

Pest aphids and climate change

The pest insects of vegetable crops can be monitored using a variety of methods. The **suction trap** at Wellesbourne is particularly effective for monitoring aphid numbers. It is part of the network of traps run by the **Rothamsted Insect Survey** and runs 365 days of the year. The information it generates is published online: <http://www.rothamsted.ac.uk/insect-survey/>

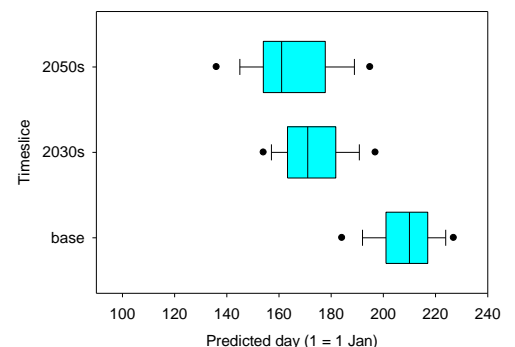
Some of the suction traps in the network have been running for more than 40 years and so they give a good indication of the relationship between the timing of aphid migrations, aphid abundance and weather conditions. These relationships have been used to develop weather-based forecasts of aphid activity which are used to give farmers 'early warnings' each year.



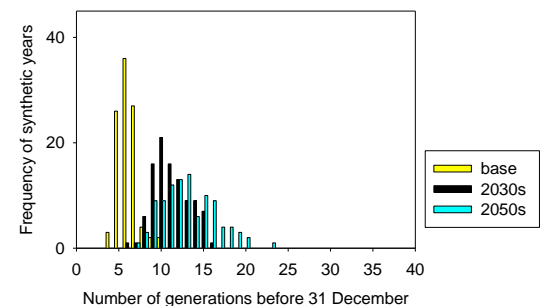
Climate change predictions for the UK have been produced by the UK Climate Impacts Programme (UKCIP), the latest version being UKCP09. Translation of these general predictions into a format that can be applied to specific cropping situations is facilitated by "weather generators" that produce synthetic daily time series of weather data with high spatial resolution.

The outputs from weather generators can be used either to estimate the frequency of a defined set of circumstances known to have an impact on cropping, e.g. dry or waterlogged soil, or as inputs to models of crop scheduling or pest activity/survival. At Warwick we have used this approach to evaluate the risk of several potential impacts on crop growth and development and associated pests and diseases in several horticultural species

Camborne Cornwall
Predicted FIRST sighting of myzus persicae (Peach Potato Aphid) using Rothamsted model re-run using data synthesised by UKCP09 weather generator and High emissions scenario



Peach Potato Aphid simulations for Fowlis Angus using model 1 and synthetic weather from UKCP09 HIGH emissions



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