**Supplement**

Table S1 – Raw data of lichen growth measurement at Volcan Barú. Given are thallus areas in 2009 and 2012, absolute and relative changes over three years, calculated radius of a circle of identical area in 2009 and 2012 and radial change per year assuming identical growth over three years.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Area 09 mm2** | **Area 12 mm2** | ** Area mm2** | ** area %** | **radius `09 (mm)** | **radius `12 (mm)** | ** radius yr-1 (mm)** |
| 1.0 | 3.2 | 2.2 | 218.6 | 0.6 | 1.0 | 0.11 |
| 1.5 | 5.7 | 4.2 | 288.7 | 0.7 | 1.3 | 0.17 |
| 2.1 | 8.7 | 6.6 | 309.7 | 0.8 | 1.7 | 0.21 |
| 2.9 | 20.5 | 17.6 | 598.2 | 1.0 | 2.6 | 0.40 |
| 4.2 | 11.4 | 7.3 | 175.4 | 1.1 | 1.9 | 0.19 |
| 4.6 | 6.5 | 1.9 | 41.0 | 1.2 | 1.4 | 0.06 |
| 6.0 | 8.9 | 2.9 | 48.5 | 1.4 | 1.7 | 0.08 |
| 7.4 | 40.3 | 32.9 | 447.4 | 1.5 | 3.6 | 0.92 |
| 10.7 | 24.5 | 13.9 | 130.3 | 1.8 | 2.8 | 0.24 |
| 21.2 | 34.4 | 13.1 | 62.0 | 2.6 | 3.3 | 0.18 |
| 177.0 | 236.2 | 59.2 | 33.4 | 7.5 | 8.7 | 0.29 |
| 308.9 | 416.8 | 107.9 | 34.9 | 9.9 | 11.5 | 0.40 |
| 329.1 | 416.9 | 87.8 | 26.7 | 10.2 | 11.5 | 0.32 |
| 350.1 | 439.7 | 89.6 | 25.6 | 10.6 | 11.8 | 0.32 |
| 535.8 | 516.1 | -19.7 | -3.7 | 13.1 | 12.8 | -0.08 |
| 588.4 | 658.2 | 69.7 | 11.9 | 13.7 | 14.5 | 0.26 |
| 638.5 | 826.5 | 188.0 | 29.4 | 14.3 | 16.2 | 0.49 |
| 662.4 | 818.7 | 156.3 | 23.6 | 14.5 | 16.1 | 0.54 |
| 756.2 | 970.5 | 214.3 | 28.3 | 15.5 | 17.6 | 0.69 |
| 810.6 | 774.0 | -36.6 | -4.5 | 16.1 | 15.7 | -0.12 |
| 925.1 | 1011.1 | 86.1 | 9.3 | 17.2 | 17.9 | 0.20 |
| 1220.6 | 1310.8 | 90.2 | 7.4 | 19.7 | 20.4 | 0.20 |
| 1269.1 | 1204.8 | -64.3 | -5.1 | 20.1 | 19.6 | -0.17 |
| 1299.4 | 1571.2 | 271.8 | 20.9 | 20.3 | 22.4 | 0.68 |
| 1786.7 | 2234.7 | 448.1 | 25.1 | 23.8 | 26.7 | 0.71 |
| 2063.2 | 2512.6 | 449.4 | 21.8 | 25.6 | 28.3 | 0.66 |
| 2065.4 | 2683.9 | 618.5 | 29.9 | 25.6 | 29.2 | 0.51 |
| 2191.0 | 2415.7 | 224.8 | 10.3 | 26.4 | 27.7 | 0.33 |
| 2934.7 | 4122.7 | 1188.0 | 40.5 | 30.6 | 36.2 | 1.89 |
| 3237.5 | 4432.4 | 1194.8 | 36.9 | 32.1 | 37.6 | 1.36 |
| 3383.5 | 4768.9 | 1385.4 | 40.9 | 32.8 | 39.0 | 1.54 |
| 3980.4 | 3270.5 | -709.9 | -17.8 | 35.6 | 32.3 | -1.10 |
| 4432.0 | 6260.0 | 1828.0 | 41.2 | 37.6 | 44.6 | 1.77 |
| 4461.2 | 5779.0 | 1317.8 | 29.5 | 37.7 | 42.9 | 1.30 |
| 5141.1 | 6720.2 | 1579.1 | 30.7 | 40.5 | 46.3 | 1.45 |
| 7556.2 | 9664.3 | 2108.1 | 27.9 | 49.0 | 55.5 | 0.52 |

