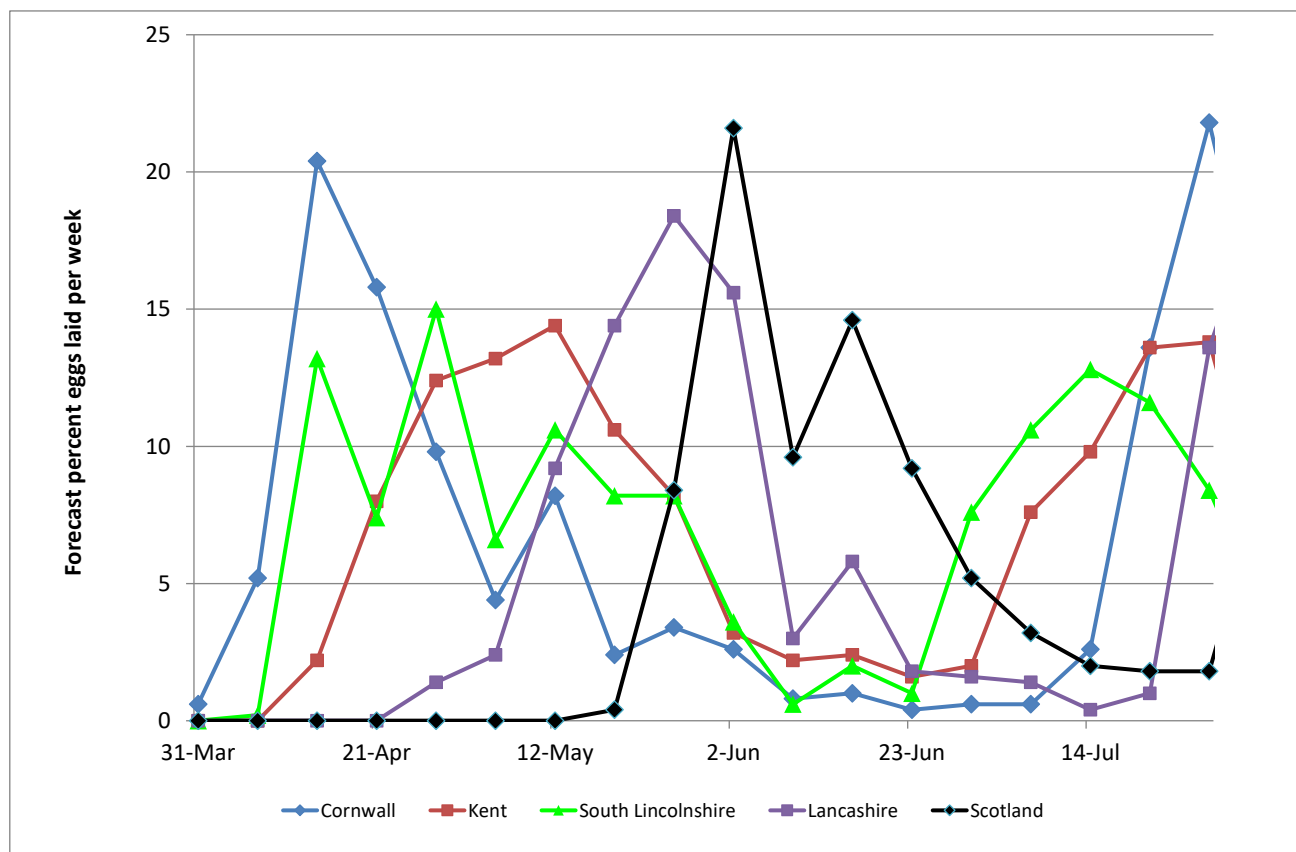
Region	First generation Forecast 10% egg- laying in 2020	First generation Forecast 50% egg- laying in 2020	Second generation Forecast 10% egg-laying in 2020	Second generation Forecast 50% egg- laying in 2020
Cornwall (Newquay)	8 Apr	20 Apr	17 Jul	30 Jul
Kent (Sittingbourne)	21 Apr	7 May	8 Jul	26 Jul
Suffolk (Woodbridge)	20 Apr	6 May	24 Jun	15 Jul
Wellesbourne (Warwick)	17 Apr	29 Apr	24 Jun	14 Jul
Norfolk (Norwich)	22 Apr	15 May	10 Jul	29 Jul
South Lincolnshire (Boston)	11 Apr	1 May	1 Jul	21 Jul
Nottingham (Bilsthorpe)	27 Apr	16 May	13 Jul	28 Jul
Lancashire (Ormskirk)	8 May	21 May	27 Jul	8 Aug
York (Market Weighton)	6 May	18 May	11 Jul	27 Jul
Scotland (Blairgowrie)	26 May	10 Jun	4 Aug	20 Aug



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





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Cabbage root fly monitoring data 2020

The table below shows the numbers of cabbage root flies recovered from plots at Wellesbourne 2020.

Date	Adult cabbage root flies - total in 3 traps near swedes. Traps were set up on 19 th May.		Numbers of eggs laid on 15 cauliflower plants. Set up on 22 May.
	Male	Female	
22 nd May	8	3	-
26 th May	4	1	1
29 th May	3	2	0
2 nd June	12	1	0
5 th June	4	2	6
9 th June	4	3	7
12 th June	8	5	44
16 th June	20	8	32
19 th June	11	4	19
23 rd June	6	9	24



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We first set up the traps in some overwintered swedes at Wellesbourne but because of COVID-19 the traps are now in the village allotments and in a garden at Tysoe in south Warwickshire. No cabbage root flies were captured before the traps were moved.

Date	Male cabbage root flies	Female cabbage root flies	Number of traps
26 th March	0	0	3
27 th March	0	0	3
28 th March	0	0	3
29 th March	0	0	3
30 th March	0	1	8
31 st March	0	0	9
1 st April	0	1	9
2 nd April	0	3	9
3 rd April	0	3	9
4 th April	0	0	9
5 th April	0	0	9
6 th April	1	0	9
7 th April	0	0	9
8 th April	1	0	9
9 th April	5	1	9
10 th April	16	3	9
11 th April	6	3	9
12 th April	7	7	9
13 th April	1	2	9
14 th April	13	5	9
15 th April	32	6	9
16 th April	49	19	9
17 th April	24	14	9
18 th April	4	0	9
19 th April	65	9	9
20 th April	65	15	9



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Date	Male cabbage root flies	Female cabbage root flies	Number of traps
21st April	71	12	9
22nd April	50	10	9
23 rd April	34	11	9
24 th April	26	3	9
25 th April	42	6	9
26 th April	33	2	9
27 th April	52	20	9
28 th April	0	3	9
29 th April	12	10	9
30 th April	12	10	9
1 st May	5	2	9
2 nd May	17	17	9
3 rd May	14	3	9
4 th May	26	5	9
5 th May	20	2	9
6 th May	18	7	9
7 th May	2	2	9
8-9 th May	11	2	9
10-11 th May	6	3	9
12 th May	7	2	9
13 th May	3	5	9
14 th May	7	3	9
15 th May	2	1	9
16 th May	3	0	9
17 th May	0	2	9
18 th May	1	2	9
19 th May	3	0	9
20 th May	0	0	9
21 st May	1	1	9
22 nd May	0	0	9



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Cabbage root fly egg-laying

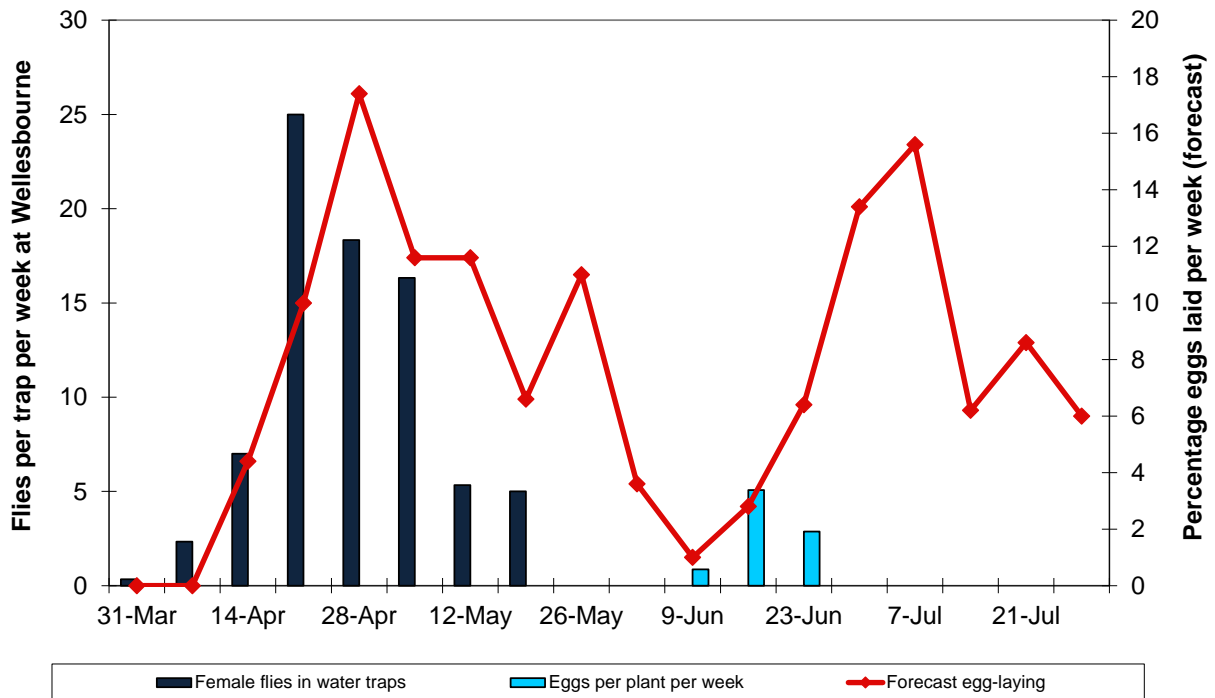
Some monitoring plants (cauliflower) have been set up in the garden in Tysoe, Warwickshire on 18th April. Hopefully the flies will find them but not many so far!

Date	Number of eggs	Number of plants
23 rd April	1	15
27 th April	1	15
3 rd May	3	15
9 th May	10	15
13 th May	6	15
17 th May	26	15

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The graph below compares the forecast pattern of egg-laying at Wellesbourne in 2020 with the number of female flies trapped firstly at Tysoe (10 miles away) and then egg-laying at Wellesbourne from 26 May.



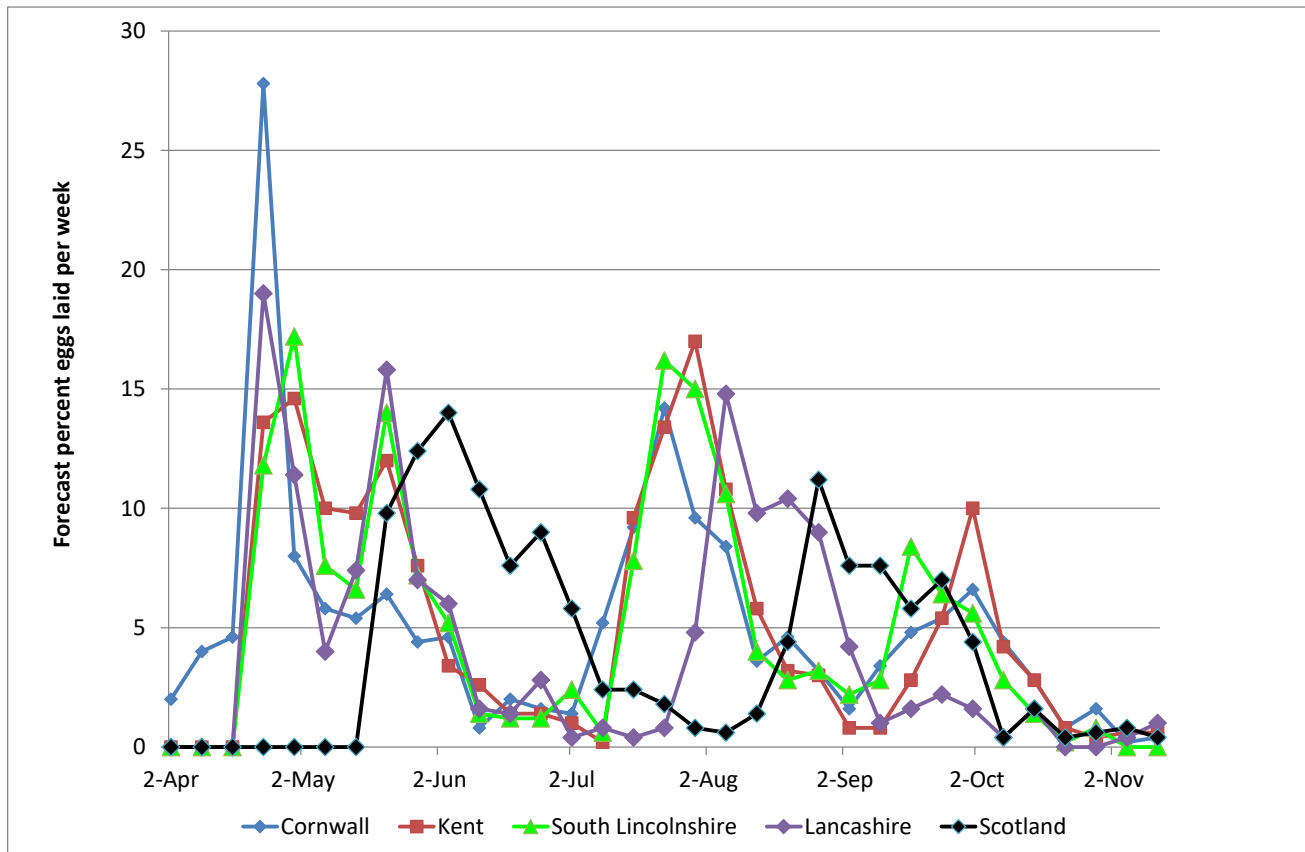


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Historical information from 2019

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

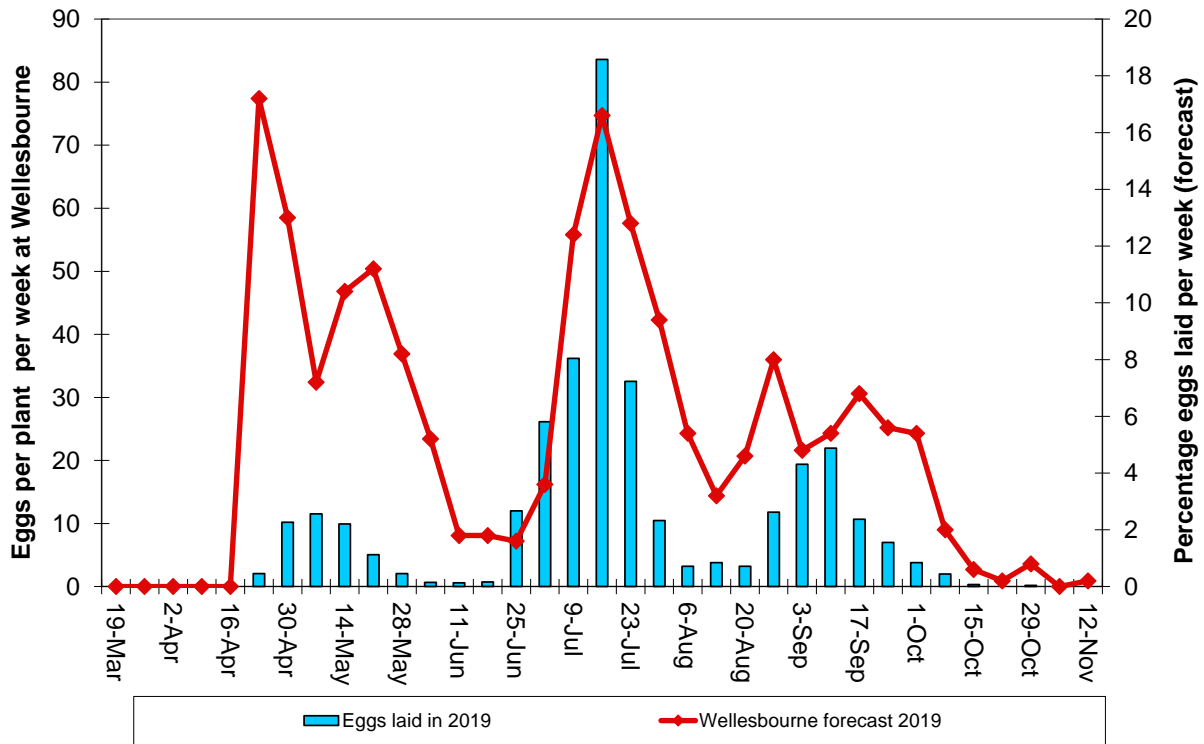




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The graph below shows the forecast pattern of egg-laying in 2019 at Wellesbourne compared with egg-laying in a plot of brassica plants in 2019.



The table below shows the numbers of cabbage root flies recovered from plots at Wellesbourne 2019.

Date	Adult cabbage root flies - total in 3 traps near overwintered swedes. Set up 26 th February 2019		Numbers of eggs laid on 15 cauliflower plants. Set up 9 th April 2019
	Male	Female	
5 th March	0	0	
12 th March	0	0	
19 th March	0	0	
26 th March	0	0	
2 nd April	0	0	
9 th April	20	5	
16 th April	110	11	0
23 rd April	199	15	31
26 th April	88	10	56
30 th April	78	4	97
3 rd May	33/17 (old swedes/new swedes)	12/2	105
7 th May	19/21 (old swedes/new swedes)	12/3	68
10 th May	15/18 (old swedes/new swedes)	9/1	109
14 th May	8/13 (old swedes/new swedes)	4/1	40
17 th May	0/4 (old swedes/new swedes)	2/0	45
21 st May	0/2 (old swedes/new swedes)	0/0	31
24 th May	12 (new swedes only from now onwards)	2	26
28 th May	1	0	5
31 st May	1	0	10
4 th June	1	3	0

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Date	Adult cabbage root flies - total in 3 traps near overwintered swedes. Set up 26 th February 2019		Numbers of eggs laid on 15 cauliflower plants. Set up 9 th April 2019
	Male	Female	
7 th June	0	0	2
11 th June	1	0	7
14 th June	2	3	0
18 th June	2	1	11
21 st June	4	3	59
25 th June	2	3	121
28 th June	7	10	64
2 nd July	14	8	328
5 th July	30	8	285
9 th July	81	43	258
12 th July	139	50	594
16 th July	124	62	660
19 th July	70	70	371
23 rd July	58	121	117
26 th July	10	54	122
30 th July	8	61	35
2 nd August	13	29	14
6 th August	31	16	34
9 th August	24	11	54
13 th August	44	14	26
16 th August	115	30	8
20 th August	189	48	40
23 rd August	221	28	148
27 th August	83	17	39



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Date	Adult cabbage root flies - total in 3 traps near overwintered swedes. Set up 26 th February 2019		Numbers of eggs laid on 15 cauliflower plants. Set up 9 th April 2019
	Male	Female	
30 th August	176	33	38
3 rd September	527	115	253
6 th September	528	98	166
10 th September	700	223	163
13 th September	207	87	78
17 th September	118	50	82
20 th September	114	36	59
24 th September	328	101	46
27 th September	127	101	29
1 st October	163	98	28
4 th October	24	55	14
7 th October	31	60	16
11 th October	6	19	5
15 th October	5	21	0
18 th October	2	12	0
22 nd October	4	9	0
25 th October	1	4	0
29 th October	2	2	3