Table *S*1

Aboveground weed species under different treatments in the winter wheat field in NCP.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Weed species** | | **Functional groups** | | **Weed occurrence** | | | |
| **Latin binomial** | **Family** | **Mf** | **LC** | **CT-NS** | **CT-CS** | **NT-NS** | **NT-CS** |
| *Abutilon theophrasti* | Malvaceae | D | A |  | √ |  |  |
| *Aegilops tauschii Coss*. | Poaceae | M | A | √ | √ | √ | √ |
| *Bromus japonicus* Thunb. ex Murr. | Poaceae | M | A | √ | √ | √ | √ |
| *Capsella bursa-pastoris* | Brassicaceae | D | P | √ | √ | √ | √ |
| *Chenopodium album* L. | Chenopodiaceae | D | A | √ | √ | √ | √ |
| *Cirsium arvense* var. integrifolium | Asteraceae | D | P | √ |  |  |  |
| *Convolvulus arvensis* | Convolvulaceae | D | P | √ | √ | √ | √ |
| *Conyza canadensis* (L.) Cronq. | Asteraceae | D | P |  |  | √ | √ |
| *Descurainia sophia* | Brassicaceae | D | A | √ |  | √ | √ |
| *Galium spurium* | Rubiaceae | D | A |  |  | √ | √ |
| *Hemisteptia lyrata* | Asteraceae | D | A |  | √ |  |  |
| *Humulus scandens* | Cannabaceae | D | P |  | √ | √ | √ |
| *Imperata cylindrica* (L.) Beauv. | Poaceae | M | A | √ |  |  |  |
| *Ixeridium dentatum* | Asteraceae | D | P | √ |  | √ |  |
| *Ixeridium sonchifolium* (Maxim.) Shih | Asteraceae | D | P |  |  | √ |  |
| *Lagopsis supina* | Lamiaceae | D | P | √ |  | √ |  |
| *Lithospermum arvense* L. | Boraginaceae | D | A | √ |  | √ | √ |
| *Rumex acetosa* L. | Polygonaceae | D | P |  |  | √ |  |
| *Stellaria media* (L.) Cyr. | Caryophyllaceae | D | P |  |  |  | √ |
| *Veronica didyma* Tenore | Plantaginaceae | D | P |  | √ | √ |  |
| *Viola philippica* | Violaceae | D | P |  |  | √ |  |

MY, LC, D, M, A, P are morphological type, life cycle, dicotyledons, monocotyledons, annual, and perennial, respectively.

CT-NS: conventional tillage with no crop residue, CT-CS: conventional tillage with crop residue, NT-NS: no-till with no crop residue, NT-CS: no-till with crop residue.

‘√’ means the occurrence of the weed under experimental treatments.