



In partnership with



## CABBAGE ROOT FLY – 30 July 2020

Page	Contents
1	Introduction
2	Cabbage root fly forecasts 2020
4	Cabbage root fly monitoring 2020
9	Historical information from 2019

### 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 in late May (10% 25 May) and to have started 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.**

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

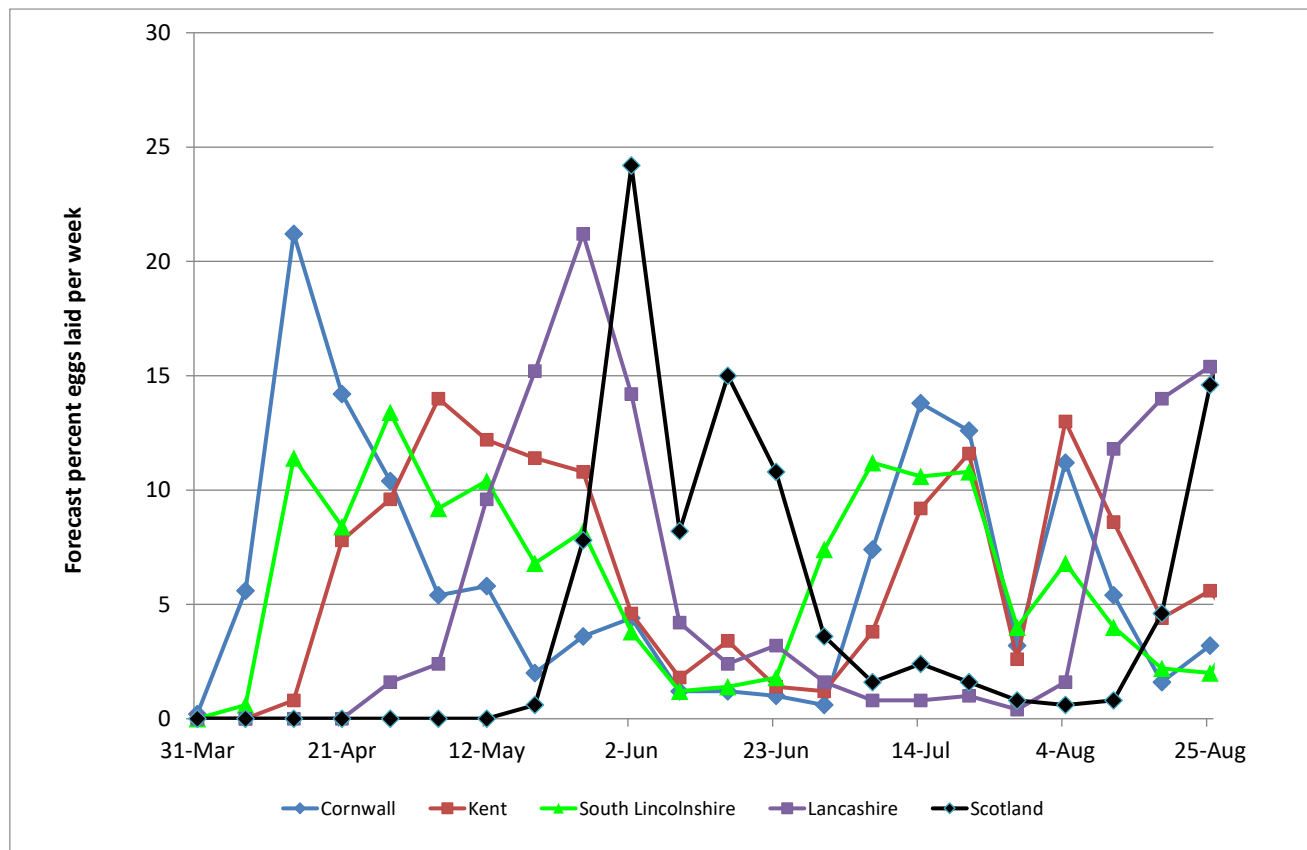
Region	First generation	First generation	Second generation	Second generation	Third generation
	Forecast 10% egg-laying in 2020	Forecast 50% egg-laying in 2020	Forecast 10% egg-laying in 2020	Forecast 50% egg-laying in 2020	Forecast 10% egg-laying in 2020
Cornwall (Newquay)	8 Apr	20 Apr	7 Jul	31 Jul	7 Sep
Kent (Sittingbourne)	21 Apr	7 May	9 Jul	5 Aug	9 Sep
Suffolk (Woodbridge)	20 Apr	6 May	23 Jun	14 Jul	16 Aug
Wellesbourne (Warwick)	17 Apr	29 Apr	23 Jun	12 Jul	18 Aug
Norfolk (Norwich)	22 Apr	15 May	14 Jul	1 Aug	10 Sep
South Lincolnshire (Boston)	11 Apr	1 May	29 June	22 Jul	29 Aug
Nottingham (Bilsthorpe)	27 Apr	16 May	17 Jul	6 Aug	14 Sep
Lancashire (Ormskirk)	8 May	21 May	9 Aug	25 Aug	-
York (Market Weighton)	6 May	18 May	15 Jul	6 Aug	18 Sep
Scotland (Blairgowrie)	26 May	10 Jun	20 Aug	5 Sep	-



In partnership with



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





### 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 <sup>th</sup> May.		Numbers of eggs laid on 15 cauliflower plants. Set up on 22 May.
	Male	Female	
22 <sup>nd</sup> May	8	3	-
26 <sup>th</sup> May	4	1	1
29 <sup>th</sup> May	3	2	0
2 <sup>nd</sup> June	12	1	0
5 <sup>th</sup> June	4	2	6
9 <sup>th</sup> June	4	3	7
12 <sup>th</sup> June	8	5	44
16 <sup>th</sup> June	20	8	32
19 <sup>th</sup> June	11	4	19
23 <sup>rd</sup> June	6	9	24
26 <sup>th</sup> June	7	4	43
30 <sup>th</sup> June	8	12	55
3 <sup>rd</sup> July	31	25	53
7 <sup>th</sup> July	30	18	58
10 <sup>th</sup> July	15	11	16
14 <sup>th</sup> July	64	10	40
17 <sup>th</sup> July	20	7	5
21 <sup>st</sup> July	27	5	0
24 <sup>th</sup> July	21	8	3/0 (old/new plants)
28 <sup>th</sup> July	25	8	4 (new plants)



In partnership with



**We first set up the traps in some overwintered swedes at Wellesbourne but because of COVID-19 the traps were moved to the village allotments and a garden at Tysoe in south Warwickshire. No cabbage root flies were captured before the traps were moved. The traps were moved back to Wellesbourne on 19<sup>th</sup> May.**

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



In partnership with



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





In partnership with



Cabbage root fly egg-laying

Some monitoring plants (cauliflower) have been set up in the garden in Tysoe, Warwickshire on 18<sup>th</sup> April.

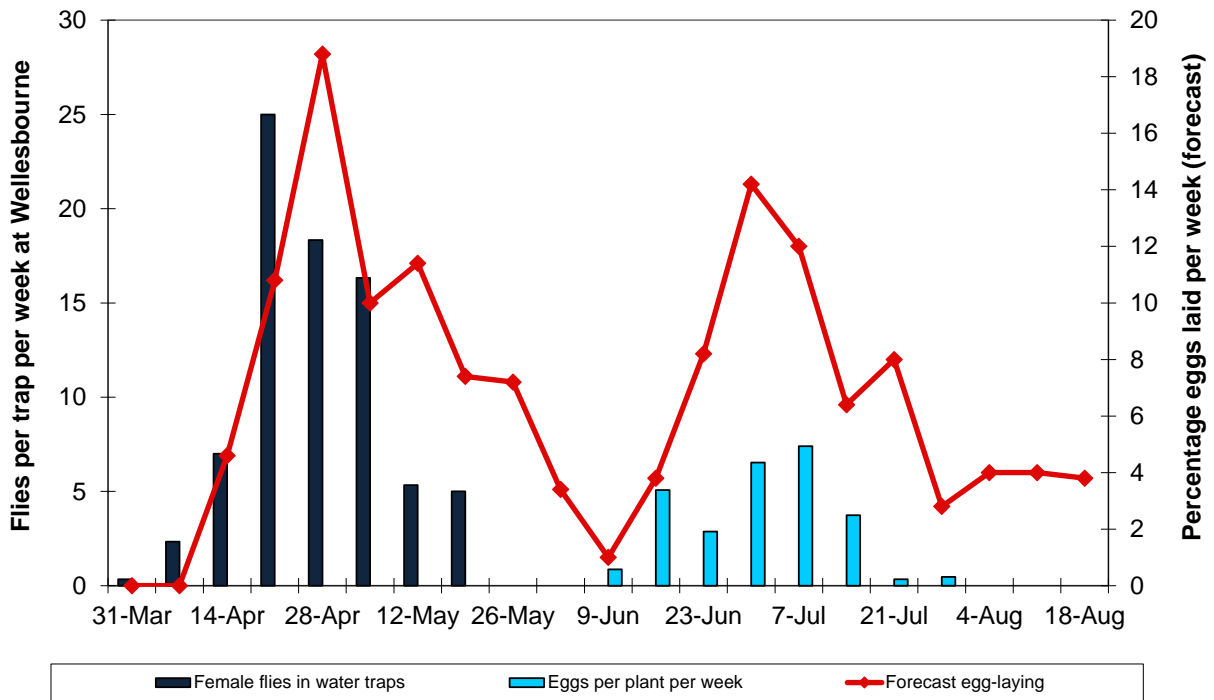
Date	Number of eggs	Number of plants
23 <sup>rd</sup> April	1	15
27 <sup>th</sup> April	1	15
3 <sup>rd</sup> May	3	15
9 <sup>th</sup> May	10	15
13 <sup>th</sup> May	6	15
17 <sup>th</sup> May	26	15



In partnership with



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.





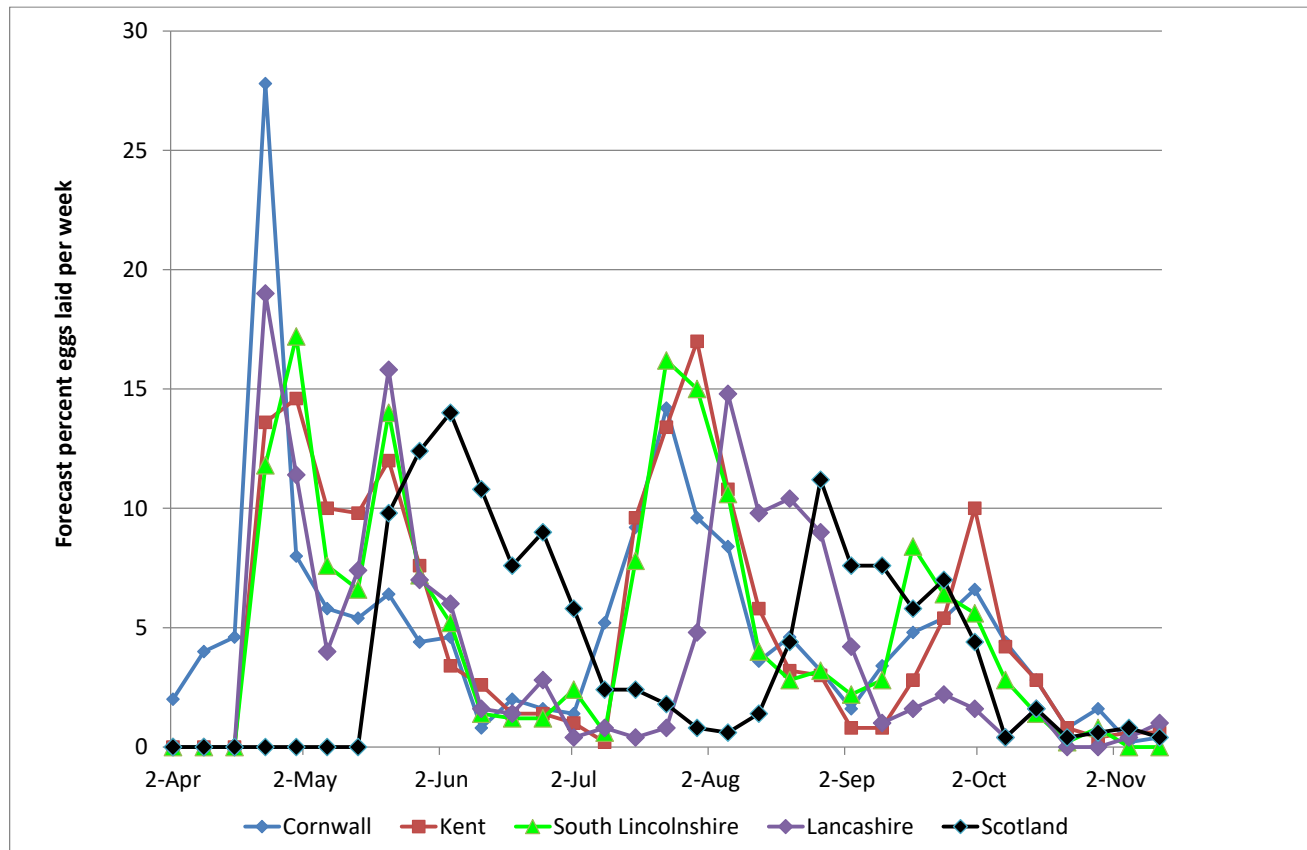


In partnership with



### Historical information from 2019

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

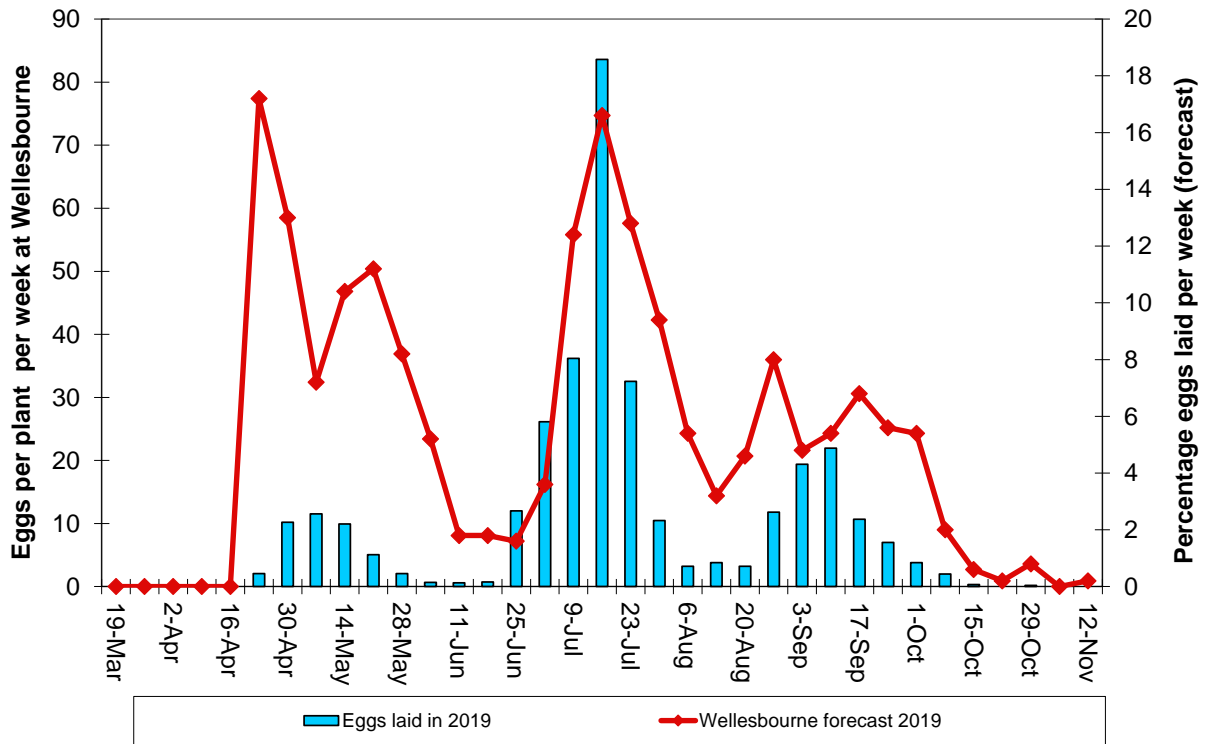




In partnership with



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



In partnership with



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



In partnership with



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