

## **Supplementary Information**

### **Plants and mycorrhizal fungi reduce mineral-associated organic matter nitrogen formed from decomposing litter**

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**Table S1.** Data summary table of measured soil properties.

|                                                                               | <i>Plant + AM</i><br>(mean $\pm$ SE) | <i>Plant only</i><br>(mean $\pm$ SE) | <i>No plant</i><br>(mean $\pm$ SE) |
|-------------------------------------------------------------------------------|--------------------------------------|--------------------------------------|------------------------------------|
| Soil moisture (g H <sub>2</sub> O/g dry wt soil)                              | 0.11                                 | 0.10                                 | 0.10 $\pm$ 0.1                     |
| Soil pH                                                                       | 6.65 $\pm$ 0.04 <sup>a</sup>         | 6.38 $\pm$ 0.04 <sup>b</sup>         | 6.28 $\pm$ 0.02 <sup>b</sup>       |
| Extractable DOC (ug C/g dry wt soil)                                          | 39.23 $\pm$ 4.76                     | 46.38 $\pm$ 3.22                     | 42.86 $\pm$ 3.94                   |
| Microbial biomass C (ug C/g dry wt soil)                                      | 395.78 $\pm$ 50.87                   | 252.53 $\pm$ 47.22                   | 321.29 $\pm$ 70.53                 |
| Initial (day 0) extractable NH <sub>4</sub> <sup>+</sup> (ug N/g dry wt soil) | 0.719 $\pm$ 0.21                     | 0.980 $\pm$ 0.382                    | 0.630 $\pm$ 0.1397                 |
| Initial (day 0) extractable NO <sub>3</sub> <sup>-</sup> (ug N/g dry wt soil) | 0.7586 $\pm$ 0.1529 <sup>a</sup>     | 0.632 $\pm$ 0.1504 <sup>a</sup>      | 14.326 $\pm$ 1.8572 <sup>b</sup>   |
| Net N mineralization (ug N/g dry wt soil/28 days)                             | -0.2579 $\pm$ 0.3029 <sup>a</sup>    | -1.2086 $\pm$ 0.4562 <sup>a</sup>    | -5.3840 $\pm$ 0.8286 <sup>b</sup>  |
| Net nitrification (ug N/g dry wt soil/28 days)                                | -0.2778 $\pm$ 0.2393 <sup>a</sup>    | -0.4235 $\pm$ 0.1872 <sup>a</sup>    | -4.9165 $\pm$ 0.8989 <sup>b</sup>  |
| MAOM C:N                                                                      | 8.97 $\pm$ 1.03 <sup>a</sup>         | 10.63 $\pm$ 0.09 <sup>b</sup>        | 9.47 $\pm$ 0.14 <sup>c</sup>       |
| POM C:N                                                                       | 19 $\pm$ 1.30                        | 17 $\pm$ 0.56                        | 16 $\pm$ 1.37                      |
| Total MAOM recovered (g)                                                      | 4.59 $\pm$ 0.06 <sup>a</sup>         | 4.80 $\pm$ 0.13 <sup>a</sup>         | 5.16 $\pm$ 0.15 <sup>b</sup>       |
| Total POM recovered (g)                                                       | 25.77 $\pm$ 0.01 <sup>a</sup>        | 25.67 $\pm$ 0.12 <sup>a</sup>        | 25.10 $\pm$ 0.19 <sup>b</sup>      |
| MAOM-N (mg N/g dry wt soil)                                                   | 1.3112 $\pm$ 0.0502 <sup>a</sup>     | 1.216 $\pm$ 0.0214 <sup>a</sup>      | 1.5 $\pm$ 0.052 <sup>b</sup>       |
| POM-N (mg N/g dry wt soil)                                                    | 0.085 $\pm$ 0.0002 <sup>a</sup>      | 0.120 $\pm$ 0.016 <sup>ab</sup>      | 0.128 $\pm$ 0.0123 <sup>b</sup>    |
| MAOM-C (mg C/g dry wt soil)                                                   | 2.14 $\pm$ 0.27 <sup>a</sup>         | 2.26 $\pm$ 0.17 <sup>a</sup>         | 2.92 $\pm$ 0.13 <sup>b</sup>       |
| POM-C (mg C/g dry wt soil)                                                    | 1.6 $\pm$ 0.1102 <sup>a</sup>        | 1.59 $\pm$ 0.0922 <sup>a</sup>       | 1.893 $\pm$ 0.069 <sup>b</sup>     |
| AMF colonization (%)                                                          | 58% <sup>a</sup>                     | 0% <sup>b</sup>                      | N/A                                |

The values were averaged across replicate pots (*plant + AM*: n=8; *plant only*: n=7  $\pm$  SE) within an experimental treatment. Letters represent significant differences ( $p \leq 0.05$ ) among treatments. Values without letters indicate no significant differences between treatments.

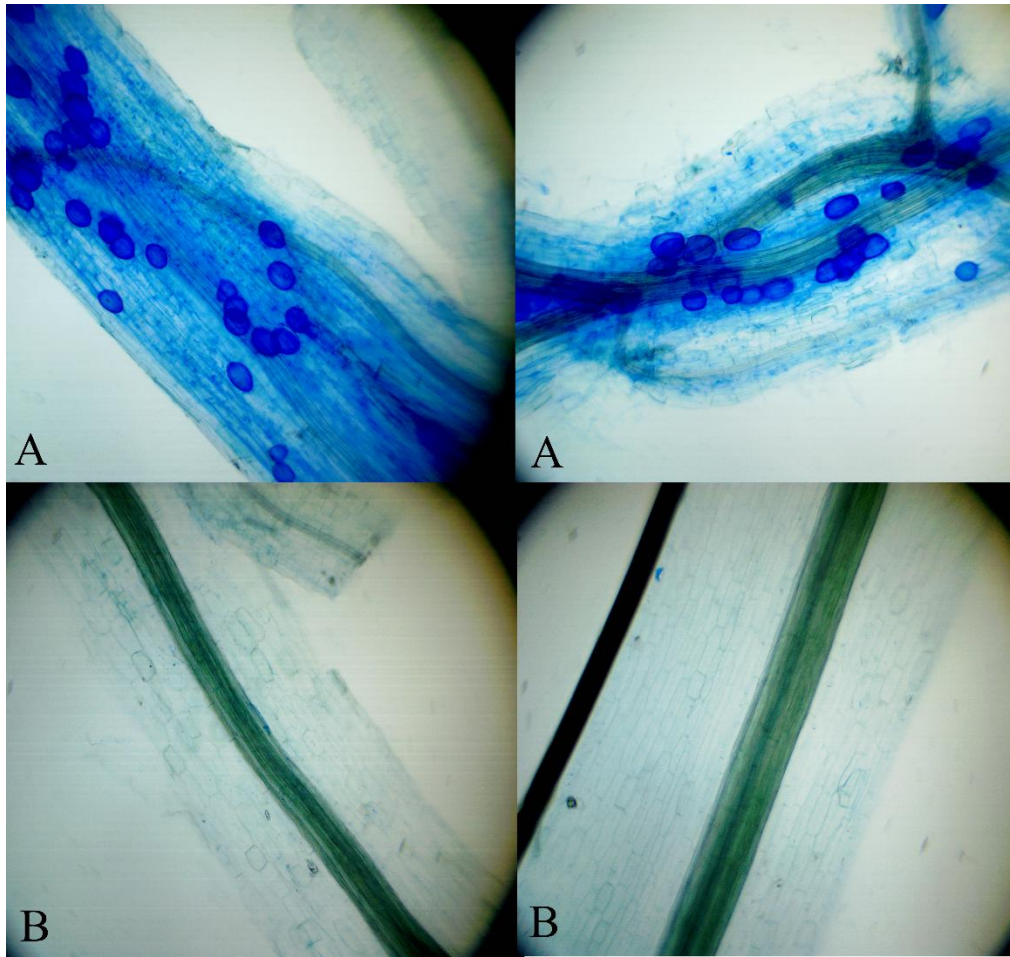


**Figure S1.** Microscope images of AM fungi vesicles, arbuscules, and hyphae in basil plant roots on treatment *AM + plant* (A) and *plant only* (B), respectively. Images taken with Olympus BH-2 compound microscope (Tokyo, Japan) and an OptixCam Summit K2-14X microscope camera under 4x, 10x, and 40x magnification.

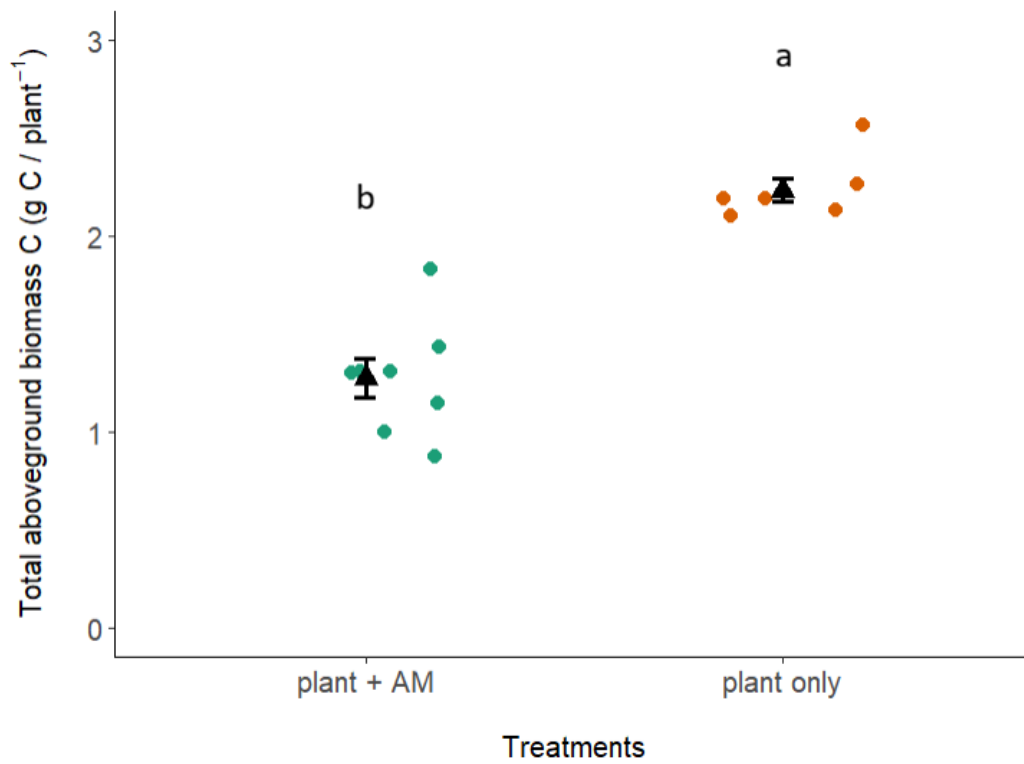


**Figure S2.** Aboveground basil biomass C across each treatment. Letters represent significant differences ( $p \leq 0.05$ ). The black triangle represents the treatment mean  $\pm$  SE. Dots represent individual samples (*plant + AM*:  $n=8$ ; *plant only*:  $n=7$ ). The treatment *AM + plant* had significantly lower biomass C compared to treatments without AM (*plant only*).

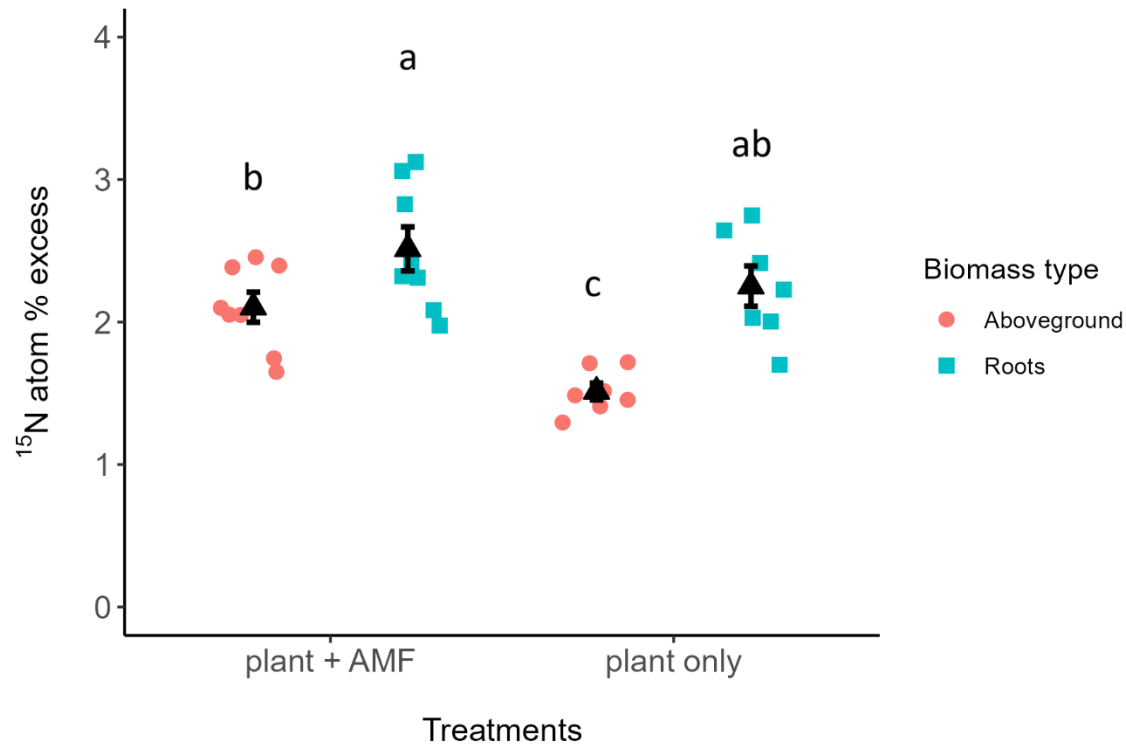


**Figure S3.** Aboveground (pink/circle) and root (blue/square) biomass enrichment (atom % excess) across each treatment. Letters represent significant differences ( $p \leq 0.05$ ). The black triangle represents the treatment mean  $\pm$  SE. Dots represent individual samples (*plant + AM*:  $n=8$ ; *plant only*:  $n=7$ ). The treatment *AM + plant* had significantly higher aboveground biomass enrichment compared to *plant only*. Root biomass enrichment was not significantly different among treatments. Root enrichment was significantly higher on both treatments compared to the aboveground biomass.