

Table S5. Analyses of Molecular Variance (AMOVA) in *A. halleri*.

A. Collection sites were assigned to three geographic regions (referred to as groups): Harz Mountains (*A. halleri* ssp. *halleri*: 1 to 5; see Table 1), Thuringian Forest (*A. halleri* ssp. *halleri*: 6, 7), and Japan (*A. halleri* ssp. *gemmifera*: 9).

| Segment | Source of variation | <i>df</i> | Sum of squares | Variance components | Percentage of variation | Fixation Indices | <i>P</i> value |
|-----------------|-----------------------------|-----------|----------------|---------------------|-------------------------|------------------|---|
| S1 | Between groups | 1 | 44.8 | 3.76 | 57.1 | F_{CT} : 0.57 | 0.1515 (\pm 0.0137) |
| | Between sites within groups | 4 | 29.1 | 1.21 | 18.4 | F_{SC} : 0.43 | 0.0049 (\pm 0.0020) |
| | Within sites | 24 | 38.8 | 1.62 | 24.5 | F_{ST} : 0.75 | $< 5 \cdot 10^{-6}$ ($\pm < 5 \cdot 10^{-6}$) |
| | Total | 29 | 112.8 | 6.59 | | | |
| S2 | Between groups | 2 | 26.0 | 0.77 | 22.0 | F_{CT} : 0.22 | 0.1652 (\pm 0.0126) |
| | Between sites within groups | 5 | 33.2 | 0.99 | 28.3 | F_{SC} : 0.36 | 0.0059 (\pm 0.0022) |
| | Within sites | 30 | 52.2 | 1.74 | 49.7 | F_{ST} : 0.50 | $< 5 \cdot 10^{-6}$ ($\pm < 5 \cdot 10^{-6}$) |
| | Total | 37 | 111.3 | 3.50 | | | |
| S3 | Between groups | 2 | 10.3 | 0.35 | 21.4 | F_{CT} : 0.21 | 0.0254 (\pm 0.0040) |
| | Between sites within groups | 5 | 10.2 | 0.19 | 11.7 | F_{SC} : 0.15 | 0.1241 (\pm 0.0128) |
| | Within sites | 30 | 32.7 | 1.09 | 66.8 | F_{ST} : 0.33 | $< 5 \cdot 10^{-6}$ ($\pm < 5 \cdot 10^{-6}$) |
| | Total | 37 | 53.2 | 1.63 | | | |
| S4 | Between groups | 2 | 17.4 | 0.69 | 30.6 | F_{CT} : 0.31 | 0.0078 (\pm 0.0031) |
| | Between sites within groups | 5 | 11.9 | 0.21 | 9.4 | F_{SC} : 0.14 | 0.2033 (\pm 0.0153) |
| | Within sites | 30 | 40.2 | 1.34 | 59.9 | F_{ST} : 0.40 | 0.0010 (\pm 0.0010) |
| | Total | 37 | 69.6 | 2.24 | | | |
| S6 ^a | Between groups | 1 | 2.4 | 0.12 | 25.2 | F_{CT} : 0.25 | 0.1134 (\pm 0.0098) |
| | Between sites within groups | 5 | 2.7 | 0.05 | 10.3 | F_{SC} : 0.14 | 0.0635 (\pm 0.0065) |
| | Within sites | 29 | 8.7 | 0.30 | 64.5 | F_{ST} : 0.35 | 0.0020 (\pm 0.0014) |
| | Total | 35 | 13.8 | 0.46 | | | |
| S9 ^a | Between groups | 1 | 0.1 | 0.00 | 0.8 | F_{CT} : 0.01 | 0.6188 (\pm 0.0151) |
| | Between sites within groups | 5 | 0.5 | -0.07 | -5.1 | F_{SC} : -0.05 | 0.6901 (\pm 0.0084) |
| | Within sites | 25 | 3.2 | 0.13 | 104.2 | F_{ST} : -0.04 | 0.6843 (\pm 0.0154) |
| | Total | 31 | 3.9 | 0.12 | | | |
| S11 | Between groups | 2 | 8.8 | 0.44 | 44.6 | F_{CT} : 0.45 | 0.0049 (\pm 0.0020) |
| | Between sites within groups | 5 | 3.5 | 0.04 | 4.2 | F_{SC} : 0.08 | 0.0841 (\pm 0.0082) |
| | Within sites | 28 | 14.1 | 0.50 | 51.2 | F_{ST} : 0.49 | $< 5 \cdot 10^{-6}$ ($\pm < 5 \cdot 10^{-6}$) |
| | Total | 35 | 26.4 | 0.98 | | | |
| S12 | Between groups | 2 | 45.0 | 1.23 | 15.3 | F_{CT} : 0.14 | 0.0860 (\pm 0.0077) |
| | Between sites within groups | 5 | 60.2 | 1.33 | 16.5 | F_{SC} : 0.20 | 0.0293 (\pm 0.0048) |
| | Within sites | 30 | 164.7 | 5.49 | 68.2 | F_{ST} : 0.31 | $< 5 \cdot 10^{-6}$ ($\pm < 5 \cdot 10^{-6}$) |
| | Total | 37 | 270.0 | 8.06 | | | |
| S13 | Between groups | 2 | 40.8 | 0.74 | 8.6 | F_{CT} : 0.09 | 0.2248 (\pm 0.0104) |
| | Between sites within groups | 5 | 81.9 | 2.32 | 27.2 | F_{SC} : 0.30 | 0.0078 (\pm 0.0034) |
| | Within sites | 28 | 153.2 | 5.47 | 64.1 | F_{ST} : 0.36 | $< 5 \cdot 10^{-6}$ ($\pm < 5 \cdot 10^{-6}$) |
| | Total | 35 | 275.9 | 8.53 | | | |

B. Collection sites were assigned to four geographic regions (referred to as groups): Groups were as in (a) above, and additionally including France as a fourth region (group) represented by Auby (*A. halleri* ssp. *halleri*: 8; see Table 1).

| Segment | Source of variation | <i>df</i> | Sum of squares | Variance components | Percentage of variation | Fixation Indices | <i>P</i> value |
|-----------------|-----------------------------|-----------|----------------|---------------------|-------------------------|------------------|---|
| S1 | Between groups | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. |
| | Between sites within groups | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. |
| | Within sites | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. |
| | Total | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. |
| S2 | Between groups | 3 | 26.9 | 0.53 | 16.6 | F_{CT} : 0.17 | 0.2493 (\pm 0.0132) |
| | Between sites within groups | 5 | 33.2 | 1.00 | 31.5 | F_{SC} : 0.37 | 0.0059 (\pm 0.0022) |
| | Within sites | 31 | 52.2 | 1.68 | 52.3 | F_{ST} : 0.48 | 0.0010 (\pm 0.0010) |
| | Total | 39 | 112.2 | 3.22 | | | |
| S3 | Between groups | 3 | 10.8 | 0.25 | 16.5 | F_{CT} : 0.16 | 0.0616 (\pm 0.0072) |
| | Between sites within groups | 5 | 10.2 | 0.19 | 11.9 | F_{SC} : 0.14 | 0.1241 (\pm 0.0117) |
| | Within sites | 31 | 34.7 | 1.12 | 71.5 | F_{ST} : 0.28 | 0.0039 (\pm 0.0018) |
| | Total | 39 | 55.6 | 1.56 | | | |
| S4 | Between groups | 3 | 18.4 | 0.56 | 26.3 | F_{CT} : 0.27 | 0.0371 (\pm 0.0057) |
| | Between sites within groups | 5 | 11.9 | 0.21 | 10.3 | F_{SC} : 0.14 | 0.2014 (\pm 0.0125) |
| | Within sites | 31 | 41.2 | 1.33 | 63.4 | F_{ST} : 0.37 | 0.0078 (\pm 0.0034) |
| | Total | 39 | 71.6 | 2.11 | | | |
| S6 ^a | Between groups | 3 | 50.0 | 1.99 | 81.3 | F_{CT} : 0.81 | 0.0371 (\pm 0.0048) |
| | Between sites within groups | 5 | 2.7 | 0.02 | 0.8 | F_{SC} : 0.04 | 0.0743 (\pm 0.0069) |
| | Within sites | 33 | 14.7 | 0.44 | 17.9 | F_{ST} : 0.82 | $< 5 \cdot 10^{-6}$ ($\pm < 5 \cdot 10^{-6}$) |
| | Total | 41 | 67.1 | 2.44 | | | |
| S9 ^a | Between groups | 3 | 84.0 | 3.77 | 82.9 | F_{CT} : 0.83 | 0.0987 (\pm 0.0110) |
| | Between sites within groups | 5 | 0.5 | -0.20 | -4.5 | F_{SC} : -0.26 | 0.7077 (\pm 0.0157) |
| | Within sites | 29 | 28.5 | 0.98 | 21.6 | F_{ST} : 0.78 | $< 5 \cdot 10^{-6}$ ($\pm < 5 \cdot 10^{-6}$) |
| | Total | 37 | 113.0 | 4.55 | | | |
| S11 | Between groups | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. |
| | Between sites within groups | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. |
| | Within sites | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. |
| | Total | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. |
| S12 | Between groups | 3 | 59.8 | 1.37 | 16.8 | F_{CT} : 0.17 | 0.0753 (\pm 0.0081) |
| | Between sites within groups | 5 | 60.2 | 1.34 | 16.5 | F_{SC} : 0.20 | 0.0283 (\pm 0.0059) |
| | Within sites | 31 | 168.2 | 5.42 | 66.7 | F_{ST} : 0.33 | $< 5 \cdot 10^{-6}$ ($\pm < 5 \cdot 10^{-6}$) |
| | Total | 39 | 288.3 | 8.14 | | | |
| S13 | Between groups | 3 | 50.6 | 0.60 | 7.3 | F_{CT} : 0.07 | 0.2698 (\pm 0.0169) |
| | Between sites within groups | 5 | 81.9 | 2.36 | 28.6 | F_{SC} : 0.31 | 0.0039 (\pm 0.0018) |
| | Within sites | 29 | 153.2 | 5.28 | 64.0 | F_{ST} : 0.36 | $< 5 \cdot 10^{-6}$ ($\pm < 5 \cdot 10^{-6}$) |
| | Total | 37 | 285.7 | 8.25 | | | |

^aexcluding *A. halleri* ssp. *gemmifera*. n.a.: not applicable (data for S1 and S11 are missing for the individual from Auby; see Table S1)