

Supplementary Information for

A trait-based understanding of wood decomposition by fungi

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Fig. S1

Tables S1 to S5

SI References

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*Schizophyllum commune [2]*

*Hyphodontia crustosa [1]*

*Pycnoporus sanguineus [1]*

*Mycoacia meridionalis [1]*

*Tyromyces chioneus [1]*

*Armillaria gallica [8]*

*Hyphoderma setigerum [2]*

*Fomes fomentarius [1]*

*Phellinus hartigii [1]*

*Phlebiopsis flavidoalba [2]*

*Phlebia rufa [2]*

*Xylobolus subpileatus [1]*

*Lentinus crinitus [1]*

*Armillaria tabescens [2]*

*Phellinus gilvus [1]*

*Armillaria sinapina [1]*

*Merulius tremellosus [2]*

*Laetiporus conifericola [1]*

*Phellinus robiniae [2]*

*Porodisculus pendulus [1]*

0.02

**Fig. S1.** Phylogeny of the 20 fungal species used in this study, with the number of unique isolates per species indicated in brackets. The phylogenetic tree was inferred based on large subunit region (LSU) sequences for each fungus (full details of the phylogenetic analysis in 1, 2).

**Table S1.** All traits analyzed in this study, with variable numbers as presented in Fig. 3. The trait data have previously been described in (1), with the exception of decomposition rate.

|  |  |  |
| --- | --- | --- |
| Nr | Variable | Description |
| V1 | Decomposition rate | Mass loss over 122 days (% dry weight), geometric mean across 10,16, and 22 °C |
| V2 | Temperature niche minimum | Lower bound of thermal niche width (°C) |
| V3 | Temperature niche maximum | Upper bound of thermal niche width (°C) |
| V4 | Optimal temperature | Temperature at maximum extension rate (°C) |
| V5 | Temperature niche width | Temperature range supporting at least half the maximum extension rate (°C) |
| V6 | Moisture niche minimum | Lower bound of moisture niche width (MPa) |
| V7 | Moisture niche maximum | Upper bound of moisture niche width (MPa) |
| V8 | Optimal moisture | Moisture at maximum extension rate (MPa) |
| V9 | Moisture niche width | Moisture range supporting at least half the maximum extension rate (MPa) |
| V10 | Competitive ranking | Position in overall competitive hierarchy (Elo ranking system) |
| V11 | Offensive ability | Avg extension rate when displacing a competitor / monoculture extension rate |
| V12 | Defensive ability | Avg extension rate when fungus is overgrown / monoculture extension rate |
| V13 | Extension rate | Linear extension rate (mm day-1) |
| V14 | Hyphal density | Dry mass (µg cm-2) at 1 cm from the edge of the growing front |
| V15 | Beta-glucosidase | Enzyme activity per unit biomass over 7 days |
| V16 | Cellulase | Enzyme activity per unit biomass over 7 days |
| V17 | Acid phosphatase | Enzyme activity per unit biomass over 7 days |
| V18 | Chitinase | Enzyme activity per unit biomass over 7 days |
| V19 | Leucine aminopeptidase | Enzyme activity per unit biomass over 7 days |
| V20 | Peroxidase II (substrate TMB) | Enzyme activity per unit biomass over 7 days |
| V21 | Phenol oxidase II (substrate ABTS) | Enzyme activity per unit biomass over 7 days |
| V22 | Peroxidase I (substrate H2O2) | Enzyme activity per unit biomass over 7 days |
| V23 | Phenol oxidase I (substrate l-DOPA) | Enzyme activity per unit biomass over 7 days |

**2.** Phylogenetic least squares regression (3, 4) for the relationship between decomposition rate and (i) extension rate, (ii) acid phosphatase activity, and (iii) the dominance-tolerance tradeoff for moisture. Analyses are analogous to those in the main text (Figs. 1C, 1D, and 4A, respectively), with the exception that the effect of extension rate was analyzed for the average decomposition rate across all temperatures, because the phylogenetic analysis did not allow for repeated measures per isolate. All models were fit using the gls function in R with corPagel correlation structure (5, 6). Pagel’s λ (7) indicates the degree of phylogenetic signal in the relationship and was estimated simultaneously with the regression coefficients (4). We determined whether the phylogenetic signal was statistically significant by testing the models against a model where λ was fixed at zero (phylogenetic independence), using likelihood ratio tests (LRT).

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Model | Pagel’s λ | | LRT for λ = 0 | | |  | Main effect | |  |
| λ | 95% CI | LR | df | *P* | slope | *F* | df | *P* |
| log(decomposition rate\*) ~ log(extension rate) | 0.44 | [-0.02, 0.90] | 3.33 | 3 | 0.07 | 0.19 | 2.47 | 1,32 | 0.13 |
| log(decomposition rate† + 1) ~ log(acid phosphatase activity + 1) | 0.28 | [-0.36, 0.93] | 0.86 | 3 | 0.35 | -0.21 | 4.64 | 1,32 | 0.04 |
| log(decomposition rate\*) ~ moisture trade-off | 0.46 | [0.03, 0.90] | 4.18 | 3 | 0.04 | 0.46 | 2.58 | 1,32 | 0.12 |

\*Geometric mean decomposition rate across 10, 16 and 22 °C.

†Decomposition rate at 22 °C, the temperature enzyme activity was measured at.

Decomposition rate measured for each isolate under standardized laboratory conditions

at 10, 16 and 22 °C (*N* = 6 replicates per temperature).

# 10 °C 16 °C 22 °C

Isolate

Decomposition rate (% dry mass loss over 122 days)

±

SD

geometric mean

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| *Armillaria gallica* FP102531 C6D |  | 4.07 ± 1.61 | 10.21 ± 2.76 | 17.12 ± 1.87 | 8.93 |
| *Armillaria gallica* EL8 A6F |  | 3.20 ± 1.17 | 1.89 ± 1.26 | 15.42 ± 5.10 | 4.54 |
| *Armillaria gallica* FP102534 A5A |  | 2.94 ± 1.12 | 6.09 ± 3.16 | 11.00 ± 1.36 | 5.81 |
| *Armillaria gallica* FP102535 A5D |  | 3.78 ± 0.87 | 7.23 ± 3.51 | 12.30 ± 2.72 | 6.95 |
| *Armillaria gallica* FP102542 A5B |  | 2.35 ± 1.28 | 5.90 ± 4.90 | 9.20 ± 3.53 | 5.03 |
| *Armillaria gallica* HHB12551 C6C |  | 2.03 ± 1.07 | 0.11 ± 0.16 | 39.51 ± 17.94 | 2.04 |
| *Armillaria gallica* OC1 A6E |  | 2.29 ± 0.51 | 1.92 ± 2.20 | 9.26 ± 2.08 | 3.44 |
| *Armillaria gallica* SH1 A4A |  | 2.18 ± 0.47 | 0.34 ± 0.40 | 10.78 ± 2.99 | 2.00 |
| *Armillaria sinapina* PR9 |  | 1.72 ± 0.83 | 6.76 ± 1.47 | 8.28 ± 1.12 | 4.58 |
| *Armillaria tabescens* FP102622 A3C |  | 3.56 ± 0.75 | 0.14 ± 0.22 | 13.28 ± 7.89 | 1.89 |
| *Armillaria tabescens* TJV93 261 A1E |  | 2.83 ± 0.59 | 3.67 ± 1.37 | 12.75 ± 2.78 | 5.10 |
| *Fomes fomentarius* TJV93 7 A3E |  | 10.41 ± 1.81 | 21.26 ± 11.9 | 47.24 ± 28.68 | 21.87 |
| *Hyphodontia crustosa* HHB13392 B7B |  | 4.29 ± 1.01 | 13.38 ± 5.67 | 13.62 ± 5.92 | 9.21 |
| *Hyphoderma setigerum* HHB12156 B3H |  | 5.64 ± 1.49 | 6.28 ± 0.85 | 12.45 ± 3.01 | 7.61 |
| *Hyphoderma setigerum* FP150263 B2C |  | 2.67 ± 1.02 | 5.63 ± 0.61 | 18.82 ± 9.96 | 6.57 |
| *Laetiporus conifericola* HHB15411 C8B |  | 2.29 ± 0.19 | 20.28 ± 9.79 | 7.60 ± 7.49 | 7.07 |
| *Lentinus crinitus* PR2058 C1B |  | 3.47 ± 0.99 | 9.30 ± 2.28 | 16.01 ± 7.58 | 8.02 |
| *Mycoacia meridionalis* FP150352 C4E |  | 2.16 ± 1.01 | 5.67 ± 1.35 | 7.96 ± 1.21 | 4.60 |
| *Merulius tremullosus* FP102301 C3E |  | 22.78 ± 2.58 | 32.27 ± 9.91 | 53.5 ± 4.78 | 34.01 |
| *Merulius tremellosus* FP150849 C3F |  | 13.52 ± 1.51 | 15.95 ± 1.79 | 43.91 ± 11.72 | 21.15 |
| *Phlebiopsis flavidoalba* FP102185 B12D |  | 11.18 ± 2.91 | 18.52 ± 14.63 | 27.94 ± 9.43 | 17.95 |
| *Phlebiopsis flavidoalba* FP150451 A8G |  | 6.40 ± 1.17 | 8.89 ± 1.82 | 25.93 ± 17.2 | 11.38 |
| *Phellinus gilvus* HHB11977 C4H |  | 5.15 ± 2.24 | 19.47 ± 7.45 | 42.09 ± 18.84 | 16.16 |
| *Phellinus hartigii* DMR94 44 A10E |  | 2.30 ± 0.27 | 12.86 ± 4.80 | 17.39 ± 12.86 | 8.01 |
| *Porodisculus pendulus* HHB13576 B12C |  | 2.61 ± 0.58 | 2.43 ± 0.55 | 4.36 ± 0.51 | 3.02 |
| *Phellinus robiniae* FP135708 A10G |  | 3.68 ± 0.49 | 4.52 ± 0.96 | 8.28 ± 4.79 | 5.17 |
| *Phellinus robiniae* AZ15 A10H Banik/Mark | | 2.22 ± 0.90 | 6.12 ± 1.99 | 26.29 ± 2.09 | 7.10 |
| *Phlebia acerina* MR4280 B9G \* | | 11.88 ± 2.99 | 24.59 ± 8.28 | 16.18 ± 8.47 | 16.78 |
| *Phlebia acerina* DR60 A8A \* | | 5.97 ± 2.14 | 21.10 ± 1.89 | 73.39 ± 10.22 | 20.98 |
| *Pycnoporus sanguineus* PR SC 95 A11C | | 4.44 ± 0.59 | 18.30 ± 9.26 | 37.43 ± 13.34 | 14.49 |
| *Schizophyllum commune* TJV93 5 A10A | | 3.92 ± 1.24 | 2.02 ± 2.07 | 12.69 ± 3.52 | 4.65 |
| *Schizophyllum commune* PR1117 | | 2.55 ± 1.11 | 3.32 ± 1.19 | 6.87 ± 0.61 | 3.88 |
| *Tyromyces chioneus* HHB11933 B10F | | 5.35 ± 1.46 | 16.74 ± 3.65 | 29.06 ± 9.35 | 13.75 |
| *Xylobolus subpileatus* FP102567 A11A | | 2.17 ± 1.61 | 7.45 ± 4.17 | 8.55 ± 6.37 | 5.17 |

* The accepted name of these isolates is *Phlebia rufa* and is used in Fig. S1. The name of the original cultures as stored in our collections (*Phlebia acerina*) is maintained here for reference.

Hyphal extension rate measured for each isolate under standardized laboratory conditions at 10, 16 and 22 °C (*N* = 5 replicates per temperature).

|  |  |  |  |
| --- | --- | --- | --- |
| Isolate |  | Extension rate (mm day-1) ± SD |  |
| 10 °C | 16 °C | 22 °C |
| *Armillaria gallica* FP102531 C6D (south) \* | 0.30 ± 0.05 | 0.36 ± 0.05 | 0.34 ± 0.06 |
| *Armillaria gallica* EL8 A6F (north) \* | 0.18 ± 0.06 | 0.26 ± 0.05 | 0.38 ± 0.15 |
| *Armillaria gallica* FP102534 A5A (south) \* | 0.26 ± 0.05 | 0.24 ± 0.05 | 0.32 ± 0.06 |
| *Armillaria gallica* FP102535 A5D (south) \* | 0.16 ± 0.05 | 0.30 ± 0.05 | 0.24 ± 0.06 |
| *Armillaria gallica* FP102542 A5B (south) \* | 0.20 ± 0.05 | 0.24 ± 0.05 | 0.40 ± 0.06 |
| *Armillaria gallica* HHB12551 C6C (north) \* | 0.14 ± 0.06 | 0.32 ± 0.05 | 0.48 ± 0.15 |
| *Armillaria gallica* OC1 A6E (north) \* | 0.20 ± 0.06 | 0.26 ± 0.05 | 0.36 ± 0.15 |
| *Armillaria gallica* SH1 A4A (north) \* | 0.06 ± 0.06 | 0.18 ± 0.05 | 0.66 ± 0.15 |
| *Armillaria sinapina* PR9 | 0.33 ± 0.04 | 0.60 ± 0.05 | 0.84 ± 0.07 |
| *Armillaria tabescens* FP102622 A3C | 0.35 ± 0.03 | 0.60 ± 0.04 | 0.93 ± 0.16 |
| *Armillaria tabescens* TJV93 261 A1E | 0.32 ± 0.03 | 0.68 ± 0.13 | 1.56 ± 0.06 |
| *Fomes fomentarius* TJV93 7 A3E | 0.36 ± 0.08 | 1.28 ± 0.22 | 4.62 ± 0.24 |
| *Hyphodontia crustosa* HHB13392 B7B | 1.20 ± 0.03 | 0.99 ± 0.07 | 1.77 ± 0.20 |
| *Hyphoderma setigerum* HHB12156 B3H | 1.39 ± 0.06 | 3.70 ± 0.†0 | 6.46 ± 0.17 |
| *Hyphoderma setigerum* FP150263 B2C | 0.44 ± 0.03 | 1.90 ± 0.06 | 4.68 ± 0.22 |
| *Laetiporus conifericola* HHB15411 C8B | 1.08 ± 0.78 | 3.31 ± 0.13 | 6.00 ± 0.30 |
| *Lentinus crinitus* PR2058 C1B | 1.64 ± 0.00 | 3.06 ± 0.09 | 6.17 ± 0.12 |
| *Mycoacia meridionalis* FP150352 C4E | 0.36 ± 0.01 | 1.10 ± 0.01 | 1.60 ± 0.00 |
| *Merulius tremullosus* FP102301 C3E | 3.30 ± 0.10 | 5.85 ± 2.31 | 8.67 ± 0.56 |
| *Merulius tremellosus* FP150849 C3F | 3.40 ± 0.00 | 6.50 ± 2.24 | 8.33 ± 0.39 |
| *Phlebiopsis flavidoalba* FP102185 B12D | 2.28 ± 0.08 | 5.70 ± 0.20 | 8.41 ± 0.74 |
| *Phlebiopsis flavidoalba* FP150451 A8G | 3.04 ± 0.05 | 7.40 ± 0.00 | 10.57 ± 0.15 |
| *Phellinus gilvus* HHB11977 C4H | 1.40 ± 0.05 | 1.53 ± 0.18 | 3.70 ± 0.00 |
| *Phellinus hartigii* DMR94 44 A10E | 0.49 ± 0.12 | 1.26 ± 0.07 | 0.94 ± 0.10 |
| *Porodisculus pendulus* HHB13576 B12C | 0.95 ± 0.25 | 1.25 ± 0.20 | 2.90 ± 0.74 |
| *Phellinus robiniae* FP135708 A10G | 0.40 ± 0.02 | 1.52 ± 0.03 | 3.32 ± 0.11 |
| *Phellinus robiniae* AZ15 A10H Banik/Mark | 0.39 ± 0.02 | 1.24 ± 0.01 | 2.84 ± 0.07 |
| *Phlebia acerina* MR4280 B9G | 3.70 ± 0.00 | 7.40 ± 0.00 | 8.27 ± 0.09 |
| *Phlebia acerina* DR60 A8A | 3.70 ± 0.00 | 7.40 ± 0.00 | 8.23 ± 0.30 |
| *Pycnoporus sanguineus* PR SC 95 A11C | 0.81 ± 0.03 | 3.21 ± 0.07 | 7.26 ± 0.17 |
| *Schizophyllum commune* TJV93 5 A10A | 1.88 ± 0.25 | 3.32 ± 0.08 | 7.40 ± 0.00 |
| *Schizophyllum commune* PR1117 | 1.06 ± 0.04 | 1.64 ± 0.00 | 4.60 ± 0.41 |
| *Tyromyces chioneus* HHB11933 B10F | 1.92 ± 0.13 | 3.37 ± 0.10 | 5.67 ± 0.12 |
| *Xylobolus subpileatus* FP102567 A11A | 0.74 ± 0.10 | 1.00 ± 0.09 | 1.04 ± 0.09 |

* SDs for *Armillaria gallica* are reported at the species level, for pooled isolates from northern and southern locations (5 isolates each). Previous work (2) had shown very little variation across the large number of isolates from this species.

†Hyphal extension was measured to the closest mm after 2 weeks; true variance exceeds zero but was not detected.

Wood mass loss (8–10) and community-weighted hyphal extension rate (this study) for 74 logs in the field decomposition experiment, located at 3 sites. Extension rate is the average hyphal extension rate measured under standardized laboratory conditions of 14 fungi isolated from the top or bottom of each log (“neither” indicates that top and bottom were indistinguishable due to the advanced state of decay of the log). If both sides of the log were sampled, we averaged the community-weighted extension rate of the top and bottom. Half the logs deployed in 2011 (3 years decay time) were enclosed in a polypropylene insect mesh (1 mm2). Table continued on next two pages.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Woody plant species | Site | Years decayed | Mesh | Sampling side  (top / bottom) | Extension rate  (mm day-1) | Mass loss  (%) |
| *Celtis occidentalis* | 2 | 3 | absent | both | 13.19 | 37.4 |
| *Celtis occidentalis* | 2 | 3 | present | both | 1.10 | 29.8 |
| *Celtis occidentalis* | 6 | 3 | absent | both | 0.92 | 33.0 |
| *Celtis occidentalis* | 6 | 3 | present | both | 9.90 | 45.7 |
| *Celtis occidentalis* | 7 | 3 | absent | bottom | 13.54 | 49.0 |
| *Celtis occidentalis* | 7 | 3 | present | both | 15.41 | 67.4 |
| *Fraxinus americana* | 2 | 3 | absent | bottom | 4.64 | 12.6 |
| *Fraxinus americana* | 2 | 3 | present | both | 5.46 | 14.3 |
| *Fraxinus americana* | 6 | 3 | absent | both | 5.90 | 13.6 |
| *Fraxinus americana* | 6 | 3 | present | bottom | 1.03 | 11.4 |
| *Fraxinus americana* | 7 | 3 | absent | both | 13.60 | 26.0 |
| *Fraxinus americana* | 7 | 3 | present | bottom | 10.11 | 29.6 |
| *Juglans nigra* | 2 | 3 | absent | both | 2.33 | 19.9 |
| *Juglans nigra* | 2 | 3 | present | both | 7.90 | 27.2 |
| *Juglans nigra* | 6 | 3 | absent | bottom | 15.96 | 26.2 |
| *Juglans nigra* | 6 | 3 | present | bottom | 7.72 | 20.2 |
| *Juglans nigra* | 7 | 3 | absent | bottom | 16.48 | 36.6 |
| *Juglans nigra* | 7 | 3 | present | both | 15.60 | 31.5 |
| *Juniperus virginiana* | 2 | 3 | present | bottom | 6.83 | 4.1\* |
| *Lonicera maackii* | 2 | 3 | absent | both | 10.84 | 25.2 |
| *Lonicera maackii* | 2 | 3 | present | top | 3.31 | 21.1 |
| *Lonicera maackii* | 6 | 3 | absent | bottom | 15.36 | 23.2 |
| *Lonicera maackii* | 6 | 3 | present | both | 2.49 | 15.2 |
| *Lonicera maackii* | 7 | 3 | absent | both | 15.66 | 28.2 |
| *Lonicera maackii* | 7 | 3 | present | both | 3.29 | 18.2 |
| *Pinus echinata* | 2 | 3 | absent | bottom | 1.26 | 27.7 |
| *Quercus alba* | 2 | 3 | absent | both | 12.08 | 46.9 |
| *Quercus alba* | 2 | 3 | present | both | 6.20 | 27.3 |
| *Quercus alba* | 6 | 3 | absent | both | 13.30 | 46.2 |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Woody plant species | Site | Years decayed | Mesh | Sampling side  (top / bottom) | Extension rate  (mm day-1) | Mass loss  (%) |
| *Quercus alba* | 6 | 3 | present | both | 10.88 | 44.5 |
| *Quercus alba* | 7 | 3 | absent | both | 16.40 | 59.2 |
| *Quercus alba* | 7 | 3 | present | both | 6.95 | 29.0 |
| *Quercus velutina* | 2 | 3 | absent | both | 1.98 | 25.3 |
| *Quercus velutina* | 2 | 3 | present | both | 8.21 | 32.4 |
| *Quercus velutina* | 6 | 3 | absent | both | 2.05 | 27.9 |
| *Quercus velutina* | 6 | 3 | present | bottom | 8.79 | 37.0 |
| *Quercus velutina* | 7 | 3 | absent | bottom | 15.86 | 53.2 |
| *Quercus velutina* | 7 | 3 | present | both | 9.06 | 45.2 |
| *Acer rubrum* | 2 | 5 | absent | bottom | 16.03 | 80.2 |
| *Aesculus glabra* | 2 | 5 | absent | both | 15.57 | 81.9 |
| *Aesculus glabra* | 6 | 5 | absent | both | 14.38 | 81.5 |
| *Aesculus glabra* | 7 | 5 | absent | both | 6.65 | 80.1 |
| *Amelanchier arborea* | 2 | 5 | absent | top | 0.22 | 57.3 |
| *Amelanchier arborea* | 6 | 5 | absent | top | 7.13 | 81.5 |
| *Amelanchier arborea* | 7 | 5 | absent | neither | 7.82 | 97.5 |
| *Asimina triloba* | 2 | 5 | absent | both | 4.69 | 46.1 |
| *Asimina triloba* | 6 | 5 | absent | bottom | 15.86 | 67.6 |
| *Asimina triloba* | 7 | 5 | absent | top | 2.66 | 79.0 |
| *Carya tomentosa* | 6 | 5 | absent | both | 14.33 | 56.9 |
| *Carya tomentosa* | 7 | 5 | absent | bottom | 15.41 | 68.8 |
| *Celtis occidentalis* | 2 | 5 | absent | top | 1.45 | 60.4 |
| *Celtis occidentalis* | 6 | 5 | absent | both | 1.08 | 69.9 |
| *Cornus florida* | 2 | 5 | absent | top | 3.38 | 47.8 |
| *Cornus florida* | 6 | 5 | absent | top | 0.26 | 54.5 |
| *Cornus florida* | 7 | 5 | absent | bottom | 1.34 | 68.5 |
| *Diospyros virginiana* | 2 | 5 | absent | top | 1.94 | 67.0 |
| *Diospyros virginiana* | 6 | 5 | absent | top | 15.09 | 84.7 |
| *Diospyros virginiana* | 7 | 5 | absent | top | 15.19 | 84.6 |
| *Gleditsia triacanthos* | 2 | 5 | absent | both | 7.49 | 58.8 |
| *Gleditsia triacanthos* | 6 | 5 | absent | both | 0.09 | 62.1 |
| *Juniperus virginiana* | 2 | 5 | absent | bottom | 0.02 | 37.9 |
| *Juniperus virginiana* | 6 | 5 | absent | bottom | 0.64 | 27.6 |
| *Juniperus virginiana* | 7 | 5 | absent | bottom | 6.29 | 32.1 |
| *Pinus strobus* | 6 | 5 | absent | both | 5.33 | 50.7 |
| *Platanus occidentalis* | 2 | 5 | absent | both | 3.18 | 69.1 |
| *Platanus occidentalis* | 6 | 5 | absent | bottom | 0.43 | 81.8 |
| *Platanus occidentalis* | 7 | 5 | absent | both | 2.26 | 62.8 |
| *Quercus velutina* | 2 | 5 | absent | top | 0.06 | 54.5 |
| *Quercus velutina* | 6 | 5 | absent | bottom | 0.48 | 67.4 |
| *Quercus velutina* | 7 | 5 | absent | bottom | 1.90 | 63.2 |

\* Sample excluded from statistical analysis as an outlier (very low mass loss, further than 1.5 times the interquartile range from the mean mass loss after 3 years).

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|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Woody plant species | Site | Years decayed | Mesh | Sampling side  (top / bottom) | Extension rate  (mm day-1) | Mass loss  (%) |
| *Ulmus rubra* | 2 | 5 | absent | bottom | 0.34 | 54.3 |
| *Ulmus rubra* | 6 | 5 | absent | both | 0.26 | 44.5 |
| *Ulmus rubra* | 7 | 5 | absent | both | 2.69 | 74.2 |
| *Vitis vulpina* | 6 | 5 | absent | both | 1.82 | 66.3 |

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