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| **Category** | **Column** | **Data collected** | **Units** | **Notes** | **Source / Formula** |
| I. General information of the paper | A | Author |  |  | Paper |
| B | Journal |  |  |
| C | Publish year |  |  |
| II. Experiment information | D | Country of experimental site |  |  |
| E | Location of experimental site |  |  |
| F | Latitude of experimental site | Degree |  |
| G | Longitude of experimental site | Degree |  |
| H | Soil type or texture |  |  |
| I | Surface pH of experimental site |  |  |
| J | Number of experiment replications |  |  |
| K | Crop type |  | Including 8 crops: barley (spring & winter barley), cotton, maize, rice, sorghum, soybean, sunflower, wheat (spring & winter wheat). |
| L | Initial year of NT practice | Year | If not mentioned in the paper, then this is assumed to be the initial year of the experiment. |
| M | Crop sowing year | Year |  |
| N | Crop harvesting year | Year |  |
| O | Years since NT started | Year |  |  |
| P | Crop planting month and harvesting month | Month | Crop growing season reported in the paper. | Paper |
| III. Information about agricultural management activities | Q | Crop rotation with at least 3 crops involved in CT practice |  | Here we set crop rotation as “Yes” only when the crop species (including the cover crops) involved in the crop rotation sequence is more than 2 species in accordance with the FAO’s definition of Conservation Agriculture. More details about the crop sequence can be found in column S. |
| R | Crop rotation with at least 3 crops involved in NT practice |  | Two categories: “Yes”, “No”. |
| S | Details of crop rotation sequence |  |  |
| T | Cover crop before sowing |  | Set to “Yes” if a cover crop is present in the experiment |
| U | Soil cover in CT practice |  | Four categories: “Yes”, “No”, “Mixed”, “Not reported”. Here we set soil cover as “Yes” when more than 30% of the soil is covered even after tillage, or when plastic/residue mulch exists. We set soil cover as “Mixed” for yield data corresponding to the average yields of both categories “Yes” and “No”. |
| V | Soil cover in NT practice |  | Four categories: “Yes”, “No”, “Mixed”, “Not reported”. Here we set soil cover as “Yes” only when more than 30% of the soil is covered in current cropping season and residues from current cropping season are retained. We set soil cover as “Mixed” for yield data corresponding to the average yields of both categories “Yes” and “No”. |
| W | Details of residue management of previous crop in CT practice |  |  |
| X | Details of residue management of previous crop in NT practice |  |  |
| Y | Weed and pest control in CT practice |  | Three categories: “Yes”, “No”, “Not reported”. |
| Z | Weed and pest control in NT practice |  | Three categories: “Yes”, “No”, “Not reported”. |
| AA | Details of weed and pest control in CT practice |  |  |
| AB | Details of weed and pest control in NT practice |  |  |
| AC | Field fertilization in CT practice |  | Four categories: “Yes”, “No”, “Mixed”, “Not reported”. We set field fertilization as “Mixed” for yield data corresponding to the average yields of both categories “Yes” and “No”. |
| AD | Field fertilization in NT practice |  | Four categories: “Yes”, “No”, “Mixed”, “Not reported”. We set field fertilization as “Mixed” for yield data corresponding to the average yields of both categories “Yes” and “No”. |
| AE | N input |  | Four categories: “Yes”, “No”, “Mixed”, “Not reported”. We set N input as “Mixed” for yield data corresponding to the average yields of both categories “Yes” and “No”. |
| AF | N input in details with the unit kg N ha-1 |  |  |
| AG | Details about field fertilization |  |  |
| AH | Crop irrigation in CT practice |  | Four categories: “Yes”, “No”, “Mixed”, “Not reported”. We set crop rotation as “Mixed” for yield data corresponding to the average yields of both categories “Yes” and “No”. |
| AI | Crop irrigation in NT practice |  | Four categories: “Yes”, “No”, “Mixed”, “Not reported”. We set crop rotation as “Mixed” for yield data corresponding to the average yields of both categories “Yes” and “No”. |
| AJ | Details of water applied in CT practice |  | Water applied in the field with the unit mm/ha/year |
| AK | Details of water applied in CT practice |  | Water applied in the field with the unit mm/ha/year |
| IV. Other detailed information | AL | More detailed information about the experiment setting and the agricultural activities |  |  |
| V. Information about crop yield | AM | Crop yield under CT practice | kg/ha |  |
| AN | Crop yield under NT practice | kg/ha |  |
| AO | Relative yield change |  |  |  |
| AP | Yield increase with NT practice? |  | Yes = yield increased with NT  No = yield not increased with NT |  |
| AQ | Outlier of crop yield in CT practice |  | Set to “Yes” if it is an outlier for corresponding crop species |  |
| AR | Outlier of crop yield in NT practice |  | Set to “Yes” if it is an outlier for corresponding crop species |  |
| VI. Information from external databases: climatic variables and soil texture | AS | Crop growing season start month | Month | Crop growing season was extracted from the external crop calendar databases of spring barley, winter barley, cotton, maize, rice, sorghum, soybean, sunflower, spring wheat and winter wheat based on the crop type and location | University of Wisconsin-Madison1 |
| AT | Crop growing season end month | Month | Crop growing season were extracted from the external crop calendar databases of spring barley, cotton, maize, rice, sorghum, soybean and winter wheat based on the crop type and location | University of Wisconsin-Madison1 |
| AU | Precipitation over the growing season | mm | Precipitation was extracted from the external database based on the location, year of the experiment and crop growing season from the external database. The precipitations in each month were added together. | NOAA/OAR/ESRL PSL2 |
| AV | Potential evapotranspiration over the growing season | mm | Potential evapotranspiration was extracted from the external database based on the location, year of the experiment and crop growing season from the external database. The potential evapotranspiration rates in each month were added together. | GHENT university/ESA GLEAM3,4 |
| AW | Precipitation balance | mm | Indicated the amount of available water in the growing season for rainfed field |  |
| AX | Average air temperature during the growing season | ℃ | Average temperature was extracted from the external database based on the location, year of the experiment and crop growing season from the external database. The temperature in each month were averaged. | NOAA/OAR/ESRL PSL2 |
| AY | Maximum air temperature during the growing season | ℃ | Maximum temperature was extracted from the external database based on the location, year of the experiment and crop growing season from the external database. The temperatures in each month of the growing season were compared, the maximum one was recorded. | NOAA/OAR/ESRL PSL5 |
| AZ | Minimum air temperature during the growing season | ℃ | Minimum temperature was extracted from the external database based on the location, year of the experiment and crop growing season from the external database. The temperatures in each month of the growing season were compared, the minimum one was recorded. | NOAA/OAR/ESRL PSL5 |
| BA | Soil texture |  | Soil texture was extracted from the external database based on the location of the experiment from the external database. Categories included in this database: Sandy Loam; Loam; Silt Loam; Sandy Clay Loam; Clay Loam; Sandy Clay; Clay | The University of Tokyo6 |

**Reference**

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