**Table 1:** List of the study species with family, life form, Ellenberg moisture index (F-value), turgor loss point (πtlp), midday leaf water potential under drought (ΨMD) and three different parameters of whole-plant drought resistance.

**Table 2:** Turgor loss point assessed with P-V curves (πtlp-P-V) and osmotic potential at full turgor assessed with an osmometer (πo-osmo) for 14 species.

**Table 1:** List of the 43 temperate perennial grassland species in our study along with family, life form, Ellenberg moisture index (F-value, Ellenberg *et al.*, 1991), turgor loss point (πtlp; mean and standard error), midday leaf water potential under drought (ΨMD; mean and standard error), and three different parameters of drought resistance (drought survival (dead/alive), % survival and survival ratio, see methods). For Ellenberg moisture index, lower values indicate associations with drier habitats and ‘X’ indicates ‘indifferent’. \* indicates the 14 species (seven forbs and seven grasses) that were used for the evaluation of the ‘osmometer method’. Species marked with \*\* were excluded from the main analyses (see methods).

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Species | Family | Life form | F-value | πtlp(MPa) | ΨMD(MPa) | drought survival(dead/alive) | % survival | survival ratio |
| \* | *Achillea millefolium* L. | Compositae | Forb | 4 | -1.76 (0.05) | -1.88 (0.13) | 0/34 | 100 | 1 |
|  | *Agrostis capillaris* L. | Poaceae | Grass | X | -2.04 (0.05) | -4.24 (0.38) | 9/29 | 76 | 0.76 |
|  | *Agrostis stolonifera* L. | Poaceae | Grass | 7 | -1.72 (0.03) | -1.99 (0.08) | 1/35 | 97 | 0.97 |
|  | *Alopecurus pratensis* L. | Poaceae | Grass | 6 | -1.86 (0.01) | -3.02 (0.44) | 3/32 | 91 | 0.91 |
| \* | *Anthoxanthum odoratum* L. | Poaceae | Grass | X | -1.78 (0.03) | -3.30 (0.34) | 1/36 | 97 | 0.97 |
| \* | *Arrhenatherum elatius* (L.) P.Beauv. ex J.Presl & C.Presl. | Poaceae | Grass | X | -1.93 (0.04) | -2.27 (0.33) | 2/32 | 94 | 0.94 |
|  | *Brachypodium pinnatum* (L.) P.Beauv. | Poaceae | Grass | 4 | -2.04 (0.06) | -2.31 (0.15) | 6/30 | 83 | 0.91 |
| \* | *Briza media* L. | Poaceae | Grass | X | -1.74 (0.02) | -3.56 (0.38) | 5/31 | 86 | 0.86 |
|  | *Bromus hordeaceus* L. | Poaceae | Grass | X | -1.58 (0.02) | -1.96 (0.19) | 3/33 | 92 | 0.92 |
|  | *Centaurea jacea* L. | Compositae | Forb | X | -1.72 (0.05) | -1.47 (0.11) | 1/34 | 97 | 0.97 |
|  | *Cerastium holosteoides* Fr. | Caryophyllaceae | Forb | 5 | -1.90 (0.05) | -2.34 (0.23) | 12/24 | 67 | 0.67 |
|  | *Cirsium oleraceum* (L.) Scop. | Compositae | Forb | 7 | -1.57 (0.02) | -1.13 (0.08) | 1/25 | 96 | 0.96 |
|  | *Crepis biennis* Lapeyr. | Compositae | Forb | 6 | -1.55 (0.06) | -1.33 (0.1) | 1/35 | 97 | 0.97 |
|  | *Dactylis glomerata* L. | Poaceae | Grass | 5 | -1.60 (0.03) | -2.76 (0.34) | 1/34 | 97 | 0.97 |
| \* | *Daucus carota* L. | Apiaceae | Forb | 4 | -1.96 (0.04) | -2.23 (0.35) | 0/35 | 100 | 1 |
|  | *Elymus repens* (L.) Gould | Poaceae | Grass | X | -1.79 (0.04) | -3.99 (0.65) | 2/34 | 94 | 0.94 |
|  | *Festuca guestfalica* Boenn. ex Rchb. | Poaceae | Grass | 4 | -1.95 (0.04) | -3.13 (0.2) | 2/33 | 94 | 0.94 |
|  | *Festuca ovina* L. | Poaceae | Grass | X | -1.78 (0.02) | -1.37 (0.12) | 0/36 | 100 | 1 |
|  | *Festuca pratensis* Huds. | Poaceae | Grass | 6 | -1.64 (0.05) | -1.99 (0.2) | 0/35 | 100 | 1 |
|  | *Festuca rubra* L. | Poaceae | Grass | 6 | -2.06 (0.07) | -2.71 (0.22) | 0/35 | 100 | 1 |
|  | *Galium mollugo* L. | Rubiaceae | Forb | 4 | -1.90 (0.07) | -2.68 (0.27) | 0/35 | 100 | 1 |
| \* | *Helictotrichon pubescens* (Huds.) Schult. & Schult.f. | Poaceae | Grass | 3 | -1.64 (0.03) | -2.31 (0.19) | 0/34 | 100 | 1 |
|  | *Holcus lanatus* L. | Poaceae | Grass | 6 | -1.80 (0.07) | -1.90 (0.2) | 0/37 | 100 | 1 |
| \* | *Lathyrus pratensis* L. | Leguminosae | Forb | 6 | -1.99 (0.07) | -2.45 (0.17) | 7/23 | 77 | 0.77 |
|  | *Leontodon hispidus* L. | Compositae | Forb | 5 | -1.64 (0.03) | -3.62 (0.3) | 1/34 | 97 | 0.97 |
| \* | *Leucanthemum vulgare* (Vaill.) Lam. | Compositae | Forb | 4 | -1.49 (0.02) | -1.34 (0.18) | 0/37 | 100 | 1 |
| \* | *Lolium perenne* L. | Poaceae | Grass | 5 | -2.02 (0.06) | -2.61 (0.26) | 0/36 | 100 | 1 |
|  | *Lotus corniculatus* L. | Leguminosae | Forb | 4 | -1.83 (0.03) | -1.36 (0.13) | 0/35 | 100 | 1 |
| \*\* | *Medicago lupulina* L. | Leguminosae | Forb | 4 | -1.80 (0.02) | -2.11 (0.16) | 18/16 | 47 | 0.69 |
| \* | *Phleum pretense* L. | Poaceae | Grass | 5 | -1.62 (0.03) | -2.50 (0.11) | 10/24 | 71 | 0.71 |
|  | *Plantago lanceolata* L. | Plantaginaceae | Forb | X | -1.66 (0.03) | -1.46 (0.1) | 0/36 | 100 | 1 |
|  | *Poa pratensis* L. | Poaceae | Grass | 5 | -1.83 (0.04) | -3.82 (0.79) | 6/28 | 82 | 0.82 |
|  | *Poa trivialis* L. | Poaceae | Grass | 7 | -2.18 (0.17) | -5.68 (0.49) | 18/13 | 42 | 0.46 |
| \* | *Prunella vulgaris* L. | Lamiaceae | Forb | 5 | -1.65 (0.02) | -1.36 (0.13) | 3/31 | 91 | 0.94 |
| \* | *Ranunculus acris* L. | Ranunculaceae | Forb | 6 | -1.88 (0.07) | -1.90 (0.25) | 7/23 | 77 | 0.77 |
|  | *Ranunculus bulbosus* L. | Ranunculaceae | Forb | 3 | -1.79 (0.05) | -2.20 (0.25) | 3/10 | 77 | 0.85 |
|  | *Ranunculus repens* L. | Ranunculaceae | Forb | 7 | -1.58 (0.04) | -1.43 (0.14) | 0/36 | 100 | 1.03 |
|  | *Rumex acetosa* L. | Polygonaceae | Forb | X | -1.56 (0.02) | -1.10 (0.09) | 0/36 | 100 | 1.03 |
|  | *Rumex crispus* L. | Polygonaceae | Forb | 7 | -1.63 (0.03) | -1.41 (0.17) | 1/35 | 97 | 0.97 |
| \* | *Taraxacum officinale* (L.) Weber ex F.H.Wigg. | Compositae | Forb | 5 | -1.89 (0.07) | -1.61 (0.11) | 0/35 | 100 | 1 |
| \*\* | *Trifolium repens* L*.* | Leguminosae | Forb | 5 | -1.55 (0.03) | -1.42 (0.13) | 25/6 | 19 | 0.29 |
| \* | *Trisetum flavescens* (L.) P. Beauv*.* | Poaceae | Grass | X | -2.30 (0.12) | -4.46 (0.75) | 9/25 | 74 | 0.76 |
|  | *Vicia cracca* L. | Leguminosae | Forb | 6 | -1.73 (0.02) | -2.87 (0.12) | 10/24 | 71 | 0.71 |

**Table 2:** Turgor loss point assessed with P-V curves (πtlp-P-V) and osmotic potential at full turgor assessed with an osmometer (πo-osmo) for 14 species. Data are species means and standard deviations (in parentheses). Sample number was 3 and 6 for each species for πtlp-P-V and πo-osmo, respectively.

|  |  |  |  |
| --- | --- | --- | --- |
| Life form | Species | πtlp-P-V (MPa) | πo-osmo (MPa) |
| forbs | *Achillea millefolium* | -1.71 (0.39) | -1.27 (0.21) |
|  | *Daucus carota* | -2.03 (0.16) | -1.57 (0.16) |
|  | *Lathyrus pratensis* | -2.12 (0.08) | -1.63 (0.26) |
|  | *Leucanthemum vulgare* | -1.48 (0.05) | -0.84 (0.09) |
|  | *Prunella vulgaris* | -1.69 (0.17) | -1.11 (0.09) |
|  | *Ranunculus acris* | -1.82 (0.21) | -0.97 (0.25) |
|  | *Taraxacum officinale* | -1.69 (0.18) | -1.46 (0.28) |
| grasses | *Anthoxanthum odoratum* | -1.74 (0.16) | -1.29 (0.10) |
|  | *Arrhenatherum elatius* | -2.25 (0.12) | -1.70 (0.13) |
|  | *Briza media* | -1.58 (0.26) | -1.24 (0.09) |
|  | *Helictotrichon pubescens* | -1.74 (0.21) | -1.09 (0.11) |
|  | *Lolium perenne* | -1.97 (0.34) | -1.67 (0.22) |
|  | *Phleum pretense* | -1.62 (0.08) | -1.01 (0.14) |
|  | *Trisetum flavescens.* | -2.22 (0.21) | -2.11 (0.45) |