



Figure S1. The length and fresh weight of the roots and the epicotyls of pea seedlings growing on the Hoagland medium with varied concentrations of Pb, i.e. 0.025 Pb(NO₃)₂, 0.05 Pb(NO₃)₂, 0.0625 Pb(NO₃)₂, 0.1 Pb(NO₃)₂, 0.25 Pb(NO₃)₂ and 0.325 Pb(NO₃)₂, and pea seedlings growing on the Hoagland medium with varied concentrations of Pb and colonised by pea aphids, *A. pisum*, and pea seedlings growing on the Hoagland medium colonised by pea aphids, *A. pisum*. The data were obtained in three independent experiments and statistically analysed using ANOVA (p -values at $\alpha = 0.05$).

Table S1. Comparisons between particular levels of analyzed factor in the roots of pea seedlings in different times (independently) using the two-sample *t*-test for equal means for all observed traits.

| Contrasts | Length of epicotyl | Fresh weight | Semiquinone radical | Mn ²⁺ | ABA | IAA | JA | SA | Pisatin | Glucose | Sucrose | Acid invertase | Alkaline/neutral invertase | Total soluble sugar |
|-------------------------------------|--------------------|--------------|---------------------|------------------|----------|----------|-----------|----------|-----------|----------|-----------|----------------|----------------------------|---------------------|
| 0 h control vs. 0.025mM Pb2+ | 0.26 | -0.014 | 0.11** | -0.5 | -0.24 | 4.3** | -81.3*** | -0.6 | -0.53 | -0.52*** | 0.017 | -0.001066*** | 0.00002 | -0.00006 |
| 0 h control vs. 0.05mM Pb2+ | 0.44 | -0.005 | 0.1** | -1.6** | 0.34 | -0.1 | -68.9*** | -1.9 | -0.61 | -1.2*** | 0 | -0.001536*** | 0.00005 | -0.00013 |
| 0 h control vs. 0.0625mM Pb2+ | -0.03 | -0.051 | 0.18*** | 3.3*** | -0.14 | 3.7* | -75.4*** | 1.3 | -0.06 | -0.24* | 0.016 | -0.001676*** | -0.00012 | -0.00003 |
| 0 h control vs. 0.1 mM Pb2+ | 0.69 | 0.043 | 0.17*** | 0.1 | -1.92*** | 4.7** | -123.5*** | -1.9 | -0.21 | -0.03 | -0.129*** | -0.000816*** | 0 | -0.00091*** |
| 0 h control vs. 0.25 mM Pb2+ | 1.67 | 0.126*** | 0.01 | 4.1*** | -1.46*** | 4.6** | -119.5*** | -7** | -4.7*** | -0.6*** | -0.06*** | -0.000946*** | -0.00069*** | -0.00108*** |
| 0 h control vs. 0.325 mM Pb2+ | 3.69*** | 0.21*** | -0.05 | 4.5*** | -4.59*** | 1.3 | -185.5*** | -32*** | -18.27*** | 0.02 | -0.181*** | -0.000273*** | -0.00029* | -0.00101*** |
| 0 h 0.025mM Pb2+vs 0.05mM Pb2+ | 0.18 | 0.008 | -0.01 | -1.1* | 0.58 | -4.4** | 12.4 | -1.3 | -0.08 | -0.68*** | -0.017 | -0.00047*** | 0.00003 | -0.00006 |
| 0 h 0.025mM Pb2+vs 0.0625mM Pb2+ | -0.29 | -0.037 | 0.07* | 3.8*** | 0.09 | -0.6 | 5.9 | 1.9 | 0.47 | 0.27** | -0.001 | -0.00061*** | -0.00014 | 0.00003 |
| 0 h 0.025mM Pb2+vs 0.1 mM Pb2+ | 0.43 | 0.056 | 0.06 | 0.6 | -1.69*** | 0.4 | -42.2*** | -1.3 | 0.32 | 0.49*** | -0.146*** | 0.00025*** | -0.00001 | -0.00085*** |
| 0 h 0.025mM Pb2+ vs. 0.25 mM Pb2+ | 1.41 | 0.14*** | -0.1** | 4.6*** | -1.22** | 0.3 | -38.2*** | -6.4* | -4.17*** | -0.09 | -0.077*** | 0.00012* | -0.00071*** | -0.00102*** |
| 0 h 0.025mM Pb2+ vs. 0.325 mM Pb2+ | 3.43*** | 0.224*** | -0.16*** | 5*** | -4.35*** | -3* | -104.2*** | -31.4*** | -17.74*** | 0.54*** | -0.199*** | 0.000793*** | -0.00031* | -0.00095*** |
| 0 h 0.05mM Pb2+vs 0.0625mM Pb2+ | -0.48 | -0.045 | 0.08* | 4.9*** | -0.48 | 3.8* | -6.5 | 3.2 | 0.55 | 0.95*** | 0.016 | -0.00014* | -0.00017 | 0.00009 |
| 0 h 0.05mM Pb2+ vs 0.1 mM Pb2+ | 0.24 | 0.048 | 0.07* | 1.7** | -2.26*** | 4.8** | -54.6*** | 0 | 0.4 | 1.17*** | -0.13*** | 0.00072*** | -0.00004 | -0.00079*** |
| 0 h 0.05mM Pb2+ vs. 0.25 mM Pb2+ | 1.22 | 0.131*** | -0.09* | 5.7*** | -1.8*** | 4.7** | -50.6*** | -5.1* | -4.09*** | 0.59*** | -0.061*** | 0.00059*** | -0.00074*** | -0.00095*** |
| 0 h 0.05mM Pb2+ vs. 0.325 mM Pb2+ | 3.25*** | 0.215*** | -0.15*** | 6.1*** | -4.93*** | 1.4 | -116.6*** | -30.1*** | -17.67*** | 1.22*** | -0.182*** | 0.001263*** | -0.00034* | -0.00088*** |
| 0 h 0.0625mM Pb2+vs 0.1 mM Pb2+ | 0.72 | 0.093** | -0.01 | -3.2*** | -1.78*** | 1 | -48.1*** | -3.2 | -0.15 | 0.21* | -0.146*** | 0.00086*** | 0.00012 | -0.00088*** |
| 0 h 0.0625mM vs. 0.25 mM Pb2+ | 1.7 | 0.177*** | -0.17*** | 0.8 | -1.32*** | 0.9 | -44.1*** | -8.3*** | -4.64*** | -0.36*** | -0.077*** | 0.00073*** | -0.00057*** | -0.00104*** |
| 0 h 0.0625mM vs. 0.325 mM Pb2+ | 3.72*** | 0.261*** | -0.23*** | 1.2* | -4.44*** | -2.4 | -110.1*** | -33.3*** | -18.22*** | 0.26* | -0.198*** | 0.001403*** | -0.00017 | -0.00097*** |
| 0 h 0.1 mM Pb2+ vs 0.25 mM Pb2+ | 0.98 | 0.083** | -0.16*** | 4*** | 0.46 | 0 | 4 | -5.1* | -4.49*** | -0.57*** | 0.069*** | -0.00013* | -0.00069*** | -0.00017 |
| 0 h 0.1 mM Pb2+ vs 0.325 mM Pb2+ | 3** | 0.167*** | -0.22*** | 4.4*** | -2.66*** | -3.4* | -62*** | -30.1*** | -18.07*** | 0.05 | -0.052** | 0.000543*** | -0.0003* | -0.0001 |
| 0 h 0.25 mM Pb2+vs 0.325 mM Pb2+ | 2.02* | 0.084** | -0.06 | 0.4 | -3.13*** | -3.3* | -66*** | -25*** | -13.58*** | 0.62*** | -0.121*** | 0.000673*** | 0.00039** | 0.00007 |
| 24 h control vs. 0.025mM Pb2+ | -0.34 | -0.025 | -0.14*** | -7.4*** | -0.16 | -1.6 | 113.6*** | -38.1*** | -0.25 | 0.13 | -0.012 | -0.000614*** | -0.00644*** | -0.00056*** |
| 24 h control vs. 0.05mM Pb2+ | -0.3 | -0.025 | 0.02 | 6*** | 4.04*** | -7.1*** | 55.3*** | -16.6*** | -0.07 | -1.16*** | -0.02 | -0.000377*** | -0.00284*** | -0.00055*** |
| 24 h control vs. 0.0625mM Pb2+ | -0.79 | -0.032 | 0.03 | 8.9*** | 1.49*** | -8.3*** | 175.8*** | 9.9*** | -0.58 | -0.57*** | 0.001 | -0.000434*** | -0.01258*** | -0.00069*** |
| 24 h control vs. 0.1 mM Pb2+ | 0.12 | 0.023 | 0.07* | 7.2*** | 2.11*** | -22.4*** | -32.1*** | -59.3*** | -0.06 | -0.66*** | -0.072*** | -0.000366*** | 0.0013*** | -0.00064*** |
| 24 h control vs. 0.25 mM Pb2+ | 1.29 | 0.089** | -0.05 | 9.3*** | 0.57 | -19.3*** | -353.6*** | -55.2*** | 0.07 | 0.14 | -0.022 | -0.001044*** | 0.00441*** | -0.00064*** |
| 24 h control vs. 0.325 mM Pb2+ | 5.13*** | 0.238*** | -0.17*** | 9.3*** | -4.85*** | -38.5*** | -375*** | -21.9*** | -4.17*** | 0.1 | -0.182*** | -0.000075 | 0.00452*** | -0.00102*** |
| 24 h 0.025mM Pb2+vs 0.05mM Pb2+ | 0.04 | 0 | 0.16*** | 13.4*** | 4.2*** | -5.5*** | -58.3*** | 21.6*** | 0.18 | -1.28*** | -0.008 | 0.000237*** | 0.0036*** | 0.00001 |
| 24 h 0.025mM Pb2+vs 0.0625mM Pb2+ | -0.45 | -0.007 | 0.17*** | 16.3*** | 1.65*** | -6.7*** | 62.3*** | 48*** | -0.33 | -0.69*** | 0.013 | 0.00018** | -0.00614*** | -0.00013 |
| 24 h 0.025mM Pb2+vs 0.1 mM Pb2+ | 0.46 | 0.048 | 0.21*** | 14.6*** | 2.26*** | -20.8*** | -145.7*** | -21.2*** | 0.19 | -0.79*** | -0.059*** | 0.000247*** | 0.00774*** | -0.00008 |
| 24 h 0.025mM Pb2+ vs. 0.25 mM Pb2+ | 1.63 | 0.114*** | 0.09* | 16.7*** | 0.73 | -17.6*** | -467.1*** | -17.1*** | 0.32 | 0.02 | -0.01 | -0.00043*** | 0.01085*** | -0.00008 |
| 24 h 0.025mM Pb2+ vs. 0.325 mM Pb2+ | 5.47*** | 0.263*** | -0.03 | 16.7*** | -4.7*** | -36.9*** | -488.5*** | 16.2*** | -3.92*** | -0.03 | -0.169*** | 0.000538*** | 0.01096*** | -0.00046*** |
| 24 h 0.05mM Pb2+vs 0.0625mM Pb2+ | -0.48 | -0.007 | 0.01 | 2.9*** | -2.55*** | -1.2 | 120.6*** | 26.5*** | -0.51 | 0.59*** | 0.021 | -0.000057 | -0.00974*** | -0.00014 |
| 24 h 0.05mM Pb2+ vs 0.1 mM Pb2+ | 0.42 | 0.048 | 0.05 | 1.2* | -1.94*** | -15.2*** | -87.4*** | -42.8*** | 0.01 | 0.49*** | -0.052** | 0.00001 | 0.00414*** | -0.00009 |
| 24 h 0.05mM Pb2+ vs. 0.25 mM Pb2+ | 1.59 | 0.114*** | -0.07* | 3.3*** | -3.47*** | -12.1*** | -408.8*** | -38.6*** | 0.14 | 1.3*** | -0.002 | -0.000667*** | 0.00725*** | -0.00009 |
| 24 h 0.05mM Pb2+ vs. 0.325 mM Pb2+ | 5.44*** | 0.263*** | -0.19*** | 3.3*** | -8.89*** | -31.4*** | -430.2*** | -5.3* | -4.1*** | 1.25*** | -0.162*** | 0.000301*** | 0.00736*** | -0.00047*** |

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|------|--|---------|----------|-----------|---------|-----------|----------|-----------|----------|----------|----------|-----------|--------------|-------------|-------------|
| 24 h | 0.0625mM Pb2+vs 0.1 mM Pb2+ | 0.91 | 0.055 | 0.04 | -1.7** | 0.61 | -14.1*** | -207.9*** | -69.3*** | 0.52 | -0.1 | -0.073*** | 0.000067 | 0.01388*** | 0.00005 |
| 24 h | 0.0625mM vs. 0.25 mM Pb2+ | 2.07* | 0.121*** | -0.08* | 0.4 | -0.92* | -10.9*** | -529.4*** | -65.1*** | 0.65 | 0.71*** | -0.023 | -0.00061*** | 0.01699*** | 0.00005 |
| 24 h | 0.0625mM vs. 0.325 mM Pb2+ | 5.92*** | 0.27*** | -0.2*** | 0.4 | -6.35*** | -30.2*** | -550.8*** | -31.8*** | -3.59*** | 0.66*** | -0.183*** | 0.000358*** | 0.0171*** | -0.00033** |
| 24 h | 0.1 mM Pb2+ vs 0.25 mM Pb2+ | 1.16 | 0.066* | -0.12*** | 2.1*** | -1.53*** | 3.1* | -321.5*** | 4.1 | 0.12 | 0.81*** | 0.05** | -0.000677*** | 0.00311*** | 0 |
| 24 h | 0.1 mM Pb2+ vs 0.325 mM Pb2+ | 5.01*** | 0.215*** | -0.24*** | 2.1*** | -6.96*** | -16.1*** | -342.9*** | 37.4*** | -4.12*** | 0.76*** | -0.11*** | 0.000291*** | 0.00322*** | -0.00038** |
| 24 h | 0.25 mM Pb2+vs 0.325 mM Pb2+ | 3.85*** | 0.149*** | -0.12*** | 0 | -5.42*** | -19.2*** | -21.4*** | 33.3*** | -4.24*** | -0.05 | -0.159*** | 0.000968*** | 0.00011 | -0.00038** |
| 24 h | control +aphids vs. 0.025mM Pb2+ +aphids | -0.73 | 0.02 | 0.13*** | 5.5*** | -1.29*** | -4.9** | 98.5*** | 8.7*** | 0.26 | -0.16 | -0.002 | -0.000572*** | -0.00003 | -0.00037** |
| 24 h | control +aphids vs. 0.05mM Pb2+ +aphids | -0.64 | -0.022 | 0.24*** | 9.3*** | -0.38 | -18.5*** | 77.7*** | -66.6*** | 0.44 | 0.32** | -0.01 | -0.001422*** | -0.00102*** | -0.00045*** |
| 24 h | control +aphids vs. 0.0625mM Pb2+ +aphids | -1.22 | -0.011 | 0.16*** | 8.1*** | -1.79*** | -46.3*** | 18.1** | 26.6*** | 0.2 | -0.28** | -0.014 | -0.001182*** | -0.00472** | -0.00031* |
| 24 h | control +aphids vs. 0.1 mM Pb2+ +aphids | 0.27 | 0.031 | 0.12*** | 8.1*** | -3.04*** | -4.7** | -27.1*** | -29.2*** | 0.2 | 0.07 | -0.002 | -0.000243*** | -0.00488** | -0.00074*** |
| 24 h | control +aphids vs. 0.25 mM Pb2+ +aphids | 1.61 | 0.052 | 0.05 | 10.8*** | -1.45*** | -10.3*** | -463*** | -7.1** | 0.3 | -0.04 | -0.083*** | -0.000203*** | -0.00369** | -0.00071*** |
| 24 h | control +aphids vs. 0.325 mM Pb2+ +aphids | 5.11*** | 0.22*** | 0.01 | 10.4*** | -10.22*** | -7.8*** | -474.1*** | -11.7*** | -0.2 | 0.07 | -0.161*** | 0.000222*** | -0.00299*** | -0.00104*** |
| 24 h | 0.025mM Pb2+ +aphids vs 0.05mM Pb2+ +aphids | 0.08 | -0.042 | 0.11** | 3.8*** | 0.92* | -13.6*** | -20.7** | -75.3*** | 0.18 | 0.48*** | -0.008 | -0.00085*** | -0.00099*** | -0.00008 |
| 24 h | 0.025mM Pb2+ +aphids vs 0.0625mM Pb2+ +aphids | -0.5 | -0.031 | 0.03 | 2.6*** | -0.49 | -41.4*** | -80.4*** | 17.9*** | -0.06 | -0.12 | -0.012 | -0.00061*** | -0.00469*** | 0.00007 |
| 24 h | 0.025mM Pb2+ +aphids vs 0.1 mM Pb2+ +aphids | 0.99 | 0.011 | -0.01 | 2.6*** | -1.75*** | 0.2 | -125.6*** | -37.9*** | -0.06 | 0.23* | 0 | 0.000329*** | -0.00485*** | -0.00036** |
| 24 h | 0.025mM Pb2+ +aphids vs. 0.25 mM Pb2+ +aphids | 2.34* | 0.032 | -0.08* | 5.3*** | -0.16 | -5.4*** | -561.5*** | -15.8*** | 0.04 | 0.12 | -0.082*** | 0.000369*** | -0.00366*** | -0.00033** |
| 24 h | 0.025mM Pb2+ +aphids vs. 0.325 mM Pb2+ +aphids | 5.84*** | 0.2** | -0.12*** | 4.9*** | -8.92*** | -2.9 | -572.5*** | -20.4*** | -0.46 | 0.23* | -0.159*** | 0.000794*** | -0.00296*** | -0.00066*** |
| 24 h | 0.05mM Pb2+ +aphids vs 0.0625mM Pb2+ +aphids | -0.58 | 0.011 | -0.08* | -1.2* | -1.41*** | -27.8*** | -59.7*** | 93.2*** | -0.24 | -0.6*** | -0.004 | 0.00024*** | -0.0037*** | 0.00014 |
| 24 h | 0.05mM Pb2+ +aphids vs 0.1 mM Pb2+ +aphids | 0.91 | 0.053 | -0.12*** | -1.2* | -2.67*** | 13.8*** | -104.8*** | 37.4*** | -0.24 | -0.25* | 0.008 | 0.001179*** | -0.00386*** | -0.00029* |
| 24 h | 0.05mM Pb2+ +aphids vs. 0.25 mM Pb2+ +aphids | 2.26* | 0.074* | -0.19*** | 1.5** | -1.07** | 8.2*** | -540.8*** | 59.5*** | -0.14 | -0.36*** | -0.073*** | 0.001219*** | -0.00267*** | -0.00026* |
| 24 h | 0.05mM Pb2+ +aphids vs. 0.325 mM Pb2+ +aphids | 5.75*** | 0.241*** | -0.23*** | 1.1* | -9.84*** | 10.7*** | -551.8*** | 54.9*** | -0.64 | -0.25* | -0.151*** | 0.001644*** | -0.00197*** | -0.00059*** |
| 24 h | 0.0625mM Pb2+ +aphids vs 0.1 mM Pb2+ +aphids | 1.49 | 0.042 | -0.04 | 0 | -1.26** | 41.7*** | -45.2*** | -55.8*** | 0 | 0.35*** | 0.012 | 0.000939*** | -0.00016 | -0.00043*** |
| 24 h | 0.0625mM +aphids vs. 0.25 mM Pb2+ +aphids | 2.83** | 0.064* | -0.11** | 2.7*** | 0.34 | 36*** | -481.1*** | -33.7*** | 0.1 | 0.24* | -0.069*** | 0.000979*** | 0.00103*** | -0.0004*** |
| 24 h | 0.0625mM +aphids vs. 0.325 mM Pb2+ +aphids | 6.33*** | 0.231*** | -0.15*** | 2.3*** | -8.43*** | 38.5*** | -492.1*** | -38.3*** | -0.4 | 0.35*** | -0.147*** | 0.001404*** | 0.00173*** | -0.00073*** |
| 24 h | 0.1 mM Pb2+ +aphids vs 0.25 mM Pb2+ +aphids | 1.35 | 0.022 | -0.07* | 2.7*** | 1.59*** | -5.7*** | -435.9*** | 22.1*** | 0.1 | -0.11 | -0.081*** | 0.00004 | 0.00119*** | 0.00003 |
| 24 h | 0.1 mM Pb2+ +aphids vs 0.325 mM Pb2+ +aphids | 4.84*** | 0.189*** | -0.11** | 2.3*** | -7.17*** | -3.1* | -447*** | 17.5*** | -0.4 | 0 | -0.159*** | 0.000465*** | 0.00189*** | -0.0003* |
| 24 h | 0.25 mM Pb2+ +aphids vs 0.325 mM Pb2+ +aphids | 3.5*** | 0.167*** | -0.04 | -0.4 | -8.77*** | 2.5 | -11 | -4.6 | -0.5 | 0.11 | -0.077*** | 0.000425*** | 0.0007*** | -0.00033** |
| 24 h | 0.025mM Pb2+vs 0.05mM Pb2+ +aphids | -0.32 | 0.039 | 0.283*** | 15.5*** | 3.77*** | -18.6*** | 11.2 | -50.7*** | 0.37 | -0.12 | 0.006 | -0.00078*** | 0.00982*** | 0.00044*** |
| 24 h | 0.025mM Pb2+vs 0.0625mM Pb2++aphids | -0.89 | 0.05 | 0.203*** | 14.3*** | 2.36*** | -46.4*** | -48.5*** | 42.4*** | 0.13 | -0.73*** | 0.002 | -0.00054*** | 0.00612*** | 0.00058*** |
| 24 h | 0.025mM Pb2+vs 0.1 mM Pb2++aphids | 0.6 | 0.092** | 0.163*** | 14.3*** | 1.1** | -4.8** | -93.7*** | -13.3*** | 0.13 | -0.37*** | 0.014 | 0.000399*** | 0.00596*** | 0.00015 |
| 24 h | 0.025mM Pb2+ vs. 0.25 mM Pb2++aphids | 1.94* | 0.114*** | 0.093** | 17*** | 2.69*** | -10.5*** | -529.6*** | 8.8*** | 0.23 | -0.48*** | -0.067*** | 0.000439*** | 0.00715*** | 0.00018 |
| 24 h | 0.025mM Pb2+ vs. 0.325 mM Pb2++aphids | 5.44*** | 0.281*** | 0.053 | 16.6*** | -6.07*** | -7.9*** | -540.7*** | 4.2 | -0.27 | -0.37*** | -0.144*** | 0.000864*** | 0.00785*** | -0.00015 |
| 24 h | 0.05mM Pb2+vs 0.0625mM Pb2+ +aphids | -0.93 | 0.05 | 0.043 | 0.9 | -1.84*** | -40.9*** | 9.8 | 20.9*** | -0.05 | 0.56*** | 0.01 | -0.000777*** | 0.00252*** | 0.00057*** |
| 24 h | 0.05mM Pb2+ vs 0.1 mM Pb2++aphids | 0.56 | 0.092** | 0.003 | 0.9 | -3.1*** | 0.7 | -35.4*** | -34.9*** | -0.05 | 0.91*** | 0.022 | 0.000162** | 0.00236*** | 0.00014 |
| 24 h | 0.05mM Pb2+ vs. 0.25 mM Pb2++aphids | 1.9 | 0.113*** | -0.067 | 3.6*** | -1.5*** | -4.9** | -471.3*** | -12.8*** | 0.05 | 0.8*** | -0.059*** | 0.000202*** | 0.00355*** | 0.00017 |
| 24 h | 0.05mM Pb2+ vs. 0.325 mM Pb2++aphids | 5.4*** | 0.281*** | -0.107** | 3.2*** | -10.27*** | -2.4 | -482.4*** | -17.4*** | -0.45 | 0.91*** | -0.137*** | 0.000627*** | 0.00425*** | -0.00016 |
| 24 h | 0.0625mM Pb2+vs 0.1 mM Pb2++aphids | 1.04 | 0.099*** | -0.007 | -2*** | -0.55 | 1.9 | -155.9*** | -61.4*** | 0.46 | 0.32** | 0.001 | 0.000219*** | 0.0121*** | 0.00028* |
| 24 h | 0.0625mM vs. 0.25 mM Pb2++aphids | 2.39* | 0.121*** | -0.077* | 0.7 | 1.04** | -3.8* | -591.9*** | -39.3*** | 0.56 | 0.21* | -0.08*** | 0.000259*** | 0.01329*** | 0.00031* |
| 24 h | 0.0625mM vs. 0.325 mM Pb2++aphids | 5.88*** | 0.288*** | -0.117*** | 0.3 | -7.72*** | -1.2 | -602.9*** | -43.9*** | 0.06 | 0.32** | -0.158*** | 0.000684*** | 0.01399*** | -0.00002 |
| 24 h | 0.1 mM Pb2+ vs 0.25 mM Pb2+ +aphids | 1.48 | 0.066* | -0.117*** | 2.4*** | 0.43 | 10.3*** | -384*** | 30*** | 0.04 | 0.31** | -0.008 | 0.000192*** | -0.00059*** | 0.00026* |
| 24 h | 0.1 mM Pb2+ vs 0.325 mM Pb2++aphids | 4.98*** | 0.233*** | -0.157*** | 2*** | -8.34*** | 12.8*** | -395*** | 25.4*** | -0.46 | 0.42*** | -0.085*** | 0.000617*** | 0.00011 | -0.00007 |
| 24 h | 0.25 mM Pb2+vs 0.325 mM Pb2++aphids | 3.81*** | 0.167*** | -0.037 | -0.1 | -6.8*** | 9.7*** | -73.5*** | 21.2*** | -0.59 | -0.39*** | -0.135*** | 0.001294*** | -0.003*** | -0.00007 |
| 24 h | 0.025mM Pb2++ aphids vs 0.05mM Pb2+ +aphids | 0.08 | -0.042 | 0.11** | 3.8*** | 0.92* | -13.6*** | -20.7** | -75.3*** | 0.18 | 0.48*** | -0.008 | -0.00085*** | -0.00099*** | -0.00008 |
| 24 h | 0.025mM Pb2+ + aphids vs 0.0625mM Pb2++aphids | -0.5 | -0.031 | 0.03 | 2.6*** | -0.49 | -41.4*** | -80.4*** | 17.9*** | -0.06 | -0.12 | -0.012 | -0.00061*** | -0.00469*** | 0.00007 |

| | | | | | | | | | | | | | | | |
|------|--|---------|----------|-----------|---------|-----------|----------|-----------|-----------|-----------|----------|-----------|--------------|-------------|-------------|
| 24 h | 0.025mM Pb2+ + aphids vs 0.1 mM Pb2++aphids | 0.99 | 0.011 | -0.01 | 2.6*** | -1.75*** | 0.2 | -125.6*** | -37.9*** | -0.06 | 0.23** | 0 | 0.000329*** | -0.00485*** | -0.00036** |
| 24 h | 0.025mM Pb2+ + aphids vs. 0.25 mM Pb2++aphids | 2.34* | 0.032 | -0.08* | 5.3*** | -0.16 | -5.4*** | -561.5*** | -15.8*** | 0.04 | 0.12 | -0.082*** | 0.000369*** | -0.00366*** | -0.00033** |
| 24 h | 0.025mM Pb2+ + aphids vs. 0.325 mM Pb2++aphids | 5.84*** | 0.2*** | -0.12*** | 4.9*** | -8.92*** | -2.9 | -572.5*** | -20.4*** | -0.46 | 0.23* | -0.159*** | 0.000794*** | -0.00296*** | -0.00066*** |
| 24 h | 0.05 mM Pb2+ + aphids vs 0.0625mM Pb2++ aphids | -0.58 | 0.011 | -0.08* | -1.2* | -1.41*** | -27.8*** | -59.7*** | 93.2*** | -0.24 | -0.6*** | -0.004 | 0.00024*** | -0.0037*** | 0.00014 |
| 24 h | 0.05mM Pb2+ + aphids vs 0.1 mM Pb2+ + aphids | 0.91 | 0.053 | -0.12*** | -1.2* | -2.67*** | 13.8*** | -104.8*** | 37.4*** | -0.24 | -0.25* | 0.008 | 0.001179*** | -0.00386*** | -0.00029* |
| 24 h | 0.05mM Pb2+ + aphids vs. 0.25 mM Pb2++ aphids | 2.26* | 0.074* | -0.19*** | 1.5** | -1.07** | 8.2*** | -540.8*** | 59.5*** | -0.14 | -0.36*** | -0.073*** | 0.001219*** | -0.00267*** | -0.00026* |
| 24 h | 0.05mM Pb2++ aphids vs. 0.325 mM Pb2++ aphids | 5.75*** | 0.241*** | -0.23*** | 1.1* | -9.84*** | 10.7*** | -551.8*** | 54.9*** | -0.64 | -0.25* | -0.151*** | 0.001644*** | -0.00197*** | -0.00059*** |
| 24 h | 0.0625mM Pb2++aphids vs 0.1 mM Pb2++aphids | 1.49 | 0.042 | -0.04 | 0 | -1.26** | 41.7*** | -45.2*** | -55.8*** | 0 | 0.35*** | 0.012 | 0.000939*** | -0.00016 | -0.00043*** |
| 24 h | 0.0625mM +aphids vs. 0.25 mM Pb2++aphids | 2.83** | 0.064* | -0.11** | 2.7*** | 0.34 | 36*** | -481.1*** | -33.7*** | 0.1 | 0.24* | -0.069*** | 0.000979*** | 0.00103*** | -0.0004*** |
| 24 h | 0.0625mM +aphids vs. 0.325 mM Pb2++aphids | 6.33*** | 0.231*** | -0.15*** | 2.3*** | -8.43*** | 38.5*** | -492.1*** | -38.3*** | -0.4 | 0.35*** | -0.147*** | 0.001404*** | 0.00173*** | -0.00073*** |
| 24 h | 0.1 mM Pb2+ + aphids vs 0.25 mM Pb2++ aphids | 1.35 | 0.022 | -0.07* | 2.7*** | 1.59*** | -5.7*** | -435.9*** | 22.1*** | 0.1 | -0.11 | -0.081*** | 0.00004 | 0.00119*** | 0.00003 |
| 24 h | 0.1 mM Pb2+ + aphids vs 0.325 mM Pb2++ aphids | 4.84*** | 0.189*** | -0.11** | 2.3*** | -7.17*** | -3.1* | -447*** | 17.5*** | -0.4 | 0 | -0.159*** | 0.000465*** | 0.00189*** | -0.0003* |
| 24 h | 0.25 mM Pb2+ + aphids vs 0.325 mM Pb2++ aphids | 3.5*** | 0.167*** | -0.04 | -0.4 | -8.77*** | 2.5 | -11 | -4.6 | -0.5 | 0.11 | -0.077*** | 0.000425*** | 0.0007*** | -0.00033** |
| 48 h | control vs. 0.025mM Pb2+ | -0.24 | -0.028 | 0.17*** | 3.1*** | -0.05 | 0.7 | -30*** | 9.5*** | 0.02 | -0.25* | 0.004 | -0.000153** | -0.00022 | -0.00034** |
| 48 h | control vs. 0.05mM Pb2+ | -0.52 | -0.049 | -0.13*** | 3.7*** | -0.13 | -2.1 | -300.1*** | 1.8 | 0.79 | 0.42*** | 0.004 | -0.000121* | 0.0002 | -0.00036** |
| 48 h | control vs. 0.0625mM Pb2+ | -0.8 | -0.044 | -0.59*** | -5*** | 0.37 | -21.1*** | -345.6*** | -49.1*** | 0.83 | -0.16 | -0.008 | -0.000075 | -0.00578*** | -0.00072*** |
| 48 h | control vs. 0.1 mM Pb2+ | 0.68 | 0.023 | 0.14*** | 6.1*** | 1.06** | -4.9** | -326.9*** | -53.4*** | 0.79 | -1.19*** | -2.213*** | 0.00005 | 0.00048*** | -0.00076*** |
| 48 h | control vs. 0.25 mM Pb2+ | 2.61** | 0.141*** | 0.1** | 7.3*** | -3.3*** | -5.8*** | -318.9*** | -127.7*** | 0.3 | -0.48*** | -0.728*** | 0.00005 | -0.00062*** | -0.00036** |
| 48 h | control vs. 0.325 mM Pb2+ | 6.83*** | 0.293*** | 0.13*** | 19.1*** | -0.24 | -0.8 | 4.8 | -77.9*** | -0.74 | -0.02 | -0.271*** | 0.000055 | 0.00093*** | -0.0009*** |
| 48 h | 0.025mM Pb2+vs 0.05mM Pb2+ | -0.28 | -0.021 | -0.3*** | 0.6 | -0.08 | -2.8 | -270.1*** | -7.7** | 0.77 | 0.67*** | 0 | 0.000033 | 0.00042** | -0.00002 |
| 48 h | 0.025mM Pb2+vs 0.0625mM Pb2+ | -0.57 | -0.015 | -0.76*** | -8.1*** | 0.43 | -21.8*** | -315.6*** | -58.5*** | 0.81 | 0.09 | -0.012 | 0.000078 | -0.00556*** | -0.00038** |
| 48 h | 0.025mM Pb2+vs 0.1 mM Pb2+ | 0.92 | 0.051 | -0.03 | 3*** | 1.11** | -5.6*** | -296.9*** | -62.9*** | 0.77 | -0.94*** | -2.218*** | 0.000204*** | 0.0007*** | -0.00042*** |
| 48 h | 0.025mM Pb2+ vs. 0.25 mM Pb2+ | 2.85** | 0.17*** | -0.07* | 4.2*** | -3.25*** | -6.5*** | -288.9*** | -137.2*** | 0.28 | -0.23* | -0.732*** | 0.000203*** | -0.0004** | -0.00002 |
| 48 h | 0.025mM Pb2+ vs. 0.325 mM Pb2+ | 7.07*** | 0.321*** | -0.04 | 16*** | -0.19 | -1.5 | 34.8*** | -87.4*** | -0.76 | 0.23* | -0.275*** | 0.000209*** | 0.00115*** | -0.00056*** |
| 48 h | 0.05mM Pb2+vs 0.0625mM Pb2+ | -0.29 | 0.006 | -0.46*** | -8.7*** | 0.5 | -19*** | -45.5*** | -50.8*** | 0.04 | -0.59*** | -0.012 | 0.000045 | -0.00598*** | -0.00036** |
| 48 h | 0.05mM Pb2+ vs 0.1 mM Pb2+ | 1.2 | 0.072* | 0.27*** | 2.4*** | 1.19** | -2.9 | -26.8*** | -55.2*** | 0 | -1.61*** | -2.218*** | 0.000171** | 0.00028*4 | -0.0004** |
| 48 h | 0.05mM Pb2+ vs. 0.25 mM Pb2+ | 3.13** | 0.191*** | 0.23*** | 3.6*** | -3.17*** | -3.7* | -18.8** | -129.5*** | -0.49 | -0.91*** | -0.732*** | 0.000171** | -0.00082*** | 0 |
| 48 h | 0.05mM Pb2+ vs. 0.325 mM Pb2+ | 7.35*** | 0.342*** | 0.26*** | 15.4*** | -0.11 | 1.3 | 304.9*** | -79.7*** | -1.53** | -0.45*** | -0.275*** | 0.000176** | 0.00073*** | -0.00054*** |
| 48 h | 0.0625mM Pb2+vs 0.1 mM Pb2+ | 1.49 | 0.066* | 0.73*** | 11.1*** | 0.68 | 16.2*** | 18.7** | -4.4 | -0.04 | -1.02*** | -2.206*** | 0.000125* | 0.00626*** | -0.00004 |
| 48 h | 0.0625mM vs. 0.25 mM Pb2+ | 3.42*** | 0.185*** | 0.69*** | 12.3*** | -3.67*** | 15.3*** | 26.7*** | -78.6*** | -0.53 | -0.32** | -0.72*** | 0.000125* | 0.00516*** | 0.00035** |
| 48 h | 0.0625mM vs. 0.325 mM Pb2+ | 7.64*** | 0.336*** | 0.72*** | 24.1*** | -0.61 | 20.3*** | 350.4*** | -28.9*** | -1.57** | 0.14 | -0.264*** | 0.000131* | 0.00671*** | -0.00018 |
| 48 h | 0.1 mM Pb2+ vs 0.25 mM Pb2+ | 1.93 | 0.119*** | -0.04 | 1.2* | -4.36*** | -0.8 | 8 | -74.3*** | -0.49 | 0.7*** | 1.486*** | 0 | -0.0011*** | 0.00039** |
| 48 h | 0.1 mM Pb2+ vs 0.325 mM Pb2+ | 6.15*** | 0.27*** | -0.01 | 13*** | -1.3*** | 4.2** | 331.7*** | -24.5*** | -1.53** | 1.16*** | 1.942*** | 0.000005 | 0.00044** | -0.00014 |
| 48 h | 0.25 mM Pb2+vs 0.325 mM Pb2+ | 4.22*** | 0.151*** | 0.03 | 11.8*** | 3.06*** | 5*** | 323.7*** | 49.8*** | -1.04 | 0.46*** | 0.457*** | 0.000005 | 0.00155*** | -0.00053*** |
| 48 h | control +aphids vs. 0.025mM Pb2+ +aphids | -0.07 | -0.018 | 0.473*** | 10.3*** | 0.11 | 3.7* | -281.4*** | -17.7*** | -0.07 | 0.05 | -0.259*** | -0.000057 | -0.00029* | 0.00029* |
| 48 h | control +aphids vs. 0.05mM Pb2+ +aphids | -0.61 | -0.002 | 0.493*** | 20.5*** | -0.21 | 11.6*** | -498.6*** | 3.4 | -0.07 | 0.09 | -0.01 | -0.000064 | -0.00067*** | 0.00023 |
| 48 h | control +aphids vs. 0.0625mM Pb2+ +aphids | -0.77 | 0 | 0.297*** | 0.7 | 0.26 | -21.7*** | -380.1*** | 21.4*** | -0.39 | -0.4*** | 0.001 | 0.000028 | -0.00001 | 0.00016 |
| 48 h | control +aphids vs. 0.1 mM Pb2+ +aphids | 1.32 | 0.006 | 0.347*** | 19.9*** | 0.22 | -5.1*** | -223.7*** | -6.2* | -0.03 | -0.46*** | -0.017 | -0.000211*** | 0.00048*** | 0.00032* |
| 48 h | control +aphids vs. 0.25 mM Pb2+ +aphids | 3.57*** | 0.105*** | 0.657*** | 31.8*** | -4.64*** | -19.6*** | -244.1*** | -19.4*** | -4.1*** | -0.54*** | -0.144*** | -0.00006 | -0.00051*** | 0.00039** |
| 48 h | control +aphids vs. 0.325 mM Pb2+ +aphids | 7.14*** | 0.273*** | 0.617*** | 32.3*** | -11.24*** | 0.6 | -354.2*** | 12.1*** | -56.12*** | -0.21* | -0.091*** | -0.000146** | 0.00037** | 0.0005*** |
| 48 h | 0.025mM Pb2+ +aphids vs 0.05mM Pb2+ +aphids | -0.54 | 0.016 | 0.02 | 10.2*** | -0.32 | 7.9*** | -217.3*** | 21.1*** | 0 | 0.04 | 0.249*** | -0.000007 | -0.00038** | -0.00006 |
| 48 h | 0.025mM Pb2+ +aphids vs 0.0625mM Pb2+ +aphids | -0.7 | 0.018 | -0.177*** | -9.6*** | 0.15 | -25.5*** | -98.7*** | 39.1*** | -0.32 | -0.45*** | 0.26*** | 0.000085 | 0.00027 | -0.00012 |
| 48 h | 0.025mM Pb2+ +aphids vs 0.1 mM Pb2+ +aphids | 1.39 | 0.024 | -0.127*** | 9.6*** | 0.11 | -8.9*** | 57.7*** | 11.4*** | 0.04 | -0.5*** | 0.242*** | -0.000155** | 0.00077*** | 0.00003 |
| 48 h | 0.025mM Pb2+ +aphids vs. 0.25 mM Pb2+ +aphids | 3.63*** | 0.123*** | 0.183*** | 21.5*** | -4.75*** | -23.3*** | 37.3*** | -1.8 | -4.03*** | -0.59*** | 0.116*** | -0.000003 | -0.00022 | 0.00011 |

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|------|--|---------|----------|-----------|----------|-----------|----------|-----------|----------|-----------|----------|-----------|--------------|-------------|------------|
| 48 h | 0.025mM Pb2+ +aphids vs. 0.325 mM Pb2+ +aphids | 7.21*** | 0.291*** | 0.143*** | 22*** | -11.35*** | -3.2* | -72.8*** | 29.8*** | -56.05*** | -0.26* | 0.168*** | -0.00009 | 0.00065*** | 0.00021 |
| 48 h | 0.05mM Pb2+ +aphids vs 0.0625mM Pb2+ +aphids | -0.16 | 0.001 | -0.197*** | -19.8*** | 0.47 | -33.4*** | 118.5*** | 18*** | -0.32 | -0.49*** | 0.011 | 0.000092 | 0.00066*** | -0.00006 |
| 48 h | 0.05mM Pb2+ +aphids vs 0.1 mM Pb2+ +aphids | 1.93* | 0.007 | -0.147*** | -0.6 | 0.43 | -16.8*** | 275*** | -9.6*** | 0.04 | -0.55*** | -0.007 | -0.000148** | 0.00115*** | 0.00009 |
| 48 h | 0.05mM Pb2+ +aphids vs. 0.25 mM Pb2+ +aphids | 4.17*** | 0.107*** | 0.163*** | 11.3*** | -4.43*** | -31.2*** | 254.5*** | -22.8*** | -4.03*** | -0.63*** | -0.133*** | 0.000004 | 0.00016 | 0.00017 |
| 48 h | 0.05mM Pb2+ +aphids vs. 0.325 mM Pb2+ +aphids | 7.75*** | 0.275*** | 0.123*** | 11.8*** | -11.03*** | -11.1*** | 144.4*** | 8.7*** | -56.05*** | -0.3** | -0.081*** | -0.000082 | 0.00103*** | 0.00027* |
| 48 h | 0.0625mM Pb2+ +aphids vs 0.1 mM Pb2+ +aphids | 2.09* | 0.006 | 0.05 | 19.2*** | -0.04 | 16.6*** | 156.4*** | -27.6*** | 0.36 | -0.06 | -0.018 | -0.000239*** | 0.0005*** | 0.00015 |
| 48 h | 0.0625mM +aphids vs. 0.25 mM Pb2+ +aphids | 4.33*** | 0.106*** | 0.36*** | 31.1*** | -4.9*** | 2.2 | 136*** | -40.8*** | -3.71*** | -0.14 | -0.144*** | -0.000088 | -0.0005*** | 0.00023 |
| 48 h | 0.0625mM +aphids vs. 0.325 mM Pb2+ +aphids | 7.91*** | 0.273*** | 0.3*** | 31.6*** | -11.5*** | 22.3*** | 25.9*** | -9.3*** | -55.73*** | 0.19 | -0.092*** | -0.000174** | 0.00038** | 0.00033** |
| 48 h | 0.1 mM Pb2+ +aphids vs 0.25 mM Pb2+ +aphids | 2.24* | 0.1*** | 0.31*** | 11.9*** | -4.86*** | -14.4*** | -20.4** | -13.2*** | -4.07*** | -0.08 | -0.126*** | 0.000151** | -0.00099*** | 0.00008 |
| 48 h | 0.1 mM Pb2+ +aphids vs 0.325 mM Pb2+ +aphids | 5.82*** | 0.267*** | 0.27*** | 12.4*** | -11.46*** | 5.7*** | -130.5*** | 18.4*** | -56.09*** | 0.24* | -0.074*** | 0.000065 | -0.00012 | 0.00018 |
| 48 h | 0.25 mM Pb2+ +aphids vs 0.325 mM Pb2+ +aphids | 3.58*** | 0.167*** | -0.04 | 0.5 | -6.6*** | 20.1*** | -110.1*** | 31.5*** | -52.02*** | 0.33** | 0.052** | -0.000086 | 0.00087*** | 0.0001 |
| 48 h | 0.025mM Pb2+vs 0.05mM Pb2+ +aphids | -0.65 | 0.038 | 0.037 | 5*** | 2.13*** | 6.4*** | -618.8*** | 3.7 | -0.3 | 0.54*** | -0.011 | 0.000133* | 0.00027 | 0.00005 |
| 48 h | 0.025mM Pb2+vs 0.0625mM Pb2++aphids | -0.81 | 0.039 | -0.16*** | -14.8*** | 2.6*** | -26.9*** | -500.3*** | 21.6*** | -0.62 | 0.05 | 0 | 0.000225*** | 0.00093*** | -0.00001 |
| 48 h | 0.025mM Pb2+vs 0.1 mM Pb2++aphids | 1.28 | 0.045 | -0.11** | 4.4*** | 2.56*** | -10.4*** | -343.8*** | -6* | -0.26 | -0.01 | -0.018 | -0.000014 | 0.00142*** | 0.00014 |
| 48 h | 0.025mM Pb2+ vs. 0.25 mM Pb2++aphids | 3.52*** | 0.145*** | 0.2*** | 16.3*** | -2.3*** | -24.8*** | -364.3*** | -19.2*** | -4.33*** | -0.09 | -0.144*** | 0.000137* | 0.00043** | 0.00022 |
| 48 h | 0.025mM Pb2+ vs. 0.325 mM Pb2++aphids | 7.1*** | 0.313*** | 0.16*** | 16.8*** | -8.9*** | -4.6** | -474.3*** | 12.4*** | -56.35*** | 0.24* | -0.092*** | 0.000051 | 0.0013*** | 0.00032** |
| 48 h | 0.05mM Pb2+vs 0.0625mM Pb2+ +aphids | -0.53 | 0.06* | 0.14*** | -15.4*** | 2.68*** | -24.2*** | -230.1*** | 29.3*** | -1.39** | -0.62*** | 0 | 0.000193*** | 0.00051*** | 0.00001 |
| 48 h | 0.05mM Pb2+ vs 0.1 mM Pb2++aphids | 1.57 | 0.066* | 0.19*** | 3.8*** | 2.64*** | -7.6*** | -73.7*** | 1.7 | -1.03 | -0.68*** | -0.018 | -0.000047 | 0.001*** | 0.00016 |
| 48 h | 0.05mM Pb2+ vs. 0.25 mM Pb2++aphids | 3.81*** | 0.166*** | 0.5*** | 15.7*** | -2.22*** | -22*** | -94.1*** | -11.5*** | -5.1*** | -0.76*** | -0.144*** | 0.000105 | 0.00001 | 0.00024 |
| 48 h | 0.05mM Pb2+ vs. 0.325 mM Pb2++aphids | 7.38*** | 0.334*** | 0.46*** | 16.2*** | -8.83*** | -1.9 | -204.2*** | 20.1*** | -57.12*** | -0.44*** | -0.092*** | 0.000018 | 0.00088*** | 0.00034** |
| 48 h | 0.0625mM Pb2+vs 0.1 mM Pb2++aphids | 1.85 | 0.061* | 0.65*** | 12.5*** | 2.13*** | 11.4*** | -28.2*** | 52.5*** | -1.07* | -0.09 | -0.006 | -0.000092 | 0.00698*** | 0.00052*** |
| 48 h | 0.0625mM vs. 0.25 mM Pb2++aphids | 4.09*** | 0.161*** | 0.96*** | 24.4*** | -2.73*** | -3* | -48.7*** | 39.4*** | -5.14*** | -0.18 | -0.132*** | 0.000059 | 0.00599*** | 0.00059*** |
| 48 h | 0.0625mM vs. 0.325 mM Pb2++aphids | 7.67*** | 0.328*** | 0.92*** | 24.9*** | -9.33*** | 17.1*** | -158.7*** | 70.9*** | -57.16*** | 0.15 | -0.08*** | -0.000027 | 0.00686*** | 0.0007*** |
| 48 h | 0.1 mM Pb2+ vs 0.25 mM Pb2+ +aphids | 2.61** | 0.094** | 0.23*** | 13.3*** | -3.41*** | -19.2*** | -67.3*** | 43.7*** | -5.1*** | 0.85*** | 2.073*** | -0.000066 | -0.00027 | 0.00063*** |
| 48 h | 0.1 mM Pb2+ vs 0.325 mM Pb2++aphids | 6.18*** | 0.261*** | 0.19*** | 13.8*** | -10.01*** | 1 | -177.4*** | 75.3*** | -57.12*** | 1.17*** | 2.126*** | -0.000152** | 0.0006*** | 0.00074*** |
| 48 h | 0.25 mM Pb2+vs 0.325 mM Pb2++aphids | 4.25*** | 0.143*** | 0.23*** | 12.6*** | -5.66*** | 1.8 | -185.4*** | 149.5*** | -56.63*** | 0.47*** | 0.64*** | -0.000152** | 0.0017*** | 0.00034** |
| 48 h | 0.025mM Pb2++ aphids vs 0.05mM Pb2+ +aphids | -0.54 | 0.016 | 0.02 | 10.2*** | -0.32 | 7.9*** | -217.3*** | 21.1*** | 0 | 0.04 | 0.249*** | -0.000007 | -0.00038** | -0.00006 |
| 48 h | 0.025mM Pb2+ + aphids vs 0.0625mM Pb2++aphids | -0.7 | 0.018 | -0.177*** | -9.6*** | 0.15 | -25.5*** | -98.7*** | 39.1*** | -0.32 | -0.45*** | 0.26*** | 0.000085 | 0.00027 | -0.00012 |
| 48 h | 0.025mM Pb2+ + aphids vs 0.1 mM Pb2++aphids | 1.39 | 0.024 | -0.127*** | 9.6*** | 0.11 | -8.9*** | 57.7*** | 11.4*** | 0.04 | -0.5*** | 0.242*** | -0.000155** | 0.00077*** | 0.00003 |
| 48 h | 0.025mM Pb2+ + aphids vs. 0.25 mM Pb2++aphids | 3.63*** | 0.123*** | 0.183*** | 21.5*** | -4.75*** | -23.3*** | 37.3*** | -1.8 | -4.03*** | -0.59*** | 0.116*** | -0.000003 | -0.00022 | 0.00011 |
| 48 h | 0.025mM Pb2+ + aphids vs. 0.325 mM Pb2++aphids | 7.21*** | 0.291*** | 0.143*** | 22*** | -11.35*** | -3.2* | -72.8*** | 29.8*** | -56.05*** | -0.26* | 0.168*** | -0.00009 | 0.00065*** | 0.00021 |
| 48 h | 0.05 mM Pb2+ + aphids vs 0.0625mM Pb2++ aphids | -0.16 | 0.001 | -0.197*** | -19.8*** | 0.47 | -33.4*** | 118.5*** | 18*** | -0.32 | -0.49*** | 0.011 | 0.000092 | 0.00066*** | -0.00006 |
| 48 h | 0.05mM Pb2+ + aphids vs 0.1 mM Pb2+ + aphids | 1.93* | 0.007 | -0.147*** | -0.6 | 0.43 | -16.8*** | 275*** | -9.6*** | 0.04 | -0.55*** | -0.007 | -0.000148** | 0.00115*** | 0.00009 |
| 48 h | 0.05mM Pb2++ aphids vs. 0.25 mM Pb2++ aphids | 4.17*** | 0.107*** | 0.163*** | 11.3*** | -4.43*** | -31.2*** | 254.5*** | -22.8*** | -4.03*** | -0.63*** | -0.133*** | 0.000004 | 0.00016 | 0.00017 |
| 48 h | 0.05mM Pb2++ aphids vs. 0.325 mM Pb2++ aphids | 7.75*** | 0.275*** | 0.123*** | 11.8*** | -11.03*** | -11.1*** | 144.4*** | 8.7*** | -56.05*** | -0.3** | -0.081*** | -0.000082 | 0.00103*** | 0.00027* |
| 48 h | 0.0625mM Pb2++aphids vs 0.1 mM Pb2++aphids | 2.09* | 0.006 | 0.05 | 19.2*** | -0.04 | 16.6*** | 156.4*** | -27.6*** | 0.36 | -0.06 | -0.018 | -0.000239*** | 0.0005*** | 0.00015 |
| 48 h | 0.0625mM +aphids vs. 0.25 mM Pb2++aphids | 4.33*** | 0.106*** | 0.36*** | 31.1*** | -4.9*** | 2.2 | 136*** | -40.8*** | -3.71*** | -0.14 | -0.144*** | -0.000088 | -0.0005*** | 0.00023 |
| 48 h | 0.0625mM +aphids vs. 0.325 mM Pb2++aphids | 7.91*** | 0.273*** | 0.32*** | 31.6*** | -11.5*** | 22.3*** | 25.9*** | -9.3*** | -55.73*** | 0.19 | -0.092*** | -0.000174** | 0.00038** | 0.00033** |
| 48 h | 0.1 mM Pb2+ + aphids vs 0.25 mM Pb2++ aphids | 2.24* | 0.1*** | 0.31*** | 11.9*** | -4.86*** | -14.4*** | -20.4** | -13.2*** | -4.07*** | -0.08 | -0.126*** | 0.000151** | -0.00099*** | 0.00008 |
| 48 h | 0.1 mM Pb2+ + aphids vs 0.325 mM Pb2++ aphids | 5.82*** | 0.267*** | 0.27*** | 12.4*** | -11.46*** | 5.7*** | -130.5*** | 18.4*** | -56.09*** | 0.24* | -0.074*** | 0.000065 | -0.00012 | 0.00018 |
| 48 h | 0.25 mM Pb2+ + aphids vs 0.325 mM Pb2++ aphids | 3.58*** | 0.167*** | -0.04 | 0.5 | -6.6*** | 20.1*** | -110.1*** | 31.5*** | -52.02*** | 0.33** | 0.052** | -0.000086 | 0.00087*** | 0.0001 |
| 72 h | control vs. 0.025mM Pb2+ | 0.31 | -0.01 | 0.29*** | -0.2 | -1.57*** | 5.2*** | -39.3*** | -3.3 | -0.44 | -0.75*** | -0.002 | -0.000171** | -0.00031* | 0.00002 |
| 72 h | control vs. 0.05mM Pb2+ | -0.93 | -0.021 | 0.33*** | 5.7*** | -0.18 | 0 | -46.8*** | -9.1*** | -0.54 | -0.6*** | 0 | -0.000157** | -0.00408*** | -0.00006 |
| 72 h | control vs. 0.0625mM Pb2+ | -0.7 | -0.025 | 0.12*** | -4.5*** | 0.26 | 5.9*** | -44.1*** | 4.2 | 0.84 | -0.3** | 0 | -0.000146** | -0.00279*** | -0.00018 |

| | | | | | | | | | | | | | | | |
|------|--|---------|----------|----------|----------|----------|---------|-----------|----------|----------|----------|-----------|--------------|-------------|-------------|
| 72 h | control vs. 0.1 mM Pb2+ | 1.16 | 0.037 | 0.31*** | -2.4*** | 2.37*** | 0.3 | -12.2 | 1.1 | -1.99*** | -0.19 | 0 | -0.000904*** | -0.00337*** | 0.00018 |
| 72 h | control vs. 0.25 mM Pb2+ | 2.77** | 0.108*** | 0.66*** | 23.7*** | 0.48 | 3.2* | -131.8*** | -12.7*** | 0.23 | -0.62*** | -0.072*** | -0.000327*** | -0.00229*** | 0.00007 |
| 72 h | control vs. 0.325 mM Pb2+ | 7.47*** | 0.278*** | 0.51*** | 23*** | -4.07*** | -3.3* | -47.1*** | -45.6*** | -5.8*** | -1.19*** | -0.166*** | -0.000297*** | -0.00196*** | 0.00023 |
| 72 h | 0.025mM Pb2+vs 0.05mM Pb2+ | -1.24 | -0.011 | 0.04 | 5.9*** | 1.38*** | -5.2*** | -7.5 | -5.8* | -0.11 | 0.15 | 0.002 | 0.000014 | -0.00377*** | -0.00008 |
| 72 h | 0.025mM Pb2+vs 0.0625mM Pb2+ | -1 | -0.015 | -0.17*** | -4.3*** | 1.83*** | 0.6 | -4.8 | 7.5** | 1.28* | 0.45*** | 0.002 | 0.000024 | -0.00248*** | -0.00021 |
| 72 h | 0.025mM Pb2+vs 0.1 mM Pb2+ | 0.85 | 0.047 | 0.02 | -2.2*** | 3.94*** | -4.9** | 27.1*** | 4.4 | -1.55** | 0.56*** | 0.002 | -0.000733*** | -0.00306*** | 0.00015 |
| 72 h | 0.025mM Pb2+ vs. 0.25 mM Pb2+ | 2.47* | 0.118*** | 0.37*** | 23.9*** | 2.05*** | -2 | -92.5*** | -9.4*** | 0.67 | 0.13 | -0.07*** | -0.000156** | -0.00198*** | 0.00004 |
| 72 h | 0.025mM Pb2+ vs. 0.325 mM Pb2+ | 7.16*** | 0.287*** | 0.22*** | 23.2*** | -2.5*** | -8.5*** | -7.9 | -42.3*** | -5.36*** | -0.44*** | -0.164*** | -0.000126* | -0.00165*** | 0.00021 |
| 72 h | 0.05mM Pb2+vs 0.0625mM Pb2+ | 0.24 | -0.004 | -0.21*** | -10.2*** | 0.44 | 5.8*** | 2.7 | 13.3*** | 1.39** | 0.3** | 0 | 0.000011 | 0.00129*** | -0.00013 |
| 72 h | 0.05mM Pb2+ vs 0.1 mM Pb2+ | 2.09* | 0.057 | -0.02 | -8.1*** | 2.56*** | 0.3 | 34.6*** | 10.2*** | -1.44** | 0.41*** | 0 | -0.000747*** | 0.00071*** | 0.00024 |
| 72 h | 0.05mM Pb2+ vs. 0.25 mM Pb2+ | 3.71*** | 0.128*** | 0.33*** | 18*** | 0.66 | 3.2* | -85*** | -3.7 | 0.77 | -0.02 | -0.072*** | -0.00017** | 0.00179*** | 0.00013 |
| 72 h | 0.05mM Pb2+ vs. 0.325 mM Pb2+ | 8.4*** | 0.298*** | 0.18*** | 17.3*** | -3.89*** | -3.3* | -0.4 | -36.5*** | -5.25*** | -0.59*** | -0.166*** | -0.00014* | 0.00212*** | 0.00029* |
| 72 h | 0.0625mM Pb2+vs 0.1 mM Pb2+ | 1.86 | 0.062* | 0.19*** | 2.1*** | 2.11*** | -5.6*** | 31.8*** | -3.1 | -2.83*** | 0.11 | 0 | -0.000758*** | -0.00058*** | 0.00036** |
| 72 h | 0.0625mM vs. 0.25 mM Pb2+ | 3.47*** | 0.133*** | 0.54*** | 28.2*** | 0.22 | -2.7 | -87.7*** | -17*** | -0.61 | -0.31** | -0.072*** | -0.000181*** | 0.0005*** | 0.00025* |
| 72 h | 0.0625mM vs. 0.325 mM Pb2+ | 8.16*** | 0.302*** | 0.39*** | 27.5*** | -4.33*** | -9.1*** | -3.1 | -49.9*** | -6.64*** | -0.88*** | -0.166*** | -0.000151** | 0.00083*** | 0.00042*** |
| 72 h | 0.1 mM Pb2+ vs 0.25 mM Pb2+ | 1.61 | 0.071* | 0.35*** | 26.1*** | -1.89*** | 2.9 | -119.6*** | -13.8*** | 2.22*** | -0.43*** | -0.072*** | 0.000577*** | 0.00108*** | -0.00011 |
| 72 h | 0.1 mM Pb2+ vs 0.325 mM Pb2+ | 6.31*** | 0.241*** | 0.2*** | 25.4*** | -6.44*** | -3.6* | -34.9*** | -46.7*** | -3.81*** | -1*** | -0.166*** | 0.000607*** | 0.00141*** | 0.00006 |
| 72 h | 0.25 mM Pb2+vs 0.325 mM Pb2+ | 4.69*** | 0.17*** | -0.15*** | -0.7 | -4.55*** | -6.5*** | 84.7*** | -32.9*** | -6.03*** | -0.57*** | -0.094*** | 0.00003 | 0.00033* | 0.00017 |
| 72 h | control +aphids vs. 0.025mM Pb2+ +aphids | 0.62 | -0.047 | 0.14*** | 6.1*** | -0.08 | -5.7*** | -61.1*** | -1.3 | -0.25 | 0.37*** | 0.001 | -0.000115* | -0.0026*** | -0.00006 |
| 72 h | control +aphids vs. 0.05mM Pb2+ +aphids | -1.15 | -0.041 | 0.16*** | 6.9*** | -0.25 | 2.4 | -18.4** | -13.4*** | -1.36* | 0.2 | 0.003 | -0.00009 | -0.00177*** | -0.00009 |
| 72 h | control +aphids vs. 0.0625mM Pb2+ +aphids | -1.48 | -0.031 | -0.05 | 3.6*** | -1.05** | 0.7 | -20.1** | -24.6*** | -1.1* | 0.13 | 0 | -0.000144* | -0.00286*** | 0.00025* |
| 72 h | control +aphids vs. 0.1 mM Pb2+ +aphids | 0.35 | 0.012 | -0.03 | 3.6*** | -0.2 | -2 | 0.4 | 1.4 | 0.06 | 0.15 | 0.002 | -0.000758*** | -0.00151*** | -0.00017 |
| 72 h | control +aphids vs. 0.25 mM Pb2+ +aphids | 2.58** | 0.057 | 0.41*** | 29*** | 0 | 2.4 | -30.5*** | 1 | -0.34 | -0.33** | -0.125*** | -0.000401*** | -0.00015 | -0.00037** |
| 72 h | control +aphids vs. 0.325 mM Pb2+ +aphids | 6.64*** | 0.267*** | 0.507*** | 29.4*** | -2.43*** | 0.4 | -7 | -41.1*** | -1.96*** | -0.62*** | -0.153*** | -0.000162** | 0.00013 | -0.00007 |
| 72 h | 0.025mM Pb2+ +aphids vs 0.05mM Pb2+ +aphids | -1.77 | 0.005 | 0.02 | 0.8 | -0.17 | 8.1*** | 42.7*** | -12.2*** | -1.11* | -0.17 | 0.002 | 0.000024 | 0.00083*** | -0.00004 |
| 72 h | 0.025mM Pb2+ +aphids vs 0.0625mM Pb2+ +aphids | -2.1* | 0.015 | -0.19*** | -2.5*** | -0.97* | 6.5*** | 41*** | -23.3*** | -0.84 | -0.24* | -0.001 | -0.000029 | -0.00026 | 0.00031* |
| 72 h | 0.025mM Pb2+ +aphids vs 0.1 mM Pb2+ +aphids | -0.28 | 0.058* | -0.17*** | -2.5*** | -0.13 | 3.7* | 61.4*** | 2.7 | 0.32 | -0.22* | 0.001 | -0.000643*** | 0.00109*** | -0.00012 |
| 72 h | 0.025mM Pb2+ +aphids vs. 0.25 mM Pb2+ +aphids | 1.96* | 0.104*** | 0.27*** | 22.9*** | 0.07 | 8.1*** | 30.6*** | 2.3 | -0.09 | -0.7*** | -0.126*** | -0.000287*** | 0.00245*** | -0.00031* |
| 72 h | 0.025mM Pb2+ +aphids vs. 0.325 mM Pb2+ +aphids | 6.02*** | 0.313*** | 0.367*** | 23.3*** | -2.35*** | 6.1*** | 54*** | -39.8*** | -1.71** | -0.99*** | -0.154*** | -0.000047 | 0.00273*** | -0.00001 |
| 72 h | 0.05mM Pb2+ +aphids vs 0.0625mM Pb2+ +aphids | -0.33 | 0.01 | -0.21*** | -3.3*** | -0.8* | -1.7 | -1.7 | -11.1*** | 0.26 | -0.07 | -0.003 | -0.000053 | -0.00109*** | 0.00034** |
| 72 h | 0.05mM Pb2+ +aphids vs 0.1 mM Pb2+ +aphids | 1.5 | 0.053 | -0.19*** | -3.3*** | 0.05 | -4.4** | 18.8** | 14.8*** | 1.43** | -0.05 | -0.001 | -0.000667*** | 0.00026 | -0.00008 |
| 72 h | 0.05mM Pb2+ +aphids vs. 0.25 mM Pb2+ +aphids | 3.73*** | 0.098*** | 0.25*** | 22.1*** | 0.24 | 0 | -12.1 | 14.4*** | 1.02 | -0.53*** | -0.128*** | -0.000311*** | 0.00162*** | -0.00028* |
| 72 h | 0.05mM Pb2+ +aphids vs. 0.325 mM Pb2+ +aphids | 7.79*** | 0.308*** | 0.347*** | 22.5*** | -2.18*** | -2 | 11.4 | -27.6*** | -0.6 | -0.82*** | -0.156*** | -0.000071 | 0.0019*** | 0.00002 |
| 72 h | 0.0625mM Pb2+ +aphids vs 0.1 mM Pb2+ +aphids | 1.83 | 0.043 | 0.02 | 0 | 0.84* | -2.7 | 20.4** | 25.9*** | 1.16* | 0.02 | 0.002 | -0.000614*** | 0.00135*** | -0.00042*** |
| 72 h | 0.0625mM +aphids vs. 0.25 mM Pb2+ +aphids | 4.06*** | 0.088** | 0.46*** | 25.4*** | 1.04** | 1.7 | -10.4 | 25.6*** | 0.76 | -0.46*** | -0.125*** | -0.000258*** | 0.00271*** | -0.00062*** |
| 72 h | 0.0625mM +aphids vs. 0.325 mM Pb2+ +aphids | 8.12*** | 0.298*** | 0.557*** | 25.8*** | -1.38*** | -0.3 | 13* | -16.5*** | -0.87 | -0.75*** | -0.153*** | -0.000018 | 0.00299*** | -0.00032* |
| 72 h | 0.1 mM Pb2+ +aphids vs 0.25 mM Pb2+ +aphids | 2.23* | 0.045 | 0.44*** | 25.4*** | 0.2 | 4.4** | -30.8*** | -0.4 | -0.41 | -0.48*** | -0.127*** | 0.000356*** | 0.00136*** | -0.0002 |
| 72 h | 0.1 mM Pb2+ +aphids vs 0.325 mM Pb2+ +aphids | 6.3*** | 0.255*** | 0.537*** | 25.8*** | -2.22*** | 2.4 | -7.4 | -42.5*** | -2.03** | -0.77*** | -0.155*** | 0.000596*** | 0.00164*** | 0.00011 |
| 72 h | 0.25 mM Pb2+ +aphids vs 0.325 mM Pb2+ +aphids | 4.06*** | 0.21*** | 0.097** | 0.4 | -2.42*** | -2 | 23.4*** | -42.1*** | -1.62** | -0.29** | -0.028 | 0.00024*** | 0.00028* | 0.0003* |
| 72 h | 0.025mM Pb2+vs 0.05mM Pb2+ +aphids | -1.09 | 0.004 | 0.09* | 1.2* | 5.45*** | 0.6 | -16.6** | -6.1* | -0.32 | 0.51*** | 0.002 | 0.000101 | -0.00358*** | -0.00005 |
| 72 h | 0.025mM Pb2+vs 0.0625mM Pb2++aphids | -1.42 | 0.014 | -0.12*** | -2.1*** | 4.65*** | -1.1 | -18.3** | -17.2*** | -0.05 | 0.43*** | -0.001 | 0.000048 | -0.00467*** | 0.00029* |
| 72 h | 0.025mM Pb2+vs 0.1 mM Pb2++aphids | 0.4 | 0.057 | -0.1** | -2.1*** | 5.5*** | -3.8* | 2.1 | 8.7*** | 1.11* | 0.46*** | 0.001 | -0.000566*** | -0.00332*** | -0.00013 |
| 72 h | 0.025mM Pb2+ vs. 0.25 mM Pb2++aphids | 2.64** | 0.102*** | 0.34*** | 23.3*** | 5.7*** | 0.6 | -28.7*** | 8.3*** | 0.7 | -0.02 | -0.126*** | -0.00021*** | -0.00196*** | -0.00033** |
| 72 h | 0.025mM Pb2+ vs. 0.325 mM Pb2++aphids | 6.7*** | 0.312*** | 0.437*** | 23.7*** | 3.27*** | -1.4 | -5.3 | -33.7*** | -0.92 | -0.32** | -0.154*** | 0.00003 | -0.00168*** | -0.00003 |

| | | | | | | | | | | | | | | | |
|------|--|---------|----------|----------|---------|----------|--------|----------|----------|----------|----------|-----------|--------------|-------------|-------------|
| 72 h | 0.05mM Pb2+vs 0.0625mM Pb2+ +aphids | -0.18 | 0.025 | -0.16*** | -8*** | 3.27*** | 4.1** | -10.8 | -11.4*** | 0.05 | 0.28** | -0.003 | 0.000034 | -0.0009*** | 0.00037** |
| 72 h | 0.05mM Pb2+ vs 0.1 mM Pb2++aphids | 1.64 | 0.068* | -0.14*** | -8*** | 4.11*** | 1.4 | 9.6 | 14.5*** | 1.22* | 0.3** | -0.001 | -0.00058*** | 0.00045** | -0.00005 |
| 72 h | 0.05mM Pb2+ vs. 0.25 mM Pb2++aphids | 3.88*** | 0.113*** | 0.3*** | 17.4*** | 4.31*** | 5.8*** | -21.2*** | 14.1*** | 0.81 | -0.18 | -0.128*** | -0.000224*** | 0.00181*** | -0.00025* |
| 72 h | 0.05mM Pb2+ vs. 0.325 mM Pb2++aphids | 7.94*** | 0.323*** | 0.397*** | 17.8*** | 1.89*** | 3.8* | 2.2 | -28*** | -0.81 | -0.47*** | -0.156*** | 0.000016 | 0.00209*** | 0.00006 |
| 72 h | 0.0625mM Pb2+vs 0.1 mM Pb2++aphids | 1.41 | 0.072* | 0.07* | 2.2*** | 3.67*** | -4.4** | 6.9 | 1.2 | -0.17 | 0.01 | -0.001 | -0.000591*** | -0.00084*** | 0.00007 |
| 72 h | 0.0625mM vs. 0.25 mM Pb2++aphids | 3.64*** | 0.117*** | 0.51*** | 27.6*** | 3.87*** | -0.1 | -24*** | 0.8 | -0.58 | -0.47*** | -0.128*** | -0.000235*** | 0.00052*** | -0.00012 |
| 72 h | 0.0625mM vs. 0.325 mM Pb2++aphids | 7.7*** | 0.327*** | 0.607*** | 28*** | 1.45*** | -2.1 | -0.5 | -41.3*** | -2.2*** | -0.77*** | -0.156*** | 0.000005 | 0.0008*** | 0.00018 |
| 72 h | 0.1 mM Pb2+ vs 0.25 mM Pb2+ +aphids | 1.79 | 0.056 | 0.32*** | 25.5*** | 1.76*** | 5.5*** | -55.8*** | 3.9 | 2.25*** | -0.58*** | -0.128*** | 0.000523*** | 0.0011*** | -0.00048*** |
| 72 h | 0.1 mM Pb2+ vs 0.325 mM Pb2++aphids | 5.85*** | 0.266*** | 0.417*** | 25.9*** | -0.67 | 3.5* | -32.4*** | -38.1*** | 0.63 | -0.88*** | -0.156*** | 0.000763*** | 0.00138*** | -0.00018 |
| 72 h | 0.25 mM Pb2+vs 0.325 mM Pb2++aphids | 4.23*** | 0.195*** | 0.067 | -0.2 | 1.23** | 0.6 | 87.2*** | -24.3*** | -1.59** | -0.45*** | -0.084*** | 0.000186*** | 0.0003* | -0.00007 |
| 72 h | 0.025mM Pb2++ aphids vs 0.05mM Pb2+ +aphids | -1.77 | 0.005 | 0.02 | 0.8 | -0.17 | 8.1*** | 42.7*** | -12.2*** | -1.11* | -0.17 | 0.002 | 0.000024 | 0.00083*** | -0.00004 |
| 72 h | 0.025mM Pb2+ + aphids vs 0.0625mM Pb2++aphids | -2.1* | 0.015 | -0.19*** | -2.5*** | -0.97* | 6.5*** | 41*** | -23.3*** | -0.84 | -0.24* | -0.001 | -0.000029 | -0.00026 | 0.00031* |
| 72 h | 0.025mM Pb2+ + aphids vs 0.1 mM Pb2++aphids | -0.28 | 0.058* | -0.17*** | -2.5*** | -0.13 | 3.7* | 61.4*** | 2.7 | 0.32 | -0.22* | 0.001 | -0.000643*** | 0.00109*** | -0.00012 |
| 72 h | 0.025mM Pb2+ + aphids vs. 0.25 mM Pb2++aphids | 1.96* | 0.104*** | 0.27*** | 22.9*** | 0.07 | 8.1*** | 30.6*** | 2.3 | -0.09 | -0.7*** | -0.126*** | -0.000287*** | 0.00245*** | -0.00031* |
| 72 h | 0.025mM Pb2+ + aphids vs. 0.325 mM Pb2++aphids | 6.02*** | 0.313*** | 0.367*** | 23.3*** | -2.35*** | 6.1*** | 54*** | -39.8*** | -1.71** | -0.99*** | -0.154*** | -0.000047 | 0.00273*** | -0.00001 |
| 72 h | 0.05 mM Pb2+ + aphids vs 0.0625mM Pb2++ aphids | -0.33 | 0.01 | -0.21*** | -3.3*** | -0.8* | -1.7 | -1.7 | -11.1*** | 0.26 | -0.07 | -0.003 | -0.000053 | -0.00109*** | 0.00034** |
| 72 h | 0.05mM Pb2+ + aphids vs 0.1 mM Pb2+ + aphids | 1.5 | 0.053 | -0.19*** | -3.3*** | 0.05 | -4.4** | 18.8** | 14.8*** | 1.43** | -0.05 | -0.001 | -0.000667*** | 0.00026 | -0.00008 |
| 72 h | 0.05mM Pb2+ + aphids vs. 0.25 mM Pb2++ aphids | 3.73*** | 0.098*** | 0.25*** | 22.1*** | 0.24 | 0 | -12.1 | 14.4*** | 1.02 | -0.53*** | -0.128*** | -0.000311*** | 0.00162*** | -0.00028* |
| 72 h | 0.05mM Pb2++ aphids vs. 0.325 mM Pb2++ aphids | 7.79*** | 0.308*** | 0.347*** | 22.5*** | -2.18*** | -2 | 11.4 | -27.6*** | -0.6 | -0.82*** | -0.156*** | -0.000071 | 0.0019*** | 0.00002 |
| 72 h | 0.0625mM Pb2++aphids vs 0.1 mM Pb2++aphids | 1.83 | 0.043 | 0.02 | 0 | 0.84* | -2.7 | 20.4** | 25.9*** | 1.16* | 0.02 | 0.002 | -0.000614*** | 0.00135*** | -0.00042*** |
| 72 h | 0.0625mM +aphids vs. 0.25 mM Pb2++aphids | 4.06*** | 0.088** | 0.46*** | 25.4*** | 1.04** | 1.7 | -10.4 | 25.6*** | 0.76 | -0.46*** | -0.125*** | -0.000258*** | 0.00271*** | -0.00062*** |
| 72 h | 0.0625mM +aphids vs. 0.325 mM Pb2++aphids | 8.12*** | 0.298*** | 0.557*** | 25.8*** | -1.38*** | -0.3 | 13* | -16.5*** | -0.87 | -0.75*** | -0.153*** | -0.000018 | 0.00299*** | -0.00032* |
| 72 h | 0.1 mM Pb2+ + aphids vs 0.25 mM Pb2++ aphids | 2.23* | 0.045 | 0.44*** | 25.4*** | 0.2 | 4.4** | -30.8*** | -0.4 | -0.41 | -0.48*** | -0.127*** | 0.000356*** | 0.00136*** | -0.0002 |
| 72 h | 0.1 mM Pb2+ + aphids vs 0.325 mM Pb2++ aphids | 6.3*** | 0.255*** | 0.537*** | 25.8*** | -2.22*** | 2.4 | -7.4 | -42.5*** | -2.03*** | -0.77*** | -0.155*** | 0.000596*** | 0.00164*** | 0.00011 |
| 72 h | 0.25 mM Pb2+ + aphids vs 0.325 mM Pb2++ aphids | 4.06*** | 0.21*** | 0.097** | 0.4 | -2.42*** | -2 | 23.4*** | -42.1*** | -1.62** | -0.29** | -0.028 | 0.00024*** | 0.00028* | 0.0003* |

Table S2. Comparisons between particular levels of analyzed factor in the leaves of pea seedlings in different times (independently) using the two-sample *t*-test for equal means for all observed traits.

| Contrasts | | Length of epicotyl | Fresh weight | Semiquinone radical | Mn ²⁺ | ABA | IAA | JA | SA | Pisatin | Glucose | Sucrose | Acid invertase | Alkaline/neutral invertase | Total soluble sugar |
|-----------|--------------------------------|--------------------|--------------|---------------------|------------------|---------|----------|----------|----------|----------|----------|-----------|----------------|----------------------------|---------------------|
| 0 h | control vs. 0.025mM Pb2+ | -0.48 | -0.04 | -0.51*** | -2.7*** | 25* | 1.7 | -107*** | 2.4 | -3.4 | -0.51 | -0.089 | -0.00006 | 0.000031 | 17080*** |
| 0 h | control vs. 0.05mM Pb2+ | -0.12 | -0.003 | -0.21*** | -3.8*** | 4 | 0.9 | -201*** | 0.4 | -10.4*** | -0.7* | 0 | -0.00013 | -0.000025 | -816 |
| 0 h | control vs. 0.0625mM Pb2+ | -0.07 | -0.037 | -0.32 | -6.2*** | 5 | -2.4 | -182*** | 4.9 | -4.1* | 0.02 | 0.012 | -0.00003 | -0.000079* | -14953*** |
| 0 h | control vs. 0.1 mM Pb2+ | 0.48 | -0.01 | -0.6*** | -1.8*** | 0 | 1 | -95*** | 1.4 | -4* | -1.07*** | -0.083 | -0.00091*** | -0.000234*** | -10141* |
| 0 h | control vs. 0.25 mM Pb2+ | 0.29 | 0.03 | 0.02 | -2.2*** | -56*** | -2.2 | -64*** | 2.8 | -1.7 | -1.82*** | -0.409*** | -0.00108*** | -0.000116*** | -22666*** |
| 0 h | control vs. 0.325 mM Pb2+ | 0.24 | 0.064 | -0.86*** | 0.7* | -140*** | -2.3 | -75*** | 1.5 | -5.2** | -1.93*** | -0.378*** | -0.00101*** | -0.00024*** | -46535*** |
| 0 h | 0.025mM Pb2+vs 0.05mM Pb2+ | 0.36 | 0.037 | 0.3*** | -1.1*** | -21 | -0.8 | -95*** | -2 | -7.1*** | -0.2 | 0.089 | -0.00006 | -0.000057 | -17897*** |
| 0 h | 0.025mM Pb2+vs 0.0625mM Pb2+ | 0.41 | 0.003 | 0.43*** | -3.5*** | -20 | -4* | -76*** | 2.5 | -0.7 | 0.52 | 0.101 | 0.00003 | -0.00011*** | -32033*** |
| 0 h | 0.025mM Pb2+vs 0.1 mM Pb2+ | 0.96 | 0.03 | -0.09* | 0.9** | -25* | -0.7 | 11 | -0.9 | -0.7 | -2.28 | 0.006 | -0.00085*** | -0.000265*** | -27221*** |
| 0 h | 0.025mM Pb2+ vs. 0.25 mM Pb2+ | 0.77 | 0.069 | 0.53*** | 0.5 | -81*** | -3.9* | 43* | 0.4 | 1.7 | -1.31*** | -0.32*** | -0.00102*** | -0.000147*** | -39746*** |
| 0 h | 0.025mM Pb2+ vs. 0.325 mM Pb2+ | 0.72 | 0.104 | -0.35*** | 3.4*** | -165*** | -4* | 32 | -0.8 | -1.9 | -1.42*** | -0.29*** | -0.00095*** | -0.000271*** | -63616*** |
| 0 h | 0.05mM Pb2+vs 0.0625mM Pb2+ | 0.05 | -0.034 | 0.13*** | -2.4*** | 1 | -3.2 | 19 | 4.6 | 6.3*** | 0.72* | 0.012 | 0.00009 | -0.000053 | -14137** |
| 0 h | 0.05mM Pb2+ vs 0.1 mM Pb2+ | 0.6 | -0.007 | -0.39*** | 2*** | -5 | 0.1 | 106*** | 1.1 | 6.4*** | -0.37 | -0.083 | -0.00079*** | -0.000209*** | -9324* |
| 0 h | 0.05mM Pb2+ vs. 0.25 mM Pb2+ | 0.4 | 0.033 | 0.23*** | 1.6*** | -60*** | -3.1 | 137*** | 2.4 | 8.7*** | -1.12*** | -0.409*** | -0.00095*** | -0.00009** | -21850*** |
| 0 h | 0.05mM Pb2+ vs. 0.325 mM Pb2+ | 0.36 | 0.067 | -0.65*** | 4.5*** | -144*** | -3.2 | 127*** | 1.2 | 5.2** | -1.22*** | -0.379*** | -0.00088*** | -0.000214*** | -45719*** |
| 0 h | 0.0625mM Pb2+vs 0.1 mM Pb2+ | 0.55 | 0.027 | -0.52*** | 4.4*** | -5 | 3.4 | 87*** | -3.5 | 0.1 | -1.09*** | -0.095 | -0.00088*** | -0.000155*** | 4813 |
| 0 h | 0.0625mM vs. 0.25 mM Pb2+ | 0.35 | 0.067 | 0.1* | 4*** | -61*** | 0.2 | 118*** | -2.1 | 2.4 | -1.83*** | -0.421*** | -0.00104*** | -0.000037 | -7713 |
| 0 h | 0.0625mM vs. 0.325 mM Pb2+ | 0.31 | 0.101 | -0.78*** | 6.9*** | -145*** | 0.1 | 108*** | -3.4 | -1.1 | -1.94*** | -0.391*** | -0.00097*** | -0.000161*** | -31582*** |
| 0 h | 0.1 mM Pb2+ vs 0.25 mM Pb2+ | -0.2 | 0.039 | 0.62*** | -0.4 | -55*** | -3.2 | 31 | 1.4 | 2.3 | -0.75** | -0.326*** | -0.00017 | 0.000118*** | -12525** |
| 0 h | 0.1 mM Pb2+ vs 0.325 mM Pb2+ | -0.24 | 0.074 | -0.26*** | 2.5*** | -139*** | -3.3 | 21 | 0.1 | -1.2 | -0.86** | -0.296*** | -0.0001 | -0.000006 | -36395*** |
| 0 h | 0.25 mM Pb2+vs 0.325 mM Pb2+ | -0.04 | 0.035 | -0.88*** | 2.9*** | -84*** | -0.1 | -10 | -1.2 | -3.5 | -0.11 | 0.03 | 0.00007 | -0.000124*** | -23869*** |
| 24 h | control vs. 0.025mM Pb2+ | -0.25 | -0.051 | -0.46*** | -0.9** | -8 | 3.5 | -133*** | -30.3*** | -1 | 0.13 | 0.068 | -0.00056*** | -0.000096** | 3631 |
| 24 h | control vs. 0.05mM Pb2+ | -0.49 | -0.078 | 0.003 | 1.2*** | 41*** | -0.2 | -3 | 7* | -12*** | -0.54 | -0.101 | -0.00055*** | -0.000195*** | 10356* |
| 24 h | control vs. 0.0625mM Pb2+ | -0.16 | -0.022 | -0.007 | 0.7* | 36** | 2.8 | -203*** | -4 | -12*** | -0.27 | 0.019 | -0.00069*** | -0.000066* | 15856*** |
| 24 h | control vs. 0.1 mM Pb2+ | -0.16 | 0.019 | 0.183*** | 2.03*** | 41*** | -11.4*** | -1194*** | 5.7 | -18*** | -1.51*** | -0.621*** | -0.00064*** | -0.000076* | 4684 |
| 24 h | control vs. 0.25 mM Pb2+ | 0.23 | 0.048 | 0.913*** | 2.03*** | 33** | -21.9*** | -1580*** | 5.6 | -21*** | -2.04*** | 0.007 | -0.00064*** | -0.000252*** | -11580** |
| 24 h | control vs. 0.325 mM Pb2+ | 1.1 | 0.114 | 0.673*** | 4.63*** | -17 | -4.3* | -1519*** | -10.4*** | -24*** | -2.68*** | -0.593*** | -0.00102*** | -0.000236*** | -22279*** |
| 24 h | 0.025mM Pb2+vs 0.05mM Pb2+ | -0.24 | -0.027 | 0.463*** | 2.1*** | 49*** | -3.7* | 130*** | 37.2*** | -11*** | -0.68* | -0.169** | 0.00001 | -0.0001** | 6725 |
| 24 h | 0.025mM Pb2+vs 0.0625mM Pb2+ | 0.09 | 0.029 | 0.453*** | 1.6*** | 43*** | -0.7 | -70*** | 26.3*** | -11*** | -0.4 | -0.049 | -0.00013 | 0.00003 | 12225** |
| 24 h | 0.025mM Pb2+vs 0.1 mM Pb2+ | 0.1 | 0.07 | 0.643*** | 2.93*** | 48*** | -14.9*** | -1060*** | 36*** | -17*** | -1.64*** | -0.689*** | -0.00008 | 0.00002 | 1053 |
| 24 h | 0.025mM Pb2+ vs. 0.25 mM Pb2+ | 0.48 | 0.099 | 1.373*** | 2.93*** | 41*** | -25.4*** | -1446*** | 35.8*** | -20*** | -2.18*** | -0.061 | -0.00008 | -0.000156*** | -15211*** |
| 24 h | 0.025mM Pb2+ vs. 0.325 mM Pb2+ | 1.35 | 0.165* | 1.133*** | 5.53*** | -9 | -7.8*** | -1386*** | 19.9*** | -23*** | -2.82*** | -0.661*** | -0.00046*** | -0.00014*** | -25910*** |
| 24 h | 0.05mM Pb2+vs 0.0625mM Pb2+ | 0.32 | 0.057 | -0.01 | -0.5 | -5 | 3 | -200*** | -10.9*** | 0 | 0.28 | 0.121* | -0.00014 | 0.000129*** | 5500 |
| 24 h | 0.05mM Pb2+ vs 0.1 mM Pb2+ | 0.33 | 0.097 | 0.18*** | 0.83** | 0 | -11.2*** | -1191*** | -1.2 | -6** | -0.96*** | -0.519*** | -0.00009 | 0.00012*** | -5672 |
| 24 h | 0.05mM Pb2+ vs. 0.25 mM Pb2+ | 0.72 | 0.126 | 0.91*** | 0.83** | -8 | -21.7*** | -1577*** | -1.4 | -9*** | -1.5*** | 0.108 | -0.00009 | -0.000056 | -21936*** |
| 24 h | 0.05mM Pb2+ vs. 0.325 mM Pb2+ | 1.58* | 0.192** | 0.67*** | 3.43*** | -58*** | -4.1* | -1516*** | -17.4*** | -12*** | -2.14*** | -0.492*** | -0.00047*** | -0.000041 | -32635*** |
| 24 h | 0.0625mM Pb2+vs 0.1 mM Pb2+ | 0.01 | 0.04 | 0.19*** | 1.33*** | 5 | -14.2*** | -990*** | 9.7*** | -6** | -1.24*** | -0.64*** | 0.00005 | -0.00001 | -11172* |
| 24 h | 0.0625mM vs. 0.25 mM Pb2+ | 0.39 | 0.07 | 0.92*** | 1.33*** | -2 | -24.7*** | -1376*** | 9.6** | -9*** | -1.77*** | -0.013 | 0.00005 | -0.000186*** | -27436*** |
| 24 h | 0.0625mM vs. 0.325 mM Pb2+ | 1.26 | 0.135* | 0.68*** | 3.93*** | -52*** | -7.1*** | -1316*** | -6.4* | -12*** | -2.42*** | -0.612*** | -0.00033** | -0.00017*** | -38135*** |

| | | | | | | | | | | | | | | | |
|------|--|--------|----------|----------|----------|--------|----------|----------|-----------|--------|----------|-----------|-------------|--------------|-----------|
| 24 h | 0.1 mM Pb2+ vs 0.25 mM Pb2+ | 0.38 | 0.029 | 0.73*** | 0 | -7 | -10.5*** | -386*** | -0.2 | -3 | -0.54 | 0.627*** | 0 | -0.000176*** | -16264*** |
| 24 h | 0.1 mM Pb2+ vs 0.325 mM Pb2+ | 1.25 | 0.095 | 0.49*** | 2.6*** | -57*** | 7.1*** | -325*** | -16.1*** | -6** | -1.18*** | 0.028 | -0.00038** | -0.00016*** | -26963*** |
| 24 h | 0.25 mM Pb2+vs 0.325 mM Pb2+ | 0.87 | 0.066 | -0.24*** | 2.6*** | -50*** | 17.6*** | 61*** | -16*** | -3 | -0.64* | -0.6*** | -0.00038** | 0.000016 | -10699* |
| 24 h | control +aphids vs. 0.025mM Pb2+ +aphids | 0.1 | 0.003 | 0.1* | -3*** | -89*** | -0.3 | 185*** | 86.1*** | -13*** | 0.4 | -0.038 | -0.00037** | 0.000005 | -2900 |
| 24 h | control +aphids vs. 0.05mM Pb2+ +aphids | -0.77 | -0.049 | 0.19*** | 1.3*** | -47*** | -6.3*** | -137*** | 29.5*** | -8*** | 0.13 | -0.068 | -0.00045*** | -0.000088** | -36481*** |
| 24 h | control +aphids vs. 0.0625mM Pb2+ +aphids | -0.19 | -0.015 | 0.32*** | 0.5 | -66*** | 1.3 | 67*** | 79.1*** | 3 | -0.32 | -0.096 | -0.00031* | -0.000218*** | -17897*** |
| 24 h | control +aphids vs. 0.1 mM Pb2+ +aphids | 0.06 | 0.065 | 0.48*** | -3.1*** | -22 | -7.9*** | -245*** | 75.2*** | -22*** | 0 | -0.21*** | -0.00074*** | -0.000435*** | -2600 |
| 24 h | control +aphids vs. 0.25 mM Pb2+ +aphids | 0.8 | 0.076 | 0.7*** | -6.7*** | -19 | -4.5* | -379*** | 128.1*** | -23*** | -1.71*** | -0.382*** | -0.00071*** | -0.000478*** | -15297*** |
| 24 h | control +aphids vs. 0.325 mM Pb2+ +aphids | 1.7* | 0.142* | 1.05*** | -5.6*** | -28* | -21.6*** | -1173*** | 13.5*** | -24*** | -2.89*** | -0.731*** | -0.00104*** | -0.000247*** | -45053*** |
| 24 h | 0.025mM Pb2+ +aphids vs 0.05mM Pb2+ +aphids | -0.86 | -0.052 | 0.09* | 4.3*** | 42*** | -6.1*** | -322*** | -56.6*** | 5* | -0.26 | -0.03 | -0.00008 | -0.000093** | -33580*** |
| 24 h | 0.025mM Pb2+ +aphids vs 0.0625mM Pb2+ +aphids | -0.29 | -0.019 | 0.22*** | 3.5*** | 24* | 1.6 | -118*** | -7.1* | 16*** | -0.71* | -0.057 | 0.00007 | -0.000223*** | -14996*** |
| 24 h | 0.025mM Pb2+ +aphids vs 0.1 mM Pb2+ +aphids | -0.03 | 0.062 | 0.38*** | -0.1 | 67*** | -7.7*** | -430*** | -10.9*** | -9*** | -0.39 | -0.171** | -0.00036** | -0.00044*** | 301 |
| 24 h | 0.025mM Pb2+ +aphids vs. 0.25 mM Pb2+ +aphids | 0.7 | 0.073 | 0.6*** | -3.7*** | 70*** | -4.3* | -564*** | 42*** | -10*** | -2.1** | -0.343*** | -0.00033** | -0.000483*** | -12397** |
| 24 h | 0.025mM Pb2+ +aphids vs. 0.325 mM Pb2+ +aphids | 1.6* | 0.139* | 0.95*** | -2.6*** | 61*** | -21.4*** | -1358*** | -72.6*** | -11*** | -3.29*** | -0.692*** | -0.00066*** | -0.000251*** | -42153*** |
| 24 h | 0.05mM Pb2+ +aphids vs 0.0625mM Pb2+ +aphids | 0.57 | 0.034 | 0.13*** | -0.8** | -18 | 7.7*** | 204*** | 49.5*** | 11*** | -0.45 | -0.028 | 0.00014 | -0.00013*** | 18584*** |
| 24 h | 0.05mM Pb2+ +aphids vs 0.1 mM Pb2+ +aphids | 0.83 | 0.114 | 0.29*** | -4.4*** | 26* | -1.6 | -108*** | 45.7*** | -14*** | -0.13 | -0.142* | -0.00029* | -0.000347*** | 33881*** |
| 24 h | 0.05mM Pb2+ +aphids vs. 0.25 mM Pb2+ +aphids | 1.56* | 0.125 | 0.51*** | -8*** | 28* | 1.8 | -242*** | 98.6*** | -15*** | -1.84*** | -0.314*** | -0.00026* | -0.00039*** | 21184*** |
| 24 h | 0.05mM Pb2+ +aphids vs. 0.325 mM Pb2+ +aphids | 2.46** | 0.191** | 0.86*** | -6.9*** | 19 | -15.3*** | -1035*** | -16*** | -16*** | -3.03*** | -0.663*** | -0.00059*** | -0.000158*** | -8572 |
| 24 h | 0.0625mM Pb2+ +aphids vs 0.1 mM Pb2+ +aphids | 0.26 | 0.08 | 0.16*** | -3.6*** | 44*** | -9.3*** | -312*** | -3.8 | -25*** | 0.32 | -0.114 | -0.00043*** | -0.000218*** | 15297*** |
| 24 h | 0.0625mM +aphids vs. 0.25 mM Pb2+ +aphids | 0.99 | 0.091 | 0.38*** | -7.2*** | 46*** | -5.9*** | -446*** | 49.1*** | -26*** | -1.39*** | -0.286*** | -0.0004*** | -0.000261*** | 2600 |
| 24 h | 0.0625mM +aphids vs. 0.325 mM Pb2+ +aphids | 1.89* | 0.157* | 0.73*** | -6.1*** | 37*** | -23*** | -1240*** | -65.6*** | -27*** | -2.58*** | -0.635*** | -0.00073*** | -0.000029 | -27156*** |
| 24 h | 0.1 mM Pb2+ +aphids vs 0.25 mM Pb2+ +aphids | 0.73 | 0.011 | 0.22*** | -3.6*** | 2 | 3.4 | -134*** | 52.9*** | -1 | -1.71*** | -0.172** | 0.00003 | -0.000043 | -12697** |
| 24 h | 0.1 mM Pb2+ +aphids vs 0.325 mM Pb2+ +aphids | 1.63* | 0.077 | 0.57*** | -2.5*** | -7 | -13.7*** | -927*** | -61.7*** | -2 | -2.9*** | -0.521*** | -0.0003* | 0.000189*** | -42453*** |
| 24 h | 0.25 mM Pb2+ +aphids vs 0.325 mM Pb2+ +aphids | 0.9 | 0.066 | 0.35*** | 1.1*** | -9 | -17.1*** | -794*** | -114.6*** | -1 | -1.19*** | -0.349*** | -0.00033** | 0.000232*** | -29756*** |
| 24 h | 0.025mM Pb2+vs 0.05mM Pb2+ +aphids | -0.4 | 0.015 | 0.563*** | 1.73*** | 21 | -8.2*** | -149*** | -126.7*** | -25*** | -0.21 | -0.053 | 0.00044*** | 0.000092** | -19873*** |
| 24 h | 0.025mM Pb2+vs 0.0625mM Pb2++aphids | 0.17 | 0.049 | 0.693*** | 0.93** | 3 | -0.5 | 55*** | -77.2*** | -14*** | -0.66* | -0.081 | 0.00058*** | -0.000037 | -1289 |
| 24 h | 0.025mM Pb2+vs 0.1 mM Pb2++aphids | 0.43 | 0.129* | 0.853*** | -2.67*** | 47*** | -9.8*** | -257*** | -81*** | -39*** | -0.34 | -0.195** | 0.00015 | -0.000255*** | 14008** |
| 24 h | 0.025mM Pb2+ vs. 0.25 mM Pb2++aphids | 1.16 | 0.14* | 1.073*** | -6.27*** | 49*** | -6.4*** | -391*** | -28.1*** | -40*** | -2.05*** | -0.367*** | 0.00018 | -0.000298*** | 1311 |
| 24 h | 0.025mM Pb2+ vs. 0.325 mM Pb2++aphids | 2.06** | 0.206** | 1.423*** | -5.17*** | 40*** | -23.5*** | -1184*** | -142.8*** | -41*** | -3.24*** | -0.716*** | -0.00015 | -0.000066* | -28446*** |
| 24 h | 0.05mM Pb2+vs 0.0625mM Pb2+ +aphids | 0.41 | 0.076 | 0.23*** | -1.17*** | -45*** | 3.1 | -75*** | -114.5*** | -3 | 0.02 | 0.088 | 0.00057*** | 0.000062 | -8014 |
| 24 h | 0.05mM Pb2+ vs 0.1 mM Pb2++aphids | 0.67 | 0.157* | 0.39*** | -4.77*** | -2 | -6.1*** | -387*** | -118.3*** | -28*** | 0.34 | -0.026 | 0.00014 | -0.000155*** | 7283 |
| 24 h | 0.05mM Pb2+ vs. 0.25 mM Pb2++aphids | 1.4 | 0.167* | 0.61*** | -8.37*** | 1 | -2.7 | -521*** | -65.4*** | -29*** | -1.37*** | -0.197*** | 0.00017 | -0.000198*** | -5414 |
| 24 h | 0.05mM Pb2+ vs. 0.325 mM Pb2++aphids | 2.3** | 0.234*** | 0.96*** | -7.27*** | -8 | -19.8*** | -1315*** | -180*** | -30*** | -2.56*** | -0.546*** | -0.00016 | 0.000034 | -35170*** |
| 24 h | 0.0625mM Pb2+vs 0.1 mM Pb2++aphids | 0.34 | 0.1 | 0.4*** | -4.27*** | 4 | -9.1*** | -187*** | -107.3*** | -28*** | 0.06 | -0.146* | 0.00028* | -0.000285*** | 1783 |
| 24 h | 0.0625mM vs. 0.25 mM Pb2++aphids | 1.07 | 0.111 | 0.62*** | -7.87*** | 6 | -5.8** | -321*** | -54.4*** | -29*** | -1.65*** | -0.318*** | 0.00031* | -0.000328*** | -10914* |
| 24 h | 0.0625mM vs. 0.325 mM Pb2++aphids | 1.97* | 0.177** | 0.97*** | -6.77*** | -3 | -22.8*** | -1115*** | -169.1*** | -30*** | -2.84*** | -0.667*** | -0.00002 | -0.000096** | -40670*** |
| 24 h | 0.1 mM Pb2+ vs 0.25 mM Pb2+ +aphids | 1.07 | 0.07 | 0.43*** | -9.2*** | 1 | 8.4*** | 670*** | -64.2*** | -23*** | -0.41 | 0.322*** | 0.00026* | -0.000318*** | 258 |
| 24 h | 0.1 mM Pb2+ vs 0.325 mM Pb2++aphids | 1.97* | 0.137* | 0.78*** | -8.1*** | -8 | -8.6*** | -124*** | -178.8*** | -24*** | -1.6*** | -0.027 | -0.00007 | -0.000086** | -29498*** |
| 24 h | 0.25 mM Pb2+vs 0.325 mM Pb2++aphids | 1.58* | 0.107 | 0.05 | -8.1*** | -1 | 1.9 | 262*** | -178.6*** | -21*** | -1.06*** | -0.654*** | -0.00007 | 0.00009** | -13234** |
| 24 h | 0.025mM Pb2++ aphids vs 0.05mM Pb2+ +aphids | -0.86 | -0.052 | 0.09* | 4.3*** | 42*** | -6.1*** | -322*** | -56.6*** | 5* | -0.26 | -0.03 | -0.00008 | -0.000093** | -33580*** |
| 24 h | 0.025mM Pb2+ + aphids vs 0.0625mM Pb2++aphids | -0.29 | -0.019 | 0.22*** | 3.5*** | 24* | 1.6 | -118*** | -7.1* | 16*** | -0.71* | -0.057 | 0.00007 | -0.000223*** | -14996*** |
| 24 h | 0.025mM Pb2+ + aphids vs 0.1 mM Pb2++aphids | -0.03 | 0.062 | 0.38*** | -0.1 | 67*** | -7.7*** | -430*** | -10.9*** | -9*** | -0.39 | -0.171** | -0.00036** | -0.00044*** | 301 |
| 24 h | 0.025mM Pb2+ + aphids vs. 0.25 mM Pb2++aphids | 0.7 | 0.073 | 0.6*** | -3.7*** | 70*** | -4.3* | -564*** | 42*** | -10*** | -2.1*** | -0.343*** | -0.00033** | -0.000483*** | -12397** |
| 24 h | 0.025mM Pb2+ + aphids vs. 0.325 mM Pb2++aphids | 1.6* | 0.139* | 0.95*** | -2.6*** | 61*** | -21.4*** | -1358*** | -72.6*** | -11*** | -3.29*** | -0.692*** | -0.00066*** | -0.000251*** | -42153*** |

| | | | | | | | | | | | | | | | |
|------|--|--------|----------|----------|----------|---------|----------|----------|-----------|---------|----------|-----------|-------------|--------------|-----------|
| 24 h | 0.05 mM Pb2+ + aphids vs 0.0625mM Pb2++ aphids | 0.57 | 0.034 | 0.13*** | -0.8** | -18 | 7.7*** | 204*** | 49.5*** | 11*** | -0.45 | -0.028 | 0.00014 | -0.00013*** | 18584*** |
| 24 h | 0.05mM Pb2+ + aphids vs 0.1 mM Pb2++ aphids | 0.83 | 0.114 | 0.29*** | -4.4*** | 26* | -1.6 | -108*** | 45.7*** | -14*** | -0.13 | -0.142* | -0.00029* | -0.000347*** | 33881*** |
| 24 h | 0.05mM Pb2+ + aphids vs. 0.25 mM Pb2++ aphids | 1.56* | 0.125 | 0.51*** | -8*** | 28* | 1.8 | -242*** | 98.6*** | -15*** | -1.84*** | -0.314*** | -0.00026* | -0.00039*** | 21184*** |
| 24 h | 0.05mM Pb2++ aphids vs. 0.325 mM Pb2++ aphids | 2.46** | 0.191** | 0.86*** | -6.9*** | 19 | -15.3*** | -1035*** | -16*** | -16*** | -3.03*** | -0.663*** | -0.00059*** | -0.000158*** | -8572 |
| 24 h | 0.0625mM Pb2++aphids vs 0.1 mM Pb2++aphids | 0.26 | 0.08 | 0.16*** | -3.6*** | 44*** | -9.3*** | -312*** | -3.8 | -25*** | 0.32 | -0.114 | -0.00043*** | -0.000218*** | 15297*** |
| 24 h | 0.0625mM +aphids vs. 0.25 mM Pb2++aphids | 0.99 | 0.091 | 0.38*** | -7.2*** | 46*** | -5.9*** | -446*** | 49.1*** | -26*** | -1.39*** | -0.286*** | -0.0004*** | -0.000261*** | 2600 |
| 24 h | 0.0625mM +aphids vs. 0.325 mM Pb2++aphids | 1.89* | 0.157* | 0.73*** | -6.1*** | 37*** | -23*** | -1240*** | -65.6*** | -27*** | -2.58*** | -0.635*** | -0.00073*** | -0.000029 | -27156*** |
| 24 h | 0.1 mM Pb2+ + aphids vs 0.25 mM Pb2++ aphids | 0.73 | 0.011 | 0.22*** | -3.6*** | 2 | 3.4 | -134*** | 52.9*** | -1 | -1.71*** | -0.172** | 0.00003 | -0.000043 | -12697** |
| 24 h | 0.1 mM Pb2+ + aphids vs 0.325 mM Pb2++ aphids | 1.63* | 0.077 | 0.57*** | -2.5*** | -7 | -13.7*** | -927*** | -61.7*** | -2 | -2.9*** | -0.521*** | -0.0003* | 0.000189*** | -42453*** |
| 24 h | 0.25 mM Pb2+ + aphids vs 0.325 mM Pb2++ aphids | 0.9 | 0.066 | 0.35*** | 1.1*** | -9 | -17.1*** | -794*** | -114.6*** | -1 | -1.19*** | -0.349*** | -0.00033** | 0.000232*** | -29756*** |
| 48 h | control vs. 0.025mM Pb2+ | -0.41 | -0.04 | 0.34*** | -0.2 | -81*** | -1.1 | 41* | -7.6* | 0 | 0.6* | 0.094 | -0.00034** | -0.000224*** | -12719** |
| 48 h | control vs. 0.05mM Pb2+ | -0.87 | -0.079 | 0.23*** | -1.9*** | -17 | 4.7** | -138*** | -4.1 | -1 | 1.42*** | 0.3*** | -0.00036** | -0.000352*** | -12568** |
| 48 h | control vs. 0.0625mM Pb2+ | -0.93 | -0.034 | 0.56*** | 0.97*** | 79*** | -11.3*** | -364*** | -7.1* | -3.9* | 1.11*** | 0.211*** | -0.00072*** | -0.000338*** | -7606 |
| 48 h | control vs. 0.1 mM Pb2+ | -0.06 | 0.047 | 0.16*** | 0.87** | 111*** | 7.6*** | -1602*** | -3.4 | -11*** | -2.06*** | -0.831*** | -0.00076*** | -0.000213*** | -10484* |
| 48 h | control vs. 0.25 mM Pb2+ | 0.15 | 0.109 | 0.8*** | 2.37*** | 101*** | 5.3** | -1013*** | -5.8* | -10*** | -2.42*** | -0.056 | -0.00036** | -0.000096** | -10850* |
| 48 h | control vs. 0.325 mM Pb2+ | 1.59* | 0.228*** | 0.18*** | -0.23 | -1 | -5** | -1147*** | -14.6*** | -11*** | -2.27*** | 0.091 | -0.0009*** | 0.000031 | -43141*** |
| 48 h | 0.025mM Pb2+vs 0.05mM Pb2+ | -0.46 | -0.04 | -0.11** | -1.7*** | 63*** | 5.8** | -179*** | 3.5 | -1 | 0.82** | 0.205*** | -0.00002 | -0.000128*** | 150 |
| 48 h | 0.025mM Pb2+vs 0.0625mM Pb2+ | -0.51 | 0.006 | 0.22*** | 1.17*** | 159*** | -10.2*** | -405*** | 0.5 | -3.9* | 0.51 | 0.117 | -0.00038** | -0.000114*** | 5113 |
| 48 h | 0.025mM Pb2+vs 0.1 mM Pb2+ | 0.36 | 0.087 | -0.18*** | 1.07*** | 191*** | 8.7*** | -1643*** | 4.2 | -11*** | -2.66*** | -0.925*** | -0.00042*** | 0.000011 | 2234 |
| 48 h | 0.025mM Pb2+ vs. 0.25 mM Pb2+ | 0.56 | 0.149* | 0.46*** | 2.57*** | 182*** | 6.4*** | -1055*** | 1.8 | -10*** | -3.02*** | -0.15* | -0.00002 | 0.000128*** | 1869 |
| 48 h | 0.025mM Pb2+ vs. 0.325 mM Pb2+ | 2* | 0.268*** | -0.16*** | -0.03 | 79*** | -3.9* | -1189*** | -7* | -11*** | -2.87*** | -0.003 | -0.00056*** | 0.000255*** | -30422*** |
| 48 h | 0.05mM Pb2+vs 0.0625mM Pb2+ | -0.06 | 0.045 | 0.33*** | 2.87*** | 96*** | -16*** | -226*** | -3 | -2.9 | -0.32 | -0.089 | -0.00036** | 0.000014 | 4963 |
| 48 h | 0.05mM Pb2+ vs 0.1 mM Pb2+ | 0.81 | 0.126 | -0.07 | 2.77*** | 128*** | 2.9 | -1464*** | 0.7 | -10*** | -3.48*** | -1.131*** | -0.0004** | 0.000138*** | 2084 |
| 48 h | 0.05mM Pb2+ vs. 0.25 mM Pb2+ | 1.02 | 0.188** | 0.57*** | 4.27*** | 119*** | 0.6 | -875*** | -1.7 | -9*** | -3.84*** | -0.355*** | 0 | 0.000256*** | 1719 |
| 48 h | 0.05mM Pb2+ vs. 0.325 mM Pb2+ | 2.46** | 0.308*** | -0.05 | 1.67*** | 16 | -9.7*** | -1009*** | -10.5*** | -10*** | -3.7*** | -0.209*** | -0.00054*** | 0.000383*** | -30572** |
| 48 h | 0.0625mM Pb2+vs 0.1 mM Pb2+ | 0.87 | 0.081 | -0.4*** | -0.1 | 32** | 18.9*** | -1238*** | 3.7 | -7.1*** | -3.17*** | -1.042*** | -0.00004 | 0.000125*** | -2879 |
| 48 h | 0.0625mM vs. 0.25 mM Pb2+ | 1.08 | 0.143* | 0.24*** | 1.4*** | 23* | 16.6*** | -649*** | 1.3 | -6.1** | -3.53*** | -0.266*** | 0.00035** | 0.000242*** | -3244 |
| 48 h | 0.0625mM vs. 0.325 mM Pb2+ | 2.51** | 0.262*** | -0.38*** | -1.2*** | -80*** | 6.3*** | -783*** | -7.5* | -7.1*** | -3.38*** | -0.12* | -0.00018 | 0.000369*** | -35535*** |
| 48 h | 0.1 mM Pb2+ vs 0.25 mM Pb2+ | 0.2 | 0.062 | 0.64*** | 1.5*** | -9 | -2.3 | 589*** | -2.4 | 1 | -0.36 | 0.776*** | 0.00039** | 0.000118*** | -365 |
| 48 h | 0.1 mM Pb2+ vs 0.325 mM Pb2+ | 1.64* | 0.181** | 0.02 | -1.1*** | -112*** | -12.6*** | 455*** | -11.2*** | 0 | -0.21 | 0.922*** | -0.00014 | 0.000244*** | -32656*** |
| 48 h | 0.25 mM Pb2+vs 0.325 mM Pb2+ | 1.44 | 0.119 | -0.62*** | -2.6*** | -103*** | -10.3*** | -134*** | -8.8** | -1 | 0.15 | 0.147* | -0.00053*** | 0.000127*** | -32291*** |
| 48 h | control +aphids vs. 0.025mM Pb2+ +aphids | -0.43 | -0.013 | 0.34*** | -1.5*** | -4 | -26.2*** | -222*** | -57.4*** | -0.2 | -0.32 | -0.031 | 0.00029* | -0.000013 | -602 |
| 48 h | control +aphids vs. 0.05mM Pb2+ +aphids | -0.61 | -0.011 | 0.47*** | -6.9*** | 0 | -21.3*** | -46** | -89.6*** | 1.3 | -0.06 | 0.081 | 0.00023 | -0.000095** | -7391 |
| 48 h | control +aphids vs. 0.0625mM Pb2+ +aphids | -0.92 | -0.008 | -0.57*** | -8.1*** | -1 | -3.6* | 172*** | -24.6*** | -4.7* | -0.41 | -0.105 | 0.00016 | -0.00008* | -12611** |
| 48 h | control +aphids vs. 0.1 mM Pb2+ +aphids | -0.19 | 0.047 | -0.47*** | -3.23*** | -2 | -2.4 | -250*** | -44.2*** | -8.2*** | -0.08 | -0.026 | 0.00032* | 0.000098** | -1332 |
| 48 h | control +aphids vs. 0.25 mM Pb2+ +aphids | -0.19 | 0.139* | -0.25*** | -0.53 | -5 | -1.9 | -610*** | -90.1*** | 0.3 | -1.77*** | -0.215*** | 0.00039** | 0.000065 | -10592* |
| 48 h | control +aphids vs. 0.325 mM Pb2+ +aphids | 1.28 | 0.217*** | -0.09* | -3.93*** | -12 | -34.7*** | -145*** | -155.6*** | -2.7 | -3.34*** | -0.501*** | 0.0005*** | -0.000114*** | -32936*** |
| 48 h | 0.025mM Pb2+ +aphids vs 0.05mM Pb2+ +aphids | -0.17 | 0.003 | 0.13*** | -5.4*** | 4 | 4.9** | 176*** | -32.2*** | 1.4 | 0.26 | 0.112 | -0.00006 | -0.000082* | -6789 |
| 48 h | 0.025mM Pb2+ +aphids vs 0.0625mM Pb2+ +aphids | -0.48 | 0.005 | -0.91*** | -6.6*** | 3 | 22.6*** | 394*** | 32.8*** | -4.6* | -0.09 | -0.074 | -0.00012 | -0.000067* | -12010** |
| 48 h | 0.025mM Pb2+ +aphids vs 0.1 mM Pb2+ +aphids | 0.24 | 0.06 | -0.81*** | -1.73*** | 1 | 23.8*** | -28 | 13.2*** | -8.1*** | 0.23 | 0.005 | 0.00003 | 0.000111*** | -730 |
| 48 h | 0.025mM Pb2+ +aphids vs. 0.25 mM Pb2+ +aphids | 0.25 | 0.152* | -0.59*** | 0.97*** | -1 | 24.3*** | -388*** | -32.7*** | 0.4 | -1.46*** | -0.184** | 0.00011 | 0.000077* | -9990* |
| 48 h | 0.025mM Pb2+ +aphids vs. 0.325 mM Pb2+ +aphids | 1.72* | 0.231*** | -0.43*** | -2.43*** | -8 | -8.5*** | 77*** | -98.2*** | -2.6 | -3.02*** | -0.469*** | 0.00021 | -0.000101** | -32334*** |
| 48 h | 0.05mM Pb2+ +aphids vs 0.0625mM Pb2+ +aphids | -0.31 | 0.003 | -1.04*** | -1.2*** | -2 | 17.8*** | 218*** | 65*** | -6** | -0.35 | -0.185** | -0.00006 | 0.000015 | -5221 |
| 48 h | 0.05mM Pb2+ +aphids vs 0.1 mM Pb2+ +aphids | 0.42 | 0.058 | -0.94*** | 3.67*** | -3 | 18.9*** | -204*** | 45.4*** | -9.5*** | -0.02 | -0.106 | 0.00009 | 0.000193*** | 6059 |

| | | | | | | | | | | | | | | | |
|------|--|---------|----------|----------|----------|---------|----------|----------|-----------|----------|----------|-----------|------------|--------------|-----------|
| 48 h | 0.05mM Pb2+ +aphids vs. 0.25 mM Pb2+ +aphids | 0.42 | 0.15* | -0.72*** | 6.37*** | -5 | 19.4*** | -564*** | -0.5 | -1 | -1.71*** | -0.296*** | 0.00017 | 0.000159*** | -3201 |
| 48 h | 0.05mM Pb2+ +aphids vs. 0.325 mM Pb2+ +aphids | 1.89* | 0.228*** | -0.56*** | 2.97*** | -12 | -13.4*** | -99*** | -66*** | -4* | -3.28*** | -0.581*** | 0.00027* | -0.000019 | -25545*** |
| 48 h | 0.0625mM Pb2+ +aphids vs 0.1 mM Pb2+ +aphids | 0.72 | 0.055 | 0.1* | 4.87*** | -1 | 1.1 | -422*** | -19.6*** | -3.5 | 0.32 | 0.079 | 0.00015 | 0.000178*** | 11279* |
| 48 h | 0.0625mM +aphids vs. 0.25 mM Pb2+ +aphids | 0.73 | 0.147* | 0.32*** | 7.57*** | -4 | 1.7 | -782*** | -65.5*** | 5* | -1.37*** | -0.11 | 0.00023 | 0.000144*** | 2020 |
| 48 h | 0.0625mM +aphids vs. 0.325 mM Pb2+ +aphids | 2.2** | 0.225*** | 0.48*** | 4.17*** | -11 | -31.1*** | -317*** | -131*** | 2 | -2.93*** | -0.396*** | 0.00033** | -0.000034 | -20324*** |
| 48 h | 0.1 mM Pb2+ +aphids vs 0.25 mM Pb2+ +aphids | 0.01 | 0.092 | 0.22*** | 2.7*** | -2 | 0.5 | -360*** | -45.9*** | 8.5*** | -1.69*** | -0.189** | 0.00008 | -0.000034 | -9260* |
| 48 h | 0.1 mM Pb2+ +aphids vs 0.325 mM Pb2+ +aphids | 1.48 | 0.17** | 0.38*** | -0.7* | -10 | -32.3*** | 105*** | -111.4*** | 5.5** | -3.25*** | -0.475*** | 0.00018 | -0.000212*** | -31604*** |
| 48 h | 0.25 mM Pb2+ +aphids vs 0.325 mM Pb2+ +aphids | 1.47 | 0.078 | 0.16*** | -3.4*** | -7 | -32.8*** | 465*** | -65.5*** | -3 | -1.56*** | -0.286*** | 0.0001 | -0.000178*** | -22344*** |
| 48 h | 0.025mM Pb2+vs 0.05mM Pb2+ +aphids | 0.18 | 0.037 | 0.53*** | -3.93*** | 223*** | -15.8*** | -680*** | -241.6*** | -11*** | 0.48 | 0.261*** | 0.00005 | -0.000055 | 5522 |
| 48 h | 0.025mM Pb2+vs 0.0625mM Pb2++aphids | -0.12 | 0.039 | -0.51*** | -5.13*** | 221*** | 1.9 | -462*** | -176.6*** | -17*** | 0.14 | 0.075 | -0.00001 | -0.00004 | 301 |
| 48 h | 0.025mM Pb2+vs 0.1 mM Pb2++aphids | 0.6 | 0.094 | -0.41*** | -0.27 | 220*** | 3.1 | -884*** | -196.3*** | -20.5*** | 0.46 | 0.154* | 0.00014 | 0.000138*** | 11580** |
| 48 h | 0.025mM Pb2+ vs. 0.25 mM Pb2++aphids | 0.6 | 0.186** | -0.19*** | 2.43*** | 217*** | 3.6* | -1244*** | -242.1*** | -12*** | -1.23*** | -0.035 | 0.00022 | 0.000104** | 2320 |
| 48 h | 0.025mM Pb2+ vs. 0.325 mM Pb2++aphids | 2.08** | 0.265*** | -0.03 | -0.97*** | 210*** | -29.2*** | -779*** | -307.7*** | -15*** | -2.79*** | -0.32*** | 0.00032** | -0.000074* | -20024*** |
| 48 h | 0.05mM Pb2+vs 0.0625mM Pb2+ +aphids | 0.33 | 0.079 | -0.4*** | -3.43*** | 158*** | -3.9* | -283*** | -180.1*** | -16*** | -0.69* | -0.13* | 0.00001 | 0.000088** | 150 |
| 48 h | 0.05mM Pb2+ vs 0.1 mM Pb2++aphids | 1.05 | 0.134* | -0.3*** | 1.43*** | 157*** | -2.8 | -704*** | -199.8*** | -19.5*** | -0.36 | -0.051 | 0.00016 | 0.000266*** | 11430* |
| 48 h | 0.05mM Pb2+ vs. 0.25 mM Pb2++aphids | 1.06 | 0.226*** | -0.32 | 4.13*** | 154*** | -2.2 | -1065*** | -245.6*** | -11*** | -2.05*** | -0.24*** | 0.00024 | 0.000232*** | 2170 |
| 48 h | 0.05mM Pb2+ vs. 0.325 mM Pb2++aphids | 2.53** | 0.304*** | 0.08*4 | 0.73* | 147*** | -35*** | -599*** | -311.2*** | -14*** | -3.62*** | -0.526*** | 0.00034** | 0.000053 | -20174*** |
| 48 h | 0.0625mM Pb2+vs 0.1 mM Pb2++aphids | 1.11 | 0.089 | -0.63*** | -1.43*** | 60*** | 13.3*** | -479*** | -196.8*** | -16.6*** | -0.05 | 0.038 | 0.00052*** | 0.000252*** | 6467 |
| 48 h | 0.0625mM vs. 0.25 mM Pb2++aphids | 1.12 | 0.181** | -0.41*** | 1.27*** | 58*** | 13.8*** | -839*** | -242.6*** | -8.1*** | -1.74*** | -0.152* | 0.00059*** | 0.000218*** | -2793 |
| 48 h | 0.0625mM vs. 0.325 mM Pb2++aphids | 2.59*** | 0.259*** | -0.25*** | -2.13*** | 51*** | -19*** | -374*** | -308.2*** | -11.1*** | -3.3*** | -0.437*** | 0.0007*** | 0.00004 | -25137*** |
| 48 h | 0.1 mM Pb2+ vs 0.25 mM Pb2+ +aphids | 0.24 | 0.1 | -0.01 | 1.37*** | 26* | -5.1** | 399*** | -246.3*** | -1 | 1.43*** | 0.89*** | 0.00063*** | 0.000093** | 86 |
| 48 h | 0.1 mM Pb2+ vs 0.325 mM Pb2++aphids | 1.72* | 0.178** | 0.15*** | -2.03*** | 19 | -37.9*** | 864*** | -311.9*** | -4* | -0.13 | 0.605*** | 0.00074*** | -0.000085* | -22258*** |
| 48 h | 0.25 mM Pb2+vs 0.325 mM Pb2++aphids | 1.51 | 0.116 | -0.49*** | -3.53*** | 28* | -35.6*** | 276*** | -309.5*** | -5* | 0.23 | -0.171** | 0.00034** | -0.000203*** | -21893*** |
| 48 h | 0.025mM Pb2++ aphids vs 0.05mM Pb2+ +aphids | -0.17 | 0.003 | 0.13*** | -5.4*** | 4 | 4.9** | 176*** | -32.2*** | 1.4 | 0.26 | 0.112 | -0.00006 | -0.000082* | -6789 |
| 48 h | 0.025mM Pb2+ + aphids vs 0.0625mM Pb2++aphids | -0.48 | 0.005 | -0.91*** | -6.6*** | 3 | 22.6*** | 394*** | 32.8*** | -4.6* | -0.09 | -0.074 | -0.00012 | -0.000067* | -12010** |
| 48 h | 0.025mM Pb2+ + aphids vs 0.1 mM Pb2++aphids | 0.24 | 0.06 | -0.81*** | -1.73*** | 1 | 23.8*** | -28 | 13.2*** | -8.1*** | 0.23 | 0.005 | 0.00003 | 0.000111*** | -730 |
| 48 h | 0.025mM Pb2+ + aphids vs. 0.25 mM Pb2++aphids | 0.25 | 0.152* | -0.59*** | 0.97*** | -1 | 24.3*** | -388*** | -32.7*** | 0.4 | -1.46*** | -0.184** | 0.00011 | 0.000077* | -9990* |
| 48 h | 0.025mM Pb2+ + aphids vs. 0.325 mM Pb2++aphids | 1.72* | 0.231*** | -0.43*** | -2.43*** | -8 | -8.5*** | 77*** | -98.2*** | -2.6 | -3.02*** | -0.469*** | 0.00021 | -0.000101** | -32334*** |
| 48 h | 0.05 mM Pb2+ + aphids vs 0.0625mM Pb2++ aphids | -0.31 | 0.003 | -1.04*** | -1.2*** | -2 | 17.8*** | 218*** | 65*** | -6** | -0.35 | -0.185** | -0.00006 | 0.000015 | -5221 |
| 48 h | 0.05mM Pb2+ + aphids vs 0.1 mM Pb2+ + aphids | 0.42 | 0.058 | -0.94*** | 3.67*** | -3 | 18.9*** | -204*** | 45.4*** | -9.5*** | -0.02 | -0.106 | 0.00009 | 0.000193*** | 6059 |
| 48 h | 0.05mM Pb2+ + aphids vs. 0.25 mM Pb2++ aphids | 0.42 | 0.15* | -0.72*** | 6.37*** | -5 | 19.4*** | -564*** | -0.5 | -1 | -1.71*** | -0.296*** | 0.00017 | 0.000159*** | -3201 |
| 48 h | 0.05mM Pb2++ aphids vs. 0.325 mM Pb2++ aphids | 1.89* | 0.228*** | -0.56*** | 2.97*** | -12 | -13.4*** | -99*** | -66*** | -4* | -3.28*** | -0.581*** | 0.00027* | -0.000019 | -25545*** |
| 48 h | 0.0625mM Pb2++aphids vs 0.1 mM Pb2++aphids | 0.72 | 0.055 | 0.1* | 4.87*** | -1 | 1.1 | -422*** | -19.6*** | -3.5 | 0.32 | 0.079 | 0.00015 | 0.000178*** | 11279* |
| 48 h | 0.0625mM +aphids vs. 0.25 mM Pb2++aphids | 0.73 | 0.147* | 0.32*** | 7.57*** | -4 | 1.7 | -782*** | -65.5*** | 5* | -1.37*** | -0.11 | 0.00023 | 0.000144*** | 2020 |
| 48 h | 0.0625mM +aphids vs. 0.325 mM Pb2++aphids | 2.2** | 0.225*** | 0.48*** | 4.17*** | -11 | -31.1*** | -317*** | -131*** | 2 | -2.93*** | -0.396*** | 0.00033** | -0.000034 | -20324*** |
| 48 h | 0.1 mM Pb2+ + aphids vs 0.25 mM Pb2+ +aphids | 0.01 | 0.092 | 0.22*** | 2.7*** | -2 | 0.5 | -360*** | -45.9*** | 8.5*** | -1.69*** | -0.189** | 0.00008 | -0.000034 | -9260* |
| 48 h | 0.1 mM Pb2+ + aphids vs 0.325 mM Pb2++ aphids | 1.48 | 0.17** | 0.38*** | -0.7* | -10 | -32.3*** | 105*** | -111.4*** | 5.5** | -3.25*** | -0.475*** | 0.00018 | -0.000212*** | -31604*** |
| 48 h | 0.25 mM Pb2+ + aphids vs 0.325 mM Pb2++ aphids | 1.47 | 0.078 | 0.16*** | -3.4*** | -7 | -32.8*** | 465*** | -65.5*** | -3 | -1.56*** | -0.286*** | 0.0001 | -0.000178*** | -22344*** |
| 72 h | control vs. 0.025mM Pb2+ | 0.4 | 0.001 | 0.04 | -0.8** | -271*** | -0.3 | -6 | -0.8 | -0.5 | -1.29*** | -0.157** | 0.00002 | -0.000099** | -8486 |
| 72 h | control vs. 0.05mM Pb2+ | -0.06 | -0.047 | 0.16*** | -0.1 | -100*** | -7.7*** | -118*** | -14.4*** | -3.5 | -0.87** | -0.182** | -0.00006 | -0.000146*** | -10012* |
| 72 h | control vs. 0.0625mM Pb2+ | -0.27 | -0.014 | 0.59*** | -0.8** | -45*** | -6.4*** | -60*** | -2.2 | -6.7*** | -0.26 | -0.11 | -0.00018 | -0.0001** | -14395** |
| 72 h | control vs. 0.1 mM Pb2+ | 0.08 | 0.02 | -0.03 | -0.4 | 50*** | -3.3 | -125*** | 0 | -6.9*** | -1.19*** | 0.208*** | 0.00018 | -0.000075* | -33924*** |
| 72 h | control vs. 0.25 mM Pb2+ | 0.67 | 0.075 | 0.7*** | 6.4*** | 46*** | -3.2 | -281*** | -1.8 | -9.9*** | -3.12*** | -0.043 | 0.00007 | -0.000061 | -9668* |
| 72 h | control vs. 0.325 mM Pb2+ | 1.69* | 0.147* | 0.94*** | 7*** | 22 | -6.9*** | -254*** | -3.6 | -9.6*** | -3.54*** | -0.138* | 0.00023 | -0.000016 | -34547*** |

| | | | | | | | | | | | | | | | |
|------|--|--------|----------|-----------|----------|--------|----------|---------|----------|---------|----------|-----------|-------------|--------------|-----------|
| 72 h | 0.025mM Pb2+vs 0.05mM Pb2+ | -0.45 | -0.047 | 0.12** | 0.7* | 171*** | -7.4*** | -112*** | -13.6*** | -3 | 0.42 | -0.026 | -0.00008 | -0.000048 | -1525 |
| 72 h | 0.025mM Pb2+vs 0.0625mM Pb2+ | -0.67 | -0.015 | 0.55*** | 0 | 227*** | -6.1*** | -53** | -1.4 | -6.2** | 1.04*** | 0.046 | -0.00021 | -0.000002 | -5908 |
| 72 h | 0.025mM Pb2+ vs 0.1 mM Pb2+ | -0.32 | 0.019 | -0.07 | 0.4 | 321*** | -3.1 | -119*** | 0.8 | -6.4*** | 0.11 | 0.364*** | 0.00015 | 0.000024 | -25438*** |
| 72 h | 0.025mM Pb2+ vs. 0.25 mM Pb2+ | 0.27 | 0.074 | 0.66*** | 7.2*** | 317*** | -2.9 | -275*** | -1 | -9.5*** | -1.82*** | 0.113 | 0.00004 | 0.000037 | -1182 |
| 72 h | 0.025mM Pb2+ vs. 0.325 mM Pb2+ | 1.29 | 0.146* | 0.9*** | 7.8*** | 293*** | -6.7*** | -248*** | -2.8 | -9.1*** | -2.25*** | 0.019 | 0.00021 | 0.000082* | -26061*** |
| 72 h | 0.05mM Pb2+vs 0.0625mM Pb2+ | -0.21 | 0.032 | 0.43*** | -0.7* | 56*** | 1.3 | 58*** | 12.2*** | -3.2 | 0.61* | 0.072 | -0.00013 | 0.000046 | -4383 |
| 72 h | 0.05mM Pb2+ vs 0.1 mM Pb2+ | 0.14 | 0.066 | -0.19*** | -0.3 | 151*** | 4.3* | -7 | 14.4*** | -3.4 | -0.31 | 0.39*** | 0.00024 | 0.000071* | -23912*** |
| 72 h | 0.05mM Pb2+ vs. 0.25 mM Pb2+ | 0.73 | 0.121 | 0.54*** | 6.5*** | 146*** | 4.5* | -163*** | 12.6*** | -6.5*** | -2.25*** | 0.139* | 0.00013 | 0.000085* | 344 |
| 72 h | 0.05mM Pb2+ vs. 0.325 mM Pb2+ | 1.75* | 0.193** | 0.78*** | 7.1*** | 122*** | 0.7 | -136*** | 10.9*** | -6.1** | -2.67*** | 0.044 | 0.00029* | 0.00013*** | -24535*** |
| 72 h | 0.0625mM Pb2+vs 0.1 mM Pb2+ | 0.35 | 0.034 | -0.62*** | 0.4 | 95*** | 3 | -65*** | 2.2 | -0.2 | -0.93*** | 0.318*** | 0.00036** | 0.000025 | -19529*** |
| 72 h | 0.0625mM vs. 0.25 mM Pb2+ | 0.94 | 0.089 | 0.11** | 7.2*** | 91*** | 3.2 | -222*** | 0.4 | -3.3 | -2.86*** | 0.067 | 0.00025* | 0.000039 | 4727 |
| 72 h | 0.0625mM vs. 0.325 mM Pb2+ | 1.96* | 0.161* | 0.35*** | 7.8*** | 66*** | -0.6 | -195*** | -1.3 | -2.9 | -3.28*** | -0.028 | 0.00042*** | 0.000084* | -20152*** |
| 72 h | 0.1 mM Pb2+ vs 0.25 mM Pb2+ | 0.59 | 0.055 | 0.73*** | 6.8*** | -4 | 0.2 | -156*** | -1.8 | -3.1 | -1.93*** | -0.251*** | -0.00011 | 0.000014 | 24256*** |
| 72 h | 0.1 mM Pb2+ vs 0.325 mM Pb2+ | 1.61* | 0.127 | 0.97*** | 7.4*** | -28* | -3.6* | -129*** | -3.5 | -2.7 | -2.36*** | -0.346*** | 0.00006 | 0.000059 | -623 |
| 72 h | 0.25 mM Pb2+vs 0.325 mM Pb2+ | 1.02 | 0.072 | 0.24*** | 0.6* | -24* | -3.8* | 27 | -1.8 | 0.3 | -0.42 | -0.095 | 0.00017 | 0.000045 | -24879*** |
| 72 h | control +aphids vs. 0.025mM Pb2+ +aphids | -0.02 | -0.011 | 0.22*** | -3.7*** | 4 | -4.6* | 21 | 13.8*** | -9.3*** | 0.55* | 0.09 | -0.00006 | 0.000067*4 | -8465 |
| 72 h | control +aphids vs. 0.05mM Pb2+ +aphids | -0.13 | -0.024 | 0.52*** | 0.9** | 1 | -0.1 | -29 | 17.2*** | -8.3*** | 0.31 | 0.08 | -0.00009 | 0.000007 | 7391 |
| 72 h | control +aphids vs. 0.0625mM Pb2+ +aphids | -0.28 | -0.069 | 0.47*** | 0.77* | 2 | 2.5 | -79*** | 9.9*** | -1.8 | 0.71* | 0.137* | 0.00025* | -0.000031 | -2449 |
| 72 h | control +aphids vs. 0.1 mM Pb2+ +aphids | -0.05 | 0.024 | -0.027 | -0.63* | 1 | -0.2 | 6 | 0.3 | -2.6 | 0 | 0.15* | -0.00017 | -0.000045 | -6682 |
| 72 h | control +aphids vs. 0.25 mM Pb2+ +aphids | 0.8 | 0.053 | 0.173*** | 4.37*** | 3 | 2.7 | 29 | -16.2*** | -10*** | -1.08*** | 0.082 | -0.00037** | -0.000241*** | -20410*** |
| 72 h | control +aphids vs. 0.325 mM Pb2+ +aphids | 2.23** | 0.203** | 2.503*** | 4.57*** | -20 | -6.6*** | 42* | -45.3*** | -3.5 | -1.3*** | -0.024 | -0.00007 | -0.000094** | -50338*** |
| 72 h | 0.025mM Pb2+ +aphids vs 0.05mM Pb2+ +aphids | -0.11 | -0.013 | 0.3*** | 4.6*** | -3 | 4.5* | -50** | 3.4 | 1 | -0.24 | -0.009 | -0.00004 | -0.00006 | 15856*** |
| 72 h | 0.025mM Pb2+ +aphids vs 0.0625mM Pb2+ +aphids | -0.25 | -0.058 | 0.25*** | 4.47*** | -2 | 7.1*** | -100*** | -3.9 | 7.5*** | 0.16 | 0.047 | 0.00031* | -0.000099** | 6016 |
| 72 h | 0.025mM Pb2+ +aphids vs 0.1 mM Pb2+ +aphids | -0.03 | 0.035 | -0.247*** | 3.07*** | -2 | 4.4* | -15 | -13.5*** | 6.7*** | -0.56* | 0.06 | -0.00012 | -0.000112*** | 1783 |
| 72 h | 0.025mM Pb2+ +aphids vs. 0.25 mM Pb2+ +aphids | 0.83 | 0.064 | -0.047 | 8.07*** | -1 | 7.3*** | 8 | -30*** | -0.7 | -1.63*** | -0.008 | -0.00031* | -0.000309*** | -11945** |
| 72 h | 0.025mM Pb2+ +aphids vs. 0.325 mM Pb2+ +aphids | 2.25** | 0.214*** | 2.283*** | 8.27*** | -24* | -2 | 21 | -59.1*** | 5.7** | -1.85*** | -0.114 | -0.00001 | -0.000162*** | -41873*** |
| 72 h | 0.05mM Pb2+ +aphids vs 0.0625mM Pb2+ +aphids | -0.14 | -0.045 | -0.05 | -0.13 | 1 | 2.6 | -50** | -7.3* | 6.5*** | 0.41 | 0.057 | 0.00034** | -0.000039 | -9840* |
| 72 h | 0.05mM Pb2+ +aphids vs 0.1 mM Pb2+ +aphids | 0.08 | 0.048 | -0.547*** | -1.53*** | 1 | 0 | 35* | -16.8*** | 5.7** | -0.31 | 0.07 | -0.00008 | -0.000052 | -14072** |
| 72 h | 0.05mM Pb2+ +aphids vs. 0.25 mM Pb2+ +aphids | 0.94 | 0.077 | -0.347*** | 3.47** | 2 | 2.8 | 58*** | -33.3*** | -1.7 | -1.39*** | 0.001 | -0.00028* | -0.000249*** | -27801*** |
| 72 h | 0.05mM Pb2+ +aphids vs. 0.325 mM Pb2+ +aphids | 2.36** | 0.226*** | 1.983*** | 3.67*** | -21 | -6.5*** | 71*** | -62.4*** | 4.7* | -1.61*** | -0.105 | 0.00002 | -0.000102** | -57729*** |
| 72 h | 0.0625mM Pb2+ +aphids vs 0.1 mM Pb2+ +aphids | 0.23 | 0.094 | -0.497*** | -1.4*** | -1 | -2.6 | 85*** | -9.6*** | -0.8 | -0.72* | 0.013 | -0.00042*** | -0.000013 | -4232 |
| 72 h | 0.0625mM +aphids vs. 0.25 mM Pb2+ +aphids | 1.08 | 0.122 | -0.297*** | 3.6*** | 1 | 0.2 | 107*** | -26.1*** | -8.2*** | -1.79*** | -0.055 | -0.00062*** | -0.00021*** | -17961*** |
| 72 h | 0.0625mM +aphids vs. 0.325 mM Pb2+ +aphids | 2.51** | 0.272*** | 2.033*** | 3.8*** | -22 | -9.1*** | 121*** | -55.2*** | -1.8 | -2.01*** | -0.162** | -0.00032* | -0.000063 | -47889*** |
| 72 h | 0.1 mM Pb2+ +aphids vs 0.25 mM Pb2+ +aphids | 0.85 | 0.029 | 0.2*** | 5*** | 1 | 2.9 | 23 | -16.5*** | -7.4*** | -1.07*** | -0.068 | -0.0002 | -0.000197*** | -13729** |
| 72 h | 0.1 mM Pb2+ +aphids vs 0.325 mM Pb2+ +aphids | 2.28** | 0.178** | 2.53*** | 5.2*** | -22 | -6.4*** | 36* | -45.6*** | -1 | -1.3*** | -0.175** | 0.00011 | -0.00005 | -43657*** |
| 72 h | 0.25 mM Pb2+ +aphids vs 0.325 mM Pb2+ +aphids | 1.43 | 0.149* | 2.33*** | 0.2 | -92 | -9.3*** | 13 | -29.1*** | 6.4*** | -0.22 | -0.106 | 0.0003* | 0.000147*** | -29928*** |
| 72 h | 0.025mM Pb2+vs 0.05mM Pb2+ +aphids | -0.43 | 0.003 | 0.67*** | 2.5*** | 363*** | -5** | -139*** | -16.1*** | -2.5 | 0.79** | 0.191** | -0.00005 | 0.000182*** | 3910 |
| 72 h | 0.025mM Pb2+vs 0.0625mM Pb2+aphids | -0.58 | -0.043 | 0.62*** | 2.37*** | 365*** | -2.4 | -188*** | -23.4*** | 4* | 1.2*** | 0.248*** | 0.00029* | 0.000143*** | -5930 |
| 72 h | 0.025mM Pb2+vs 0.1 mM Pb2++aphids | -0.35 | 0.051 | 0.123** | 0.97*** | 364*** | -5** | -103*** | -33*** | 3.2 | 0.48 | 0.261*** | -0.00013 | 0.00013*** | -10162* |
| 72 h | 0.025mM Pb2+ vs. 0.25 mM Pb2++aphids | 0.5 | 0.08 | 0.323*** | 5.97*** | 365*** | -2.1 | -81*** | -49.4*** | -4.2* | -0.6* | 0.192** | -0.00033** | -0.000067* | -23891*** |
| 72 h | 0.025mM Pb2+ vs. 0.325 mM Pb2++aphids | 1.93* | 0.229*** | 2.653*** | 6.17*** | 342*** | -11.4*** | -67*** | -78.6*** | 2.2 | -0.82** | 0.086 | -0.00003 | 0.00008* | -53819*** |
| 72 h | 0.05mM Pb2+vs 0.0625mM Pb2+ +aphids | -0.12 | 0.004 | 0.5*** | 1.67*** | 194*** | 5** | -76*** | -9.7*** | 7*** | 0.77** | 0.273*** | 0.00037** | 0.000191*** | -4404 |
| 72 h | 0.05mM Pb2+ vs 0.1 mM Pb2++aphids | 0.11 | 0.098 | 0.003 | 0.27 | 193*** | 2.4 | 8 | -19.3*** | 6.2** | 0.06 | 0.286*** | -0.00005 | 0.000178*** | -8637 |
| 72 h | 0.05mM Pb2+ vs. 0.25 mM Pb2++aphids | 0.96 | 0.127 | 0.203*** | 5.27*** | 195*** | 5.3** | 31 | -35.8*** | -1.2 | -1.02*** | 0.218*** | -0.00025* | -0.000019 | -22365*** |

| | | | | | | | | | | | | | | | |
|------|--|--------|----------|-----------|----------|--------|---------|---------|----------|---------|----------|-----------|-------------|--------------|-----------|
| 72 h | 0.05mM Pb2+ vs. 0.325 mM Pb2++aphids | 2.39** | 0.276*** | 2.533*** | 5.47*** | 172*** | -4* | 44** | -64.9*** | 5.2** | -1.24*** | 0.112 | 0.00006 | 0.000128*** | -52293*** |
| 72 h | 0.0625mM Pb2+vs 0.1 mM Pb2++aphids | 0.32 | 0.066 | -0.427*** | 0.97*** | 138*** | 1.1 | -50** | -31.5*** | 9.4*** | -0.56* | 0.215*** | 0.00007 | 0.000132*** | -4254 |
| 72 h | 0.0625mM vs. 0.25 mM Pb2++aphids | 1.17 | 0.095 | -0.227*** | 5.97*** | 139*** | 4* | -27 | -48*** | 2 | -1.63*** | 0.146* | -0.00012 | -0.000065 | -17983*** |
| 72 h | 0.0625mM vs. 0.325 mM Pb2++aphids | 2.6*** | 0.244*** | 2.103*** | 6.17*** | 116*** | -5.3** | -14 | -77.1*** | 8.4*** | -1.85*** | 0.04 | 0.00018 | 0.000082* | -47910*** |
| 72 h | 0.1 mM Pb2+ vs 0.25 mM Pb2+ +aphids | 0.82 | 0.061 | 0.393*** | 5.57*** | 44*** | 0.9 | 38* | -50.2*** | 2.2 | -0.71* | -0.172** | -0.00048*** | -0.00009** | 1547 |
| 72 h | 0.1 mM Pb2+ vs 0.325 mM Pb2++aphids | 2.25** | 0.21** | 2.723*** | 5.77*** | 21 | -8.4*** | 51** | -79.3*** | 8.6*** | -0.93*** | -0.278*** | -0.00018 | 0.000057 | -28381*** |
| 72 h | 0.25 mM Pb2+vs 0.325 mM Pb2++aphids | 1.66* | 0.155* | 1.993*** | -1.03*** | 25* | -8.5*** | 208*** | -77.6*** | 11.7*** | 1.01*** | -0.027 | -0.00007 | 0.000043 | -52637*** |
| 72 h | 0.025mM Pb2++ aphids vs 0.05mM Pb2+ +aphids | -0.11 | -0.013 | 0.3*** | 4.6*** | -3 | 4.5* | -50** | 3.4 | 1 | -0.24 | -0.009 | -0.00004 | -0.00006 | 15856*** |
| 72 h | 0.025mM Pb2+ + aphids vs 0.0625mM Pb2++aphids | -0.25 | -0.058 | 0.25*** | 4.47*** | -2 | 7.1*** | -100*** | -3.9 | 7.5*** | 0.16 | 0.047 | 0.00031* | -0.000099** | 6016 |
| 72 h | 0.025mM Pb2+ + aphids vs 0.1 mM Pb2++aphids | -0.03 | 0.035 | -0.247*** | 3.07*** | -2 | 4.4* | -15 | -13.5*** | 6.7*** | -0.56* | 0.06 | -0.00012 | -0.000112*** | 1783 |
| 72 h | 0.025mM Pb2+ + aphids vs. 0.25 mM Pb2++aphids | 0.83 | 0.064 | -0.047 | 8.07*** | -1 | 7.3*** | 8 | -30*** | -0.7 | -1.63*** | -0.008 | -0.00031* | -0.000309*** | -11945** |
| 72 h | 0.025mM Pb2+ + aphids vs. 0.325 mM Pb2++aphids | 2.25** | 0.214*** | 2.283*** | 8.27*** | -24* | -2 | 21 | -59.1*** | 5.7** | -1.85*** | -0.114 | -0.00001 | -0.000162*** | -41873*** |
| 72 h | 0.05 mM Pb2+ + aphids vs 0.0625mM Pb2++ aphids | -0.14 | -0.045 | -0.05 | -0.13 | 1 | 2.6 | -50** | -7.3* | 6.5*** | 0.41 | 0.057 | 0.00034** | -0.000039 | -9840* |
| 72 h | 0.05mM Pb2+ + aphids vs 0.1 mM Pb2+ + aphids | 0.08 | 0.048 | -0.547*** | -1.53*** | 1 | 0 | 35* | -16.8*** | 5.7** | -0.31 | 0.07 | -0.00008 | -0.000052 | -14072** |
| 72 h | 0.05mM Pb2+ + aphids vs. 0.25 mM Pb2++ aphids | 0.94 | 0.077 | -0.347*** | 3.47*** | 2 | 2.8 | 58*** | -33.3*** | -1.7 | -1.39*** | 0.001 | -0.00028* | -0.000249*** | -27801*** |
| 72 h | 0.05mM Pb2++ aphids vs. 0.325 mM Pb2++ aphids | 2.36** | 0.226*** | 1.983*** | 3.67*** | -21 | -6.5*** | 71*** | -62.4*** | 4.7* | -1.61*** | -0.105 | 0.00002 | -0.000102** | -57729*** |
| 72 h | 0.0625mM Pb2++aphids vs 0.1 mM Pb2++aphids | 0.23 | 0.094 | -0.497*** | -1.4*** | -1 | -2.6 | 85*** | -9.6*** | -0.8 | -0.72* | 0.013 | -0.00042*** | -0.000013 | -4232 |
| 72 h | 0.0625mM +aphids vs. 0.25 mM Pb2++aphids | 1.08 | 0.122 | -0.297*** | 3.6*** | 1 | 0.2 | 107*** | -26.1*** | -8.2*** | -1.79*** | -0.055 | -0.00062*** | -0.00021*** | -17961*** |
| 72 h | 0.0625mM +aphids vs. 0.325 mM Pb2++aphids | 2.51** | 0.272*** | 2.033*** | 3.8*** | -22 | -9.1*** | 121*** | -55.2*** | -1.8 | -2.01*** | -0.162** | -0.00032* | -0.000063 | -47889*** |
| 72 h | 0.1 mM Pb2+ + aphids vs 0.25 mM Pb2++ aphids | 0.85 | 0.029 | 0.2*** | 5*** | 1 | 2.9 | 23 | -16.5*** | -7.4*** | -1.07*** | -0.068 | -0.0002 | -0.000197*** | -13729** |
| 72 h | 0.1 mM Pb2+ + aphids vs 0.325 mM Pb2++ aphids | 2.28** | 0.178** | 2.53*** | 5.2*** | -22 | -6.4*** | 36* | -45.6*** | -1 | -1.3*** | -0.175** | 0.00011 | -0.00005 | -43657*** |
| 72 h | 0.25 mM Pb2+ + aphids vs 0.325 mM Pb2++ aphids | 1.43 | 0.149* | 2.33*** | 0.2 | -92 | -9.3*** | 13 | -29.1*** | 6.4*** | -0.22 | -0.106 | 0.0003* | 0.000147*** | -29928*** |

Table S3. Mean squares from two-way analysis of variance of observed traits in roots.

| Source of variation | Time | Variant | Time × Variant | Residual |
|----------------------------------|---------------|---------------|----------------|-------------|
| The number of degrees of freedom | 3 | 13 | 32 | 98 |
| Length of epicotyl | 21.07*** | 56.19*** | 1.32 | 1.427 |
| Fresh weight | 0.0183*** | 0.1036*** | 0.0013 | 0.00126 |
| Semiquinone radical | 1.996*** | 0.1414*** | 0.0889*** | 0.00179 |
| Mn ²⁺ ions | 1902*** | 546*** | 113*** | 0.43 |
| ABA | 2.12*** | 53.1*** | 11.1*** | 0.227 |
| IAA | 4465*** | 349.79*** | 238.3*** | 3.459 |
| JA | 1367017*** | 93772*** | 76443*** | 60.65 |
| SA | 32246*** | 3305*** | 2371*** | 9.277 |
| Pisatin | 170*** | 272*** | 195*** | 0.418 |
| Glucose | 0.3857*** | 0.3807*** | 0.4756*** | 0.0165 |
| Sucrose | 0.5001*** | 0.3357*** | 0.3092*** | 0.00043 |
| Acid invertase | 0.000009*** | 0.00000047*** | 0.00000039*** | 0.000000005 |
| Alkaline invertase | 0.000114*** | 0.0000299*** | 0.000022*** | 0.000000029 |
| Total soluble sugar | 0.00000167*** | 0.00000042*** | 0.00000026*** | 0.00000002 |

*** $P < 0.001$

Table S4. Mean squares from two-way analysis of variance of observed traits in leaves.

| Source of variation | Time | Variant | Time × Variant | Residual |
|----------------------------------|----------------|---------------|----------------|-------------|
| The number of degrees of freedom | 3 | 13 | 32 | 98 |
| Length of epicotyl | 52.35*** | 4.178*** | 0.304 | 0.913 |
| Fresh weight | 0.259*** | 0.053*** | 0.0027 | 0.006 |
| Semiquinone radical | 19.8*** | 1.127*** | 0.518*** | 0.0023 |
| Mn ²⁺ ions | 1.98*** | 27.06*** | 23.30*** | 0.131 |
| ABA | 6435*** | 28164*** | 11291*** | 190.4 |
| IAA | 248*** | 308*** | 134*** | 4.826 |
| JA | 5172738*** | 836475*** | 390415*** | 421 |
| SA | 116281*** | 41743*** | 7320*** | 12.86 |
| Pisatin | 2517*** | 334*** | 171*** | 5.512 |
| Glucose | 11.79*** | 12.75*** | 0.858*** | 0.1157 |
| Sucrose | 0.288*** | 0.248*** | 0.134*** | 0.0053 |
| Acid invertase | 0.0000017*** | 0.0000004*** | 0.00000026*** | 0.000000022 |
| Alkaline invertase | 0.000000066*** | 0.00000005*** | 0.00000004*** | 0.000000002 |
| Total soluble sugar | 1532000000*** | 1773000000*** | 291500000*** | 29500000 |

** $P<0.01$; *** $P<0.001$

Table S5. The correlation coefficients and p -values for the values of individual traits in roots and leaves.

| Trait | Correlation coefficient | p -value |
|--------------------------|-------------------------|------------|
| 1. Length of epicotyl | 0.688 *** | <0.001 |
| 2. Fresh weight | 0.784 *** | <0.001 |
| 3. Semiquinone radical | 0.628 *** | <0.001 |
| 4. Mn ²⁺ ions | 0.293 * | 0.0409 |
| 5. ABA | 0.337 * | 0.0179 |
| 6. IAA | 0.146 | 0.3184 |
| 7. JA | 0.754 *** | <0.001 |
| 8. SA | 0.175 | 0.2304 |
| 9. Pisatin | -0.032 | 0.8249 |
| 10. Glucose | 0.398 ** | 0.0046 |
| 11. Sucrose | 0.636 *** | <0.001 |
| 12. Acid invertase | -0.080 | 0.5827 |
| 13. Alkaline invertase | 0.073 | 0.6172 |
| 14. Total soluble sugar | 0.223 | 0.1239 |

* $P<0.05$; ** $P<0.01$; *** $P<0.001$

Table S6. Effect of Pb and *A. pisum* on concentrations of semiquinone radicals and the Mn²⁺ ions in organs of pea seedlings detected by EPR in the roots and leaves. The data were obtained in three independent experiments and statistically analysed using ANOVA (at $\alpha = 0.05$).

| Time | Variant | Semiquinone radicals | | | | | | Mn ²⁺ | | | | | |
|------|--|----------------------|----|--------|--------|----|-------|------------------|----|--------|-------|----|--------|
| | | Leaves | | | Roots | | | Leaves | | | Roots | | |
| | | Mean | | SE | Mean | | SE | Mean | | SE | Mean | | SE |
| 0 h | Control | 1.237 | f* | 0.0219 | 0.3533 | a | 0.024 | 7.367 | e | 0.2186 | 5.7 | b | 0.4041 |
| | 0.025 mM Pb (NO ₃) ₂ | 1.747 | c | 0.0219 | 0.2433 | bc | 0.024 | 10.067 | c | 0.2186 | 6.2 | ab | 0.4041 |
| | 0.050 mM Pb (NO ₃) ₂ | 1.447 | d | 0.0219 | 0.2533 | b | 0.024 | 11.167 | b | 0.2186 | 7.3 | a | 0.4041 |
| | 0.0625 mM Pb (NO ₃) ₂ | 1.317 | e | 0.0219 | 0.1733 | c | 0.024 | 13.567 | a | 0.2186 | 2.4 | c | 0.4041 |
| | 0.1 mM Pb (NO ₃) ₂ | 1.837 | b | 0.0219 | 0.1833 | bc | 0.024 | 9.167 | d | 0.2186 | 5.6 | b | 0.4041 |
| | 0.25 mM Pb (NO ₃) ₂ | 1.217 | f | 0.0219 | 0.3433 | a | 0.024 | 9.567 | cd | 0.2186 | 1.6 | c | 0.4041 |
| | 0.325 mM Pb (NO ₃) ₂ | 2.097 | a | 0.0219 | 0.4033 | a | 0.024 | 6.667 | f | 0.2186 | 1.2 | c | 0.4041 |
| | LSD _{0.05} | 0.066 | | | 0.073 | | | 0.663 | | | 1.23 | | |

| | | | | | | | | | | | | | |
|------|---|-------|----|--------|--------|-----|--------|--------|----|--------|------|----|--------|
| 24 h | Control | 1.657 | c | 0.0219 | 0.3533 | def | 0.024 | 9.467 | e | 0.2186 | 11.1 | b | 0.4041 |
| | 0.025 mM Pb (NO ₃) ₂ | 2.117 | a | 0.0219 | 0.4933 | ab | 0.024 | 10.367 | d | 0.2186 | 18.5 | a | 0.4041 |
| | 0.050 mM Pb (NO ₃) ₂ | 1.653 | c | 0.024 | 0.3333 | def | 0.024 | 8.267 | f | 0.2186 | 5.1 | d | 0.4041 |
| | 0.0625 mM Pb (NO ₃) ₂ | 1.663 | c | 0.024 | 0.3233 | f | 0.024 | 8.767 | f | 0.2186 | 2.2 | gh | 0.4041 |
| | 0.1 mM Pb (NO ₃) ₂ | 1.473 | e | 0.024 | 0.2833 | f | 0.024 | 7.433 | g | 0.2028 | 3.9 | ef | 0.4041 |
| | 0.25 mM Pb (NO ₃) ₂ | 0.743 | h | 0.024 | 0.4033 | cd | 0.024 | 7.433 | g | 0.2028 | 1.8 | h | 0.4041 |
| | 0.325 mM Pb (NO ₃) ₂ | 0.983 | g | 0.024 | 0.5233 | a | 0.024 | 4.833 | h | 0.2028 | 1.8 | h | 0.4041 |
| | Control + aphids | 1.743 | b | 0.024 | 0.45 | bc | 0.0265 | 9.933 | de | 0.2028 | 12.3 | b | 0.4041 |
| | 0.025 mM Pb (NO ₃) ₂ + aphids | 1.643 | c | 0.024 | 0.32 | f | 0.0265 | 12.933 | c | 0.2028 | 6.8 | c | 0.4041 |
| | 0.050 mM Pb (NO ₃) ₂ + aphids | 1.553 | d | 0.024 | 0.21 | g | 0.0265 | 8.633 | f | 0.2028 | 3 | fg | 0.4041 |
| | 0.0625 mM Pb (NO ₃) ₂ + aphids | 1.423 | e | 0.024 | 0.29 | f | 0.0265 | 9.433 | e | 0.2028 | 4.2 | de | 0.4041 |
| | 0.1 mM Pb (NO ₃) ₂ + aphids | 1.263 | f | 0.024 | 0.33 | ef | 0.0265 | 13.033 | c | 0.2028 | 4.2 | de | 0.4041 |
| | 0.25 mM Pb (NO ₃) ₂ + aphids | 1.043 | g | 0.024 | 0.4 | cde | 0.0265 | 16.633 | a | 0.2028 | 1.5 | h | 0.4041 |
| | 0.325 mM Pb (NO ₃) ₂ + aphids | 0.693 | h | 0.0291 | 0.44 | bc | 0.0265 | 15.533 | b | 0.2028 | 1.9 | gh | 0.4041 |
| | LSD _{0.05} | 0.07 | | | 0.073 | | | 0.601 | | | 1.17 | | |
| 48 h | Control | 2.073 | b | 0.0291 | 0.6933 | d | 0.0203 | 9.533 | e | 0.2028 | 20.7 | d | 0.4041 |
| | 0.025 mM Pb (NO ₃) ₂ | 1.733 | ef | 0.0291 | 0.5233 | gh | 0.0203 | 9.733 | e | 0.2028 | 17.6 | e | 0.4041 |
| | 0.050 mM Pb (NO ₃) ₂ | 1.843 | d | 0.0291 | 0.8233 | c | 0.0203 | 11.433 | c | 0.2028 | 17 | e | 0.4041 |
| | 0.0625 mM Pb (NO ₃) ₂ | 1.513 | g | 0.0291 | 1.2833 | a | 0.0203 | 8.567 | f | 0.2028 | 25.7 | b | 0.4041 |
| | 0.1 mM Pb (NO ₃) ₂ | 1.913 | cd | 0.024 | 0.5533 | fgh | 0.0203 | 8.667 | f | 0.2028 | 14.6 | f | 0.4041 |
| | 0.25 mM Pb (NO ₃) ₂ | 1.273 | hi | 0.024 | 0.5933 | ef | 0.0203 | 7.167 | g | 0.2028 | 13.4 | g | 0.4041 |
| | 0.325 mM Pb (NO ₃) ₂ | 1.893 | cd | 0.024 | 0.5633 | fg | 0.0203 | 9.767 | e | 0.2028 | 1.6 | h | 0.4041 |
| | Control + aphids | 1.673 | f | 0.024 | 0.98 | b | 0.0231 | 6.767 | g | 0.2028 | 33.1 | a | 0.4041 |
| | 0.025 mM Pb (NO ₃) ₂ + aphids | 1.333 | h | 0.024 | 0.5067 | gh | 0.0291 | 8.267 | f | 0.2028 | 22.8 | c | 0.4041 |
| | 0.050 mM Pb (NO ₃) ₂ + aphids | 1.203 | i | 0.024 | 0.4867 | h | 0.0291 | 13.667 | b | 0.2028 | 12.6 | g | 0.4041 |
| | 0.0625 mM Pb (NO ₃) ₂ + aphids | 2.243 | a | 0.024 | 0.6833 | d | 0.026 | 14.867 | a | 0.2028 | 32.4 | a | 0.4041 |
| | 0.1 mM Pb (NO ₃) ₂ + aphids | 2.143 | b | 0.024 | 0.6333 | de | 0.026 | 10 | e | 0.2082 | 13.2 | g | 0.1732 |
| | 0.25 mM Pb (NO ₃) ₂ + aphids | 1.923 | c | 0.024 | 0.3233 | i | 0.026 | 7.3 | g | 0.2082 | 1.3 | h | 0.1732 |
| | 0.325 mM Pb (NO ₃) ₂ + aphids | 1.763 | e | 0.024 | 0.3633 | i | 0.026 | 10.7 | d | 0.2082 | 0.8 | h | 0.1732 |
| | LSD _{0.05} | 0.074 | | | 0.068 | | | 0.59 | | | 1.06 | | |
| 72 h | Control | 3.493 | a | 0.024 | 1.1533 | a | 0.026 | 11.6 | c | 0.2082 | 24.8 | de | 0.1732 |
| | 0.025 mM Pb (NO ₃) ₂ | 3.453 | a | 0.024 | 0.8633 | de | 0.026 | 12.4 | b | 0.2082 | 25 | d | 0.1732 |
| | 0.050 mM Pb (NO ₃) ₂ | 3.333 | b | 0.024 | 0.8233 | ef | 0.026 | 11.7 | c | 0.2082 | 19.1 | f | 0.4041 |
| | 0.0625 mM Pb (NO ₃) ₂ | 2.903 | d | 0.0406 | 1.0333 | b | 0.026 | 12.4 | b | 0.2082 | 29.3 | b | 0.4041 |
| | 0.1 mM Pb (NO ₃) ₂ | 3.523 | a | 0.0406 | 0.8433 | ef | 0.024 | 12 | bc | 0.2082 | 27.2 | c | 0.3464 |
| | 0.25 mM Pb (NO ₃) ₂ | 2.793 | e | 0.0406 | 0.4933 | i | 0.024 | 5.2 | g | 0.2082 | 1.1 | g | 0.3464 |
| | 0.325 mM Pb (NO ₃) ₂ | 2.553 | f | 0.0406 | 0.6433 | g | 0.024 | 4.6 | g | 0.2082 | 1.8 | g | 0.3464 |
| | Control + aphids | 3.303 | b | 0.0406 | 0.9333 | cd | 0.024 | 10.8 | d | 0.2082 | 30.7 | a | 0.3464 |
| | 0.025 mM Pb (NO ₃) ₂ + aphids | 3.083 | c | 0.0406 | 0.7933 | ef | 0.024 | 14.5 | a | 0.2082 | 24.6 | de | 0.3464 |
| | 0.050 mM Pb (NO ₃) ₂ + aphids | 2.783 | e | 0.0406 | 0.7733 | f | 0.024 | 9.9 | e | 0.2082 | 23.8 | e | 0.3464 |
| | 0.0625 mM Pb (NO ₃) ₂ + aphids | 2.833 | de | 0.0406 | 0.9833 | bc | 0.024 | 10.033 | e | 0.2186 | 27.1 | c | 0.3464 |
| | 0.1 mM Pb (NO ₃) ₂ + aphids | 3.33 | b | 0.0265 | 0.9633 | bc | 0.024 | 11.433 | c | 0.2186 | 27.1 | c | 0.4041 |
| | 0.25 mM Pb (NO ₃) ₂ + aphids | 3.13 | c | 0.0265 | 0.5233 | h | 0.024 | 6.433 | f | 0.2186 | 1.7 | g | 0.4041 |
| | 0.325 mM Pb (NO ₃) ₂ + aphids | 0.8 | g | 0.0265 | 0.4267 | i | 0.0219 | 6.233 | f | 0.2186 | 1.3 | g | 0.4041 |

| | | | | |
|---------------------|--------|-------|-------|-------|
| LSD _{0.05} | 0.1009 | 0.071 | 0.612 | 1.014 |
|---------------------|--------|-------|-------|-------|

* In the columns, for individual times, the means denoted by the same letters are not significantly different. SE – standard error.

Table S7. Effect of lead and *A. pisum* on content of phytohormones in the organs of pea seedlings’ roots and leaves. The data were obtained in three independent experiments and statistically analysed using ANOVA (α = 0.05).

| Time | Variant | ABA | | | | | | SA | | | | | | JA | | | | | | Significance | | | |
|------|---|--------|----|--------|--------|----|-------|--------|----|-------|--------|----|-------|--------|----|-------|-------|----|-------|--------------|--------|-----|--|
| | | Leaves | | | Roots | | | Leaves | | | Roots | | | Leaves | | | Roots | | | | Leaves | | |
| | | Mean | SE | | Mean | SE | | Mean | SE | | Mean | SE | | Mean | SE | | Mean | SE | | | Mean | SE | |
| 0 h | Control | 45.75 | c* | 12.124 | 2.199 | c | 0.346 | 8.18 | a | 1.27 | 9.6 | c | 1.27 | 57.6 | d | 12.3 | 12.7 | d | 3.002 | 6.88 | abc | 0.5 | |
| | 0.025 mM Pb (NO ₃) ₂ | 20.7 | c | 6.928 | 2.435 | c | 0.231 | 5.81 | ab | 1.905 | 10.19 | c | 1.905 | 164.3 | b | 12.87 | 94 | c | 2.078 | 5.22 | c | 1.1 | |
| | 0.050 mM Pb (NO ₃) ₂ | 41.52 | c | 10.525 | 1.857 | c | 0.133 | 7.82 | ab | 1.443 | 11.47 | c | 1.443 | 258.8 | a | 14.15 | 81.6 | c | 5.889 | 6.02 | abc | 0.9 | |
| | 0.0625 mM Pb (NO ₃) ₂ | 40.69 | c | 8.216 | 2.341 | c | 0.098 | 3.27 | b | 1.501 | 8.29 | c | 1.501 | 239.8 | a | 13.45 | 88.1 | c | 6.062 | 9.26 | abc | 0.8 | |
| | 0.1 mM Pb (NO ₃) ₂ | 46.13 | c | 10.311 | 4.121 | b | 0.254 | 6.75 | ab | 1.328 | 11.48 | c | 1.328 | 153 | bc | 14.15 | 136.2 | b | 5.485 | 5.9 | bc | 0.9 | |
| | 0.25 mM Pb (NO ₃) ₂ | 101.63 | b | 8.216 | 3.656 | b | 0.075 | 5.38 | ab | 1.501 | 16.59 | b | 1.501 | 121.8 | c | 14.03 | 132.2 | b | 3.637 | 9.11 | ab | 0.6 | |
| | 0.325 mM Pb (NO ₃) ₂ | 185.63 | a | 10.756 | 6.785 | a | 0.092 | 6.63 | ab | 1.617 | 41.6 | a | 1.617 | 132.2 | bc | 7.1 | 198.2 | a | 3.118 | 9.19 | a | 1.8 | |
| | LSD _{0.05} | 29.51 | | | 0.606 | | | 4.6 | | | 4.62 | | | 38.8 | | | 13.46 | | | 3.246 | | | |
| 24 h | Control | 67.22 | bc | 6.928 | 4.931 | c | 0.098 | 26.2 | i | 1.386 | 33.68 | i | 1.425 | 188.1 | k | 12.87 | 345 | e | 2.021 | 9.47 | de | 1.3 | |
| | 0.025 mM Pb (NO ₃) ₂ | 74.74 | b | 7.506 | 5.087 | c | 0.254 | 56.48 | g | 1.501 | 71.81 | d | 1.41 | 321.5 | i | 14.15 | 231.5 | i | 5.889 | 5.98 | e | 1.3 | |
| | 0.050 mM Pb (NO ₃) ₂ | 26.22 | e | 8.66 | 0.889 | j | 0.075 | 19.24 | j | 1.386 | 50.24 | h | 1.395 | 191.3 | k | 13.45 | 289.8 | gh | 6.062 | 9.66 | de | 0.6 | |
| | 0.0625 mM Pb (NO ₃) ₂ | 31.68 | e | 5.774 | 3.436 | e | 0.092 | 30.19 | i | 1.617 | 23.77 | k | 1.38 | 391.4 | h | 14.15 | 169.2 | k | 6.004 | 6.64 | e | 1.2 | |
| | 0.1 mM Pb (NO ₃) ₂ | 26.71 | e | 6.928 | 2.825 | f | 0.081 | 20.47 | j | 1.328 | 93.02 | b | 1.365 | 1381.8 | d | 14.03 | 377.1 | d | 6.293 | 20.84 | b | 1.3 | |
| | 0.25 mM Pb (NO ₃) ₂ | 34.15 | e | 6.351 | 4.36 | d | 0.098 | 20.64 | j | 1.674 | 88.88 | c | 1.35 | 1767.9 | a | 7.1 | 698.6 | c | 5.658 | 31.33 | a | 1.3 | |
| | 0.325 mM Pb (NO ₃) ₂ | 84.06 | ab | 7.506 | 9.782 | b | 0.254 | 36.61 | h | 2.425 | 55.58 | g | 1.336 | 1707.3 | b | 12.87 | 720 | b | 4.907 | 13.76 | c | 1.3 | |
| | Control + aphids | 6.19 | f | 1.155 | 0.945 | ij | 0.075 | 212.75 | a | 2.078 | 55.95 | g | 1.321 | 333.1 | i | 14.15 | 298.1 | g | 3.233 | 7.86 | e | 1.4 | |
| | 0.025 mM Pb (NO ₃) ₂ + aphids | 95.33 | a | 4.619 | 2.237 | h | 0.092 | 126.62 | e | 1.617 | 47.26 | h | 1.306 | 148.2 | l | 13.45 | 199.6 | j | 4.33 | 8.12 | e | 1.5 | |
| | 0.050 mM Pb (NO ₃) ₂ + aphids | 53.69 | cd | 8.66 | 1.321 | i | 0.098 | 183.22 | c | 4.157 | 122.55 | a | 1.291 | 470.5 | g | 14.15 | 220.3 | i | 2.598 | 14.18 | c | 1.2 | |
| | 0.0625 mM Pb (NO ₃) ₂ + aphids | 71.71 | bc | 6.928 | 2.731 | fg | 0.254 | 133.7 | d | 1.386 | 29.37 | j | 1.276 | 266 | j | 14.03 | 280 | h | 2.714 | 6.52 | e | 1.7 | |
| | 0.1 mM Pb (NO ₃) ₂ + aphids | 27.91 | e | 6.928 | 3.987 | d | 0.075 | 137.53 | d | 1.501 | 85.12 | c | 1.261 | 578.5 | f | 7.1 | 325.2 | f | 3.464 | 15.79 | c | 1.3 | |
| | 0.25 mM Pb (NO ₃) ₂ + aphids | 25.61 | e | 6.351 | 2.394 | gh | 0.092 | 84.63 | f | 1.386 | 63.04 | f | 1.247 | 712.1 | e | 12.87 | 761.1 | a | 3.233 | 12.4 | cd | 1.2 | |
| | 0.325 mM Pb (NO ₃) ₂ + aphids | 34.66 | de | 5.774 | 11.161 | a | 0.081 | 199.26 | b | 1.617 | 67.66 | e | 1.232 | 1505.9 | c | 14.15 | 772.1 | a | 3.349 | 29.47 | a | 1.4 | |
| | LSD _{0.05} | 19.35 | | | 0.408 | | | 5.587 | | | 3.851 | | | 37.57 | | | 13.05 | | | 3.93 | | | |
| 48 h | Control | 147.36 | b | 12.702 | 3.579 | d | 0.098 | 16.63 | i | 1.328 | 63.45 | f | 1.217 | 193.6 | l | 13.45 | 131.3 | l | 2.021 | 9.64 | fg | 0.5 | |
| | 0.025 mM Pb (NO ₃) ₂ | 228.15 | a | 13.279 | 3.63 | d | 0.254 | 24.23 | h | 1.674 | 53.99 | h | 1.202 | 152.1 | m | 14.15 | 161.3 | k | 5.889 | 10.79 | f | 1.1 | |
| | 0.050 mM Pb (NO ₃) ₂ | 164.86 | b | 16.166 | 3.706 | d | 0.075 | 20.74 | hi | 2.425 | 61.69 | fg | 1.187 | 331.6 | k | 14.03 | 431.4 | i | 6.062 | 4.95 | hi | 0.9 | |
| | 0.0625 mM Pb (NO ₃) ₂ | 68.69 | c | 6.928 | 3.204 | d | 0.092 | 23.73 | h | 2.078 | 112.52 | d | 1.172 | 557.4 | j | 7.1 | 476.9 | g | 6.004 | 20.96 | d | 0.8 | |
| | 0.1 mM Pb (NO ₃) ₂ | 36.72 | de | 5.774 | 2.52 | e | 0.098 | 20.04 | hi | 1.617 | 116.88 | c | 1.157 | 1795.5 | a | 12.87 | 458.2 | h | 6.293 | 2.08 | i | 0.9 | |
| | 0.25 mM Pb (NO ₃) ₂ | 46.07 | d | 7.506 | 6.876 | b | 0.254 | 22.44 | hi | 4.157 | 191.14 | a | 1.143 | 1206.7 | d | 14.15 | 450.2 | h | 5.658 | 4.34 | hi | 0.6 | |
| | 0.325 mM Pb (NO ₃) ₂ | 148.82 | b | 8.66 | 3.819 | d | 0.075 | 31.26 | g | 1.386 | 141.38 | b | 1.128 | 1340.8 | c | 13.45 | 126.5 | l | 4.907 | 14.66 | e | 1.8 | |
| | Control + aphids | 5.86 | f | 1.155 | 1.29 | f | 0.092 | 176.26 | f | 1.501 | 53.73 | h | 1.113 | 786.2 | h | 14.15 | 281.5 | j | 3.233 | 5.28 | hi | 1.3 | |
| | 0.025 mM Pb (NO ₃) ₂ + aphids | 9.69 | f | 0.577 | 1.182 | f | 0.081 | 233.67 | c | 1.386 | 71.4 | e | 1.098 | 1007.9 | e | 14.03 | 562.8 | d | 4.33 | 31.49 | b | 1.3 | |
| | 0.050 mM Pb (NO ₃) ₂ + aphids | 5.57 | f | 1.155 | 1.499 | f | 0.185 | 265.88 | b | 1.617 | 50.33 | i | 1.083 | 832.3 | g | 7.1 | 780.1 | a | 2.598 | 26.61 | c | 0.6 | |
| | 0.0625 mM Pb (NO ₃) ₂ + aphids | 7.18 | f | 1.155 | 1.03 | f | 0.554 | 200.88 | e | 1.328 | 32.34 | k | 1.068 | 614.1 | i | 12.87 | 661.6 | b | 2.714 | 8.85 | fg | 1.2 | |
| | 0.1 mM Pb (NO ₃) ₂ + aphids | 8.34 | f | 1.155 | 1.07 | f | 0.45 | 220.5 | d | 1.674 | 59.98 | g | 1.054 | 1036.1 | e | 14.15 | 505.1 | f | 3.464 | 7.7 | fgh | 1.3 | |
| | 0.25 mM Pb (NO ₃) ₂ + aphids | 10.83 | f | 1.155 | 5.93 | c | 0.185 | 266.38 | b | 2.425 | 73.15 | e | 1.039 | 1396.3 | b | 13.45 | 525.6 | e | 3.233 | 7.17 | gh | 1.3 | |
| | 0.325 mM Pb (NO ₃) ₂ + aphids | 17.97 | ef | 3.464 | 12.532 | a | 0.554 | 331.9 | a | 2.078 | 41.6 | j | 1.617 | 931 | f | 14.15 | 635.7 | c | 3.349 | 39.97 | a | 1.3 | |
| | LSD _{0.05} | 22.31 | | | 0.8 | | | 5.9 | | | 3.391 | | | 37.69 | | | 13.05 | | | 3.41 | | | |

| | | | | | | | | | | | | | | | | | | | | | | |
|------|---|--------|----|--------|-------|----|-------|-------|----|-------|-------|----|-------|-------|-----|-------|-------|-----|-------|-------|------|-----|
| 72 h | Control | 100.66 | d | 10.121 | 5.361 | c | 0.185 | 6.14 | f | 1.386 | 16.93 | fg | 3.118 | 19.1 | j | 8.26 | 27.7 | g | 2.021 | 6.28 | g | 1.3 |
| | 0.025 mM Pb (NO ₃) ₂ | 371.72 | a | 11.738 | 6.928 | b | 0.554 | 6.97 | f | 1.501 | 20.24 | ef | 1.501 | 25.5 | j | 12.47 | 66.9 | f | 5.889 | 6.55 | g | 1.3 |
| | 0.050 mM Pb (NO ₃) ₂ | 200.8 | b | 17.448 | 5.545 | c | 0.45 | 20.58 | e | 1.386 | 26.02 | de | 1.386 | 137.2 | ef | 10.74 | 74.4 | def | 6.062 | 13.95 | bc | 0.6 |
| | 0.0625 mM Pb (NO ₃) ₂ | 145.18 | c | 8.227 | 5.1 | c | 0.306 | 8.37 | f | 1.617 | 12.69 | g | 1.617 | 78.9 | i | 8.37 | 71.7 | ef | 6.004 | 12.66 | bcde | 1.2 |
| | 0.1 mM Pb (NO ₃) ₂ | 50.29 | fg | 9.959 | 2.988 | de | 0.237 | 6.17 | f | 1.328 | 15.84 | fg | 1.328 | 144.2 | de | 8.26 | 39.9 | g | 6.293 | 9.61 | defg | 1.3 |
| | 0.25 mM Pb (NO ₃) ₂ | 54.56 | ef | 8.868 | 4.882 | c | 0.364 | 7.93 | f | 1.674 | 29.68 | d | 1.674 | 300.5 | a | 8.49 | 159.5 | a | 5.658 | 9.45 | defg | 1.3 |
| | 0.325 mM Pb (NO ₃) ₂ | 78.77 | de | 8.216 | 9.433 | a | 0.3 | 9.72 | f | 2.425 | 62.56 | a | 2.425 | 273.5 | b | 7.62 | 74.8 | def | 4.907 | 13.22 | bcd | 1.3 |
| | Control + aphids | 8.96 | h | 3.167 | 1.228 | f | 0.335 | 40.23 | c | 2.078 | 12.9 | fg | 2.078 | 135 | ef | 8.2 | 65.2 | f | 3.233 | 11.39 | cdef | 1.4 |
| | 0.025 mM Pb (NO ₃) ₂ + aphids | 5.42 | h | 2.656 | 1.304 | f | 0.312 | 26.45 | de | 1.617 | 14.2 | fg | 1.617 | 113.9 | fgh | 6.52 | 126.3 | b | 4.33 | 15.99 | ab | 1.5 |
| | 0.050 mM Pb (NO ₃) ₂ + aphids | 8.44 | h | 1.328 | 1.477 | f | 0.549 | 23.07 | e | 4.157 | 26.35 | de | 4.157 | 164 | d | 6.35 | 83.6 | cde | 2.598 | 11.51 | cdef | 1.2 |
| | 0.0625 mM Pb (NO ₃) ₂ + aphids | 6.98 | h | 3.58 | 2.275 | ef | 0.185 | 30.33 | d | 1.328 | 37.47 | c | 1.328 | 213.5 | c | 9.01 | 85.3 | cd | 2.714 | 8.93 | efg | 1.7 |
| | 0.1 mM Pb (NO ₃) ₂ + aphids | 7.56 | h | 3.406 | 1.432 | f | 0.433 | 39.92 | c | 2.598 | 11.53 | g | 2.598 | 128.9 | efg | 9.01 | 64.8 | f | 3.464 | 11.55 | cdef | 1.3 |
| | 0.25 mM Pb (NO ₃) ₂ + aphids | 6.25 | h | 1.732 | 1.233 | f | 0.491 | 56.4 | b | 2.656 | 11.9 | g | 2.656 | 106.3 | gh | 7.22 | 95.7 | c | 3.233 | 8.69 | fg | 1.2 |
| | 0.325 mM Pb (NO ₃) ₂ + aphids | 29.22 | gh | 9.353 | 3.655 | d | 0.433 | 85.52 | a | 4.965 | 53.98 | b | 4.965 | 92.9 | hi | 5.89 | 72.2 | ef | 3.349 | 17.99 | a | 1.4 |
| | LSD _{0.05} | 24.38 | | | 1.116 | | | 7.078 | | | 7.401 | | | 24.56 | | | 13.05 | | | | 3.9 | |

* In the columns, for individual times, the means denoted by the same letters are not significantly different. SE – standard error.

Table S8. Effect of lead and *A. pisum* on concentration of pisatin in the organs of pea seedlings’ roots and leaves. The data were obtained in three independent experiments and statistically analysed using ANOVA ($\alpha = 0.05$).

| Time | Variant | Pisatin | | | | | |
|------|---|---------|------|-------|--------|-----|-------|
| | | Leaves | | | Roots | | |
| | | Mean | | SE | Mean | | SE |
| 0 h | Control | 13.55 | b* | 0.116 | 0.985 | c | 0.231 |
| | 0.025 mM Pb (NO ₃) ₂ | 16.92 | b | 0.231 | 1.515 | c | 0.173 |
| | 0.050 mM Pb (NO ₃) ₂ | 23.97 | a | 3.002 | 1.592 | c | 0.346 |
| | 0.0625 mM Pb (NO ₃) ₂ | 17.66 | b | 3.175 | 1.043 | c | 0.231 |
| | 0.1 mM Pb (NO ₃) ₂ | 17.58 | b | 2.598 | 1.193 | c | 0.116 |
| | 0.25 mM Pb (NO ₃) ₂ | 15.23 | b | 0.751 | 5.683 | b | 0.808 |
| | 0.325 mM Pb (NO ₃) ₂ | 18.77 | ab | 0.231 | 19.259 | a | 0.693 |
| | LSD _{0.05} | 5.91 | | | 1.358 | | |
| 24 h | Control | 4 | j | 0.116 | 0.177 | ef | 0.01 |
| | 0.025 mM Pb (NO ₃) ₂ | 5 | j | 0.15 | 0.428 | c | 0.025 |
| | 0.050 mM Pb (NO ₃) ₂ | 16 | i | 0.219 | 0.249 | de | 0.008 |
| | 0.0625 mM Pb (NO ₃) ₂ | 16 | i | 0.139 | 0.76 | b | 0.009 |
| | 0.1 mM Pb (NO ₃) ₂ | 22 | g | 0.139 | 0.235 | de | 0.008 |
| | 0.25 mM Pb (NO ₃) ₂ | 25 | f | 0.156 | 0.112 | fg | 0.01 |
| | 0.325 mM Pb (NO ₃) ₂ | 28 | e | 0.167 | 4.351 | a | 0.025 |
| | Control + aphids | 22 | g | 0.185 | 0.5 | c | 0.008 |
| | 0.025 mM Pb (NO ₃) ₂ + aphids | 35 | c | 0.127 | 0.243 | de | 0.092 |
| | 0.050 mM Pb (NO ₃) ₂ + aphids | 30 | d | 0.577 | 0.062 | g | 0.01 |
| | 0.0625 mM Pb (NO ₃) ₂ + aphids | 19 | h | 1.155 | 0.3 | d | 0.025 |
| | 0.1 mM Pb (NO ₃) ₂ + aphids | 44 | b | 1.155 | 0.3 | d | 0.008 |
| | 0.25 mM Pb (NO ₃) ₂ + aphids | 45 | ab | 0.173 | 0.2 | e | 0.009 |
| | 0.325 mM Pb (NO ₃) ₂ + aphids | 46 | a | 0.173 | 0.7 | b | 0.008 |
| | LSD _{0.05} | 1.4 | | | 0.082 | | |
| 48 h | Control | 1.95 | h | 0.173 | 0.98 | ef | 0.01 |
| | 0.025 mM Pb (NO ₃) ₂ | 2 | h | 0.116 | 0.96 | ef | 0.025 |
| | 0.050 mM Pb (NO ₃) ₂ | 3 | h | 0.173 | 0.19 | g | 0.008 |
| | 0.0625 mM Pb (NO ₃) ₂ | 5.9 | g | 0.173 | 0.15 | g | 0.009 |
| | 0.1 mM Pb (NO ₃) ₂ | 13 | ef | 0.289 | 0.19 | g | 0.01 |
| | 0.25 mM Pb (NO ₃) ₂ | 12 | f | 0.058 | 0.68 | f | 0.025 |
| | 0.325 mM Pb (NO ₃) ₂ | 13 | ef | 0.173 | 1.721 | c | 0.008 |
| | Control + aphids | 14.25 | d | 0.346 | 1.19 | de | 0.009 |
| | 0.025 mM Pb (NO ₃) ₂ + aphids | 14.44 | d | 0.289 | 1.26 | cde | 0.081 |
| | 0.050 mM Pb (NO ₃) ₂ + aphids | 13 | ef | 0.381 | 1.26 | cde | 0.019 |
| | 0.0625 mM Pb (NO ₃) ₂ + aphids | 19 | b | 0.058 | 1.58 | cd | 0.055 |
| | 0.1 mM Pb (NO ₃) ₂ + aphids | 22.5 | a | 0.173 | 1.22 | de | 0.045 |
| | 0.25 mM Pb (NO ₃) ₂ + aphids | 14 | de | 0.346 | 5.288 | b | 0.185 |
| | 0.325 mM Pb (NO ₃) ₂ + aphids | 17 | c | 1.155 | 57.308 | a | 0.554 |
| | LSD _{0.05} | 1.11 | | | 0.461 | | |
| 72 h | Control | 26.86 | defg | 1.732 | 1.948 | cd | 0.116 |
| | 0.025 mM Pb (NO ₃) ₂ | 27.32 | defg | 3.002 | 2.384 | bcd | 0.577 |
| | 0.050 mM Pb (NO ₃) ₂ | 30.32 | cde | 3.175 | 2.492 | bcd | 0.751 |

| | | | | | | |
|---|-------|------|-------|-------|-----|-------|
| 0.0625 mM Pb (NO ₃) ₂ | 33.54 | abc | 3.118 | 1.106 | d | 0.231 |
| 0.1 mM Pb (NO ₃) ₂ | 33.72 | abc | 3.406 | 3.936 | b | 0.635 |
| 0.25 mM Pb (NO ₃) ₂ | 36.79 | a | 2.771 | 1.718 | cd | 0.693 |
| 0.325 mM Pb (NO ₃) ₂ | 36.46 | ab | 2.021 | 7.745 | a | 0.751 |
| Control + aphids | 21.57 | g | 0.346 | 1.341 | d | 0.52 |
| 0.025 mM Pb (NO ₃) ₂ + aphids | 30.84 | bcde | 1.443 | 1.595 | cd | 0.52 |
| 0.050 mM Pb (NO ₃) ₂ + aphids | 29.85 | cdef | 0.289 | 2.703 | bcd | 0.751 |
| 0.0625 mM Pb (NO ₃) ₂ + aphids | 23.32 | g | 0.173 | 2.439 | bcd | 0.058 |
| 0.1 mM Pb (NO ₃) ₂ + aphids | 24.13 | fg | 0.577 | 1.276 | d | 0.173 |
| 0.25 mM Pb (NO ₃) ₂ + aphids | 31.53 | abcd | 0.346 | 1.682 | cd | 0.808 |
| 0.325 mM Pb (NO ₃) ₂ + aphids | 25.1 | efg | 0.462 | 3.305 | bc | 0.924 |
| LSD _{0.05} | 5.9 | | | 1.74 | | |

* In the columns, for individual times, the means denoted by the same letters are not significantly different. SE – standard error.

Table S9. Effect of lead and *A. pisum* on sucrose and glucose contents as well as total soluble sugar content in the roots and leaves of pea seedlings. The data were obtained in three independent experiments and statistically analysed using ANOVA ($\alpha = 0.05$).

| Time | Variant | Sucrose | | | | | | Glucose | | | | | | | |
|------|---|---------|------|--------|--------|----|--------|---------|-----|--------|--------|-----|--------|--------|-----|
| | | Leaves | | | Roots | | | Leaves | | | Roots | | | Leaves | |
| | | Mean | SE | | Mean | SE | | Mean | SE | | Mean | SE | | | |
| 0 h | Control | 0.375 | b | 0.0145 | 0.0205 | d | 0.0029 | 3.609 | d | 0.1494 | 0.543 | d | 0.0301 | 60287 | d |
| | 0.025 mM Pb (NO ₃) ₂ | 0.4635 | b | 0.0462 | 0.0033 | d | 0.0018 | 4.114 | c | 0.0251 | 1.06 | b | 0.0178 | 43206 | e |
| | 0.050 mM Pb (NO ₃) ₂ | 0.3747 | b | 0.0028 | 0.0201 | d | 0.0094 | 4.312 | bc | 0.0485 | 1.74 | a | 0.0935 | 61103 | d |
| | 0.0625 mM Pb (NO ₃) ₂ | 0.3625 | b | 0.0741 | 0.0042 | d | 0.0003 | 3.594 | d | 0.3176 | 0.786 | c | 0.0103 | 75240 | bc |
| | 0.1 mM Pb (NO ₃) ₂ | 0.4577 | b | 0.0146 | 0.1497 | b | 0.0201 | 4.68 | b | 0.0147 | 0.575 | d | 0.0507 | 70427 | cd |
| | 0.25 mM Pb (NO ₃) ₂ | 0.7838 | a | 0.0781 | 0.0807 | c | 0.0017 | 5.428 | a | 0.1137 | 1.146 | b | 0.0366 | 82953 | b |
| | 0.325 mM Pb (NO ₃) ₂ | 0.7534 | a | 0.0146 | 0.202 | a | 0.0199 | 5.537 | a | 0.0773 | 0.522 | d | 0.0372 | 106822 | a |
| | LSD _{0.05} | 0.1374 | | | 0.034 | | | 0.437 | | | 0.1421 | | | 11846 | |
| 24 h | Control | 0.3361 | ef | 0.0292 | 0.004 | c | 0.002 | 3.472 | fg | 0.1445 | 0.547 | f | 0.0516 | 60287 | d |
| | 0.025 mM Pb (NO ₃) ₂ | 0.2679 | ef | 0.0026 | 0.0164 | c | 0.001 | 3.338 | fg | 0.2084 | 0.419 | f | 0.0149 | 56656 | de |
| | 0.050 mM Pb (NO ₃) ₂ | 0.4374 | cd | 0.0285 | 0.0241 | c | 0.0088 | 4.016 | e | 0.0549 | 1.702 | a | 0.0813 | 49931 | ef |
| | 0.0625 mM Pb (NO ₃) ₂ | 0.3167 | ef | 0.0362 | 0.003 | c | 0.0025 | 3.739 | ef | 0.1674 | 1.113 | c | 0.0157 | 44431 | fg |
| | 0.1 mM Pb (NO ₃) ₂ | 0.9566 | a | 0.0376 | 0.0759 | b | 0.0174 | 4.977 | d | 0.0525 | 1.209 | b | 0.1538 | 55603 | de |
| | 0.25 mM Pb (NO ₃) ₂ | 0.3294 | ef | 0.0425 | 0.0263 | c | 0.0017 | 5.514 | c | 0.3484 | 0.402 | f | 0.0244 | 71867 | c |
| | 0.325 mM Pb (NO ₃) ₂ | 0.9291 | a | 0.0054 | 0.1857 | a | 0.0259 | 6.156 | b | 0.1153 | 0.448 | f | 0.0072 | 82566 | ab |
| | Control + aphids | 0.2531 | f | 0.0092 | 0 | c | 0 | 3.682 | efg | 0.0136 | 0.861 | de | 0.0651 | 40048 | g |
| | 0.025 mM Pb (NO ₃) ₂ + aphids | 0.2916 | ef | 0.0242 | 0.0018 | c | 0.0015 | 3.286 | g | 0.0103 | 1.023 | cd | 0.0310 | 42949 | fg |
| | 0.050 mM Pb (NO ₃) ₂ + aphids | 0.3211 | ef | 0.0302 | 0.01 | c | 0.0033 | 3.549 | fg | 0.0137 | 0.544 | f | 0.0182 | 76529 | bc |
| | 0.0625 mM Pb (NO ₃) ₂ + aphids | 0.3491 | de | 0.0338 | 0.0143 | c | 0.0021 | 4 | e | 0.0284 | 1.145 | c | 0.0340 | 57945 | de |
| | 0.1 mM Pb (NO ₃) ₂ + aphids | 0.4629 | c | 0.022 | 0.0022 | c | 0.0018 | 3.678 | efg | 0.1058 | 0.791 | e | 0.0222 | 42648 | fg |
| | 0.25 mM Pb (NO ₃) ₂ + aphids | 0.6347 | b | 0.0361 | 0.0834 | b | 0.0005 | 5.389 | c | 0.1468 | 0.903 | de | 0.1335 | 55345 | de |
| | 0.325 mM Pb (NO ₃) ₂ + aphids | 0.9837 | a | 0.0557 | 0.1608 | a | 0.0211 | 6.575 | a | 0.1101 | 0.79 | e | 0.0011 | 85101 | a |
| | LSD _{0.05} | 0.091 | | | 0.03 | | | 0.41 | | | 0.19 | | | 8083 | |
| 48 h | Control | 0.5322 | cd | 0.0414 | 0.0042 | f | 0.0014 | 4.166 | c | 0.0594 | 0.861 | def | 0.0783 | 42411 | e |
| | 0.025 mM Pb (NO ₃) ₂ | 0.4381 | def | 0.0754 | 0 | f | 0 | 3.569 | d | 0.0441 | 1.11 | bcd | 0.0422 | 55130 | c |
| | 0.050 mM Pb (NO ₃) ₂ | 0.2327 | hi | 0.0149 | 0 | f | 0 | 2.744 | f | 0.0925 | 0.437 | g | 0.0228 | 54980 | c |
| | 0.0625 mM Pb (NO ₃) ₂ | 0.3214 | fgh | 0.003 | 0.0118 | f | 0.0013 | 3.06 | ef | 0.0593 | 1.023 | cd | 0.0768 | 50017 | cde |
| | 0.1 mM Pb (NO ₃) ₂ | 1.3633 | a | 0.0387 | 2.2176 | a | 0.0507 | 6.227 | a | 0.0711 | 2.047 | a | 0.2636 | 52896 | cd |
| | 0.25 mM Pb (NO ₃) ₂ | 0.5877 | c | 0.0457 | 0.732 | b | 0.021 | 6.588 | a | 0.1308 | 1.343 | b | 0.0879 | 53261 | c |
| | 0.325 mM Pb (NO ₃) ₂ | 0.4412 | def | 0.0087 | 0.2753 | c | 0.0305 | 6.44 | a | 0.0724 | 0.884 | de | 0.0207 | 85552 | a |
| | Control + aphids | 0.258 | ghi | 0.0721 | 0.0006 | f | 0.0005 | 3.024 | ef | 0.1299 | 0.66 | efg | 0.0423 | 42218 | e |
| | 0.025 mM Pb (NO ₃) ₂ + aphids | 0.2891 | ghi | 0.0464 | 0.2598 | c | 0.0225 | 3.34 | de | 0.0847 | 0.614 | efg | 0.0350 | 42820 | e |
| | 0.050 mM Pb (NO ₃) ₂ + aphids | 0.1773 | i | 0.0763 | 0.0108 | f | 0.0026 | 3.084 | def | 0.4307 | 0.571 | fg | 0.0432 | 49609 | cde |
| | 0.0625 mM Pb (NO ₃) ₂ + aphids | 0.3627 | efg | 0.021 | 0 | f | 0 | 3.43 | de | 0.0683 | 1.061 | bcd | 0.0204 | 54829 | c |
| | 0.1 mM Pb (NO ₃) ₂ + aphids | 0.2837 | ghi | 0.0175 | 0.0179 | f | 0.0006 | 3.106 | def | 0.1431 | 1.117 | bcd | 0.1106 | 43550 | de |
| | 0.25 mM Pb (NO ₃) ₂ + aphids | 0.4729 | cde | 0.0311 | 0.1442 | d | 0.0066 | 4.796 | b | 0.0242 | 1.2 | bc | 0.0266 | 52810 | cd |
| | 0.325 mM Pb (NO ₃) ₂ + aphids | 0.7585 | b | 0.0041 | 0.0919 | e | 0.0068 | 6.36 | a | 0.3659 | 0.874 | def | 0.2072 | 75154 | b |
| | LSD _{0.05} | 0.125 | | | 0.05 | | | 0.5 | | | 0.303 | | | 9536.5 | |
| 72 h | Control | 0.3014 | bcde | 0.0621 | 0 | e | 0 | 2.084 | f | 0.4827 | 0.267 | h | 0.0116 | 36568 | g |
| | 0.025 mM Pb (NO ₃) ₂ | 0.458 | a | 0.0754 | 0.0022 | e | 0.0018 | 3.379 | cd | 0.0206 | 1.017 | bc | 0.0143 | 45054 | ef |

| | | | | | | | | | | | | | | |
|---|--------|------|--------|--------|---|--------|-------|-----|--------|-------|----|--------|-------|-----|
| 0.050 mM Pb (NO ₃) ₂ | 0.4835 | a | 0.0316 | 0 | e | 0 | 2.956 | de | 0.3599 | 0.865 | cd | 0.0215 | 46579 | ef |
| 0.0625 mM Pb (NO ₃) ₂ | 0.4116 | ab | 0.0228 | 0 | e | 0 | 2.343 | ef | 0.0294 | 0.568 | ef | 0.0343 | 50962 | cde |
| 0.1 mM Pb (NO ₃) ₂ | 0.0937 | f | 0.0091 | 0 | e | 0 | 3.269 | cd | 0.1348 | 0.456 | fg | 0.0352 | 70492 | b |
| 0.25 mM Pb (NO ₃) ₂ | 0.3446 | abcd | 0.0652 | 0.0721 | d | 0.0015 | 5.203 | a | 0.1271 | 0.882 | bc | 0.0033 | 46236 | ef |
| 0.325 mM Pb (NO ₃) ₂ | 0.4393 | ab | 0.0018 | 0.1664 | a | 0.0074 | 5.627 | a | 0.0383 | 1.452 | a | 0.0140 | 71115 | b |
| Control + aphids | 0.3474 | abcd | 0.089 | 0.003 | e | 0.0024 | 2.898 | de | 0.6122 | 0.71 | de | 0.0418 | 48535 | def |
| 0.025 mM Pb (NO ₃) ₂ + aphids | 0.2575 | cde | 0.0323 | 0.0022 | e | 0.0002 | 2.344 | ef | 0.2706 | 0.341 | gh | 0.0248 | 56999 | c |
| 0.050 mM Pb (NO ₃) ₂ + aphids | 0.2669 | cde | 0.0368 | 0 | e | 0 | 2.589 | def | 0.1644 | 0.51 | f | 0.0110 | 41144 | fg |
| 0.0625 mM Pb (NO ₃) ₂ + aphids | 0.2101 | def | 0.0339 | 0.0034 | e | 0.0002 | 2.183 | ef | 0.0383 | 0.584 | ef | 0.0039 | 50984 | cde |
| 0.1 mM Pb (NO ₃) ₂ + aphids | 0.1971 | ef | 0.0211 | 0.0014 | e | 0.0012 | 2.9 | de | 0.2891 | 0.561 | ef | 0.1322 | 55216 | cd |
| 0.25 mM Pb (NO ₃) ₂ + aphids | 0.2655 | cde | 0.0719 | 0.1284 | c | 0.005 | 3.975 | bc | 0.0512 | 1.041 | b | 0.0374 | 68945 | b |
| 0.325 mM Pb (NO ₃) ₂ + aphids | 0.3716 | abc | 0.0199 | 0.1564 | b | 0.005 | 4.195 | b | 0.2975 | 1.334 | a | 0.1315 | 98873 | a |
| LSD _{0.05} | 0.14 | | | 0.0084 | | | 0.8 | | | 0.16 | | | 8282 | |

* In the columns, for individual times, the means denoted by the same letters are not significantly different. SE – standard error.

Table S10. Effect of lead and *A. pisum* on acid invertase and alkaline invertase activities in the roots and leaves of pea seedlings. The data were obtained in three independent experiments and statistically analysed using ANOVA ($\alpha = 0.05$).

| Time | Variant | Acid invertase | | | | | | Alkaline/neutral invertase | | | | |
|------|---|----------------|-----|----------|---------|-----|----------|----------------------------|-----|-----------|-----------|----|
| | | Leaves | | | Roots | | | Leaves | | | Roots | |
| | | Mean | | SE | Mean | | SE | Mean | | SE | Mean | |
| 0 h | Control | 0.00001 | b* | 0 | 0.00026 | g | 0.000020 | 0.0001107 | d | 0.0000088 | 0.000048 | cd |
| | 0.025 mM Pb (NO ₃) ₂ | 0.00007 | b | 0.000006 | 0.00133 | c | 0.000012 | 0.0000793 | d | 0.0000154 | 0.000031 | d |
| | 0.050 mM Pb (NO ₃) ₂ | 0.00014 | b | 0.000056 | 0.00180 | b | 0.000023 | 0.0001361 | cd | 0.0000189 | 0 | d |
| | 0.0625 mM Pb (NO ₃) ₂ | 0.00005 | b | 0.000013 | 0.00194 | a | 0.000053 | 0.0001892 | bc | 0.0000208 | 0.000167 | c |
| | 0.1 mM Pb (NO ₃) ₂ | 0.00092 | b | 0.000016 | 0.00108 | e | 0.000010 | 0.0003446 | a | 0.0000440 | 0.000044 | cd |
| | 0.25 mM Pb (NO ₃) ₂ | 0.00109 | a | 0.000205 | 0.00121 | d | 0.000011 | 0.0002263 | b | 0.0000084 | 0.000736 | a |
| | 0.325 mM Pb (NO ₃) ₂ | 0.00102 | a | 0.000150 | 0.00054 | f | 0.000040 | 0.0003505 | a | 0.0000124 | 0.000342 | b |
| | LSD _{0.05} | 0.00030 | | | 0.00009 | | | 0.000065 | | | 0.0001306 | |
| 24 h | Control | 0.00063 | d | 0.000055 | 0.00062 | hi | 0.000022 | 0.0001233 | f | 0.0000191 | 0.00461 | e |
| | 0.025 mM Pb (NO ₃) ₂ | 0.00119 | bc | 0.000076 | 0.00123 | c | 0.000020 | 0.0002189 | de | 0.0000190 | 0.01105 | b |
| | 0.050 mM Pb (NO ₃) ₂ | 0.00118 | bc | 0.000183 | 0.00099 | def | 0.000023 | 0.0003188 | bc | 0.0000521 | 0.00745 | c |
| | 0.0625 mM Pb (NO ₃) ₂ | 0.00132 | b | 0.000013 | 0.00105 | de | 0.000072 | 0.0001893 | ef | 0.0000092 | 0.01719 | a |
| | 0.1 mM Pb (NO ₃) ₂ | 0.00127 | b | 0.000043 | 0.00098 | ef | 0.000015 | 0.0001989 | e | 0.0000105 | 0.00331 | g |
| | 0.25 mM Pb (NO ₃) ₂ | 0.00127 | b | 0.000138 | 0.00166 | b | 0.000008 | 0.0003749 | b | 0.0000143 | 0.000204 | i |
| | 0.325 mM Pb (NO ₃) ₂ | 0.00165 | a | 0.000049 | 0.00069 | ghi | 0.000018 | 0.0003593 | b | 0.0000096 | 0.000094 | i |
| | Control + aphids | 0.00030 | e | 0.000027 | 0.00059 | i | 0.000044 | 0.0000387 | g | 0.0000051 | 0.000214 | i |
| | 0.025 mM Pb (NO ₃) ₂ + aphids | 0.00068 | d | 0.000013 | 0.00116 | cd | 0.000045 | 0.0000338 | g | 0.0000065 | 0.000243 | i |
| | 0.050 mM Pb (NO ₃) ₂ + aphids | 0.00075 | d | 0.000095 | 0.00201 | a | 0.000013 | 0.0001268 | f | 0.0000075 | 0.00123 | h |
| | 0.0625 mM Pb (NO ₃) ₂ + aphids | 0.00061 | d | 0.000035 | 0.00177 | b | 0.000010 | 0.0002564 | cde | 0.0000489 | 0.00493 | de |
| | 0.1 mM Pb (NO ₃) ₂ + aphids | 0.00104 | c | 0.000018 | 0.00083 | fg | 0.000185 | 0.000474 | a | 0.0000117 | 0.00509 | d |
| | 0.25 mM Pb (NO ₃) ₂ + aphids | 0.00101 | c | 0.000010 | 0.00079 | gh | 0.000079 | 0.0005171 | a | 0.0000338 | 0.0039 | f |
| | 0.325 mM Pb (NO ₃) ₂ + aphids | 0.00134 | b | 0.000066 | 0.00037 | j | 0.000023 | 0.0002852 | cd | 0.0000022 | 0.0032 | g |
| | LSD _{0.05} | 0.00022 | | | 0.00018 | | | 0.000068 | | | 0.00038 | |
| 48 h | Control | 0.00048 | e | 0.000011 | 0.00012 | def | 0.000020 | 0.0000953 | i | 0.0000000 | 0.00125 | cd |
| | 0.025 mM Pb (NO ₃) ₂ | 0.00082 | cd | 0.000174 | 0.00027 | a | 0.000056 | 0.0003193 | def | 0.0000065 | 0.00147 | c |
| | 0.050 mM Pb (NO ₃) ₂ | 0.00084 | cd | 0.000147 | 0.00024 | ab | 0.000054 | 0.000447 | a | 0.0000129 | 0.00105 | de |
| | 0.0625 mM Pb (NO ₃) ₂ | 0.00120 | ab | 0.000153 | 0.00020 | bc | 0.000018 | 0.0004334 | ab | 0.0000138 | 0.00703 | a |
| | 0.1 mM Pb (NO ₃) ₂ | 0.00124 | ab | 0.000091 | 0.00007 | def | 0.000011 | 0.0003086 | def | 0.0000226 | 0.000766 | ef |
| | 0.25 mM Pb (NO ₃) ₂ | 0.00085 | cd | 0.000122 | 0.00007 | def | 0.000011 | 0.0001911 | h | 0.0000504 | 0.00187 | b |
| | 0.325 mM Pb (NO ₃) ₂ | 0.00138 | a | 0.000045 | 0.00006 | ef | 0.000006 | 0.0000643 | i | 0.0000067 | 0.000322 | gh |
| | Control + aphids | 0.00100 | bc | 0.000004 | 0.00008 | def | 0.000021 | 0.0002798 | fg | 0.0000119 | 0.000532 | fg |
| | 0.025 mM Pb (NO ₃) ₂ + aphids | 0.00071 | cde | 0.000137 | 0.00013 | cde | 0.000036 | 0.0002925 | ef | 0.0000458 | 0.000818 | ef |
| | 0.050 mM Pb (NO ₃) ₂ + aphids | 0.00077 | cde | 0.000043 | 0.00014 | cd | 0.000023 | 0.0003747 | bcd | 0.0000445 | 0.0012 | cd |
| | 0.0625 mM Pb (NO ₃) ₂ + aphids | 0.00084 | cd | 0.000031 | 0.00005 | f | 0.000013 | 0.0003593 | cde | 0.0000042 | 0.000545 | fg |
| | 0.1 mM Pb (NO ₃) ₂ + aphids | 0.00068 | de | 0.000054 | 0.00029 | a | 0.000008 | 0.0001815 | h | 0.0000139 | 0.000048 | h |
| | 0.25 mM Pb (NO ₃) ₂ + aphids | 0.00061 | de | 0.000189 | 0.00014 | cde | 0.000005 | 0.0002153 | gh | 0.0000086 | 0.00104 | de |
| | 0.325 mM Pb (NO ₃) ₂ + aphids | 0.00050 | e | 0.000013 | 0.00022 | ab | 0.000004 | 0.0003937 | abc | 0.0000282 | 0.000165 | h |
| | LSD _{0.05} | 0.00031 | | | 0.00008 | | | 0.00007 | | | 0.0003499 | |
| 72 h | Control | 0.00069 | cd | 0.000074 | 0.00006 | h | 0.000006 | 0.0002941 | ef | 0.0000097 | 0.000114 | l |
| | 0.025 mM Pb (NO ₃) ₂ | 0.00066 | cd | 0.000004 | 0.00023 | e | 0.000032 | 0.0003927 | bc | 0.0000365 | 0.000421 | k |
| | 0.050 mM Pb (NO ₃) ₂ | 0.00075 | bc | 0.000002 | 0.00022 | ef | 0.000040 | 0.0004403 | ab | 0.0000138 | 0.00419 | c |

| | | | | | | | | | | | |
|---|---------|-----|----------|---------|-----|----------|-----------|-----|-----------|----------|---|
| 0.0625 mM Pb (NO ₃) ₂ | 0.00087 | ab | 0.000063 | 0.00021 | ef | 0.000041 | 0.0003946 | abc | 0.0000542 | 0.0029 | g |
| 0.1 mM Pb (NO ₃) ₂ | 0.00051 | def | 0.000094 | 0.00097 | a | 0.000032 | 0.0003691 | cd | 0.0000066 | 0.00348 | f |
| 0.25 mM Pb (NO ₃) ₂ | 0.00062 | cde | 0.000064 | 0.00039 | cd | 0.000000 | 0.0003553 | cde | 0.0000209 | 0.0024 | h |
| 0.325 mM Pb (NO ₃) ₂ | 0.00045 | ef | 0.000023 | 0.00036 | d | 0.000005 | 0.0003103 | def | 0.0000073 | 0.00207 | j |
| Control + aphids | 0.00062 | cde | 0.000006 | 0.00004 | h | 0.000005 | 0.0002181 | g | 0.0000163 | 0.00223 | i |
| 0.025 mM Pb (NO ₃) ₂ + aphids | 0.00068 | cd | 0.000067 | 0.00016 | fg | 0.000012 | 0.0001507 | h | 0.0000072 | 0.00483 | b |
| 0.050 mM Pb (NO ₃) ₂ + aphids | 0.00072 | bc | 0.000041 | 0.00013 | g | 0.000018 | 0.0002108 | gh | 0.0000355 | 0.004 | d |
| 0.0625 mM Pb (NO ₃) ₂ + aphids | 0.00037 | f | 0.000070 | 0.00019 | efg | 0.000012 | 0.0002493 | fg | 0.0000060 | 0.00509 | a |
| 0.1 mM Pb (NO ₃) ₂ + aphids | 0.00080 | bc | 0.000054 | 0.00080 | b | 0.000008 | 0.0002627 | fg | 0.0000071 | 0.00374 | e |
| 0.25 mM Pb (NO ₃) ₂ + aphids | 0.00099 | a | 0.000039 | 0.00044 | c | 0.000008 | 0.0004595 | a | 0.0000084 | 0.00238 | h |
| 0.325 mM Pb (NO ₃) ₂ + aphids | 0.00069 | c | 0.000127 | 0.00021 | ef | 0.000033 | 0.0003124 | def | 0.0000117 | 0.0021 | j |
| LSD _{0.05} | 0.00018 | | | 0.00007 | | | 0.000065 | | | 0.000084 | |

* In the columns, for individual times, the means denoted by the same letters are not significantly different. SE – standard error.

Table S11. The effect of the *HMM* and *IFS* in the leaves and roots. The data were obtained in three independent experiments and statistically analyzed using ANOVA (*p*-values <0.001).

| Time | Variant | Leave | | | | | | Root | | | | | |
|------|---|------------|------|-------|------------|------|-------|------------|------|-------|------------|------|-------|
| | | <i>HMM</i> | | | <i>IFS</i> | | | <i>HMM</i> | | | <i>IFS</i> | | |
| | | Mean | s.e. | | Mean | s.e. | | Mean | s.e. | | Mean | s.e. | |
| 0 h | Control | 0.059 | b | 0.004 | 0.034 | b | 0.002 | 0.473 | b | 0.026 | 0.110 | b | 0.006 |
| | 0.075 mM Pb(NO ₃) ₂ | 0.052 | b | 0.003 | 0.027 | b | 0.001 | 0.315 | b | 0.017 | 0.024 | b | 0.001 |
| | 0.5 mM Pb(NO ₃) ₂ | 1.213 | a | 0.072 | 1.168 | a | 0.037 | 5.275 | a | 0.286 | 3.518 | a | 0.180 |
| | LSD _{0.05} | 0.145 | | | 0.075 | | | 0.574 | | | 0.361 | | |
| 24 h | Control | 0.083 | c | 0.006 | 0.067 | c | 0.002 | 0.831 | c | 0.045 | 0.505 | c | 0.026 |
| | + aphids | 0.253 | c | 0.016 | 0.180 | c | 0.008 | 0.732 | c | 0.040 | 0.295 | cd | 0.017 |
| | 0.075 mM Pb(NO ₃) ₂ | 0.209 | c | 0.017 | 0.173 | c | 0.010 | 0.193 | c | 0.012 | 0.014 | d | 0.001 |
| | 0.075 mM Pb(NO ₃) ₂ + aphids | 1.875 | b | 0.115 | 2.179 | b | 0.062 | 0.273 | c | 0.016 | 0.021 | d | 0.001 |
| | 0.5 mM mM Pb(NO ₃) ₂ | 0.207 | c | 0.015 | 0.140 | c | 0.005 | 3.842 | b | 0.209 | 2.730 | b | 0.140 |
| | 0.5 mM Pb(NO ₃) ₂ + aphids | 8.448 | a | 0.499 | 9.839 | a | 0.292 | 10.060 | a | 0.562 | 5.646 | a | 0.288 |
| | LSD _{0.05} | 0.645 | | | 0.376 | | | 0.758 | | | 0.405 | | |
| 48 h | Control | 0.098 | c | 0.008 | 0.164 | c | 0.009 | 2.148 | c | 0.118 | 1.706 | b | 0.089 |
| | + aphids | 0.331 | c | 0.024 | 0.662 | b | 0.023 | 1.862 | c | 0.103 | 1.725 | b | 0.091 |
| | 0.075 mM Pb(NO ₃) ₂ | 0.191 | c | 0.014 | 0.498 | b | 0.027 | 0.358 | d | 0.022 | 0.156 | d | 0.009 |
| | 0.075 mM Pb(NO ₃) ₂ + aphids | 2.335 | b | 0.137 | 5.112 | a | 0.140 | 0.704 | d | 0.039 | 0.819 | c | 0.043 |
| | 0.5 mM mM Pb(NO ₃) ₂ | 0.152 | c | 0.010 | 0.135 | c | 0.009 | 6.217 | b | 0.353 | 6.590 | a | 0.351 |
| | 0.5 mM Pb(NO ₃) ₂ + aphids | 3.508 | a | 0.215 | 5.333 | a | 0.184 | 7.502 | a | 0.412 | 7.121 | a | 0.366 |
| | LSD _{0.05} | 0.323 | | | 0.295 | | | 0.712 | | | 0.660 | | |
| 72 h | Control | 0.093 | c | 0.006 | 0.217 | e | 0.018 | 1.010 | c | 0.078 | 1.588 | c | 0.120 |
| | + aphids | 1.884 | b | 0.151 | 4.791 | c | 0.277 | 1.057 | c | 0.063 | 1.130 | cd | 0.060 |
| | 0.075 mM Pb(NO ₃) ₂ | 0.240 | c | 0.016 | 1.115 | d | 0.051 | 0.606 | cd | 0.039 | 0.755 | cd | 0.044 |
| | 0.075 mM Pb(NO ₃) ₂ + aphids | 2.154 | b | 0.149 | 11.040 | b | 0.301 | 0.331 | d | 0.018 | 0.472 | d | 0.025 |
| | 0.5 mM mM Pb(NO ₃) ₂ | 0.368 | c | 0.023 | 0.401 | de | 0.013 | 4.847 | b | 0.273 | 6.313 | b | 0.336 |
| | 0.5 mM Pb(NO ₃) ₂ + aphids | 11.830 | a | 0.691 | 18.940 | a | 0.561 | 8.530 | a | 0.465 | 12.050 | a | 0.614 |
| | LSD _{0.05} | 0.909 | | | 0.876 | | | 0.692 | | | 0.899 | | |