**Supplementary tables II**

These tables show descriptive and inferential statistical data on species level.

**Supplementary Table S2.** Tested plant species and information on plant family and germination percentage (GP; mean ± SE) for the ethanol control treatment (CE).

|  |  |  |
| --- | --- | --- |
| **Family** | **Species** | **Ethanol control (CE) GP [%]** |
| Asteraceae | *Achillea ptarmica* L. | 15.4 ± 4.5 |
| *Centaurea jacea* L. | 15.4 ± 1.7 |
| *Hypochaeris radicata* L. | 93.4 ± 1.4 |
| Caryophyllaceae | *Cerastium holosteoides* Fr. | 35.1 ± 3.9 |
| *Dianthus deltoides* L. | 18.9 ± 1.9 |
| *Lychnis flos-cuculi* L. | 12.3 ± 2.6 |
| Fabaceae | *Hippocrepis comosa* L. | 17.4 ± 2.2 |
| *Medicago lupulina* L. | 18.6 ± 3.0 |
| *Trifolium aureum* POLLICH | 70.6 ± 3.1 |
| *Trifolium pratense* L. | 81.4 ± 1.9 |
| Plantaginaceae | *Plantago lanceolata* L. | 21.4 ± 4.1 |
| *Plantago media* L. | 7.7 ± 2.2 |
| *Veronica officinalis* L. | 4.9 ± 1.7 |
| Poaceae | *Agrostis capillaris* L. | 59.7 ± 4.0 |
| *Cynosurus cristatus* L. | 75.4 ± 2.8 |
| *Lolium perenne* L. | 53.1 ± 5.6 |
| *Phleum phleoides* (L.) H. KARST | 1.7 ± 0.7 |

**Supplementary Table S3.** Mean germination percentage (GP) for the test species under the influence of three concentrations of pure moxidectin in comparison to the ethanol control (CE; cf. Methods section). Deviations of treatment means from control means are given in percentage points [pp] and percentages [%]. ANOVA results for concentration on species level are given; significant p-values (p ≤ 0.05) are in bold. In case of significant ANOVA results, Tukey HSD test was employed; different letters indicate significant differences (p ≤ 0.05).

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Family** | **Species** | **Concentration of active ingredient [mg l-1]** | **GP (mean ± SE) [%]** | **Deviation of treatment from control [pp]** | **Deviation of treatment from control [%]** | **ANOVA**  **p-value** | **Tukey HSD**  **significant**  **differences** |
| Asteraceae | *Achillea ptarmica* L. | 0 | 15.4 ± 4.5 | - | - | 0.971 | - |
| 0.1 | 13.7 ± 4.4 | -1.7 | -11.2 | - |
| 1 | 15.1 ± 2.3 | -0.3 | -1.9 | - |
| 10 | 14.6 ± 1.6 | -0.9 | -5.6 | - |
| *Centaurea jacea* L. | 0 | 15.4 ± 1.7 | - | - | **˂ 0.0001** | A |
| 0.1 | 27.1 ± 1.6 | +11.7 | +75.9 | B |
| 1 | 26.6 ± 2.1 | +11.1 | +72.2 | B |
| 10 | 28.0 ± 1.6 | +12.6 | +81.5 | B |
| *Hypochaeris radicata* L. | 0 | 93.4 ± 1.4 | - | - | **0.011** | A |
| 0.1 | 94.0 ± 1.8 | +0.6 | +0.6 | AB |
| 1 | 98.9 ± 0.4 | +5.4 | +5.8 | B |
| 10 | 92.0 ± 1.5 | -1.4 | -1.5 | A |
| Caryophyllaceae | *Cerastium holosteoides* Fr. | 0 | 35.1 ± 3.9 | - | - | 0.472 | - |
| 0.1 | 40.3 ± 2.6 | +5.2 | +14.7 | - |
| 1 | 34.6 ± 5.5 | -0.6 | -1.6 | - |
| 10 | 41.7 ± 3.4 | +6.6 | +18.7 | - |
| *Dianthus deltoides* L. | 0 | 18.9 ± 1.9 | - | - | 0.163 | - |
| 0.1 | 16.0 ± 3.2 | -2.9 | -15.2 | - |
| 1 | 24.0 ± 2.3 | +5.1 | +27.3 | - |
| 10 | 17.7 ± 2.6 | -1.2 | -6.1 | - |
| *Lychnis flos-cuculi* L. | 0 | 12.3 ± 2.6 | - | - | 0.293 | - |
| 0.1 | 20.9 ± 3.1 | +8.6 | +69.7 | - |
| 1 | 17.4 ± 3.5 | +5.1 | +41.8 | - |
| 10 | 19.1 ± 3.8 | +6.9 | +55.7 | - |
| Fabaceae | *Hippocrepis comosa* L. | 0 | 17.4 ± 2.2 | - | - | 0.099 | - |
| 0.1 | 21.1 ± 1.4 | +3.7 | +21.3 | - |
| 1 | 22.0 ± 2.1 | +4.6 | +26.2 | - |
| 10 | 15.4 ± 2.2 | -2.0 | -11.5 | - |
| *Medicago lupulina* L. | 0 | 18.6 ± 3.0 | - | - | 0.938 | - |
| 0.1 | 16.3 ± 2.0 | -2.3 | -12.3 | - |
| 1 | 18.0 ± 2.8 | -0.6 | -3.1 | - |
| 10 | 17.4 ± 1.9 | -1.1 | -6.1 | - |
| *Trifolium aureum* POLLICH | 0 | 70.6 ± 3.1 | - | - | 0.675 | - |
| 0.1 | 72.3 ± 2.7 | +1.7 | +2.4 | - |
| 1 | 68.9 ± 3.0 | -1.7 | -2.4 | - |
| 10 | 67.7 ± 2.3 | -2.9 | -4.1 | - |
| *Trifolium pratense* L. | 0 | 81.4 ± 1.9 | - | - | 0.748 | - |
| 0.1 | 85.4 ± 1.7 | +4.0 | +4.9 | - |
| 1 | 81.7 ± 2.6 | +0.3 | +0.3 | - |
| 10 | 82.6 ± 4.5 | +1.1 | +1.4 | - |
| Plantaginaceae | *Plantago lanceolata* L. | 0 | 21.4 ± 4.1 | - | - | **0.043** | A |
| 0.1 | 31.4 ± 5.7 | +10.0 | +46.7 | AB |
| 1 | 33.7 ± 3.4 | +12.3 | +57.3 | AB |
| 10 | 39.4 ± 3.1 | +18.0 | +84.0 | B |
| *Plantago media* L. | 0 | 7.7 ± 2.2 | - | - | **0.035** | A |
| 0.1 | 10.0 ± 2.3 | +2.3 | +29.7 | AB |
| 1 | 12.9 ± 2.7 | +5.2 | +66.8 | AB |
| 10 | 17.1 ± 1.6 | +9.4 | +122.3 | B |
| *Veronica officinalis* L. | 0 | 4.9 ± 1.7 | - | - | 0.215 | - |
| 0.1 | 7.7 ± 2.8 | +2.9 | +58.7 | - |
| 1 | 16.9 ± 6.8 | +12.0 | +246.9 | - |
| 10 | 7.1 ± 2.3 | +2.3 | +47.0 | - |
| Poaceae | *Agrostis capillaris* L. | 0 | 59.7 ± 4.0 | - | - | 0.439 | - |
| 0.1 | 63.1 ± 3.4 | +3.4 | +5.7 | - |
| 1 | 54.3 ± 4.8 | -5.4 | -9.1 | - |
| 10 | 58.3 ± 2.6 | -1.4 | -2.4 | - |
| *Cynosurus cristatus* L. | 0 | 75.4 ± 2.8 | - | - | 0.466 | - |
| 0.1 | 78.9 ± 1.2 | +3.4 | +4.6 | - |
| 1 | 75.4 ± 2.6 | 0 | 0.0 | - |
| 10 | 73.4 ± 2.7 | -2.0 | -2.7 | - |
| *Lolium perenne* L. | 0 | 53.1 ± 5.6 | - | - | 0.701 | - |
| 0.1 | 55.4 ± 4.0 | +2.3 | +4.3 | - |
| 1 | 60.0 ± 3.8 | +6.9 | +12.9 | - |
| 10 | 55.1 ± 3.3 | +2.0 | +3.8 | - |
| *Phleum phleoides* (L.)H. KARST. | 0 | 1.7 ± 0.7 | - | - | 0.496 | - |
| 0.1 | 2.3 ± 0.8 | +0.6 | +33.9 | - |
| 1 | 2.0 ± 0.6 | +0.3 | +17.0 | - |
| 10 | 3.4 ± 1.0 | +1.7 | +100.6 | - |

**Supplementary Table S4.** Mean germination time (MGT) for the test species under the influence of three concentrations of pure moxidectin in comparison to the ethanol control (CE; cf. Methods section). Deviations of treatment means from control means are given in days [d] and percentages [%]. ANOVA results for concentration on species level are given; significant p-values (p ≤ 0.05) are in bold. In case of significant ANOVA results, Tukey HSD test was employed; different letters indicate significant differences (p ≤ 0.05).

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Family** | **Species** | **Concentration of active ingredient [mg l-1]** | **MGT (mean ± SE) [d]** | **Deviation of treatment from control [d]** | **Deviation of treatment from control [%]** | **ANOVA p-value** | **Tukey HSD**  **significant differences** |
| Asteraceae | *Achillea ptarmica* L. | 0 | 25.2 ± 1.4 | - | - | 0.962 | - |
| 0.1 | 26.1 ± 1.9 | +0.9 | +3.3 | - |
| 1 | 26.4 ± 1.9 | +1.2 | +4.6 | - |
| 10 | 25.3 ± 1.6 | +0.1 | +0.4 | - |
| *Centaurea jacea* L. | 0 | 21.3 ± 1.2 | - | - | 0.357 | - |
| 0.1 | 20.8 ± 0.8 | -0.5 | -2.6 | - |
| 1 | 19.1 ± 0.5 | -2.2 | -10.3 | - |
| 10 | 20.6 ± 0.8 | -0.7 | -3.6 | - |
| *Hypochaeris radicata* L. | 0 | 7.1 ± 0.5 | - | - | **0.015** | A |
| 0.1 | 9.6 ± 0.6 | +2.4 | +34.1 | B |
| 1 | 9.5 ± 0.8 | +2.3 | +33.8 | B |
| 10 | 8.9 ± 0.4 | +1.8 | +24.3 | AB |
| Caryophyllaceae | *Cerastium holosteoides* Fr. | 0 | 26.8 ± 1.4 | - | - | 0.784 | - |
| 0.1 | 26.8 ± 1.2 | 0.0 | +0.2 | - |
| 1 | 25.8 ± 1.4 | -1.0 | -3.7 | - |
| 10 | 25.2 ± 1.5 | -1.6 | -6.0 | - |
| *Dianthus deltoides* L. | 0 | 26.3 ± 1.2 | - | - | 0.128 | - |
| 0.1 | 25.9 ± 1.6 | -0.4 | -1.5 | - |
| 1 | 27.1 ± 1.3 | +0.8 | +3.0 | - |
| 10 | 30.0 ± 0.8 | +3.7 | +14.0 | - |
| *Lychnis flos-cuculi* L. | 0 | 31.6 ± 1.0 | - | - | 0.883 | - |
| 0.1 | 31.7 ± 1.3 | +0.1 | +0.1 | - |
| 1 | 32.6 ± 1.1 | +1.0 | +2.9 | - |
| 10 | 31.2 ± 1.5 | -0.4 | -1.2 | - |
| Fabaceae | *Hippocrepis comosa* L. | 0 | 13.0 ± 0.9 | - | - | **0.014** | A |
| 0.1 | 8.9 ± 0.5 | -4.1 | -31.6 | B |
| 1 | 10.9 ± 1.2 | -2.1 | -16.4 | AB |
| 10 | 11.9 ± 0.8 | -1.1 | -9.1 | AB |
| *Medicago lupulina* L. | 0 | 10.0 ± 0.5 | - | - | 0.356 | - |
| 0.1 | 8.1 ± 1.0 | -1.9 | -18.6 | - |
| 1 | 9.8 ± 0.6 | -0.2 | -1.5 | - |
| 10 | 9.5 ± 1.3 | -0.5 | -4.5 | - |
| *Trifolium aureum* POLLICH | 0 | 4.9 ± 0.7 | - | - | 0.577 | - |
| 0.1 | 5.3 ± 0.1 | +0.4 | +6.9 | - |
| 1 | 5.7 ± 0.4 | +0.8 | +16.2 | - |
| 10 | 5.6 ± 0.5 | +0.7 | +13.8 | - |
| *Trifolium pratense* L. | 0 | 6.5 ± 0.6 | - | - | 0.232 | - |
| 0.1 | 6.3 ± 0.4 | -0.2 | -3.3 | - |
| 1 | 5.2 ± 0.4 | -1.3 | -20.4 | - |
| 10 | 5.6 ± 0.5 | -0.9 | -13.4 | - |
| Plantaginaceae | *Plantago lanceolata* L. | 0 | 21.5 ± 1.4 | - | - | 0.707 | - |
| 0.1 | 22.2 ± 0.6 | +0.7 | +3.5 | - |
| 1 | 22.9 ± 0.6 | +1.4 | +6.5 | - |
| 10 | 21.8 ± 0.9 | +0.3 | +1.5 | - |
| *Plantago media* L. | 0 | 24.3 ± 1.8 | - | - | 0.564 | - |
| 0.1 | 25.0 ± 2.7 | +0.7 | +2.8 | - |
| 1 | 24.0 ± 1.4 | -0.3 | -1.3 | - |
| 10 | 21.5 ± 0.4 | -2.8 | -11.7 | - |
| *Veronica officinalis* L. | 0 | 29.4 ± 1.1 | - | - | 0.265 | - |
| 0.1 | 31.6 ± 1.3 | +2.3 | +7.7 | - |
| 1 | 32.2 ± 1.6 | +2.8 | +9.5 | - |
| 10 | 29.2 ± 0.7 | -0.2 | -0.7 | - |
| Poaceae | *Agrostis capillaris* L. | 0 | 13.6 ± 0.2 | - | - | **0.009** | A |
| 0.1 | 13.3 ± 0.5 | -0.3 | -2.7 | A |
| 1 | 11.2 ± 0.7 | -2.4 | -18.1 | B |
| 10 | 12.5 ± 0.6 | -1.1 | -8.3 | AB |
| *Cynosurus cristatus* L. | 0 | 17.9 ± 0.5 | - | - | 0.729 | - |
| 0.1 | 19.4 ± 1.4 | +1.5 | +8.2 | - |
| 1 | 17.9 ± 0.7 | 0.0 | 0.0 | - |
| 10 | 19.5 ± 1.8 | +1.6 | +8.6 | - |
| *Lolium perenne* L. | 0 | 10.7 ± 0.3 | - | - | **0.037** | AB |
| 0.1 | 11.5 ± 0.5 | +0.8 | +8.0 | A |
| 1 | 11.1 ± 0.6 | +0.4 | +3.5 | AB |
| 10 | 9.6 ± 0.3 | -1.1 | -10.1 | B |
| *Phleum phleoides* (L.)H. KARST. | 0 | 30.8 ± 1.8 | - | - | 0.707 | - |
| 0.1 | 30.5 ± 2.1 | -0.3 | -0.7 | - |
| 1 | 27.6 ± 2.6 | -3.2 | -10.2 | - |
| 10 | 30.1 ± 2.2 | -0.7 | -2.1 | - |

**Supplementary Table S5.** Mean synchrony of germination (Z) for the test species under the influence of three concentrations of pure moxidectin in comparison to the ethanol control (CE; cf. Methods section). Deviations of treatment means from control means are given in absolute numbers and percentages [%]. ANOVA results for concentration on species level are given; significant p-values (p ≤ 0.05) are in bold. In case of significant ANOVA results, Tukey HSD test was employed; different letters indicate significant differences (p ≤ 0.05).

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Family** | **Species** | **Concentration of active ingredient [mg l-1]** | **Z (mean ± SE)** | **Deviation of treatment from control** | **Deviation of treatment from control [%]** | **ANOVA**  **p-value** | **Tukey HSD**  **significant differences** |
| Asteraceae | *Achillea ptarmica* L. | 0 | 0.28 ± 0.13 | - | - | 0.309 | - |
| 0.1 | 0.24 ± 0.06 | -0.04 | -14.3 | - |
| 1 | 0.32 ± 0.09 | +0.04 | +14.3 | - |
| 10 | 0.12 ± 0.03 | -0.16 | -57.1 | - |
| *Centaurea jacea* L. | 0 | 0.18 ± 0.02 | - | - | 0.604 | - |
| 0.1 | 0.14 ± 0.01 | -0.04 | -22.2 | - |
| 1 | 0.16 ± 0.04 | -0.02 | -11.1 | - |
| 10 | 0.18 ± 0.02 | 0 | 0.0 | - |
| *Hypochaeris radicata* L. | 0 | 0.47 ± 0.06 | - | - | 0.831 | - |
| 0.1 | 0.44 ± 0.06 | -0.03 | -6.4 | - |
| 1 | 0.44 ± 0.04 | -0.03 | -6.4 | - |
| 10 | 0.54 ± 0.09 | +0.07 | +15.0 | - |
| Caryophyllaceae | *Cerastium holosteoides* Fr. | 0 | 0.17 ± 0.02 | - | - | 0.772 | - |
| 0.1 | 0.21 ± 0.03 | +0.04 | +23.5 | - |
| 1 | 0.22 ± 0.05 | +0.05 | +29.4 | - |
| 10 | 0.24 ± 0.05 | +0.07 | +41.2 | - |
| *Dianthus deltoides* L. | 0 | 0.23 ± 0.07 | - | - | 0.699 | - |
| 0.1 | 0.15 ± 0.02 | -0.08 | -34.8 | - |
| 1 | 0.19 ± 0.05 | -0.04 | -17.4 | - |
| 10 | 0.19 ± 0.02 | -0.04 | -17.4 | - |
| *Lychnis flos-cuculi* L. | 0 | 0.23 ± 0.07 | - | - | 0.483 | - |
| 0.1 | 0.26 ± 0.04 | +0.03 | +13.0 | - |
| 1 | 0.37 ± 0.11 | +0.14 | +60.9 | - |
| 10 | 0.24 ± 0.08 | +0.01 | +4.4 | - |
| Fabaceae | *Hippocrepis comosa* L. | 0 | 0.25 ± 0.07 | - | - | 0.338 | - |
| 0.1 | 0.36 ± 0.03 | +0.11 | +44.0 | - |
| 1 | 0.23 ± 0.04 | -0.02 | -8.0 | - |
| 10 | 0.27 ± 0.07 | +0.02 | +8.0 | - |
| *Medicago lupulina* L. | 0 | 0.22 ± 0.04 | - | - | 0.401 | - |
| 0.1 | 0.22 ± 0.01 | 0 | 0.0 | - |
| 1 | 0.16 ± 0.04 | -0.06 | -27.3 | - |
| 10 | 0.24 ± 0.05 | +0.02 | +9.1 | - |
| *Trifolium aureum* POLLICH | 0 | 0.37 ± 0.03 | - | - | **0.045** | A |
| 0.1 | 0.28 ± 0.01 | -0.09 | -24.3 | A |
| 1 | 0.31 ± 0.02 | -0.06 | -16.2 | A |
| 10 | 0.36 ± 0.02 | -0.01 | -2.7 | A |
| *Trifolium pratense* L. | 0 | 0.52 ± 0.06 | - | - | 0.167 | - |
| 0.1 | 0.39 ± 0.02 | -0.13 | -25.0 | - |
| 1 | 0.42 ± 0.02 | -0.1 | -19.2 | - |
| 10 | 0.4 ± 0.06 | -0.12 | -23.1 | - |
| Plantaginaceae | *Plantago lanceolata* L. | 0 | 0.14 ± 0.02 | - | - | 0.096 | - |
| 0.1 | 0.2 ± 0.03 | +0.06 | +42.9 | - |
| 1 | 0.14 ± 0.01 | 0 | 0.0 | - |
| 10 | 0.15 ± 0.02 | +0.01 | +7.1 | - |
| *Plantago media* L. | 0 | 0.17 ± 0.07 | - | - | 0.194 | - |
| 0.1 | 0.16 ± 0.07 | -0.01 | -5.9 | - |
| 1 | 0.25 ± 0.06 | +0.08 | +47.1 | - |
| 10 | 0.33 ± 0.07 | +0.16 | +94.1 | - |
| *Veronica officinalis* L. | 0 | 0.13 ± 0.07 | - | - | 0.957 | - |
| 0.1 | 0.27 ± 0.15 | +0.14 | +104.0 | - |
| 1 | 0.34 ± 0.14 | +0.21 | +158.8 | - |
| 10 | 0.31 ± 0.16 | +0.18 | +137.6 | - |
| Poaceae | *Agrostis capillaris* L. | 0 | 0.34 ± 0.05 | - | - | 0.315 | - |
| 0.1 | 0.29 ± 0.02 | -0.05 | -14.7 | - |
| 1 | 0.36 ± 0.05 | +0.02 | +5.9 | - |
| 10 | 0.27 ± 0.02 | -0.07 | -20.6 | - |
| *Cynosurus cristatus* L. | 0 | 0.33 ± 0.04 | - | - | 0.576 | - |
| 0.1 | 0.36 ± 0.04 | +0.03 | +9.1 | - |
| 1 | 0.34 ± 0.03 | +0.01 | +3.0 | - |
| 10 | 0.29 ± 0.03 | -0.04 | -12.1 | - |
| *Lolium perenne* L. | 0 | 0.45 ± 0.06 | - | - | 0.059 | - |
| 0.1 | 0.4 ± 0.05 | -0.05 | -11.1 | - |
| 1 | 0.39 ± 0.05 | -0.06 | -13.3 | - |
| 10 | 0.59 ± 0.06 | +0.14 | +31.1 | - |
| *Phleum phleoides* (L.)H. KARST. | 0 | 0.5 ± 0.5 | - | - | 0.283 | - |
| 0.1 | 0.17 ± 0.17 | -0.33 | -66.0 | - |
| 1 | 1 | +0.5 | +100.0 | - |
| 10 | 0.11 ± 0.11 | -0.39 | -78.0 | - |

**Supplementary Table S6.** Mean germination percentage (GP) for the test species under the influence of three concentrations of formulated moxidectin (Cydectin) in comparison to the blank control (CW; cf. Methods section). Deviations of treatment means from control means are given in percentage points [pp] and percentages [%]. ANOVA results for concentration on species level are given; significant p-values (p ≤ 0.05) are in bold. In case of significant ANOVA results, Tukey HSD test was employed; different letters indicate significant differences (p ≤ 0.05).

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Family** | **Species** | **Concentration of active ingredient [mg l-1]** | **GP (mean ± SE) [%]** | **Deviation of treatment from control [pp]** | **Deviation of treatment from control [%]** | **ANOVA**  **p-value** | **Tukey HSD**  **significant differences** |
| Asteraceae | *Achillea ptarmica* L. | 0 | 29.1 ± 9.1 | - | - | **0.0002** | A |
| 0.1 | 19.1 ± 5.1 | -10.0 | -34.3 | AB |
| 1 | 9.1 ± 3.1 | -20.0 | -68.6 | BC |
| 10 | 0.6 ± 0.4 | -28.6 | -98.0 | C |
| *Centaurea jacea* L. | 0 | 25.7 ± 2.5 | - | - | **˂ 0.0001** | A |
| 0.1 | 28.9 ± 3.5 | +3.2 | +12.3 | A |
| 1 | 25.1 ± 2.7 | -0.6 | -2.2 | A |
| 10 | 10.9 ± 0.9 | -14.9 | -57.8 | B |
| *Hypochaeris radicata* L. | 0 | 92.0 ± 2.0 | - | - | **˂ 0.0001** | A |
| 0.1 | 95.1 ± 1.7 | +3.1 | +3.4 | A |
| 1 | 86.0 ± 3.1 | -6.0 | -6.5 | A |
| 10 | 70.0 ± 4.4 | -22.0 | -23.9 | B |
| Caryophyllaceae | *Cerastium holosteoides* Fr. | 0 | 47.1 ± 2.7 | - | - | **˂ 0.0001** | A |
| 0.1 | 36.3 ± 3.5 | -10.9 | -23.0 | AB |
| 1 | 32.9 ± 3.2 | -14.3 | -30.3 | B |
| 10 | 0.6 ± 0.4 | -46.6 | -98.8 | C |
| *Dianthus deltoides* L. | 0 | 63.4 ± 4.8 | - | - | **˂ 0.0001** | A |
| 0.1 | 59.1 ± 4.6 | -4.3 | -6.8 | AB |
| 1 | 38.9 ± 7.5 | -24.6 | -38.7 | B |
| 10 | 2.0 ± 1.1 | -61.4 | -96.8 | C |
| *Lychnis flos-cuculi* L. | 0 | 55.7 ± 3.9 | - | - | **˂ 0.0001** | A |
| 0.1 | 35.7 ± 4.7 | -20.0 | -35.9 | B |
| 1 | 33.1 ± 4.9 | -22.6 | -40.5 | B |
| 10 | 0.9 ± 0.4 | -54.9 | -98.5 | C |
| Fabaceae | *Hippocrepis comosa* L. | 0 | 22.3 ± 2.5 | - | - | 0.217 | - |
| 0.1 | 18.0 ± 2.2 | -4.3 | -19.2 | - |
| 1 | 15.7 ± 1.4 | -6.6 | -29.5 | - |
| 10 | 20.0 ± 2.4 | -2.3 | -10.3 | - |
| *Medicago lupulina* L. | 0 | 25.4 ± 4.7 | - | - | 0.613 | - |
| 0.1 | 24.6 ± 1.6 | -0.9 | -3.4 | - |
| 1 | 21.7 ± 3.2 | -3.7 | -14.6 | - |
| 10 | 20.0 ± 3.4 | -5.4 | -21.4 | - |
| *Trifolium aureum* POLLICH | 0 | 71.4 ± 3.3 | - | - | **0.030** | A |
| 0.1 | 68.9 ± 1.8 | -2.6 | -3.6 | AB |
| 1 | 68.3 ± 2.6 | -3.1 | -4.4 | AB |
| 10 | 49.4 ± 8.1 | -22.0 | -30.8 | B |
| *Trifolium pratense* L. | 0 | 81.4 ± 2.6 | - | - | 0.341 | - |
| 0.1 | 86.3 ± 3.3 | +4.9 | +6.0 | - |
| 1 | 81.7 ± 2.9 | +0.3 | +0.3 | - |
| 10 | 76.9 ± 4.9 | -4.6 | -5.6 | - |
| Plantaginaceae | *Plantago lanceolata* L. | 0 | 34.0 ± 3.1 | - | - | **0.014** | A |
| 0.1 | 32.6 ± 3.82 | -1.4 | -4.2 | A |
| 1 | 29.4 ± 3.0 | -4.6 | -13.4 | AB |
| 10 | 18.9 ± 3.8 | -15.1 | -44.5 | B |
| *Plantago media* L. | 0 | 22.0 ± 3.2 | - | - | **˂ 0.0001** | A |
| 0.1 | 3.4 ± 0.7 | -18.6 | -84.4 | BC |
| 1 | 5.1 ± 0.7 | -16.9 | -76.6 | B |
| 10 | 1.7 ± 0.5 | -20.3 | -92.2 | C |
| *Veronica officinalis* L. | 0 | 5.4 ± 0.9 | - | - | 0.129 | - |
| 0.1 | 10.6 ± 5.1 | +5.2 | +95.0 | - |
| 1 | 4.6 ± 1.8 | +0.9 | -15.7 | - |
| 10 | 0.9 ± 0.9 | -4.6 | -84.2 | - |
| Poaceae | *Agrostis capillaris* L. | 0 | 70.6 ± 4.3 | - | - | **˂ 0.0001** | A |
| 0.1 | 65.1 ± 3.1 | -5.4 | -7.7 | AB |
| 1 | 53.7 ± 3.2 | -16.9 | -23.9 | B |
| 10 | 4.9 ± 1.1 | -65.7 | -93.1 | C |
| *Cynosurus cristatus* L. | 0 | 78.3 ± 4.1 | - | - | **˂ 0.0001** | A |
| 0.1 | 83.7 ± 1.1 | +5.4 | +6.9 | B |
| 1 | 78.9 ± 1.6 | +0.6 | +0.7 | B |
| 10 | 32.9 ± 5.0 | -45.4 | -58.0 | B |
| *Lolium perenne* L. | 0 | 53.7 ± 5.5 | - | - | 0.255 | - |
| 0.1 | 62.9 ± 1.6 | +9.2 | +17.0 | - |
| 1 | 62.9 ± 5.4 | +9.2 | +17.0 | - |
| 10 | 52.3 ± 5.2 | -1.4 | -2.6 | - |
| *Phleum phleoides* (L.)H. KARST. | 0 | 7.4 ± 0.8 | - | - | **˂ 0.0001** | A |
| 0.1 | 2.0 ± 1.2 | -5.4 | -73.1 | B |
| 1 | 4.6 ± 0.8 | -2.9 | -38.5 | A |
| 10 | 0 | -7.4 | -100.0 | B |

**Supplementary Table S7.** Mean germination time (MGT) for the test species under the influence of three concentrations of formulated moxidectin (Cydectin) in comparison to the blank control (CW; cf. Methods section). Deviations of treatment means from control means are given in days [d] and percentages [%]. ANOVA results for concentration on species level are given; significant p-values (p ≤ 0.05) are in bold. In case of significant ANOVA results, Tukey HSD test was employed; different letters indicate significant differences (p ≤ 0.05).

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Family** | **Species** | **Concentration of active ingredient [mg l-1]** | **MGT (mean ± SE) [d]** | **Deviation of treatment from control [d]** | **Deviation of treatment from control [%]** | **ANOVA**  **p-value** | **Tukey HSD**  **significant differences** |
| Asteraceae | *Achillea ptarmica* L. | 0 | 14.5 ± 2.3 | - | - | **0.034** | A |
| 0.1 | 17.0 ± 2.9 | +2.5 | +17.3 | AB |
| 1 | 26.0 ± 1.7 | +11.5 | +78.7 | B |
| 10 | 25.5 ± 10.5 | +11.0 | +75.5 | AB |
| *Centaurea jacea* L. | 0 | 22.1 ± 0.9 | - | - | 0.190 | - |
| 0.1 | 19.4 ± 1.9 | -2.7 | -12.3 | - |
| 1 | 21.9 ± 1.1 | -0.2 | -1.0 | - |
| 10 | 24.6 ± 2.4 | +2.5 | +11.5 | - |
| *Hypochaeris radicata* L. | 0 | 8.5 ± 0.3 | - | - | **˂ 0.0001** | A |
| 0.1 | 6.4 ± 0.6 | -2.1 | -24.7 | A |
| 1 | 7.5 ± 0.6 | -1.0 | -12.2 | A |
| 10 | 11.7 ± 1.0 | +3.2 | +36.9 | B |
| Caryophyllaceae | *Cerastium holosteoides* Fr. | 0 | 10.4 ± 0.3 | - | - | **˂ 0.0001** | A |
| 0.1 | 18.9 ± 1.6 | +8.5 | +82.1 | B |
| 1 | 22.7 ± 1.9 | +12.3 | +119.2 | BC |
| 10 | 30.5 ± 1.5 | +20.1 | +194.3 | C |
| *Dianthus deltoides* L. | 0 | 9.8 ± 0.3 | - | - | **˂ 0.0001** | A |
| 0.1 | 11.6 ± 0.8 | +1.8 | +18.5 | AB |
| 1 | 14.8 ± 2.5 | +5.0 | +51.1 | B |
| 10 | 37.1 ± 1.7 | +27.3 | +279.4 | C |
| *Lychnis flos-cuculi* L. | 0 | 19.3 ± 2.1 | - | - | 0.893 | - |
| 0.1 | 19.0 ± 2.0 | -0.3 | -1.5 | - |
| 1 | 20.1 ± 1.8 | +0.8 | +4.5 | - |
| 10 | 24.0 ± 8.1 | +4.7 | +24.5 | - |
| Fabaceae | *Hippocrepis comosa* L. | 0 | 9.6 ± 0.8 | - | - | **0.008** | A |
| 0.1 | 10.6 ± 0.6 | +1.0 | +11.2 | AB |
| 1 | 10.8 ± 0.9 | +1.2 | +13.0 | AB |
| 10 | 13.4 ± 0.5 | +3.8 | +39.8 | B |
| *Medicago lupulina* L. | 0 | 6.5 ± 1.0 | - | - | 0.247 | - |
| 0.1 | 8.9 ± 0.8 | +2.4 | +38.4 | - |
| 1 | 8.2 ± 1.6 | +1.7 | +26.4 | - |
| 10 | 7.4 ± 0.5 | +0.9 | +14.2 | - |
| *Trifolium aureum* POLLICH | 0 | 5.1 ± 0.3 | - | - | **˂ 0.0001** | A |
| 0.1 | 5.3 ± 0.4 | +0.2 | +3.5 | A |
| 1 | 5.8 ± 0.4 | +0.7 | +13.6 | A |
| 10 | 13.4 ± 1.5 | +8.3 | +162.7 | B |
| *Trifolium pratense* L. | 0 | 3.0 ± 0.4 | - | - | **˂ 0.0001** | A |
| 0.1 | 5.7 ± 0.6 | +2.7 | +91.2 | B |
| 1 | 6.4 ± 0.4 | +3.4 | +115.7 | BC |
| 10 | 8.3 ± 0.5 | +5.3 | +178.7 | C |
| Plantaginaceae | *Plantago lanceolata* L. | 0 | 15.1 ± 0.6 | - | - | **˂ 0.0001** | A |
| 0.1 | 18.3 ± 1.3 | +3.2 | +21.6 | AB |
| 1 | 21.1 ± 1.0 | +6.0 | +39.9 | B |
| 10 | 27.1 ± 1.8 | +12.0 | +79.7 | C |
| *Plantago media* L. | 0 | 15.0 ± 1.3 | - | - | **0.006** | A |
| 0.1 | 21.0 ± 1.3 | +6.0 | +40.0 | B |
| 1 | 22.9 ± 1.4 | +7.9 | +53.1 | B |
| 10 | 22.0 ± 3.1 | +7.0 | +46.8 | B |
| *Veronica officinalis* L. | 0 | 31.4 ± 2.3 | - | - | 0.627 | - |
| 0.1 | 29.0 ± 1.0 | -2.4 | -7.7 | - |
| 1 | 27.6 ± 1.8 | -3.8 | -11.9 | - |
| 10 | 29.0 | -2.4 | -7.6 | - |
| Poaceae | *Agrostis capillaris* L. | 0 | 9.7 ± 0.4 | - | - | **˂ 0.0001** | A |
| 0.1 | 12.6 ± 0.6 | +2.9 | +29.7 | B |
| 1 | 13.0 ± 0.7 | +3.3 | +33.4 | B |
| 10 | 25.0 ± 2.0 | +15.3 | +156.8 | C |
| *Cynosurus cristatus* L. | 0 | 13.2 ± 0.4 | - | - | **˂ 0.0001** | A |
| 0.1 | 14.3 ± 0.3 | +1.1 | +8.5 | A |
| 1 | 14.5 ± 0.6 | +1.3 | +10.5 | A |
| 10 | 33.3 ± 0.9 | +20.1 | +152.9 | B |
| *Lolium perenne* L. | 0 | 8.4 ± 0.3 | - | - | **˂ 0.0001** | A |
| 0.1 | 9.7 ± 0.9 | +1.3 | +15.3 | A |
| 1 | 9.5 ± 0.4 | +1.1 | +13.2 | A |
| 10 | 16.1 ± 0.8 | +7.7 | +92.5 | B |
| *Phleum phleoides* (L.)H. KARST. | 0 | 23.5 ± 1.3 | - | - | 0.227 | - |
| 0.1 | 29.4 ± 5.0 | +5.9 | +25.2 | - |
| 1 | 26.8 ± 1.6 | +3.3 | +13.9 | - |
| 10 | - | - | - | - |

**Supplementary Table S8.** Mean synchrony of germination (Z) for the test species under the influence of three concentrations of formulated moxidectin (Cydectin) in comparison to the blank control (CW; cf. Methods section). Deviations of treatment means from control means are given in absolute numbers and percentages [%]. ANOVA results for concentration on species level are given; significant p-values (p ≤ 0.05) are in bold. In case of significant ANOVA results, Tukey HSD test was employed; different letters indicate significant differences (p ≤ 0.05). \* indicates species for which no ANOVA could be calculated because germination at the highest concentration level was too low to calculate Z

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Family** | **Species** | **Concentration of active ingredient [mg l-1]** | **Z (mean ± SE)** | **Deviation of treatment from control** | **Deviation of treatment from control [%]** | **ANOVA**  **p-value** | **Tukey HSD**  **significant differences** |
| Asteraceae | *Achillea ptarmica* L. | 0 | 0.19 ± 0.05 | - | - | \* | - |
| 0.1 | 0.36 ± 0.05 | +0.17 | +89.5 | - |
| 1 | 0.35 ± 0.17 | +0.16 | +84.2 | - |
| 10 | - | - | - | - |
| *Centaurea jacea* L. | 0 | 0.16 ± 0.02 | - | - | **0.028** | AB |
| 0.1 | 0.18 ± 0.02 | +0.02 | +12.5 | B |
| 1 | 0.14 ± 0.02 | -0.02 | -12.5 | AB |
| 10 | 0.08 ± 0.03 | -0.08 | -50.0 | A |
| *Hypochaeris radicata* L. | 0 | 0.51 ± 0.05 | - | - | **0.028** | AB |
| 0.1 | 0.53 ± 0.06 | +0.02 | +3.9 | B |
| 1 | 0.42 ± 0.05 | -0.09 | -17.7 | AB |
| 10 | 0.33 ± 0.03 | -0.18 | -35.3 | A |
| Caryophyllaceae | *Cerastium holosteoides* Fr. | 0 | 0.31 ± 0.03 | - | - | \* | - |
| 0.1 | 0.2 ± 0.03 | -0.11 | -35.5 | - |
| 1 | 0.2 ± 0.02 | -0.11 | -35.5 | - |
| 10 | - | - | - | - |
| *Dianthus deltoides* L. | 0 | 0.54 ± 0.08 | - | - | 0.592 | - |
| 0.1 | 0.41 ± 0.04 | -0.13 | -24.1 | - |
| 1 | 0.46 ± 0.11 | -0.08 | -14.8 | - |
| 10 | 0.5 | -0.04 | -7.4 | - |
| *Lychnis flos-cuculi* L. | 0 | 0.16 ± 0.02 | - | - | \* | - |
| 0.1 | 0.24 ± 0.02 | +0.08 | +50.0 | - |
| 1 | 0.29 ± 0.05 | +0.13 | +81.3 | - |
| 10 | - | - | - | - |
| Fabaceae | *Hippocrepis comosa* L. | 0 | 0.34 ± 0.03 | - | - | 0.268 | - |
| 0.1 | 0.32 ± 0.05 | -0.02 | -5.9 | - |
| 1 | 0.4 ± 0.06 | +0.06 | +17.7 | - |
| 10 | 0.28 ± 0.04 | -0.06 | -17.7 | - |
| *Medicago lupulina* L. | 0 | 0.42 ± 0.07 | - | - | 0.232 | - |
| 0.1 | 0.24 ± 0.03 | -0.18 | -42.9 | - |
| 1 | 0.42 ± 0.06 | 0 | 0 | - |
| 10 | 0.39 ± 0.1 | -0.03 | -7.1 | - |
| *Trifolium aureum* POLLICH | 0 | 0.38 ± 0.04 | - | - | 0.409 | - |
| 0.1 | 0.36 ± 0.03 | -0.02 | -5.3 | - |
| 1 | 0.3 ± 0.02 | -0.08 | -21.1 | - |
| 10 | 0.43 ± 0.1 | +0.05 | +13.2 | - |
| *Trifolium pratense* L. | 0 | 0.55 ± 0.03 | - | - | 0.137 | - |
| 0.1 | 0.51 ± 0.06 | -0.04 | -7.3 | - |
| 1 | 0.43 ± 0.05 | -0.12 | -21.8 | - |
| 10 | 0.41 ± 0.04 | -0.14 | -25.5 | - |
| Plantaginaceae | *Plantago lanceolata* L. | 0 | 0.15 ± 0.01 | - | - | 0.636 | - |
| 0.1 | 0.23 ± 0.06 | +0.08 | +53.3 | - |
| 1 | 0.19 ± 0.02 | +0.04 | +26.7 | - |
| 10 | 0.21 ± 0.06 | +0.06 | +40.0 | - |
| *Plantago media* L. | 0 | 0.24 ± 0.05 | - | - | 0.711 | - |
| 0.1 | 0.44 ± 0.29 | +0.2 | +83.3 | - |
| 1 | 0.39 ± 0.2 | +0.15 | +62.5 | - |
| 10 | - | -0.24 | -100.0 | - |
| *Veronica officinalis* L. | 0 | 0.13 ± 0.07 | - | - | **0.018** | A |
| 0.1 | 0.38 ± 0.05 | +0.25 | +189.1 | AB |
| 1 | 0.62 ± 0.19 | +0.49 | +378.6 | B |
| 10 | 1.00 | +0.87 | +669.2 | B |
| Poaceae | *Agrostis capillaris* L. | 0 | 0.54 ± 0.05 | - | - | **˂ 0.0001** | A |
| 0.1 | 0.41 ± 0.06 | -0.13 | -24.1 | A |
| 1 | 0.36 ± 0.04 | -0.18 | -33.3 | A |
| 10 | 0.08 ± 0.08 | -0.46 | -85.2 | B |
| *Cynosurus cristatus* L. | 0 | 0.37 ± 0.02 | - | - | **0.0004** | A |
| 0.1 | 0.33 ± 0.02 | -0.04 | -10.8 | AB |
| 1 | 0.39 ± 0.03 | +0.02 | +5.4 | A |
| 10 | 0.25 ± 0.02 | -0.12 | -32.4 | B |
| *Lolium perenne* L. | 0 | 0.59 ± 0.05 | - | - | **˂ 0.0001** | A |
| 0.1 | 0.65 ± 0.09 | +0.06 | +10.2 | A |
| 1 | 0.48 ± 0.06 | -0.11 | -18.6 | A |
| 10 | 0.19 ± 0.02 | -0.4 | -67.8 | B |
| *Phleum phleoides* (L.)H. KARST. | 0 | 0.38 ± 0.12 | - | - | \* | - |
| 0.1 | 0.58 ± 0.42 | +0.2 | +52.6 | - |
| 1 | 0.1 ± 0.07 | 0.28 | -73.7 | - |
| 10 | - | - | - | - |

**Supplementary Table S9.** Mean germination percentage (GP), for the test species under the influence of three concentrations of pure ivermectin in comparison to the ethanol control (CE; cf. Methods section). Deviations of treatment means from control means are given in percentage points [pp] and percentages [%]. ANOVA results for concentration on species level are given; significant p-values (p ≤ 0.05) are in bold. In case of significant ANOVA results, Tukey HSD test was employed; different letters indicate significant differences (p ≤ 0.05).

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Family** | **Species** | **Concentration of active ingredient [mg l-1]** | **GP (mean ± SE) [%]** | **Deviation of treatment from control [pp]** | **Deviation of treatment from control [%]** | **ANOVA**  **p-value** | **Tukey HSD**  **significant differences** |
| Asteraceae | *Achillea ptarmica* L. | 0 | 15.4 ± 4.5 | - | - | 0.580 | - |
| 0.1 | 20.3 ± 4.9 | +4.9 | +31.5 | - |
| 1 | 20.6 ± 4.7 | +5.1 | +33.3 | - |
| 10 | 28.6 ± 8.8 | +13.1 | +85.2 | - |
| *Centaurea jacea* L. | 0 | 15.4 ± 1.7 | - | - | **0.004** | A |
| 0.1 | 27.4 ± 2.1 | +12.0 | +77.8 | B |
| 1 | 26.3 ± 2.8 | +10.9 | +70.4 | B |
| 10 | 27.7 ± 3.3 | +12.3 | +79.6 | B |
| *Hypochaeris radicata* L. | 0 | 93.4 ± 1.4 | - | - | 0.996 | - |
| 0.1 | 94.0 ± 1.5 | +0.6 | +0.6 | - |
| 1 | 93.7 ± 2.5 | +0.3 | +0.3 | - |
| 10 | 93.4 ± 2.4 | 0.0 | +0.0 | - |
| Caryophyllaceae | *Cerastium holosteoides* Fr. | 0 | 35.1 ± 3.9 | - | - | 0.423 | - |
| 0.1 | 42.9 ± 3.6 | +7.7 | +22.0 | - |
| 1 | 40.3 ± 3.7 | +5.2 | +14.7 | - |
| 10 | 42.3 ± 3.0 | +7.2 | +20.4 | - |
| *Dianthus deltoides* L. | 0 | 18.9 ± 1.9 | - | - | 0.569 | - |
| 0.1 | 29.4 ± 8.2 | +10.5 | +56.0 | - |
| 1 | 24.0 ± 2.3 | +5.1 | +27.3 | - |
| 10 | 24.9 ± 4.8 | +6.0 | +31.8 | - |
| *Lychnis flos-cuculi* L. | 0 | 12.3 ± 2.6 | - | - | 0.102 | - |
| 0.1 | 22.6 ± 3.7 | +10.3 | +83.7 | - |
| 1 | 21.1 ± 3.4 | +8.9 | +72.0 | - |
| 10 | 26.0 ± 5.8 | +13.7 | +111.6 | - |
| Fabaceae | *Hippocrepis comosa* L. | 0 | 17.4 ± 2.2 | - | - | 0.083 | - |
| 0.1 | 16.6 ± 1.8 | -0.9 | -4.9 | - |
| 1 | 22.3 ± 2.0 | +4.9 | +27.9 | - |
| 10 | 27.4 ± 5.5 | +10.0 | +57.4 | - |
| *Medicago lupulina* L. | 0 | 18.6 ± 3.0 | - | - | 0.135 | - |
| 0.1 | 24.0 ± 5.4 | +5.4 | +29.2 | - |
| 1 | 11.4 ± 2.8 | -7.1 | -38.5 | - |
| 10 | 18.3 ± 2.7 | -0.3 | -1.5 | - |
| *Trifolium aureum* POLLICH | 0 | 70.6 ± 3.1 | - | - | 0.371 | - |
| 0.1 | 71.1 ± 3.0 | +0.6 | +0.8 | - |
| 1 | 64.3 ± 5.6 | -6.3 | -8.9 | - |
| 10 | 73.1 ± 2.1 | +2.6 | +3.6 | - |
| *Trifolium pratense* L. | 0 | 81.4 ± 1.9 | - | - | 0.669 | - |
| 0.1 | 83.1 ± 1.6 | +1.7 | +2.1 | - |
| 1 | 85.4 ± 2.6 | +4.0 | +4.9 | - |
| 10 | 82.3 ± 3.0 | +0.9 | +1.1 | - |
| Plantaginaceae | *Plantago lanceolata* L. | 0 | 21.4 ± 4.1 | - | - | **0.048** | A |
| 0.1 | 33.1 ± 1.0 | +11.7 | +54.6 | AB |
| 1 | 29.1 ± 3.9 | +7.7 | +36.0 | AB |
| 10 | 36.0 ± 4.4 | +14.6 | +68.0 | B |
| *Plantago media* L. | 0 | 7.7 ± 2.2 | - | - | 0.105 | - |
| 0.1 | 15.1 ± 1.9 | +7.4 | +96.4 | - |
| 1 | 14.3 ± 1.7 | +6.6 | +85.3 | - |
| 10 | 16.0 ± 4.0 | +8.3 | +107.5 | - |
| *Veronica officinalis* L. | 0 | 4.9 ± 1.7 | - | - | 0.120 | - |
| 0.1 | 8.6 ± 2.8 | +3.7 | +76.4 | - |
| 1 | 2.3 ± 0.8 | -2.6 | -53.0 | - |
| 10 | 9.4 ± 3.1 | +4.6 | +94.0 | - |
| Poaceae | *Agrostis capillaris* L. | 0 | 59.7 ± 4.0 | - | - | 0.623 | - |
| 0.1 | 56.6 ± 4.8 | -3.1 | -5.3 | - |
| 1 | 61.7 ± 2.5 | +2.0 | +3.4 | - |
| 10 | 62.3 ± 1.9 | +2.6 | +4.3 | - |
| *Cynosurus cristatus* L. | 0 | 75.4 ± 2.8 | - | - | 0.970 | - |
| 0.1 | 76.3 ± 3.5 | +0.9 | +1.1 | - |
| 1 | 76.9 ± 2.2 | +1.4 | +1.9 | - |
| 10 | 74.9 ± 4.3 | -0.6 | -0.8 | - |
| *Lolium perenne* L. | 0 | 53.1 ± 5.6 | - | - | 0.161 | - |
| 0.1 | 56.9 ± 4.3 | +3.7 | +7.0 | - |
| 1 | 54.0 ± 3.8 | +0.9 | +1.6 | - |
| 10 | 65.7 ± 2.3 | +12.6 | +23.7 | - |
| *Phleum phleoides* (L.)H. KARST. | 0 | 1.7 ± 0.7 | - | - | 0.404 | - |
| 0.1 | 3.7 ± 1.4 | +2.0 | +117.0 | - |
| 1 | 1.7 ± 0.5 | 0.0 | +0.0 | - |
| 10 | 2.9 ± 0.9 | +1.2 | +67.3 | - |

**Supplementary Table S10.** Mean germination time (MGT) for the test species under the influence of three concentrations of pure ivermectin in comparison to the ethanol control (CE; cf. Methods section). Deviations of treatment means from control means are given in days [d] and percentages [%]. ANOVA results for concentration on species level are given; significant p-values (p ≤ 0.05) are in bold. In case of significant ANOVA results, Tukey HSD test was employed; different letters indicate significant differences (p ≤ 0.05).

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Family** | **Species** | **Concentration of active ingredient [mg l-1]** | **MGT (mean ± SE) [d]** | **Deviation of treatment from control [d]** | **Deviation of treatment from control [%]** | **ANOVA**  **p-value** | **Tukey HSD**  **significant differences** |
| Asteraceae | *Achillea ptarmica* L. | 0 | 25.2 ± 1.4 | - | - | 0.054 | - |
| 0.1 | 28.9 ± 2.6 | +3.6 | +14.8 | - |
| 1 | 20.8 ± 1.1 | -4.4 | -17.3 | - |
| 10 | 27.8 ± 2.6 | +2.6 | +10.0 | - |
| *Centaurea jacea* L. | 0 | 21.3 ± 1.2 | - | - | 0.657 | - |
| 0.1 | 22.5 ± 1.2 | +1.2 | +5.6 | - |
| 1 | 23.3 ± 1.006 | +2.0 | +8.9 | - |
| 10 | 23.4 ± 1.1 | +2.1 | +9.6 | - |
| *Hypochaeris radicata* L. | 0 | 7.1 ± 0.5 | - | - | **0.004** | A |
| 0.1 | 10.2 ± 0.7 | +3.1 | +43.0 | B |
| 1 | 8.8 ± 0.7 | +1.7 | +24.1 | AB |
| 10 | 9.0 ± 0.3 | +1.9 | +26.5 | AB |
| Caryophyllaceae | *Cerastium holosteoides* Fr. | 0 | 26.8 ± 1.4 | - | - | 0.203 | - |
| 0.1 | 23.2 ± 0.9 | -3.6 | -13.3 | - |
| 1 | 23.6 ± 1.5 | -3.2 | -11.7 | - |
| 10 | 25.4 ± 1.1 | -1.4 | -5.3 | - |
| *Dianthus deltoides* L. | 0 | 26.3 ± 1.2 | - | - | **0.024** | AB |
| 0.1 | 20.7 ± 1.2 | -5.6 | -21.2 | A |
| 1 | 27.1 ± 1.3 | +0.8 | +3.0 | B |
| 10 | 26.1 ± 2.3 | -0.2 | -0.8 | AB |
| *Lychnis flos-cuculi* L. | 0 | 31.6 ± 1.0 | - | - | 0.185 | - |
| 0.1 | 33.7 ± 1.3 | +2.1 | +6.6 | - |
| 1 | 29.8 ± 1.2 | -1.8 | -5.8 | - |
| 10 | 32.3 ± 1.3 | +0.7 | +2.0 | - |
| Fabaceae | *Hippocrepis comosa* L. | 0 | 13.0 ± 0.9 | - | - | **0.006** | A |
| 0.1 | 11.0 ± 0.7 | -2.0 | -16.0 | AB |
| 1 | 8.9 ± 0.4 | -4.1 | -31.4 | B |
| 10 | 11.2 ± 0.8 | -1.8 | -14.0 | AB |
| *Medicago lupulina* L. | 0 | 10.0 ± 0.5 | - | - | 0.066 | - |
| 0.1 | 8.8 ± 2.3 | -1.2 | -11.6 | - |
| 1 | 16.5 ± 3.2 | +6.5 | +65.7 | - |
| 10 | 10.6 ± 1.4 | +0.6 | +5.8 | - |
| *Trifolium aureum* POLLICH | 0 | 4.9 ± 0.7 | - | - | **0.026** | A |
| 0.1 | 4.8 ± 0.5 | -0.1 | -2.9 | A |
| 1 | 6.7 ± 0.4 | +1.8 | +35.7 | A |
| 10 | 6.1 ± 0.3 | +1.2 | +23.1 | A |
| *Trifolium pratense* L. | 0 | 6.5 ± 0.6 | - | - | **0.022** | A |
| 0.1 | 4.3 ± 0.4 | -2.2 | -33.9 | B |
| 1 | 5.6 ± 0.6 | -0.9 | -13.3 | AB |
| 10 | 4.6 ± 0.4 | -1.9 | -29.4 | AB |
| Plantaginaceae | *Plantago lanceolata* L. | 0 | 21.5 ± 1.4 | - | - | 0.354 | - |
| 0.1 | 20.8 ± 0.7 | -0.7 | -3.1 | - |
| 1 | 18.7 ± 1.2 | -2.8 | -12.9 | - |
| 10 | 20.5 ± 1 | -1.0 | -4.7 | - |
| *Plantago media* L. | 0 | 24.3 ± 1.8 | - | - | 0.641 | - |
| 0.1 | 22.0 ± 1.2 | -2.3 | -9.8 | - |
| 1 | 22.4 ± 1.5 | -1.9 | -8.0 | - |
| 10 | 21.9 ± 1 | -2.4 | -10.1 | - |
| *Veronica officinalis* L. | 0 | 29.4 ± 1.1 | - | - | 0.164 | - |
| 0.1 | 33.5 ± 1.9 | +4.1 | +14.0 | - |
| 1 | 24.9 ± 4.4 | -4.5 | -15.2 | - |
| 10 | 28.2 ± 1.2 | -1.2 | -4.1 | - |
| Poaceae | *Agrostis capillaris* L. | 0 | 13.6 ± 0.2 | - | - | 0.204 | - |
| 0.1 | 11.9 ± 1.1 | -1.7 | -12.7 | - |
| 1 | 13.1 ± 0.3 | -0.5 | -4.2 | - |
| 10 | 13.2 ± 0.5 | -0.4 | -3.0 | - |
| *Cynosurus cristatus* L. | 0 | 17.9 ± 0.5 | - | - | **˂ 0.0001** | A |
| 0.1 | 21.5 ± 0.8 | +3.6 | +20.0 | B |
| 1 | 17.6 ± 0.4 | -0.3 | -1.8 | A |
| 10 | 16 ± 0.7 | -1.9 | -11.0 | A |
| *Lolium perenne* L. | 0 | 10.7 ± 0.3 | - | - | 0.486 | - |
| 0.1 | 9.8 ± 0.5 | -0.9 | -8.6 | - |
| 1 | 10.2 ± 0.6 | -0.5 | -4.8 | - |
| 10 | 10.7 ± 0.5 | 0.0 | 0.0 | - |
| *Phleum phleoides* (L.)H. KARST. | 0 | 30.8 ± 1.8 | - | - | 0.233 | - |
| 0.1 | 22.9 ± 2.4 | -7.9 | -25.6 | - |
| 1 | 27.8 ± 2.8 | -3.0 | -9.6 | - |
| 10 | 28.9 ± 3 | -1.9 | -5.9 | - |

**Supplementary Table S11.** Mean synchrony of germination (Z) for the test species under the influence of three concentrations of pure ivermectin in comparison to the ethanol control (CE; cf. Methods section). Deviations of treatment means from control means are given in absolute numbers and percentages [%]. ANOVA results for concentration on species level are given; significant p-values (p ≤ 0.05) are in bold. In case of significant ANOVA results, Tukey HSD test was employed; different letters indicate significant differences (p ≤ 0.05).

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Family** | **Species** | **Concentration of active ingredient [mg l-1]** | **Z (mean ± SE)** | **Deviation of treatment from control** | **Deviation of treatment from control [%]** | **ANOVA**  **p-value** | **Tukey HSD**  **significant differences** |
| Asteraceae | *Achillea ptarmica* L. | 0 | 0.28 ± 0.13 | - | - | 0.143 | - |
| 0.1 | 0.34 ± 0.11 | +0.06 | +21.4 | - |
| 1 | 0.12 ± 0.04 | -0.16 | -57.1 | - |
| 10 | 0.33 ± 0.07 | +0.05 | +17.9 | - |
| *Centaurea jacea* L. | 0 | 0.18 ± 0.02 | - | - | 0.912 | - |
| 0.1 | 0.17 ± 0.03 | -0.01 | -5.6 | - |
| 1 | 0.2 ± 0.03 | +0.02 | +11.1 | - |
| 10 | 0.2 ± 0.05 | +0.02 | +11.1 | - |
| *Hypochaeris radicata* L. | 0 | 0.47 ± 0.06 | - | - | 0.759 | - |
| 0.1 | 0.42 ± 0.09 | -0.05 | -10.6 | - |
| 1 | 0.39 ± 0.04 | -0.08 | -17.0 | - |
| 10 | 0.47 ± 0.06 | 0.00 | 0.0 | - |
| Caryophyllaceae | *Cerastium holosteoides* Fr. | 0 | 0.17 ± 0.02 | - | - | 0.119 | - |
| 0.1 | 0.22 ± 0.02 | +0.05 | +29.4 | - |
| 1 | 0.2 ± 0.03 | +0.03 | +17.7 | - |
| 10 | 0.27 ± 0.04 | +0.10 | +58.8 | - |
| *Dianthus deltoides* L. | 0 | 0.23 ± 0.07 | - | - | 0.687 | - |
| 0.1 | 0.14 ± 0.03 | -0.09 | -39.1 | - |
| 1 | 0.19 ± 0.05 | -0.04 | -17.4 | - |
| 10 | 0.22 ± 0.08 | -0.01 | -4.4 | - |
| *Lychnis flos-cuculi* L. | 0 | 0.23 ± 0.07 | - | - | 0.117 | - |
| 0.1 | 0.39 ± 0.07 | +0.16 | +69.6 | - |
| 1 | 0.19 ± 0.03 | -0.04 | -17.4 | - |
| 10 | 0.23 ± 0.05 | 0.00 | 0.0 | - |
| Fabaceae | *Hippocrepis comosa* L. | 0 | 0.25 ± 0.07 | - | - | 0.129 | - |
| 0.1 | 0.36 ± 0.11 | +0.11 | +44.0 | - |
| 1 | 0.47 ± 0.07 | +0.22 | +88.0 | - |
| 10 | 0.34 ± 0.03 | +0.09 | +36.0 | - |
| *Medicago lupulina* L. | 0 | 0.22 ± 0.04 | - | - | 0.611 | - |
| 0.1 | 0.33 ± 0.07 | +0.11 | +50.0 | - |
| 1 | 0.33 ± 0.08 | +0.11 | +50.0 | - |
| 10 | 0.27 ± 0.05 | +0.05 | +22.7 | - |
| *Trifolium aureum* POLLICH | 0 | 0.37 ± 0.03 | - | - | 0.513 | - |
| 0.1 | 0.32 ± 0.02 | -0.05 | -13.5 | - |
| 1 | 0.41 ± 0.06 | +0.04 | +10.8 | - |
| 10 | 0.35 ± 0.03 | -0.02 | -5.4 | - |
| *Trifolium pratense* L. | 0 | 0.52 ± 0.06 | - | - | **0.035** | A |
| 0.1 | 0.44 ± 0.03 | -0.08 | -15.4 | AB |
| 1 | 0.42 ± 0.05 | -0.10 | -19.2 | AB |
| 10 | 0.32 ± 0.03 | -0.20 | -38.5 | B |
| Plantaginaceae | *Plantago lanceolata* L. | 0 | 0.14 ± 0.02 | - | - | 0.639 | - |
| 0.1 | 0.16 ± 0.02 | +0.02 | +14.3 | - |
| 1 | 0.18 ± 0.03 | +0.04 | +28.6 | - |
| 10 | 0.17 ± 0.02 | +0.03 | +21.4 | - |
| *Plantago media* L. | 0 | 0.17 ± 0.07 | - | - | 0.075 | - |
| 0.1 | 0.15 ± 0.02 | -0.02 | -11.8 | - |
| 1 | 0.35 ± 0.08 | +0.18 | +105.9 | - |
| 10 | 0.27 ± 0.04 | +0.10 | +58.8 | - |
| *Veronica officinalis* L. | 0 | 0.13 ± 0.07 | - | - | 0.982 | - |
| 0.1 | 0.24 ± 0.06 | +0.11 | +85.0 | - |
| 1 | 0.5 ± 0.5 | +0.37 | +284.6 | - |
| 10 | 0.29 ± 0.18 | +0.16 | +120.8 | - |
| Poaceae | *Agrostis capillaris* L. | 0 | 0.34 ± 0.05 | - | - | 0.198 | - |
| 0.1 | 0.43 ± 0.06 | +0.09 | +26.5 | - |
| 1 | 0.29 ± 0.03 | -0.05 | -14.7 | - |
| 10 | 0.31 ± 0.03 | -0.03 | -8.8 | - |
| *Cynosurus cristatus* L. | 0 | 0.33 ± 0.04 | - | - | 0.099 | - |
| 0.1 | 0.27 ± 0.03 | -0.06 | -18.2 | - |
| 1 | 0.37 ± 0.04 | +0.04 | +12.1 | - |
| 10 | 0.42 ± 0.07 | +0.09 | +27.3 | - |
| *Lolium perenne* L. | 0 | 0.45 ± 0.06 | - | - | 0.520 | - |
| 0.1 | 0.55 ± 0.08 | +0.10 | +22.2 | - |
| 1 | 0.42 ± 0.05 | -0.03 | -6.7 | - |
| 10 | 0.46 ± 0.03 | +0.01 | +2.2 | - |
| *Phleum phleoides* (L.)H. KARST. | 0 | 0.5 ± 0.5 | - | - | 0.569 | - |
| 0.1 | 0.03 ± 0.03 | -0.47 | -94.0 | - |
| 1 | - | -0.50 | -100.0 | - |
| 10 | 0.17 ± 0.17 | -0.33 | -66.0 | - |

**Supplementary Table S12.** Mean germination percentage (GP) for the test species under the influence of three concentrations of formulated ivermectin (Oramec) in comparison to the blank control (CW; cf. Methods section). Deviations of treatment means from control means are given in percentage points [pp] and percentages [%]. ANOVA results for concentration on species level are given; significant p-values (p ≤ 0.05) are in bold. In case of significant ANOVA results, Tukey HSD test was employed; different letters indicate significant differences (p ≤ 0.05).

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Family** | **Species** | **Concentration of active ingredient [mg l-1]** | **GP (mean ± SE) [%]** | **Deviation of treatment from control [pp]** | **Deviation of treatment from control [%]** | **ANOVA**  **p-value** | **Tukey HSD**  **significant differences** |
| Asteraceae | *Achillea ptarmica* L. | 0 | 29.1 ± 9.1 | - | - | 0.119 | - |
| 0.1 | 15.4 ± 5.4 | -13.7 | -47.1 | - |
| 1 | 12.0 ± 3.2 | -17.1 | -58.8 | - |
| 10 | 11.4 ± 3.1 | -17.7 | -60.8 | - |
| *Centaurea jacea* L. | 0 | 25.7 ± 2.5 | - | - | 0.358 | - |
| 0.1 | 29.4 ± 4.3 | +3.7 | +14.5 | - |
| 1 | 21.7 ± 1.5 | -4.0 | -15.6 | - |
| 10 | 26.3 ± 2.1 | +0.6 | +2.3 | - |
| *Hypochaeris radicata* L. | 0 | 92.0 ± 2.0 | - | - | 0.052 | - |
| 0.1 | 96.0 ± 1.2 | +4.0 | +4.4 | - |
| 1 | 94.0 ± 3.3 | +2.0 | +2.2 | - |
| 10 | 86.0 ± 3.0 | -6.0 | -6.5 | - |
| Caryophyllaceae | *Cerastium holosteoides* Fr. | 0 | 47.1 ± 2.7 | - | - | **0.002** | A |
| 0.1 | 43.7 ± 1.6 | -3.4 | -7.3 | A |
| 1 | 39.4 ± 4.9 | -7.7 | -16.4 | AB |
| 10 | 25.7 ± 4.5 | -21.4 | -45.5 | B |
| *Dianthus deltoides* L. | 0 | 63.4 ± 4.8 | - | - | 0.331 | - |
| 0.1 | 69.1 ± 3.9 | +5.7 | +9.0 | - |
| 1 | 54.0 ± 7.2 | -9.4 | -14.9 | - |
| 10 | 60.9 ± 6.4 | -2.6 | -4.1 | - |
| *Lychnis flos-cuculi* L. | 0 | 55.7 ± 3.9 | - | - | **0.0002** | A |
| 0.1 | 28.0 ± 2.8 | -27.7 | -49.7 | B |
| 1 | 38.0 ± 4.3 | -17.7 | -31.8 | B |
| 10 | 30.0 ± 4.0 | -25.7 | -46.2 | B |
| Fabaceae | *Hippocrepis comosa* L. | 0 | 22.3 ± 2.5 | - | - | 0.992 | - |
| 0.1 | 22.3 ± 2.0 | 0 | 0.00 | - |
| 1 | 21.7 ± 3.4 | -0.6 | -2.6 | - |
| 10 | 22.0 ± 1.3 | -0.3 | -1.3 | - |
| *Medicago lupulina* L. | 0 | 25.4 ± 4.7 | - | - | 0.242 | - |
| 0.1 | 20.3 ± 2.0 | -5.1 | -20.2 | - |
| 1 | 17.1 ± 2.1 | -8.3 | -32.6 | - |
| 10 | 24.9 ± 3.2 | -0.6 | -2.2 | - |
| *Trifolium aureum* POLLICH | 0 | 71.4 ± 3.3 | - | - | 0.553 | - |
| 0.1 | 72.6 ± 3.3 | +1.1 | +1.6 | - |
| 1 | 66.6 ± 3.9 | -4.9 | -6.8 | - |
| 10 | 67.4 ± 3.3 | -4.0 | -5.6 | - |
| *Trifolium pratense* L. | 0 | 81.4 ± 2.6 | - | - | 0.600 | - |
| 0.1 | 84.9 ± 1.6 | +3.4 | +4.2 | - |
| 1 | 84.9 ± 1.9 | +3.4 | +4.2 | - |
| 10 | 83.4 ± 1.9 | +2.0 | +2.5 | - |
| Plantaginaceae | *Plantago lanceolata* L. | 0 | 34.0 ± 3.1 | - | - | 0.315 | - |
| 0.1 | 35.7 ± 2.8 | +1.7 | +5.0 | - |
| 1 | 34.0 ± 2.5 | -0 | 0.0 | - |
| 10 | 28.9 ± 2.5 | -5.1 | -15.1 | - |
| *Plantago media* L. | 0 | 22.0 ± 3.2 | - | - | **˂ 0.0001** | A |
| 0.1 | 5.4 ± 1.4 | -16.6 | -75.3 | B |
| 1 | 5.1 ± 1.4 | -16.9 | -76.6 | B |
| 10 | 5.1 ± 1.7 | -16.9 | -76.6 | B |
| *Veronica officinalis* L. | 0 | 5.4 ± 0.9 | - | - | **0.017** | A |
| 0.1 | 27.1 ± 4.9 | +21.7 | +400.8 | B |
| 1 | 8.0 ± 2.8 | +2.6 | +47.6 | AB |
| 10 | 20.3 ± 8.4 | +14.8 | +274.3 | AB |
| Poaceae | *Agrostis capillaris* L. | 0 | 70.6 ± 4.3 | - | - | 0.218 | - |
| 0.1 | 64.9 ± 5.5 | -5.7 | -8.1 | - |
| 1 | 58.3 ± 5.9 | -12.3 | -17.4 | - |
| 10 | 54.6 ± 6.5 | -16.0 | -22.7 | - |
| *Cynosurus cristatus* L. | 0 | 78.3 ± 4.1 | - | - | 0.899 | - |
| 0.1 | 78.6 ± 3.3 | +0.3 | +0.4 | - |
| 1 | 81.1 ± 1.6 | +2.9 | +3.6 | - |
| 10 | 79.4 ± 2.6 | +1.1 | +1.5 | - |
| *Lolium perenne* L. | 0 | 53.7 ± 5.5 | - | - | 0.359 | - |
| 0.1 | 54.6 ± 7.8 | +0.9 | +1.6 | - |
| 1 | 65.4 ± 3.1 | +11.7 | +21.8 | - |
| 10 | 60.9 ± 3.5 | +7.2 | +13.3 | - |
| *Phleum phleoides* (L.)H. KARST. | 0 | 7.4 ± 0.8 | - | - | **0.019** | A |
| 0.1 | 4.9 ± 1.1 | -2.6 | -34.6 | AB |
| 1 | 6.0 ± 1.2 | -1.4 | -19.3 | AB |
| 10 | 2.9 ± 0.6 | -4.6 | -61.5 | B |

**Supplementary Table S13.** Mean germination time (MGT) for the test species under the influence of three concentrations of formulated ivermectin (Oramec) in comparison to the blank control (CW; cf. Methods section). Deviations of treatment means from control means are given in days [d] and percentages [%]. ANOVA results for concentration on species level are given; significant p-values (p ≤ 0.05) are in bold. In case of significant ANOVA results, Tukey HSD test was employed; different letters indicate significant differences (p ≤ 0.05).

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Family** | **Species** | **Concentration of active ingredient [mg l-1]** | **MGT (mean ± SE) [d]** | **Deviation of treatment from control [d]** | **Deviation of treatment from control [%]** | **ANOVA**  **p-value** | **Tukey HSD**  **significant differences** |
| Asteraceae | *Achillea ptarmica* L. | 0 | 14.5 ± 2.3 | - | - | 0.108 | - |
| 0.1 | 20.9 ± 2.6 | +6.4 | +44.2 | - |
| 1 | 17.6 ± 2.5 | +3.1 | +20.8 | - |
| 10 | 25.9 ± 4.3 | +11.4 | +78.2 | - |
| *Centaurea jacea* L. | 0 | 22.1 ± 0.9 | - | - | **0.023** | A |
| 0.1 | 16.1 ± 1.1 | -6.0 | -27.0 | B |
| 1 | 19.4 ± 1.4 | -2.7 | -12.2 | AB |
| 10 | 19.2 ± 1.6 | -2.9 | -13.3 | AB |
| *Hypochaeris radicata* L. | 0 | 8.5 ± 0.3 | - | - | **0.004** | A |
| 0.1 | 5.8 ± 0.4 | -2.7 | -32.4 | B |
| 1 | 6.6 ± 0.5 | -1.9 | -23.1 | B |
| 10 | 6.5 ± 0.6 | -2.0 | -23.5 | B |
| Caryophyllaceae | *Cerastium holosteoides* Fr. | 0 | 10.4 ± 0.3 | - | - | **0.002** | A |
| 0.1 | 16.9 ± 0.8 | +6.5 | +62.9 | B |
| 1 | 20.5 ± 3.5 | +10.1 | +97.5 | B |
| 10 | 17.1 ± 2.7 | +6.7 | +65.2 | B |
| *Dianthus deltoides* L. | 0 | 9.8 ± 0.3 | - | - | 0.086 | - |
| 0.1 | 10.2 ± 0.2 | +0.4 | +4.5 | - |
| 1 | 14.1 ± 2.2 | +4.3 | +44.7 | - |
| 10 | 11.7 ± 1.9 | +1.9 | +19.3 | - |
| *Lychnis flos-cuculi* L. | 0 | 19.3 ± 2.1 | - | - | 0.826 | - |
| 0.1 | 17.6 ± 1.1 | -1.7 | -8.7 | - |
| 1 | 19.7 ± 1.6 | +0.4 | +2.2 | - |
| 10 | 18.5 ± 1.1 | -0.8 | -4.3 | - |
| Fabaceae | *Hippocrepis comosa* L. | 0 | 9.6 ± 0.8 | - | - | 0.126 | - |
| 0.1 | 13.1 ± 1.8 | +3.5 | +37.1 | - |
| 1 | 10.4 ± 0.3 | +0.8 | +8.9 | - |
| 10 | 11.0 ± 0.9 | +1.4 | +15.0 | - |
| *Medicago lupulina* L. | 0 | 6.5 ± 1.0 | - | - | 0.102 | - |
| 0.1 | 9.5 ± 1.2 | +3.0 | +47.2 | - |
| 1 | 8.9 ± 0.9 | +2.4 | +38.1 | - |
| 10 | 7.7 ± 0.9 | +1.2 | +19.2 | - |
| *Trifolium aureum* POLLICH | 0 | 5.1 ± 0.3 | - | - | 0.428 | - |
| 0.1 | 5.9 ± 0.7 | +0.8 | +14.8 | - |
| 1 | 5.6 ± 0.4 | +0.5 | +10.3 | - |
| 10 | 6.1 ± 0.2 | +1.0 | +20.2 | - |
| *Trifolium pratense* L. | 0 | 3.0 ± 0.4 | - | - | **0.011** | A |
| 0.1 | 3.9 ± 0.2 | +0.9 | +31.5 | AB |
| 1 | 4.7 ± 0.3 | +1.7 | +58.3 | B |
| 10 | 4.9 ± 0.7 | +1.9 | +66.0 | B |
| Plantaginaceae | *Plantago lanceolata* L. | 0 | 15.1 ± 0.6 | - | - | 0.183 | - |
| 0.1 | 18.0 ± 1.3 | +2.9 | +19.2 | - |
| 1 | 17.8 ± 1.3 | +2.7 | +18.3 | - |
| 10 | 15.9 ± 0.9 | +0.8 | +5.1 | - |
| *Plantago media* L. | 0 | 15.0 ± 1.3 | - | - | 0.299 | - |
| 0.1 | 19.0 ± 2.5 | +4.0 | +26.8 | - |
| 1 | 20.2 ± 1.9 | +5.2 | +34.8 | - |
| 10 | 17.1 ± 2.3 | +2.1 | +14.1 | - |
| *Veronica officinalis* L. | 0 | 31.4 ± 2.3 | - | - | 0.790 | - |
| 0.1 | 29.6 ± 1.5 | -1.8 | -5.7 | - |
| 1 | 30.6 ± 2.4 | -0.8 | -2.5 | - |
| 10 | 28.4 ± 0.9 | -3.0 | -9.6 | - |
| Poaceae | *Agrostis capillaris* L. | 0 | 9.7 ± 0.4 | - | - | 0.068 | - |
| 0.1 | 10.8 ± 0.4 | +1.1 | +11.4 | - |
| 1 | 12.3 ± 0.7 | +2.6 | +27.0 | - |
| 10 | 12.4 ± 1.6 | +2.7 | +27.9 | - |
| *Cynosurus cristatus* L. | 0 | 13.2 ± 0.4 | - | - | 0.280 | - |
| 0.1 | 13.6 ± 0.4 | +0.4 | +3.7 | - |
| 1 | 13.7 ± 0.5 | +0.5 | +3.8 | - |
| 10 | 14.3 ± 0.4 | +1.1 | +8.8 | - |
| *Lolium perenne* L. | 0 | 8.4 ± 0.3 | - | - | **0.044** | A |
| 0.1 | 9.1 ± 0.3 | +0.7 | +8.0 | AB |
| 1 | 9.4 ± 0.2 | +1.0 | +12.0 | B |
| 10 | 8.9 ± 0.2 | +0.5 | +5.6 | AB |
| *Phleum phleoides* (L.)H. KARST. | 0 | 23.5 ± 1.3 | - | - | 0.173 | - |
| 0.1 | 25.8 ± 1 | +2.3 | +9.9 | - |
| 1 | 28.3 ± 2.1 | +4.8 | +20.2 | - |
| 10 | 28.1 ± 2 | +4.6 | +19.6 | - |

**Supplementary Table S14.** Mean synchrony of germination (Z) for the test species under the influence of three concentrations of formulated ivermectin (Oramec) in comparison to the blank control (CW; cf. Methods section). Deviations of treatment means from control means are given in absolute numbers and percentages [%]. ANOVA results for concentration on species level are given; significant p-values (p ≤ 0.05) are in bold. In case of significant ANOVA results, Tukey HSD test was employed; different letters indicate significant differences (p ≤ 0.05).

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Family** | **Species** | **Concentration of active ingredient [mg l-1]** | **Z (mean ± SE)** | **Deviation of treatment from control** | **Deviation of treatment from control [%]** | **ANOVA**  **p-value** | **Tukey HSD**  **significant differences** |
| Asteraceae | *Achillea ptarmica* L. | 0 | 0.19 ± 0.05 | - | - | 0.455 | - |
| 0.1 | 0.26 ± 0.08 | +0.07 | +36.8 | - |
| 1 | 0.22 ± 0.11 | +0.03 | +15.8 | - |
| 10 | 0.4 ± 0.13 | +0.21 | +110.5 | - |
| *Centaurea jacea* L. | 0 | 0.16 ± 0.02 | - | - | 0.720 | - |
| 0.1 | 0.19 ± 0.02 | +0.03 | +18.8 | - |
| 1 | 0.22 ± 0.05 | +0.06 | +37.5 | - |
| 10 | 0.2 ± 0.04 | +0.04 | +25.0 | - |
| *Hypochaeris radicata* L. | 0 | 0.51 ± 0.05 | - | - | 0.720 | - |
| 0.1 | 0.6 ± 0.05 | +0.09 | +17.7 | - |
| 1 | 0.58 ± 0.08 | +0.07 | +13.7 | - |
| 10 | 0.55 ± 0.06 | +0.04 | +7.8 | - |
| Caryophyllaceae | *Cerastium holosteoides* Fr. | 0 | 0.31 ± 0.03 | - | - | 0.349 | - |
| 0.1 | 0.31 ± 0.04 | 0 | +0.0 | - |
| 1 | 0.23 ± 0.02 | -0.08 | -25.8 | - |
| 10 | 0.26 ± 0.05 | -0.05 | -16.1 | - |
| *Dianthus deltoides* L. | 0 | 0.54 ± 0.08 | - | - | **0.008** | A |
| 0.1 | 0.47 ± 0.05 | -0.07 | -12.96 | AB |
| 1 | 0.29 ± 0.03 | -0.25 | -46.30 | B |
| 10 | 0.47 ± 0.05 | -0.07 | -12.96 | A |
| *Lychnis flos-cuculi* L. | 0 | 0.16 ± 0.02 | - | - | 0.854 | - |
| 0.1 | 0.18 ± 0.02 | +0.02 | +12.5 | - |
| 1 | 0.16 ± 0.02 | 0 | 0.0 | - |
| 10 | 0.15 ± 0.03 | -0.01 | -6.3 | - |
| Fabaceae | *Hippocrepis comosa* L. | 0 | 0.34 ± 0.03 | - | - | 0.269 | - |
| 0.1 | 0.31 ± 0.03 | -0.03 | -8.8 | - |
| 1 | 0.48 ± 0.09 | +0.14 | +41.2 | - |
| 10 | 0.35 ± 0.08 | +0.01 | +2.9 | - |
| *Medicago lupulina* L. | 0 | 0.42 ± 0.07 | - | - | 0.553 | - |
| 0.1 | 0.36 ± 0.08 | -0.06 | -14.3 | - |
| 1 | 0.29 ± 0.04 | -0.13 | -31.0 | - |
| 10 | 0.38 ± 0.07 | -0.04 | -9.5 | - |
| *Trifolium aureum* POLLICH | 0 | 0.38 ± 0.04 | - | - | 0.522 | - |
| 0.1 | 0.33 ± 0.02 | -0.05 | -13.2 | - |
| 1 | 0.39 ± 0.04 | +0.01 | +2.6 | - |
| 10 | 0.33 ± 0.02 | -0.05 | -13.2 | - |
| *Trifolium pratense* L. | 0 | 0.55 ± 0.03 | - | - | 0.824 | - |
| 0.1 | 0.55 ± 0.05 | 0 | 0.0 | - |
| 1 | 0.53 ± 0.03 | -0.02 | -3.6 | - |
| 10 | 0.51 ± 0.03 | -0.04 | -7.3 | - |
| Plantaginaceae | *Plantago lanceolata* L. | 0 | 0.15 ± 0.01 | - | - | 0.688 | - |
| 0.1 | 0.17 ± 0.03 | +0.02 | +13.3 | - |
| 1 | 0.14 ± 0.01 | -0.01 | -6.7 | - |
| 10 | 0.16 ± 0.02 | +0.01 | +6.7 | - |
| *Plantago media* L. | 0 | 0.24 ± 0.05 | - | - | 0.060 | - |
| 0.1 | 0.09 ± 0.07 | -0.15 | -62.5 | - |
| 1 | 0.4 ± 0.1 | +0.16 | +66.7 | - |
| 10 | 0.18 ± 0.08 | -0.06 | -25.0 | - |
| *Veronica officinalis* L. | 0 | 0.13 ± 0.07 | - | - | 0.308 | - |
| 0.1 | 0.27 ± 0.03 | +0.14 | +110.3 | - |
| 1 | 0.29 ± 0.14 | +0.16 | +121.0 | - |
| 10 | 0.2 ± 0.08 | +0.07 | +50.2 | - |
| Poaceae | *Agrostis capillaris* L. | 0 | 0.54 ± 0.05 | - | - | **0.014** | A |
| 0.1 | 0.38 ± 0.01 | -0.16 | -29.6 | AB |
| 1 | 0.35 ± 0.07 | -0.19 | -35.2 | B |
| 10 | 0.35 ± 0.02 | -0.19 | -35.2 | B |
| *Cynosurus cristatus* L. | 0 | 0.37 ± 0.02 | - | - | 0.472 | - |
| 0.1 | 0.4 ± 0.04 | +0.03 | +8.1 | - |
| 1 | 0.44 ± 0.04 | +0.07 | +18.9 | - |
| 10 | 0.37 ± 0.03 | 0 | 0.0 | - |
| *Lolium perenne* L. | 0 | 0.59 ± 0.05 | - | - | 0.298 | - |
| 0.1 | 0.62 ± 0.07 | +0.03 | +5.1 | - |
| 1 | 0.61 ± 0.03 | +0.02 | +3.4 | - |
| 10 | 0.72 ± 0.05 | +0.13 | +22.0 | - |
| *Phleum phleoides* (L.)H. KARST. | 0 | 0.38 ± 0.12 | - | - | 0.107 | - |
| 0.1 | 0.61 ± 0.18 | +0.23 | +60.5 | - |
| 1 | 0.33 ± 0.05 | -0.05 | -13.1 | - |
| 10 | - | -0.38 | -100.0 | - |

**Supplementary Table S15.** Mean germination percentage (GP) for the test species under the influence of three concentrations of pure abamectin in comparison to the ethanol control (CE; cf. Methods section). Deviations of treatment means from control means are given in percentage points [pp] and percentages [%]. ANOVA results for concentration on species level are given; significant p-values (p ≤ 0.05) are in bold. In case of significant ANOVA results, Tukey HSD test was employed; different letters indicate significant differences (p ≤ 0.05).

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Family** | **Species** | **Concentration of active ingredient [mg l-1]** | **GP (mean ± SE) [%]** | **Deviation of treatment from control [pp]** | **Deviation of treatment from control [%]** | **ANOVA**  **p-value** | **Tukey HSD**  **significant differences** |
| Asteraceae | *Achillea ptarmica* L. | 0 | 15.4 ± 4.5 | - | - | 0.078 | - |
| 0.1 | 8.3 ± 1.2 | -7.1 | -46.3 | - |
| 1 | 6.9 ± 1.4 | -8.6 | -55.6 | - |
| 10 | 25.7 ± 9.5 | +10.3 | +66.7 | - |
| *Centaurea jacea* L. | 0 | 15.4 ± 1.7 | - | - | **˂ 0.0001** | A |
| 0.1 | 31.7 ± 2.1 | +16.3 | +105.5 | B |
| 1 | 25.1 ± 1.4 | +9.7 | +63.0 | BC |
| 10 | 21.1 ± 2.4 | +5.7 | +37.0 | AC |
| *Hypochaeris radicata* L. | 0 | 93.4 ± 1.4 | - | - | 0.389 | - |
| 0.1 | 96.6 ± 1.9 | +3.1 | +3.4 | - |
| 1 | 94.3 ± 1.8 | +0.9 | +0.9 | - |
| 10 | 97.1 ± 1.8 | +3.7 | +4.0 | - |
| Caryophyllaceae | *Cerastium holosteoides* Fr. | 0 | 35.1 ± 3.9 | - | - | 0.692 | - |
| 0.1 | 33.1 ± 3.0 | -2.0 | -5.7 | - |
| 1 | 38.0 ± 4.4 | +2.9 | +8.1 | - |
| 10 | 31.7 ± 3.4 | -3.4 | -9.8 | - |
| *Dianthus deltoides* L. | 0 | 18.9 ± 1.9 | - | - | 0.163 | - |
| 0.1 | 14.9 ± 5.2 | -4.0 | -21.2 | - |
| 1 | 27.7 ± 4.5 | +8.9 | +47.0 | - |
| 10 | 18.0 ± 4.4 | -0.9 | -4.6 | - |
| *Lychnis flos-cuculi* L. | 0 | 12.3 ± 2.6 | - | - | **˂ 0.0001** | A |
| 0.1 | 49.7 ± 3.1 | +37.4 | +304.5 | B |
| 1 | 28.6 ± 5.5 | +16.3 | +132.5 | C |
| 10 | 21.4 ± 3.2 | +9.1 | +74.4 | AC |
| Fabaceae | *Hippocrepis comosa* L. | 0 | 17.4 ± 2.2 | - | - | 0.815 | - |
| 0.1 | 20.6 ± 2.5 | +3.1 | +18.0 | - |
| 1 | 18.3 ± 2.5 | +0.9 | +4.9 | - |
| 10 | 19.4 ± 2.4 | +2.0 | +11.5 | - |
| *Medicago lupulina* L. | 0 | 18.6 ± 3.0 | - | - | 0.073 | - |
| 0.1 | 21.4 ± 1.6 | +2.9 | +15.4 | - |
| 1 | 13.7 ± 1.2 | -4.9 | -26.2 | - |
| 10 | 15.1 ± 2.3 | -3.4 | -18.5 | - |
| *Trifolium aureum* POLLICH | 0 | 70.6 ± 3.1 | - | - | 0.613 | - |
| 0.1 | 71.4 ± 5.5 | +0.9 | +1.2 | - |
| 1 | 65.1 ± 1.4 | -5.4 | -7.7 | - |
| 10 | 68.0 ± 2.6 | -2.6 | -3.6 | - |
| *Trifolium pratense* L. | 0 | 81.4 ± 1.9 | - | - | 0.132 | - |
| 0.1 | 81.7 ± 2.7 | +0.3 | +0.4 | - |
| 1 | 81.7 ± 2.4 | +0.3 | +0.4 | - |
| 10 | 89.7 ± 3.8 | +8.3 | +10.2 | - |
| Plantaginaceae | *Plantago lanceolata* L. | 0 | 21.4 ± 4.1 | - | - | **0.009** | A |
| 0.1 | 34.3 ± 1.0 | +12.9 | +60.0 | B |
| 1 | 32.9 ± 2.5 | +11.4 | +53.3 | AB |
| 10 | 21.1 ± 4.1 | -0.3 | -1.3 | A |
| *Plantago media* L. | 0 | 7.7 ± 2.2 | - | - | **0.021** | A |
| 0.1 | 18.3 ± 3.6 | +10.6 | +137.2 | B |
| 1 | 14.6 ± 2.4 | +6.9 | +89.0 | AB |
| 10 | 10.0 ± 1.3 | +2.3 | +29.7 | AB |
| *Veronica officinalis* L. | 0 | 4.9 ± 1.7 | - | - | **˂ 0.0001** | A |
| 0.1 | 33.4 ± 6.9 | +28.6 | +587.8 | B |
| 1 | 4.3 ± 1.7 | -0.6 | -11.8 | A |
| 10 | 7.1 ± 2.6 | +2.3 | +47.0 | A |
| Poaceae | *Agrostis capillaris* L. | 0 | 59.7 ± 4.0 | - | - | 0.483 | - |
| 0.1 | 60.3 ± 3.5 | +0.6 | +1.0 | - |
| 1 | 64.6 ± 3.5 | +4.9 | +8.1 | - |
| 10 | 70.3 ± 8.3 | +10.6 | +17.7 | - |
| *Cynosurus cristatus* L. | 0 | 75.4 ± 2.8 | - | - | 0.212 | - |
| 0.1 | 82.0 ± 1.5 | +6.6 | +8.7 | - |
| 1 | 75.4 ± 2.5 | 0.0 | 0.0 | - |
| 10 | 75.1 ± 3.4 | -0.3 | -0.4 | - |
| *Lolium perenne* L. | 0 | 53.1 ± 5.6 | - | - | 0.697 | - |
| 0.1 | 55.4 ± 4.0 | +2.3 | +4.3 | - |
| 1 | 60.0 ± 3.8 | +6.9 | +12.9 | - |
| 10 | 55.1 ± 3.3 | +2.0 | +3.8 | - |
| *Phleum phleoides* (L.)H. KARST. | 0 | 1.7 ± 0.7 | - | - | 0.078 | - |
| 0.1 | 3.7 ± 1.3 | +2.0 | +117.2 | - |
| 1 | 4.0 ± 1.2 | +2.3 | +133.9 | - |
| 10 | 5.7 ± 0.8 | +4.0 | +234.2 | - |

**Supplementary Table S16.** Mean germination time (MGT) for the test species under the influence of three concentrations of pure abamectin in comparison to the ethanol control (CE; cf. Methods section). Deviations of treatment means from control means are given in days [d] and percentages [%]. ANOVA results for concentration on species level are given; significant p-values (p ≤ 0.05) are in bold. In case of significant ANOVA results, Tukey HSD test was employed; different letters indicate significant differences (p ≤ 0.05).

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Family** | **Species** | **Concentration of active ingredient [mg l-1]** | **MGT (mean ± SE) [d]** | **Deviation of treatment from control [d]** | **Deviation of treatment from control [%]** | **ANOVA**  **p-value** | **Tukey HSD**  **significant differences** |
| Asteraceae | *Achillea ptarmica* L. | 0 | 25.2 ± 1.4 | - | - | 0.159 | - |
| 0.1 | 26.4 ± 2.3 | +1.2 | +4.6 | - |
| 1 | 21.2 ± 1.0 | -4.0 | -16.0 | - |
| 10 | 27.0 ± 2.4 | +1.8 | +7.0 | - |
| *Centaurea jacea* L. | 0 | 21.3 ± 1.2 | - | - | **0.016** | A |
| 0.1 | 16.1 ± 0.9 | -5.2 | -24.5 | B |
| 1 | 22.4 ± 1.6 | +1.1 | +5.0 | A |
| 10 | 19.7 ± 1.6 | -1.6 | -7.5 | AB |
| *Hypochaeris radicata* L. | 0 | 7.1 ± 0.5 | - | - | **˂ 0.0001** | A |
| 0.1 | 6.2 ± 0.3 | -0.9 | -13.2 | A |
| 1 | 10.6 ± 0.8 | +3.5 | +48.4 | B |
| 10 | 9.7 ± 0.7 | +2.6 | +36.6 | B |
| Caryophyllaceae | *Cerastium holosteoides* Fr. | 0 | 26.8 ± 1.4 | - | - | 0.576 | - |
| 0.1 | 25.9 ± 1.4 | -0.9 | -3.1 | - |
| 1 | 24.8 ± 0.8 | -2.0 | -7.4 | - |
| 10 | 27.5 ± 1.6 | +0.7 | +2.7 | - |
| *Dianthus deltoides* L. | 0 | 26.3 ± 1.2 | - | - | 0.128 | - |
| 0.1 | 22.7 ± 2.3 | -3.6 | -13.5 | - |
| 1 | 23.2 ± 1.1 | -3.1 | -11.6 | - |
| 10 | 28.0 ± 1.8 | +1.7 | +6.5 | - |
| *Lychnis flos-cuculi* L. | 0 | 31.6 ± 1.0 | - | - | **˂ 0.0001** | A |
| 0.1 | 18.7 ± 2.4 | -12.9 | -41.0 | B |
| 1 | 32.5 ± 1.6 | +0.8 | +2.6 | A |
| 10 | 34.3 ± 0.4 | +2.7 | +8.4 | A |
| Fabaceae | *Hippocrepis comosa* L. | 0 | 13.0 ± 0.9 | - | - | **0.033** | A |
| 0.1 | 9.8 ± 0.9 | -3.2 | -24.9 | B |
| 1 | 10.8 ± 0.3 | -2.2 | -17.2 | AB |
| 10 | 10.6 ± 0.7 | -2.5 | -19.1 | AB |
| *Medicago lupulina* L. | 0 | 10.0 ± 0.5 | - | - | 0.396 | - |
| 0.1 | 10.7 ± 0.9 | +0.7 | +7.2 | - |
| 1 | 9.1 ± 1.2 | -0.9 | -9.2 | - |
| 10 | 8.7 ± 1.2 | -1.3 | -12.8 | - |
| *Trifolium aureum* POLLICH | 0 | 4.9 ± 0.7 | - | - | 0.162 | - |
| 0.1 | 5.3 ± 0.3 | +0.4 | +7.0 | - |
| 1 | 5.3 ± 0.3 | +0.4 | +7.6 | - |
| 10 | 6.3 ± 0.4 | +1.4 | +27.7 | - |
| *Trifolium pratense* L. | 0 | 6.5 ± 0.6 | - | - | **0.0003** | AB |
| 0.1 | 5.0 ± 0.3 | -1.5 | -23.4 | AC |
| 1 | 6.6 ± 0.3 | +0.1 | +2.3 | B |
| 10 | 4.1 ± 0.3 | -2.4 | -36.5 | C |
| Plantaginaceae | *Plantago lanceolata* L. | 0 | 21.5 ± 1.4 | - | - | 0.107 | - |
| 0.1 | 24.2 ± 0.8 | +2.7 | +12.4 | - |
| 1 | 21.1 ± 0.9 | -0.4 | -1.7 | - |
| 10 | 25.1 ± 1.9 | +3.6 | +16.8 | - |
| *Plantago media* L. | 0 | 24.3 ± 1.8 | - | - | 0.169 | - |
| 0.1 | 22.4 ± 0.6 | -1.9 | -7.8 | - |
| 1 | 21.6 ± 0.8 | -2.7 | -11.1 | - |
| 10 | 26.0 ± 2.0 | +1.7 | +6.7 | - |
| *Veronica officinalis* L. | 0 | 29.4 ± 1.1 | - | - | **0.028** | AB |
| 0.1 | 26.9 ± 0.9 | -2.5 | -8.4 | A |
| 1 | 33.2 ± 1.9 | +3.8 | +13.1 | B |
| 10 | 28.9 ± 1.6 | -0.5 | -1.6 | AB |
| Poaceae | *Agrostis capillaris* L. | 0 | 13.6 ± 0.2 | - | - | 0.116 | - |
| 0.1 | 13.4 ± 0.4 | -0.2 | -2.0 | - |
| 1 | 12.4 ± 0.3 | -1.2 | -8.9 | - |
| 10 | 13.0 ± 0.5 | -0.6 | -4.7 | - |
| *Cynosurus cristatus* L. | 0 | 17.9 ± 0.5 | - | - | **˂ 0.0001** | A |
| 0.1 | 13.5 ± 0.6 | -4.4 | -24.5 | B |
| 1 | 17.6 ± 0.6 | -0.3 | -1.8 | A |
| 10 | 19.5 ± 1.0 | +1.6 | +8.6 | A |
| *Lolium perenne* L. | 0 | 10.7 ± 0.3 | - | - | **0.006** | A |
| 0.1 | 10.2 ± 0.5 | -0.5 | -4.5 | A |
| 1 | 9.7 ± 0.5 | -1.0 | -9.0 | AB |
| 10 | 8.5 ± 0.3 | -2.2 | -20.6 | B |
| *Phleum phleoides* (L.)H. KARST. | 0 | 30.8 ± 1.8 | - | - | 0.288 | - |
| 0.1 | 23.0 ± 6.2 | -7.8 | -25.1 | - |
| 1 | 30.7 ± 2.0 | -0.1 | -0.1 | - |
| 10 | 30.8 ± 2.6 | 0.0 | 0 | - |

**Supplementary Table S17.** Mean synchrony of germination (Z) for the test species under the influence of three concentrations of pure abamectin in comparison to the ethanol control (CE; cf. Methods section). Deviations of treatment means from control means are given in absolute numbers and percentages [%]. ANOVA results for concentration on species level are given; significant p-values (p ≤ 0.05) are in bold. In case of significant ANOVA results, Tukey HSD test was employed; different letters indicate significant differences (p ≤ 0.05).

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Family** | **Species** | **Concentration of active ingredient [mg l-1]** | **Z (mean ± SE)** | **Deviation of treatment from control** | **Deviation of treatment from control [%]** | **ANOVA**  **p-value** | **Tukey HSD**  **significant differences** |
| Asteraceae | *Achillea ptarmica* L. | 0 | 0.28 ± 0.13 | - | - | 0.279 | - |
| 0.1 | 0.18 ± 0.07 | -0.10 | -34.40 | - |
| 1 | 0.08 ± 0.08 | -0.20 | -70.24 | - |
| 10 | 0.36 ± 0.14 | +0.08 | +27.44 | - |
| *Centaurea jacea* L. | 0 | 0.18 ± 0.02 | - | - | 0.371 | - |
| 0.1 | 0.19 ± 0.03 | +0.01 | +3.43 | - |
| 1 | 0.21 ± 0.03 | +0.03 | +16.52 | - |
| 10 | 0.15 ± 0.01 | -0.03 | -16.52 | - |
| *Hypochaeris radicata* L. | 0 | 0.47 ± 0.06 | - | - | 0.189 | - |
| 0.1 | 0.49 ± 0.02 | +0.02 | +3.76 | - |
| 1 | 0.37 ± 0.04 | -0.10 | -20.77 | - |
| 10 | 0.48 ± 0.05 | +0.01 | +2.59 | - |
| Caryophyllaceae | *Cerastium holosteoides* Fr. | 0 | 0.17 ± 0.02 | - | - | 0.427 | - |
| 0.1 | 0.26 ± 0.04 | +0.09 | +50.69 | - |
| 1 | 0.23 ± 0.03 | +0.06 | +34.09 | - |
| 10 | 0.24 ± 0.05 | +0.07 | +43.42 | - |
| *Dianthus deltoides* L. | 0 | 0.23 ± 0.07 | - | - | 0.284 | - |
| 0.1 | 0.3 ± 0.11 | +0.07 | +28.90 | - |
| 1 | 0.2 ± 0.02 | -0.03 | -14.59 | - |
| 10 | 0.13 ± 0.02 | -0.10 | -43.11 | - |
| *Lychnis flos-cuculi* L. | 0 | 0.23 ± 0.07 | - | - | 0.756 | - |
| 0.1 | 0.26 ± 0.04 | +0.03 | +14.11 | - |
| 1 | 0.26 ± 0.07 | +0.04 | +16.19 | - |
| 10 | 0.28 ± 0.03 | +0.05 | +23.29 | - |
| Fabaceae | *Hippocrepis comosa* L. | 0 | 0.25 ± 0.07 | - | - | 0.327 | - |
| 0.1 | 0.34 ± 0.08 | +0.09 | +37.09 | - |
| 1 | 0.35 ± 0.05 | +0.10 | +40.81 | - |
| 10 | 0.38 ± 0.06 | +0.14 | +55.60 | - |
| *Medicago lupulina* L. | 0 | 0.22 ± 0.04 | - | - | 0.747 | - |
| 0.1 | 0.24 ± 0.05 | +0.02 | +7.27 | - |
| 1 | 0.27 ± 0.03 | +0.06 | +25.95 | - |
| 10 | 0.29 ± 0.06 | +0.07 | +31.43 | - |
| *Trifolium aureum* POLLICH | 0 | 0.37 ± 0.03 | - | - | 0.134 | - |
| 0.1 | 0.30 ± 0.02 | -0.07 | -18.54 | - |
| 1 | 0.30 ± 0.03 | -0.07 | -18.47 | - |
| 10 | 0.36 ± 0.02 | -0.01 | -2.41 | - |
| *Trifolium pratense* L. | 0 | 0.52 ± 0.06 | - | - | 0.405 | - |
| 0.1 | 0.44 ± 0.04 | -0.08 | -14.73 | - |
| 1 | 0.43 ± 0.04 | -0.09 | -17.99 | - |
| 10 | 0.5 ± 0.03 | -0.02 | -3.54 | - |
| Plantaginaceae | *Plantago lanceolata* L. | 0 | 0.14 ± 0.02 | - | - | 0.120 | - |
| 0.1 | 0.17 ± 0.01 | +0.03 | +19.52 | - |
| 1 | 0.2 ± 0.02 | +0.06 | +40.78 | - |
| 10 | 0.15 ± 0.03 | +0.01 | +3.30 | - |
| *Plantago media* L. | 0 | 0.17 ± 0.07 | - | - | 0.508 | - |
| 0.1 | 0.28 ± 0.06 | +0.11 | +64.09 | - |
| 1 | 0.23 ± 0.04 | +0.06 | +32.61 | - |
| 10 | 0.21 ± 0.05 | +0.04 | +25.25 | - |
| *Veronica officinalis* L. | 0 | 0.13 ± 0.07 | - | - | 0.975 | - |
| 0.1 | 0.24 ± 0.02 | +0.11 | +83.87 | - |
| 1 | 0.24 ± 0.07 | +0.11 | +88.03 | - |
| 10 | 0.27 ± 0.1 | +0.14 | +109.25 | - |
| Poaceae | *Agrostis capillaris* L. | 0 | 0.34 ± 0.05 | - | - | 0.991 | - |
| 0.1 | 0.32 ± 0.03 | -0.02 | -4.56 | - |
| 1 | 0.32 ± 0.02 | -0.02 | -6.60 | - |
| 10 | 0.32 ± 0.03 | -0.02 | -5.04 | - |
| *Cynosurus cristatus* L. | 0 | 0.33 ± 0.04 | - | - | 0.469 | - |
| 0.1 | 0.35 ± 0.01 | +0.02 | +5.35 | - |
| 1 | 0.44 ± 0.07 | +0.11 | +33.50 | - |
| 10 | 0.37 ± 0.05 | +0.04 | +12.61 | - |
| *Lolium perenne* L. | 0 | 0.45 ± 0.06 | - | - | 0.058 | - |
| 0.1 | 0.4 ± 0.05 | -0.05 | -11.81 | - |
| 1 | 0.39 ± 0.05 | -0.06 | -14.38 | - |
| 10 | 0.59 ± 0.06 | +0.14 | 31.54 | - |
| *Phleum phleoides* (L.)H. KARST. | 0 | 0.5 ± 0.5 | - | - | 0.851 | - |
| 0.1 | 0.48 ± 0.21 | -0.02 | -3.33 | - |
| 1 | 0.3 ± 0.24 | -0.20 | -40.00 | - |
| 10 | 0.38 ± 0.13 | -0.11 | -22.22 | - |

**Supplementary Table S18.** Mean germination percentage (GP) for the test species under the influence of three concentrations of pure doramectin in comparison to the ethanol control (CE; cf. Methods section). Deviations of treatment means from control means are given in percentage points [pp] and percentages [%]. ANOVA results for concentration on species level are given; significant p-values (p ≤ 0.05) are in bold. In case of significant ANOVA results, Tukey HSD test was employed; different letters indicate significant differences (p ≤ 0.05).

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Family** | **Species** | **Concentration of active ingredient [mg l-1]** | **GP (mean ± SE) [%]** | **Deviation of treatment from control [pp]** | **Deviation of treatment from control [%]** | **ANOVA**  **p-value** | **Tukey HSD**  **significant differences** |
| Asteraceae | *Achillea ptarmica* L. | 0 | 15.4 ± 4.5 | - | - | 0.132 | - |
| 0.1 | 8.3 ± 2.5 | -7.1 | -46.3 | - |
| 1 | 5.4 ± 1.5 | -10.0 | -64.8 | - |
| 10 | 10.6 ± 2.3 | -4.9 | -31.5 | - |
| *Centaurea jacea* L. | 0 | 15.4 ± 1.7 | - | - | 0.052 | - |
| 0.1 | 22.9 ± 3.7 | +7.4 | +48.1 | - |
| 1 | 24.0 ± 1.6 | +8.6 | +55.5 | - |
| 10 | 21.7 ± 1.5 | +6.3 | +40.7 | - |
| *Hypochaeris radicata* L. | 0 | 93.4 ± 1.4 | - | - | 0.159 | - |
| 0.1 | 96.6 ± 1.1 | +3.1 | +3.4 | - |
| 1 | 96.0 ± 1.1 | +2.6 | +2.8 | - |
| 10 | 96.9 ± 1.0 | +3.4 | +3.7 | - |
| Caryophyllaceae | *Cerastium holosteoides* Fr. | 0 | 35.1 ± 3.9 | - | - | **0.049** | AB |
| 0.1 | 44.6 ± 3.1 | +9.4 | +26.8 | B |
| 1 | 28.6 ± 4.6 | -6.6 | -18.7 | A |
| 10 | 40.9 ± 4.5 | +5.7 | +16.3 | AB |
| *Dianthus deltoides* L. | 0 | 18.9 ± 1.9 | - | - | **0.026** | AB |
| 0.1 | 21.1 ± 2.4 | +2.3 | +12.1 | B |
| 1 | 14.3 ± 2.7 | -4.6 | -24.3 | AB |
| 10 | 11.7 ± 1.6 | -7.2 | -37.9 | A |
| *Lychnis flos-cuculi* L. | 0 | 12.3 ± 2.6 | - | - | 0.075 | - |
| 0.1 | 8.0 ± 2.4 | -4.3 | -34.9 | - |
| 1 | 7.1 ± 1.7 | -5.2 | -41.9 | - |
| 10 | 13.4 ± 1.0 | +1.1 | +9.3 | - |
| Fabaceae | *Hippocrepis comosa* L. | 0 | 17.4 ± 2.2 | - | - | 0.685 | - |
| 0.1 | 22.0 ± 6.0 | +4.6 | +26.2 | - |
| 1 | 22.3 ± 4.2 | +4.9 | +27.9 | - |
| 10 | 16.6 ± 2.2 | -0.9 | -4.9 | - |
| *Medicago lupulina* L. | 0 | 18.6 ± 3.0 | - | - | 0.492 | - |
| 0.1 | 14.3 ± 3.3 | -4.3 | -23.1 | - |
| 1 | 12.9 ± 1.3 | -5.7 | -30.8 | - |
| 10 | 16.0 ± 2.7 | -2.6 | -13.8 | - |
| *Trifolium aureum* POLLICH | 0 | 70.6 ± 3.1 | - | - | 0.299 | - |
| 0.1 | 66.6 ± 2.5 | -4.0 | -5.7 | - |
| 1 | 66.0 ± 2.4 | -4.6 | -6.5 | - |
| 10 | 72.3 ± 2.6 | +1.7 | +2.4 | - |
| *Trifolium pratense* L. | 0 | 81.4 ± 1.9 | - | - | 0.908 | - |
| 0.1 | 82.0 ± 6.6 | +0.6 | +0.7 | - |
| 1 | 83.1 ± 2.0 | +1.7 | +2.1 | - |
| 10 | 78.6 ± 6.7 | -2.9 | -3.5 | - |
| Plantaginaceae | *Plantago lanceolata* L. | 0 | 21.4 ± 4.1 | - | - | **0.045** | A |
| 0.1 | 32.6 ± 1.8 | +11.1 | +52.0 | B |
| 1 | 27.1 ± 1.6 | +5.7 | +26.7 | AB |
| 10 | 22.9 ± 3.2 | +1.4 | +6.7 | AB |
| *Plantago media* L. | 0 | 7.7 ± 2.2 | - | - | 0.922 | - |
| 0.1 | 8.9 ± 2.1 | +1.2 | +14.9 | - |
| 1 | 8.3 ± 2.7 | +0.6 | +7.5 | - |
| 10 | 6.6 ± 2.0 | -1.1 | -14.8 | - |
| *Veronica officinalis* L. | 0 | 4.9 ± 1.7 | - | - | 0.056 | - |
| 0.1 | 1.1 ± 0.6 | -3.7 | -76.5 | - |
| 1 | 2.3 ± 1.1 | -2.6 | -53.0 | - |
| 10 | 6.3 ± 1.9 | +1.4 | +29.3 | - |
| Poaceae | *Agrostis capillaris* L. | 0 | 59.7 ± 4.0 | - | - | 0.096 | - |
| 0.1 | 68.0 ± 2.9 | +8.3 | +13.9 | - |
| 1 | 54.9 ± 2.8 | -4.9 | -8.1 | - |
| 10 | 68.3 ± 6.6 | +8.6 | +14.4 | - |
| *Cynosurus cristatus* L. | 0 | 75.4 ± 2.8 | - | - | 0.767 | - |
| 0.1 | 78.0 ± 2.1 | +2.6 | +3.4 | - |
| 1 | 78.6 ± 2.2 | +3.1 | +4.2 | - |
| 10 | 78.3 ± 2.4 | +2.9 | +3.8 | - |
| *Lolium perenne* L. | 0 | 53.1 ± 5.6 | - | - | 0.377 | - |
| 0.1 | 61.7 ± 2.2 | +8.6 | +16.1 | - |
| 1 | 54.6 ± 4.0 | +1.4 | +2.7 | - |
| 10 | 60.0 ± 3.8 | +6.9 | +12.9 | - |
| *Phleum phleoides* (L.)H. KARST. | 0 | 1.7 ± 0.7 | - | - | 0.366 | - |
| 0.1 | 2.9 ± 0.4 | +1.2 | +67.1 | - |
| 1 | 3.4 ± 1.0 | +1.7 | +100.5 | - |
| 10 | 2.3 ± 0.5 | +0.6 | +33.7 | - |

**Supplementary Table S19.** Mean germination time (MGT) for the test species under the influence of three concentrations of pure doramectin in comparison to the ethanol control (CE; cf. Methods section). Deviations of treatment means from control means are given in days [d] and percentages [%]. ANOVA results for concentration on species level are given; significant p-values (p ≤ 0.05) are in bold. In case of significant ANOVA results, Tukey HSD test was employed; different letters indicate significant differences (p ≤ 0.05).

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Family** | **Species** | **Concentration of active ingredient [mg l-1]** | **MGT (mean ± SE) [d]** | **Deviation of treatment from control [d]** | **Deviation of treatment from control [%]** | **ANOVA**  **p-value** | **Tukey HSD**  **significant differences** |
| Asteraceae | *Achillea ptarmica* L. | 0 | 25.2 ± 1.4 | - | - | 0.649 | - |
| 0.1 | 23.4 ± 4.1 | -1.8 | -7.4 | - |
| 1 | 24.8 ± 4.2 | -0.4 | -1.6 | - |
| 10 | 27.5 ± 1.8 | +2.3 | +9.1 | - |
| *Centaurea jacea* L. | 0 | 21.3 ± 1.2 | - | - | 0.556 | - |
| 0.1 | 22.3 ± 0.7 | +1.0 | +4.5 | - |
| 1 | 24.2 ± 2.1 | +2.9 | +13.3 | - |
| 10 | 22.0 ± 1.2 | +0.7 | +3.0 | - |
| *Hypochaeris radicata* L. | 0 | 7.1 ± 0.5 | - | - | 0.319 | - |
| 0.1 | 7.1 ± 0.5 | 0.0 | 0.0 | - |
| 1 | 8.4 ± 0.4 | +1.3 | +17.6 | - |
| 10 | 7.6 ± 0.7 | +0.5 | +6.5 | - |
| Caryophyllaceae | *Cerastium holosteoides* Fr. | 0 | 26.8 ± 1.4 | - | - | 0.290 | - |
| 0.1 | 29.3 ± 1 | +2.5 | +9.3 | - |
| 1 | 31.1 ± 1.5 | +4.3 | +16.3 | - |
| 10 | 29.2 ± 1.9 | +2.4 | +8.9 | - |
| *Dianthus deltoides* L. | 0 | 26.3 ± 1.2 | - | - | **0.013** | A |
| 0.1 | 27.4 ± 1 | +1.1 | +4.3 | AB |
| 1 | 31.6 ± 1.1 | +5.3 | +20.3 | B |
| 10 | 28.0 ± 0.9 | +1.7 | +6.5 | AB |
| *Lychnis flos-cuculi* L. | 0 | 31.6 ± 1.0 | - | - | 0.528 | - |
| 0.1 | 32.0 ± 1.3 | +0.4 | +1.2 | - |
| 1 | 28.6 ± 3.8 | -3.0 | -9.6 | - |
| 10 | 31.7 ± 0.8 | +0.1 | +0.1 | - |
| Fabaceae | *Hippocrepis comosa* L. | 0 | 13.0 ± 0.9 | - | - | 0.369 | - |
| 0.1 | 11.6 ± 0.5 | -1.4 | -11.5 | - |
| 1 | 14.0 ± 1.6 | +1.0 | +7.0 | - |
| 10 | 11.4 ± 1.0 | -1.6 | -12.3 | - |
| *Medicago lupulina* L. | 0 | 10.0 ± 0.5 | - | - | 0.987 | - |
| 0.1 | 10.0 ± 0.5 | 0.0 | 0.0 | - |
| 1 | 10.6 ± 1.1 | +0.6 | +5.8 | - |
| 10 | 10.1 ± 0.7 | +0.1 | +1.5 | - |
| *Trifolium aureum* POLLICH | 0 | 4.9 ± 0.7 | - | - | 0.308 | - |
| 0.1 | 5.5 ± 0.4 | +0.6 | +11.6 | - |
| 1 | 6.1 ± 0.5 | +1.2 | +23.9 | - |
| 10 | 5.7 ± 0.4 | +0.8 | +14.9 | - |
| *Trifolium pratense* L. | 0 | 6.5 ± 0.6 | - | - | 0.798 | - |
| 0.1 | 7.2 ± 0.6 | +0.7 | +11.7 | - |
| 1 | 6.8 ± 0.5 | +0.3 | +5.2 | - |
| 10 | 6.7 ± 0.5 | +0.2 | +2.8 | - |
| Plantaginaceae | *Plantago lanceolata* L. | 0 | 21.5 ± 1.4 | - | - | 0.183 | - |
| 0.1 | 25.1 ± 1.7 | +3.6 | +17.0 | - |
| 1 | 25.6 ± 0.6 | +4.1 | +19.1 | - |
| 10 | 24.2 ± 1.4 | +2.7 | +12.5 | - |
| *Plantago media* L. | 0 | 24.3 ± 1.8 | - | - | 0.154 | - |
| 0.1 | 21.7 ± 1.0 | -2.6 | -10.8 | - |
| 1 | 24.1 ± 1.2 | -0.2 | -0.9 | - |
| 10 | 26.6 ± 1.6 | +2.3 | +9.3 | - |
| *Veronica officinalis* L. | 0 | 29.4 ± 1.1 | - | - | 0.847 | - |
| 0.1 | 27.5 ± 2.5 | -1.9 | -6.4 | - |
| 1 | 29.9 ± 2.3 | +0.5 | +1.9 | - |
| 10 | 30 ± 1.9 | +0.6 | +2.0 | - |
| Poaceae | *Agrostis capillaris* L. | 0 | 13.6 ± 0.2 | - | - | **0.007** | A |
| 0.1 | 14.1 ± 0.7 | +0.5 | +3.3 | A |
| 1 | 12.9 ± 0.4 | -0.7 | -5.8 | AB |
| 10 | 11.7 ± 0.5 | -1.9 | -14.6 | B |
| *Cynosurus cristatus* L. | 0 | 17.9 ± 0.5 | - | - | **0.0009** | A |
| 0.1 | 19.9 ± 0.3 | +2.0 | +10.8 | B |
| 1 | 17.9 ± 0.3 | 0.0 | 0.0 | A |
| 10 | 17.7 ± 0.3 | -0.2 | -1.2 | A |
| *Lolium perenne* L. | 0 | 10.7 ± 0.3 | - | - | 0.495 | - |
| 0.1 | 10.8 ± 0.5 | +0.1 | +0.8 | - |
| 1 | 9.9 ± 0.6 | -0.8 | -7.1 | - |
| 10 | 10.1 ± 0.5 | -0.6 | -5.6 | - |
| *Phleum phleoides* (L.)H. KARST. | 0 | 30.8 ± 1.8 | - | - | 0.656 | - |
| 0.1 | 29.4 ± 1.8 | -1.4 | -4.5 | - |
| 1 | 30.5 ± 2.7 | -0.3 | -0.7 | - |
| 10 | 33.2 ± 2.2 | +2.4 | +7.9 | - |

**Supplementary Table S20.** Mean synchrony of germination (Z) for the test species under the influence of three concentrations of pure doramectin in comparison to the ethanol control (CE; cf. Methods section). Deviations of treatment means from control means are given in absolute numbers and percentages [%]. ANOVA results for concentration on species level are given; significant p-values (p ≤ 0.05) are in bold. In case of significant ANOVA results, Tukey HSD test was employed; different letters indicate significant differences (p ≤ 0.05).

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Family** | **Species** | **Concentration of active ingredient [mg l-1]** | **Z (mean ± SE)** | **Deviation of treatment from control** | **Deviation of treatment from control [%]** | **ANOVA**  **p-value** | **Tukey HSD**  **significant differences** |
| Asteraceae | *Achillea ptarmica* L. | 0 | 0.28 ± 0.13 | - | - | 0.586 | - |
| 0.1 | 0.26 ± 0.15 | -0.02 | -8.5 | - |
| 1 | 0.21 ± 0.06 | -0.07 | -26.2 | - |
| 10 | 0.11 ± 0.07 | -0.17 | -61.5 | - |
| *Centaurea jacea* L. | 0 | 0.18 ± 0.02 | - | - | 0.926 | - |
| 0.1 | 0.21 ± 0.03 | +0.03 | +16.9 | - |
| 1 | 0.22 ± 0.06 | +0.04 | +22.1 | - |
| 10 | 0.18 ± 0.02 | 0.00 | +2.6 | - |
| *Hypochaeris radicata* L. | 0 | 0.47 ± 0.06 | - | - | 0.924 | - |
| 0.1 | 0.48 ± 0.05 | +0.01 | +1.6 | - |
| 1 | 0.45 ± 0.03 | -0.02 | -4.0 | - |
| 10 | 0.43 ± 0.02 | -0.04 | -8.6 | - |
| Caryophyllaceae | *Cerastium holosteoides* Fr. | 0 | 0.17 ± 0.02 | - | - | 0.295 | - |
| 0.1 | 0.21 ± 0.02 | +0.04 | +23.6 | - |
| 1 | 0.23 ± 0.03 | +0.06 | +36.0 | - |
| 10 | 0.19 ± 0.02 | +0.02 | +9.1 | - |
| *Dianthus deltoides* L. | 0 | 0.23 ± 0.07 | - | - | 0.124 | - |
| 0.1 | 0.19 ± 0.03 | -0.04 | -18.4 | - |
| 1 | 0.38 ± 0.11 | +0.15 | +66.9 | - |
| 10 | 0.17 ± 0.05 | -0.06 | -27.1 | - |
| *Lychnis flos-cuculi* L. | 0 | 0.23 ± 0.07 | - | - | 0.554 | - |
| 0.1 | 0.39 ± 0.13 | +0.16 | +68.3 | - |
| 1 | 0.35 ± 0.12 | +0.11 | +49.9 | - |
| 10 | 0.22 ± 0.04 | -0.01 | -6.0 | - |
| Fabaceae | *Hippocrepis comosa* L. | 0 | 0.25 ± 0.07 | - | - | 0.585 | - |
| 0.1 | 0.25 ± 0.04 | 0.00 | +1.5 | - |
| 1 | 0.28 ± 0.06 | +0.03 | +11.9 | - |
| 10 | 0.42 ± 0.13 | +0.17 | +69.4 | - |
| *Medicago lupulina* L. | 0 | 0.22 ± 0.04 | - | - | 0.078 | - |
| 0.1 | 0.13 ± 0.04 | -0.09 | -41.4 | - |
| 1 | 0.26 ± 0.06 | +0.04 | +16.0 | - |
| 10 | 0.31 ± 0.05 | +0.09 | +38.8 | - |
| *Trifolium aureum* POLLICH | 0 | 0.37 ± 0.03 | - | - | 0.246 | - |
| 0.1 | 0.3 ± 0.03 | -0.07 | -19.1 | - |
| 1 | 0.35 ± 0.02 | -0.02 | -6.2 | - |
| 10 | 0.35 ± 0.02 | -0.02 | -5.0 | - |
| *Trifolium pratense* L. | 0 | 0.52 ± 0.06 | - | - | 0.191 | - |
| 0.1 | 0.4 ± 0.04 | -0.12 | -23.5 | - |
| 1 | 0.43 ± 0.03 | -0.09 | -17.7 | - |
| 10 | 0.50 ± 0.04 | -0.02 | -3.0 | - |
| Plantaginaceae | *Plantago lanceolata* L. | 0 | 0.14 ± 0.02 | - | - | 0.547 | - |
| 0.1 | 0.19 ± 0.04 | +0.05 | +33.3 | - |
| 1 | 0.21 ± 0.04 | +0.07 | +47.3 | - |
| 10 | 0.18 ± 0.02 | +0.04 | +27.0 | - |
| *Plantago media* L. | 0 | 0.17 ± 0.07 | - | - | 0.284 | - |
| 0.1 | 0.29 ± 0.15 | +0.12 | +72.7 | - |
| 1 | 0.40 ± 0.17 | +0.23 | +133.3 | - |
| 10 | 0.09 ± 0.06 | -0.08 | -47.9 | - |
| *Veronica officinalis* L. | 0 | 0.13 ± 0.07 | - | - | 0.534 | - |
| 0.1 | 0 | -0.13 | -100.0 | - |
| 1 | 0.58 ± 0.42 | +0.45 | +348.7 | - |
| 10 | 0.52 ± 0.18 | +0.38 | +293.8 | - |
| Poaceae | *Agrostis capillaris* L. | 0 | 0.34 ± 0.05 | - | - | 0.736 | - |
| 0.1 | 0.39 ± 0.05 | +0.05 | +14.6 | - |
| 1 | 0.34 ± 0.02 | 0.00 | -0.8 | - |
| 10 | 0.38 ± 0.04 | +0.04 | +11.2 | - |
| *Cynosurus cristatus* L. | 0 | 0.33 ± 0.04 | - | - | 0.656 | - |
| 0.1 | 0.29 ± 0.04 | -0.04 | -11.4 | - |
| 1 | 0.34 ± 0.02 | +0.01 | +2.0 | - |
| 10 | 0.33 ± 0.02 | 0.00 | -1.2 | - |
| *Lolium perenne* L. | 0 | 0.45 ± 0.06 | - | - | 0.439 | - |
| 0.1 | 0.41 ± 0.04 | -0.04 | -8.6 | - |
| 1 | 0.5 ± 0.05 | +0.05 | +10.8 | - |
| 10 | 0.54 ± 0.07 | +0.09 | +19.7 | - |
| *Phleum phleoides* (L.)H. KARST. | 0 | 0.5 ± 0.5 | - | - | 0.352 | - |
| 0.1 | 0 | -0.50 | -100.0 | - |
| 1 | 0.22 ± 0.11 | -0.28 | -55.6 | - |
| 10 | 0.00 | -0.50 | -100.0 | - |