

Data on the effects of crop rotational diversity and nitrogen fertilisation on cereal yields - Data on effects of crop rotational diversity and nitrogen fertilisation on cereal yields

SND-ID: 2022-230-1. **Version:** 1. **DOI:** <https://doi.org/10.5878/8af1-0q60>

Download data

yield_anomalies_publication.tsv (2.21 MB)

Associated documentation

Crop_rotational_information_desc.txt (2.13 KB)

Crop_rotational_information.tsv (8.05 KB)

Metadata.txt (4.14 KB)

R_script_Smith_et al.pdf (3.62 MB)

R_script_Smith_et al.Rmd (41.09 KB)

Download all files

2022-230-1-1.zip (~5.88 MB)

Citation

Smith, M., & Bommarco, R. (2023) Data on the effects of crop rotational diversity and nitrogen fertilisation on cereal yields - Data on effects of crop rotational diversity and nitrogen fertilisation on cereal yields (Version 1) [Data set]. Swedish University of Agricultural Sciences. Available at: <https://doi.org/10.5878/8af1-0q60>

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Principal's reference number

SLU.ekol.2023.4.4.IÄ-9

Description

Data contain standardised yields of several different cereals collected between 1958 and 2020 from 32 long-term agricultural trials across North America and Europe. Yields in tonnes per hectare were standardised against the overall mean yield per site across all treatments and years. Treatments include different levels of crop rotational diversity and nitrogen fertilisation.

This data was used in the article: Smith et al., Increasing crop rotational diversity can enhance cereal yields, Communications Earth and Environment, 2023.

See the attached documents for more information, including, 'Metadata.txt' for description of data codes, 'Crop_rotation_information_desc.txt' and 'Crop_rotation_information.tsv' detailing cropping sequence and mean yields of each rotation per site and 'R_script_Smith_etal.Rmd' to see how this data was used in the associated article.

R markdown output of the script is provided in the form of R_script_Smith_etal.pdf.

Data contains personal data

No

Language

[English](#)

Time period(s) investigated

1958 - 2020

Variables

18

Data format / data structure

[Numeric](#)

[Text](#)

Species and taxons

[Poaceae](#)

[Zea mays](#)

[Hordeum vulgare](#)

[Secale cereale](#)

[Triticum aestivum](#)

[x triticosecale](#)

[Avena sativa](#)

Data collection 1

- Mode of collection: Field/Intervention experiment
- Description of the mode of collection: Data was originally collected from long-term agricultural trials across Europe and North America (see contributors of data). A research team at SLU collated and formatted the data to fit the purpose of examining the trends for the effects of crop rotational diversity and nitrogen fertilisation on cereal yields across a large geographical range.
- Time period(s) for data collection: 1958 - 2020
- Temporal resolution: 1 year

Geographic spread

Geographic location: [Canada](#), [United States](#), [Europe](#)

Geographic description: Data was originally collected from long-term agricultural trials across Europe and North America.

Responsible department/unit

Department of Ecology

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Research area

[Natural sciences](#) (Standard för svensk indelning av forskningsämnen 2011)

[Ecology](#) (Standard för svensk indelning av forskningsämnen 2011)

[Agriculture, forestry and fisheries](#) (Standard för svensk indelning av forskningsämnen 2011)

[Agricultural science](#) (Standard för svensk indelning av forskningsämnen 2011)

[Farming](#) (INSPIRE topic categories)

[Environment](#) (INSPIRE topic categories)

Keywords

[Cultivation system](#), [Crop rotation](#), [Agricultural and aquaculture facilities](#), [Crop rotational diversity](#), [Grain yield](#), [Long-term agricultural trials](#), [Nitrogen fertilizers](#), [Cropping sequence](#)

Publications

Smith, Vico, Costa, Bowles, Gaudin, Hallin, Watson, Alarcón, Berti, Blecharczyk, Calderon, Culman, Deen, Drury, Garcia y Garcia, García-Díaz, Hernández Plaza, Jonczyk, Jäck, Lehman, Montemurro, Morari, Onofri, Osborne, Pasamón, Sandström, Santín-Montanyá, Sawinska, Schmer, Stalenga, Strock, Tei, Topp, Ventrella, Walker, Bommarco, "Increasing crop rotational diversity can enhance cereal yields", Communications Earth and Environment, 2023.

: accepted manuscript

If you have published anything based on these data, [please notify us](#) with a reference to your publication(s). If you are responsible for the catalogue entry, you can update the metadata/data description in DORIS.

Accessibility level

Access to data through SND

Data are freely accessible

Use of data

[Things to consider when using data shared through SND](#)

Versions

Version 1. 2023-03-07

Contact for questions about the data

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Download metadata

[DataCite](#)

[DDI 2.5](#)

[DDI 3.3](#)

[DCAT-AP-SE 2.0](#)

[JSON-LD](#)

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[File overview \(CSV\)](#)

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