1. ABOUT THE DATASET

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

Title: Apple fruit set and quality under contrasting pollination treatments for multiple apple varieties from multiple countries

Creator(s): Garratt, Michael P. D. [1], O’Connor, Rory [1], Potts, Simon G. [1], Webber, Sean [1], Andersson, George K. S. [2], Garibaldi, Lucas A. [3], Bernauer, Olivia M. [4], Blitzer, Eleanor J. [5], Boreux, Virginie [6], Klein, Alex. M. [6], Pufal, Gesine [6], Roquer-Beni, Laura [7], Bosch, Jordi [7], Campbell, Alistair [8] Wäckers, Felix [9], de Groot, G. A. [10] Kirkitadze, Giorgi [11], Japoshvili, George [11] Kovács-Hostyánszki, Aniko [12], Földesi, Rita [12] Martins, Kyle T. [13] Miñarro, Marcos [14], García, Daniel [15] Paxton, Robert J. [16], Zhusupbaeva, Aigul [17], Scott, Lorraine [18] Radzeviciute, Rita [19], Samnegård, Ulrika [20,2], Hambäck, Peter A. [20] Vereecken, Nicolas J. [22]

Organisation(s): [1] University of Reading, [2] Lund University, [3] Universidad Nacional de Río Negro, [4] Western Sydney University, [5] Carroll College, [6] Albert-Ludwigs-University, [7] Universitat Autònoma de Barcelona, [8] Embrapa Amazônia Oriental, [9] Lancaster University, [10] Wageningen Environmental Research (WENR), [11] Agricultural University of Georgia, [12] MTA Lendület Ecosystem Services Research Group, Institute of Ecology and Botany, Centre for Ecological Research, [13] McGill University, [14] Servicio Regional de Investigación y Desarrollo Agroalimentario (SERIDA), [15] Universidad de Oviedo, [16] Martin Luther-University Halle-Wittenberg, [17] Academy of Public Administration Under the President of the Kyrgyz Republic, [18] Queen’s University Belfast, [19] University of Leipzig, [20] Stockholm University,[21] Université libre de Bruxelles

Rights-holder(s): University of Reading, Lund university, Universidad Nacional de Río Negro, Western Sydney University, Carroll College, Albert-Ludwigs-University, Universitat Autònoma de Barcelona, Embrapa Amazônia Oriental, Lancaster University, Wageningen Environmental Research (WENR), Agricultural University of Georgia, MTA Lendület Ecosystem Services Research Group, Institute of Ecology and Botany, Centre for Ecological Research, McGill University, Servicio Regional de Investigación y Desarrollo Agroalimentario (SERIDA), Universidad de Oviedo, Martin Luther-University Halle-Wittenberg, Academy of Public Administration Under the President of the Kyrgyz Republic, Queen’s University Belfast, University of Leipzig, Stockholm University, Lund University, Université libre de Bruxelles and Sean Webber.

Publication Year: 2021

Description: These data include information on fruit set and fruit quality (size, weight, seed number, sugar content and firmness) of apples grown under different pollination treatments including pollinator exclusion (no visitation by insects), open pollination (visitation by insects) and supplementary pollination (hand pollinated). Data were collected as part of several projects, and include data on multiple different varieties of apples from several different countries.

Cite as: Garratt, Michael P. D., O’Connor, Rory, Potts, Simon G., Webber, Sean, Andersson, George K. S., Garibaldi, Lucas A., Bernauer, Olivia M., Blitzer, Eleanor J., Boreux, Virginie, Klein, Alex. M., Pufal, Gesine, Roquer-Beni, Laura, Bosch, Jordi, Campbell, Alistair, Wäckers, Felix, de Groot, G. A., Kirkitadze, Giorgi, Japoshvili, George, Kovács-Hostyánszki, Aniko, Földesi, Rita, Martins, Kyle T., Miñarro, Marcos, García, Daniel, Paxton, Robert J., Zhusupbaeva, Aigul, Scott, Lorraine, Radzeviciute, Rita, Samnegård, Ulrika, Hambäck, Peter A., Vereecken, Nicolas J.

(2021): Apple fruit set and quality under contrasting pollination treatments for multiple apple varieties from multiple countries, University of Reading. Dataset. http://dx.doi.org/10.17864/1947.314

Related publication: Garratt, M., de Groot, A., Albrecht, M., Bosch, J., Breeze, T. , Fountain, M., Klein, A., McKerchar, M., Park, M., Paxton, R., Potts, S. , Pufal, G., Rader, R., Senapathi, D. , Andersson, G., Bernauer, O., Blitzer, E., Boreux, V., Campbell, A., Carvell, C., Földesi, R., García, D., Garibaldi, L., Hambäck, P., Kirkitadze, G., Kovács-Hostyánszki, A., Martins, K., Miñarro, M., O’Connor, R., Radzeviciute, R., Roquer-Beni, L., Samnegård, U., Scott, L., Vereecken, N., Wäckers, F., Webber, S., Japoshvili, G. and Zhusupbaeva, A. (2021) Opportunities to reduce pollination deficits and address production shortfalls in an important insect pollinated crop. Ecological Applications. ISSN 0051-0761 (In Press)

2. TERMS OF USE

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

Copyright 2021 University of Reading, Lund university, Universidad Nacional de Río Negro, Western Sydney University, Carroll College, Albert-Ludwigs-University, Universitat Autònoma de Barcelona, Embrapa Amazônia Oriental, Lancaster University, Wageningen Environmental Research (WENR), Agricultural University of Georgia, MTA Lendület Ecosystem Services Research Group, Institute of Ecology and Botany, Centre for Ecological Research, McGill University, Servicio Regional de Investigación y Desarrollo Agroalimentario (SERIDA), Universidad de Oviedo, Martin Luther-University Halle-Wittenberg, Academy of Public Administration Under the President of the Kyrgyz Republic, Queen’s University Belfast, University of Leipzig, Stockholm University, Lund University, Université libre de Bruxelles and Sean Webber.

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

3. CONTENTS

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

Two CSV files 1. ApplePollinationEAManuscriptHeaders contains a list of all column headers and a description of the data contained within that column in the dataset. 2. ApplePollinationEAManuscriptData includes the raw data on fruit set and fruit quality.

4. METHODS

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

Datasets on insect pollination in apples were gathered from regions around the world, including intensive commercial orchards and low intensity smaller scale production. Data holders were identified and approached following a workshop held on apple pollination as part of the ‘Sustainable Pollination in Europe’ Super-B COST Action Project to which European and other international researchers were invited. Studies were included if they involved manipulation of apple blossoms. Manipulations 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. Studies recorded metrics of apple pollination, including early fruit set and seed number per apple, or apple production such as fruit set at harvest and fruit quality in terms of apple size (max width mm), weight (g), firmness (kg/cm measured using a penetrometer) and sugar content (%brix measured using a refractometer).

For full details see: Garratt, M., de Groot, A., Albrecht, M., Bosch, J., Breeze, T. , Fountain, M., Klein, A., McKerchar, M., Park, M., Paxton, R., Potts, S. , Pufal, G., Rader, R., Senapathi, D. , Andersson, G., Bernauer, O., Blitzer, E., Boreux, V., Campbell, A., Carvell, C., Földesi, R., García, D., Garibaldi, L., Hambäck, P., Kirkitadze, G., Kovács-Hostyánszki, A., Martins, K., Miñarro, M., O’Connor, R., Radzeviciute, R., Roquer-Beni, L., Samnegård, U., Scott, L., Vereecken, N., Wäckers, F., Webber, S., Japoshvili, G. and Zhusupbaeva, A. (2021) Opportunities to reduce pollination deficits and address production shortfalls in an important insect pollinated crop. Ecological Applications. ISSN 0051-0761 (In Press)