12th March 2013

# Aphid News

ROTHAMSTED RESEARCH

British Beet BBRO Research Organisation

## POTATO, SUGAR BEET AND BRASSICA APHID FORECASTS 2013

The long run of aphid data from our suction trap network, combined with the long run of weather data available from the Met Office and others, makes it possible to establish relationships between weather and the timing of the start of aphid flights and aphid abundance in spring and early summer. The best predictor is the mean temperature in January and February, and confidence is greatest for those aphid species which pass the winter in the active stages rather than as eggs, including Peach–potato aphid (*Myzus persicae*) and Potato aphid (*Macrosiphum euphorbiae*). This is because active stages are susceptible to low winter temperatures but can take advantage of warm conditions, whereas eggs are very cold hardy and in diapause, so don't respond to warm conditions in mid-winter. Although Cabbage aphid (*Brevicoryne brassicae*) overwinters mainly in the active stages it flies later and is more difficult to predict.

The winter was colder than the long-term average throughout the Country, especially in the southern half where January and February were between 1°C and 2°C below normal, leading to expected first aphid flights of two to four weeks later than average. In the northern half of the Country average temperatures were less than 1°C below normal, leading to expected first aphid flights of up to two weeks later than average.

| | Monthly mean temp °C | | Mean temp Jan-Feb °C |
|---|---|---|---|
| | Jan | Feb | |
| **Dundee** | 3.50 | 3.30 | 3.40 |
| **Gogarbank** | 3.70 | 3.50 | 3.60 |
| **Ayr** | 4.56 | 3.65 | 4.11 |
| **Newcastle** | 4.30 | 3.90 | 4.10 |
| **Preston** | 3.50 | 2.95 | 3.23 |
| **Kirton II** | 2.70 | 2.80 | 2.75 |
| **Broom's Barn** | 2.80 | 2.83 | 2.81 |
| **Hereford** | 2.90 | 1.70 | 2.30 |
| **Rothamsted** | 2.71 | 2.68 | 2.69 |
| **Writtle** | 3.53 | 2.94 | 3.24 |
| **Silwood** | 3.43 | 1.31 | 2.37 |
| **Wye** | 4.00 | 3.00 | 3.50 |
| **Starcross** | 4.90 | 3.60 | 4.25 |

The tables give the following information:

For *Myzus persicae, Macrosiphum euphorbiae* and *Brevicoryne brassicae*, the predicted date of first capture at the listed sites, together with the position of this year's prediction out of all years of trap operation (*e.g.* 24/47 = 24th earliest out of 47 years).
For *Myzus persicae* and *Macrosiphum euphorbiae*, the predicted numbers caught by 17th June and for *Brevicoryne brassicae* by 7th October, together with the position of this year's prediction out of all years of trap operation (*e.g.* 17/47 = 17th largest number out of 47 years).

A major feature of the winter was high rainfall but this is not expected to have had a significant influence on aphid survival. Nonetheless, by no means all the variability in the aphid data is captured by winter temperature and the actual dates should be seen as very approximate.
**The general message is that, if spring does not throw any wildly abnormal conditions at us, aphids will be flying considerably later than normal, especially in the south.**

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## Peach—potato aphid (*Myzus persicae*)

| | 1st Capture in suction trap | | | Numbers to 17th June | | |
|---|---|---|---|---|---|---|
| | Predicted | 75% Confidence limits | Ranking | Predicted | 75% Confidence limits | Ranking |
| Dundee | 16 Jun | (21 May - 11 Jul) | 24/47 | 1 | (0 - 4) | =17/47 |
| Gogarbank | 17 Jun | (26 May - 9 Jul) | =25/45 | 1 | (0 - 6) | =21/45 |
| Ayr | 29 Jun | (5 Jun - 24 Jul) | 16/34 | 0 | (0 - 1) | =14/34 |
| Newcastle | 25 Jun | (29 May - 22 Jul) | 24/45 | 1 | (0 - 5) | =13/45 |
| Preston | 24 May | (20 Apr - 28 Jun) | =24/38 | 2 | (0 - 8) | =25/38 |
| Kirton | 31 May | (15 May - 16 Jun) | 25/34 | 4 | (0 - 19) | 22/34 |
| Broom's Barn | 05 Jun | (19 May - 22 Jun) | 39/49 | 4 | (0 - 19) | =33/49 |
| Hereford | 19 Jun | (29 May - 9 Jul) | 34/42 | 1 | (0 - 5) | =29/42 |
| Rothamsted | 02 Jun | (17 May - 18 Jun) | 34/49 | 5 | (1 - 17) | =35/49 |
| Writtle | 15 May | (18 Apr - 10 Jun) | 27/39 | 14 | (3 - 61) | 28/39 |
| Silwood Park | 24 May | (4 May - 14 Jun) | 28/34 | 4 | (1 - 18) | =26/33 |
| Wye | 10 May | (5 Apr - 14 Jun) | 23/46 | 17 | (5 - 56) | 22/45 |
| Starcross | 14 May | (12 Apr - 16 Jun) | =30/44 | 6 | (2 - 19) | =25/42 |

## Potato aphid *(Macrosiphum euphorbiae)*

| | 1st Capture in suction trap | | | Numbers to 17th June | | |
|---|---|---|---|---|---|---|
| | Predicted | 75% Confidence limits | Ranking | Predicted | 75% Confidence limits | Ranking |
| Dundee | 2 Jun | (9 May - 27 Jun) | =26/47 | 3 | (0 - 12) | =22/47 |
| Gogarbank | 25 May | (2 May - 17 Jun) | =28/45 | 8 | (2 - 29) | 26/45 |
| Ayr | 01 Jun | (13 May - 21 Jun) | 21/36 | 2 | (1 - 6) | =19/35 |
| Newcastle | 09 Jun | (20 May - 28 Jun) | 28/45 | 3 | (0 - 12) | =20/45 |
| Preston | 29 May | (12 May - 14 Jun) | 29/38 | 5 | (2 - 11) | =24/38 |
| Kirton | 23 May | (3 May - 11 Jun) | 26/34 | 6 | (1 - 20) | 25/34 |
| Broom's Barn | 05 Jun | (16 May - 25 Jun) | 36/49 | 2 | (0 - 8) | =33/49 |
| Hereford | 30 May | (13 May - 16 Jun) | 35/42 | 4 | (1 - 14) | =32/42 |
| Rothamsted | 25 May | (4 May - 14 Jun) | =36/49 | 6 | (1 - 19) | =30/49 |
| Writtle | 13 May | (20 April - 5 Jun) | 27/39 | 13 | (4 - 40) | =29/39 |
| Silwood Park | 21 May | (4 May - 7 Jun) | 27/34 | 11 | (3 - 34) | =24/33 |
| Wye | 12 May | (20 April - 3 Jun) | =21/45 | 12 | (3 - 38) | =18/45 |
| Starcross | 2 May | (9 April - 26 May) | =23/43 | 14 | (5 - 35) | =28/42 |

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## Cabbage aphid (*Brevicoryne brassicae)*

| | 1st Capture in suction trap | | | Numbers to 7th October | | |
|---|---|---|---|---|---|---|
| | Predicted | 75% Confidence limits | Ranking | Predicted | 75% Confidence limits | Ranking |
| Dundee | 30 Jul | (17 Jun - 10 Sept) | 22/46 | 5 | (0 - 35) | =22/46 |
| Gogarbank | 28-Jul | (15 Jun - 9 Sept) | 21/44 | 3 | (0 - 12) | =19/43 |
| Ayr | 13 Aug | (10 Jul - 16 Sept) | =15/34 | 1 | (0 - 5) | =13/31 |
| Newcastle | 08 Aug | (9 Jul - 6 Sept) | 18/44 | 3 | (0 - 16) | =20/44 |
| Preston | 25 Jul | (18 Jun - 31 Aug) | 27/39 | 6 | (1 - 26) | 26/39 |
| Kirton | 14 Jul | (9 Jun - 17 Aug) | =25/34 | 35 | (6 - 178) | 23/34 |
| Broom's Barn | 22 Jun | (4 Jun - 9 Jul) | =32/49 | 106 | (20 - 544) | 31/49 |
| Hereford | 26 Jun | (4 Jun - 18 Jul) | =32/42 | 68 | (14 - 323) | 28/40 |
| Rothamsted | 26 Jun | (1 Jun - 22 Jul) | 36/49 | 46 | (8 - 247) | =31/49 |
| Writtle | 12 Jun | (23 May - 1 Jul) | 27/39 | 150 | (27 - 813) | 23/38 |
| Silwood Park | 21 Jun | (25 May - 18 Jul) | 24/33 | 23 | (3 - 134) | 22/32 |
| Wye | 15 Jun | (15 May - 16 Jul) | =28/44 | 55 | (8 - 328) | 21/43 |
| Starcross | 18 May | (21 April - 15 Jun) | =24/42 | 128 | (44 - 369) | 23/40 |

More aphid information available at http://www.rothamsted.ac.uk/insect-survey/ .
Please feed back any information on aphids in crops.
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