1. ABOUT THE DATASET

------------

Title: Flower visitor, fruit yield and fruit quality data from UK apple orchards under flowering and nesting habitat interventions

Creator(s): Garratt, Michael P. D. [1], O’Connor, Rory [1], Kinneen, Lois [1], Fountain, Michelle T. [2] and Carvell, Claire [3].

Organisation(s): [1] University of Reading, [2] NIAB EMR and [3] UK Centre for Ecology and Hydrology.

Rights-holder(s): University of Reading, UK Centre for Ecology and Hydrology and National Institute of Agricultural Botany.

Publication Year: 2022

Description: These data include information on flower visitors, fruit set and fruit quality (size, weight and seed number) of apples grown under different pollination treatments including pollinator exclusion (no visitation by insects), open pollination (visitation by insects) and supplementary pollination (hand pollinated) in orchards receiving combinations of nesting floral habitat interventions. Data were collected for the Sustainable Pollination Services for UK crops project.

Cite as: Michael P. D. Garratt, Rory O’Connor, Lois Kinneen, Michelle T. Fountain and Claire Carvell(2022): Flower visitor, fruit yield and fruit quality data from UK apple orchards under flowering and nesting habitat interventions. Dataset. https://dx.doi.org/10.17864/1947.000400

Related publication: Michael P. D. Garratt, Rory O’Connor, Claire Carvell, Michelle T Fountain, Tom D. Breeze, Richard Pywell, John Redhead, Lois Kinneen, Nadine Mitschunas, Louise Truslove, Celina Xavier e Silva, Nigel Jenner, Caroline Ashdown, Claire Brittain, Megan McKerchar, Charnee Butcher, Mike Edwards, Marek Nowakowski, Peter Sutton, and Simon G. Potts (2022) Addressing pollination deficits in orchard crops through habitat

management for wild pollinators. Ecological Applications. ISSN 0051-0761 (In Press)

2. TERMS OF USE

-----------------

Copyright 2022 University of Reading, UK Centre for Ecology and Hydrology and National Institute of Agricultural Botany.

This dataset is licensed under a Creative Commons Attribution 4.0 International Licence: https://creativecommons.org/licenses/by/4.0/.

3. CONTENTS

------------

Six CSV files 1. Transect\_Data\_Final\_Header, 2. FruitSet\_Data\_Final\_Header, 3. FruitQuality\_Data\_Final\_Header contains lists of all column headers for each of the datasets and a description of the data contained within that column. 4. Transect\_Data\_Final, 5. FruitSet\_Data\_Final and 6. FruitQuality\_Data\_Final includes the raw data.

4. METHODS

--------------------------

Data on insect pollinators and pollination in apples were gathered from 23 conventionally managed Gala apple orchards in Kent, UK. Data on flower visitors was collected using transect surveys to record flower visitors to broad groups including bumblebees, honeybees, solitary bees, hoverflies, other flies and other insects. Branches on 15 trees in each study orchard were also assessed for pollination following manipulations which included pollinator exclusion using net bags, supplementary pollination, whereby pollen was applied by hand using compatible pollen from local polliniser trees or neighbouring varieties, and open ‘controls’ accessible to insect visits. From these branches, metrics of apple pollination, including early fruit set, final fruit set, seed number per apple, apple size (max width mm) and apple weight (g) were collected. Study orchards had received differing habitat interventions including flower plots established adjacent to them, nesting habitat in the form of bare ground extensions, and control orchards with no intervention.

For full details see: Michael P. D. Garratt, Rory O’Connor, Claire Carvell, Michelle T Fountain, Tom D. Breeze, Richard Pywell, John Redhead, Lois Kinneen, Nadine Mitschunas, Louise Truslove, Celina Xavier e Silva, Nigel Jenner, Caroline Ashdown, Claire Brittain, Megan McKerchar, Charnee Butcher, Mike Edwards, Marek Nowakowski, Peter Sutton, and Simon G. Potts (2022) Addressing pollination deficits in orchard crops through habitat management for wild pollinators. Ecological Applications. ISSN 0051-0761 (In Press)