**Supplementary Table 2 Variations of seed traits among different types of plants in Songnen grassland.**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | N | Seed mass (mg) | Seed volume (mm3) | Germination percentage | Seed coat color | Seed dispersal mode |
| Plant life form |  |  |  |  |  |  |
| Annual | 28 | 2.26±0.66 | 4.52±1.07 | 0.26±0.06 | △;▽;○;◇ | ▼;●;◆;★ |
| Biennial | 8 | 3.93±3.26 | 1.43±0.36 | 0.96±0.18 | △;▽;○ | ★;●;◆ |
| Perennial | 53 | 4.37±0.96 | 10.77±1.99 | 0.54±0.07 | △;▽;○;◇ | ★;▼;● |
| Functional group |  |  |  |  |  |  |
| Legume | 6 | 6.30±2.81 | 8.11±3.02 | 0.38±0.16 | △;▽;○ | ★ |
| Grass | 23 | 1.87±0.49 | 5.22±1.34 | 0.32±0.08 | △;▽;○;◇ | ▼;★ |
| Compositae | 15 | 1.05±0.43 | 2.85±0.91 | 0.77±0.12 | △;▽ | ▼;●;◆ |
| Forb | 45 | 5.11±1.20 | 11.05±2.31 | 0.51±0.08 | △;▽;○;◇ | ★;▼;●;◆ |
| Taxomonomic group |  |  |  |  |  |  |
| Monocot | 29 | 2.96±1.02 | 7.08±1.99 | 0.34±0.07 | △;▽;○;◇ | ★;▼ |
| Eudicot | 60 | 4.01±0.87 | 8.39±1.65 | 0.57±0.07 | △;▽;○;◇ | ★;▼;●;◆ |

Different solid symbols represent seed dispersal mode: ★, autochorous; ▼, zoochorous; ●, anemochorous; ◆, ombrohydrochorous. Different hollow symbols represent seed coat color: △, brown or dark brown; ▽, light yellowish brown or yellowish brown; ○, black; ◇, pale yellow, yellow or reddish yellow.