Supplement of

Contrasting strategies of nutrient demand and use between savanna and forest ecosystems in a neotropical transition zone

Marina Corrêa Scalon et al.

Correspondence to: Marina Corrêa Scalon (marina_scalon@yahoo.com.br)

The copyright of individual parts of the supplement might differ from the article licence.
Table S1. Soil nutrient concentration (mean ± sd) for Cerrado (savanna) and Cerradão (transition forest) permanent plots in Nova Xavantina, Brazil. V (%) = base saturation level; SOM = soil organic matter; ECC = effective cation exchange capacity. Soil chemistry data were provided by ForestPlots database (Lopez-Gonzalez et al. 2011).

| Soil layer | V (%)  | pH (H₂O) | Clay (g kg⁻¹) | Silt | Sand (g dm⁻³) | SOM (g dm⁻³) | P (mg dm⁻³) | Fe | K | Ca | Mg | Al | ECC (cmolc dm⁻³) |
|------------|--------|----------|--------------|------|---------------|--------------|-------------|----|---|----|----|----|----------------|
| Forest     |        |          |              |      |               |              |             |    |   |    |    |    |                 |
| 0-10       | 13.3 ± 14.3 | 5.2 ± 0.2 | 172.4 ± 14.2 | 80.0 ± 11.2 | 747.6 ± 13.1 | 19.7 ± 2.9 | 4.6 ± 0.4 | 189.0 ± 25.9 | 0.13 ± 0.02 | 0.09 ± 0.03 | 1.10 ± 1.7 | 1.30 ± 0.23 | 8.7 ± 1.50 |
| 10-20      | 12.5 ± 15.0 | 5.4 ± 0.2 | 207.2 ± 27.7 | 65.2 ± 29.0 | 727.6 ± 28.3 | 11.8 ± 1.1 | 2.2 ± 0.5 | 199.3 ± 30.8 | 0.09 ± 0.03 | 0.02 ± 0.01 | 0.85 ± 1.4 | 1.31 ± 0.15 | 6.4 ± 1.40 |
| Savanna    |        |          |              |      |               |              |             |    |   |    |    |    |                 |
| 0-10       | 7.7 ± 1.7  | 5.5 ± 0.1 | 132.8 ± 11.6 | 89.6 ± 14.2 | 777.6 ± 14.2 | 16.6 ± 1.1 | 3.8 ± 0.4 | 150.5 ± 22.9 | 0.14 ± 0.04 | 0.09 ± 0.03 | 0.24 ± 0.06 | 1.03 ± 0.12 | 6.2 ± 0.36 |
| 10-20      | 5.4 ± 1.5  | 5.4 ± 0.1 | 147.6 ± 13.1 | 80.0 ± 11.2 | 772.4 ± 14.2 | 11.1 ± 0.3 | 2.3 ± 0.2 | 194.1 ± 13.9 | 0.10 ± 0.02 | 0.02 ± 0.01 | 0.12 ± 0.04 | 1.06 ± 0.15 | 4.5 ± 0.20 |
**Figure S1.** Macronutrients (N, P, K, Ca and Mg) concentration (%) for different plant organ (leaf, branch, outer bark, inner bark, soft wood, hard wood and fine roots) across the most representative species from Cerrado (savanna, left column) and Cerradão (transition forest, right column) vegetation. Species abbreviation refer to the first three letters of the genera followed by the first three letters of the specific epithet, as follow from left to right: cerradão species (*Chaetocarpus echinocarpus, Emmotum nitens, Hirtella glandulosa, Myrcia splendens, Tachigali vulgaris, Tapirira guianensis, Xylopia aromatica*); and savanna species (*Aspidosperma tomentosum, Byrsonima pachyphylla, Davilla elliptica, Eriotheca gracipiles, Qualea grandiflora, Qualea parviflora, Roupala montana*).
### Table S2. P-values from z-test comparison between cerrado and cerradoo NPP and nutrient demand for each biomass component: canopy demand met by resorption (canopy resorption), canopy demand met by new uptake (canopy), wood and fine roots. Significant differences in bold (P < 0.05)

| Component            | NPP | N   | P   | K   | Ca  | Mg  |
|----------------------|-----|-----|-----|-----|-----|-----|
| Canopy resorption    | --  | 0.006 | 0.007 | 0.037 | --  | 0.753 |
| Canopy               | < 0.001 | < 0.001 | < 0.001 | 0.005 | 0.264 | **0.008** |
| Wood                 | 0.111 | 0.057 | < 0.001 | 0.001 | 0.623 | 0.769 |
| Fine roots           | 0.954 | 0.507 | **0.005** | 0.061 | 0.243 | 0.076 |
Table S3. P-values from z-test comparison between cerrado and cerradao nutrient use efficiency demand base and nutrient use efficiency uptake base for each macronutrient. Significant differences in bold (P < 0.05)

| Nutrient | NutUE\textsubscript{demand} | NutUE\textsubscript{uptake} |
|----------|-------------------------------|-----------------------------|
| N        | 0.012                         | 0.077                       |
| P        | 0.107                         | <0.001                      |
| K        | 0.717                         | 0.011                       |
| Ca       | 0.647                         | 0.647                       |
| Mg       | 0.976                         | 0.977                       |
References

Lopez-Gonzalez G, Lewis SL, Burkitt M, Phillips OL (2011) ForestPlots.net: a web application and research tool to manage and analyse tropical forest plot data. J Veg Sci 22:610–613. https://doi.org/10.1111/j.1654-1103.2011.01312.x