**SUPPLEMENTARY FIGURES AND TABLES FROM THE PREVIOUS EXPERIMENT**

**Figure S1.** Variations in plant height (a), Leaf chlorophyll content (b), leaf area (c), and shoot dry weight (d) across the three crop cycles. F represents fertilizer; B, 2B and 3B represent biochar application at 6, 12 and 18% (w/w) respectively. Data points represent mean ± standard error (n=3).

**Table S1.** Plant nutrient uptake among treatments at the end of each crop cultivation cycle.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Nutrient** | **Treatment** | **1st crop cycle** | **2nd crop cycle** | **3rd crop cycle** |
|  | **mg plant−1** |  |
| N | B | 20.6 ± 4.2b | - | - |
| F | 310.8 ± 49.7a | 239.7 ± 18.5a | 144.3 ± 28.8a |
| FB | 397.3 ± 3.7a | 207.2 ± 27.2a | 62.5 ± 9.3b |
| F2B | 390.3 ± 19.9a | 163.9 ± 21.1ab | 45.6 ± 3.1b |
| F3B | 344.4 ± 43.2a | 112.9 ± 9.6b | 44.2 ± 5.3b |
| P | B | 4.3 ± 0.8b | - | - |
| F | 35.4 ± 5.4a | 53.2 ± 2.1a | 33.7 ± 1.2ab |
| FB | 44.1 ± 0.9a | 55.3 ± 6.8a | 35.2 ± 3.0a |
| F2B | 42.2 ± 2.9a | 50.1 ± 6.2a | 27.9 ± 2.4ab |
| F3B | 37.8 ± 4.3a | 36.0 ± 1.0a | 24.7 ± 1.8b |
| K | B | 32.2 ± 4.8c | - | - |
| F | 263.4 ± 29.5b | 320.6 ± 3.4a | 194.5 ± 22.4a |
| FB | 433.9 ± 13.4a | 365.0 ± 44.2a | 163.1 ± 19.8a |
| F2B | 448.9 ± 24.5a | 322.7 ± 52.6a | 125.4 ± 10.9a |
| F3B | 403.9 ± 54.0ab | 232.5 ± 12.8a | 126.9 ± 17.8a |
| Ca | B | 14.6 ± 2.1c | - | - |
| F | 86.7 ± 13.4b | 120.4 ± 3.4a | 80.9 ± 7.2a |
| FB | 155.6 ± 3.1a | 128.6 ± 16.1a | 60.8 ± 8.2ab |
| F2B | 119.4 ± 2.9ab | 99.4 ± 9.9ab | 41.3 ± 2.6b |
| F3B | 89.9 ± 22.5b | 71.8 ± 2.5b | 38.6 ± 3.1b |
| Mg | B | 4.2 ± 0.7b | - | - |
| F | 34.1 ± 4.2a | 47.8 ± 2.4a | 36.1 ± 4.4a |
| FB | 39.2 ± 2.3a | 37.4 ± 5.2ab | 17.0 ± 1.6b |
| F2B | 30.7 ± 1.6a | 33.2 ± 4.3ab | 12.5 ± 0.9b |
| F3B | 25.5 ± 4.2a | 22.2 ± 1.2b | 11.0 ± 0.7b |

For each plant nutrient, different letters within a column indicate significant differences among treatments at *P* < 0.05 using Tukey’s HSD test. Mean ± standard error (n=3). Dash (-): No samples analyzed due to inadequate sample size. F represents fertilizer; B, 2B and 3B represent biochar application at 6, 12 and 18% (w/w) respectively.

**Table S2.** Soil chemical properties at the end of the three crop cycles.

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Soil pH (H2O) | Soil EC  (d S m−2) | Total N  (g kg−1) | NH4+-N | NO3−-N | P | K | Ca | Mg |
| mg kg−1 | | | | | |
| B | 8.4 ± 0.1a | 0.05 ± 0.00b | 0.49 ± 0.02ab | 2.44 ± 0.05b | 2.16 ± 0.78b | 15.3 ± 0.8c | 137.2 ± 2.9c | 414.1 ± 14.7b | 56.7 ± 0.9c |
| F | 7.2 ± 0.0c | 0.02 ± 0.00c | 0.32 ± 0.00b | 3.63 ± 0.22a | 1.49 ± 0.17b | 3.5 ± 0.3c | 25.4 ± 7.9d | 147.9 ± 6.0c | 62.3 ± 1.7bc |
| FB | 8.0 ± 0.2b | 0.05 ± 0.00b | 0.56 ± 0.06ab | 2.23 ± 0.12b | 2.99 ± 0.61b | 37.2 ± 2.4b | 108.0 ± 4.2cd | 481.1 ± 42.2b | 63.8 ± 3.6bc |
| F2B | 8.4 ± 0.0a | 0.08 ± 0.00a | 0.73 ± 0.05ab | 2.28 ± 0.11b | 7.12 ± 0.98a | 70.6 ± 1.2a | 234.3 ± 4.6b | 912.4 ± 57.4a | 83.0 ± 3.8ab |
| F3B | 8.5 ± 0.0a | 0.09 ± 0.01a | 1.05 ± 0.30a | 1.85 ± 0.09b | 7.68 ± 1.27a | 78.2 ± 8.0a | 335.4 ± 38.9a | 1032.7 ± 98.4a | 98.9 ± 10.1a |

Different letters within a column indicate significant differences among treatments at *P* < 0.05 using Tukey’s HSD test.

Mean ± standard error (n=3). F represents fertilizer; B, 2B and 3B represent biochar application at 6, 12 and 18% (w/w) respectively.