**Garratt, Michael P D, Bommarco, Riccardo, van Gils, Stijn, Martin, Emily, Redlich, Sarah, Steffan-Dewenter, Ingolf, Switek, Stanislaw, Kleijn, David, Mortimer, Simon, van der Putten, Wim, Takacs, Victoria, Senapathi, Deepa, Potts, Simon (2018): Crop growth and aphid populations in winter wheat fields from across Europe. University of Reading. Dataset. http://dx.doi.org/10.17864/1947.136**

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**Supporting Documentation**

This dataset contains the data on aphid populations, crop morphology and yield used in the manuscript ‘Enhancing soil organic matter as a route to the ecological intensification of European arable systems’ published in the journal Ecosystems. Please see manuscript for full detail of the experimental design.

The dataset is made up of 3 CSV files. The first ‘Aphid\_and\_crop\_morphology\_data’ contains data on aphid populations and crop morphology for each field plot from the field pairs in each of the 5 countries. One field in each pair had high (H) or low (L) soil organic carbon and one plot in each field had nitrogen fertilisers applied ‘Fertiliser’ or no ‘NoFert’. Ear mass and tiller mass in grams from individual tillers collected from a sub-sample are provided. Aphid pest pressure as Aphid days per tiller is then provide for three common aphid species.

The second, ‘Yield\_data’ contain yield data in Tonnes per hectare established from a dried, threshed and weighed crop sub-sample collected from each study plot.

The third, ‘Aphid\_cage\_study\_data’ contains data on aphid population change from an inoculation experiment where *Sitobion avenae* populations were established in plots of wheat under cages to protect against predation by natural enemies. Data on the number of wheat tillers inside each cage as well as the number of aphids at the first count ‘Round1’ and the second count ‘Round2’ are provide as well as percentage change and relative population growth as the second count divided by the first.