Morphological diversity of ancho chile pepper landraces from Mexico

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**Supplementary Material**

**Supplementary Table S2.** Mean squares of the combined ANOVA to characterize the morphological diversity of native ancho chile peppers of Mexico.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Descriptor** | **Loc** | **Pop** | **Pop x Loc** | **Error** |  **CV (%)** | **Range / Value** |
| Hypocotyl color | 1.78 | \*\*\* | 0.14 | ns | 0.12 | \* | 0.08 | 9.6 | 87.8 % purple; 12.2 % green |
| Hypocotyl pubescence | 0.73 | \* | 0.16 | ns | 0.18 | ns | 0.13 | 7.5 | 96 % intermediate; 4 % sparce |
| Cotyledonous leaf shape | 0.18 | ns | 0.59 | ns | 0.50 | \*\*\* | 0.23 | 14.7 | 89.2 % lanceolate; 10.8 % elong-deltoid |
| Cotyledonous leaf length | 3.81 | ns | 7.02 | \* | 4.65 | \*\*\* | 1.18 | 5.8 | 14.4 - 24.3 mm |
| Cotyledonous leaf width | 1.34 | \*\*\* | 0.41 | ns | 0.34 | \*\*\* | 0.06 | 6.1 | 3.0 - 5.5 mm |
| Cotyledonous leaf length/width index | 0.56 | \* | 0.40 | \*\*\* | 0.18 | \*\*\* | 0.06 | 5.5 | 3.5 - 5.7 |
| Stem color | 4.32 | \*\*\* | 0.90 | \*\*\* | 0.40 | \*\*\* | 0.14 | 23.2 | 44.9 % green; 46.3 % Green with purple stripes; 8.8 % purple |
| Nodal anthocyanin | 19.10 | \*\* | 3.25 | \*\*\* | 1.54 | ns | 1.60 | 51.1 | 40.9 % green; 46.6 % light purple, 10.5 % purple; 2.0 % dark purple |
| Stem pubescence | 0.00 | - | 0.18 | \*\*\* | 0.00 | - | 0.00 | 0.0 | 98.9 % sparce; 1.1 % intermediate |
| Plant growth habit | 15.56 | \*\*\* | 1.04 | ns | 1.30 | \* | 0.84 | 15.5 | 1.4 % postrate; 51.4 intermediate; 47.2 % erect |
| Plant height | 252.45 | \* | 208.03 | \*\*\* | 75.61 | \* | 55.74 | 10.5 | 33.6 - 97.9 cm |
| Plant width | 221.30 | ns | 94.75 | ns | 82.62 | ns | 73.95 | 16.3 | 28.2 - 85.5 cm |
| Plant length/width index | 0.00 | ns | 0.06 | ns | 0.05 | \*\* | 0.03 | 12.0 | 0.82 - 2.11 |
| Stem length | 5352.36 | \*\*\* | 18.10 | \*\* | 10.40 | \*\*\* | 5.22 | 8.5 | 14.4 - 40.4 mm |
| Stem diameter | 14.08 | \*\*\* | 1.84 | \* | 1.12 | ns | 0.83 | 9.5 | 6.9 - 12.6 mm |
| Branching habit | 169.14 | \*\*\* | 0.82 | ns | 0.75 | ns | 0.88 | 17.5 | 9.1 % sparce; 63.6 % intermediate; 27.3 % dense |
| Bifurcations number | 222.73 | \*\*\* | 5.65 | \* | 3.92 | \* | 2.71 | 11.1 | 9 - 21 |
| Number of branches after the first bifurcation | 3.09 | \*\*\* | 0.32 | \* | 0.20 | ns | 0.16 | 17.1 | 2 - 3 |
| Primary branches number | 269.50 | \*\*\* | 0.82 | ns | 0.74 | ns | 0.68 | 14.3 | 4 - 9 |
| Tillering | 186.18 | \*\*\* | 3.11 | ns | 2.64 | ns | 2.23 | 30.3 | 40.1 % sparce; 23.3 % intermediate; 36.6 % dense |
| Leaf density | 0.28 | \* | 0.05 | ns | 0.05 | ns | 0.06 | 3.4 | 1.4 % intermediate 98.6 % dense |
| Leaf shape | 3.09 | \*\*\* | 0.18 | ns | 0.16 | ns | 0.16 | 21.9 | 18.8 % deltoid; 79.3 % ovate; 2.0 lanceolate |
| Leaf margin | 0.00 | ns | 0.03 | \*\*\* | 0.00 | ns | 0.02 | 12.9 | 98.3 % entire; 1.7 % undulate |
| Mature leaf length | 23166.67 | \*\*\* | 239.30 | ns | 286.15 | \*\*\* | 133.03 | 12.9 | 38.9 - 130.0 mm |
| Mature leaf width | 10198.76 | \*\*\* | 104.48 | ns | 97.22 | \* | 55.48 | 16.4 | 15.9 - 67.8 mm |
| Mature leaf length/width index | 1.91 | \*\*\* | 0.05 | \* | 0.03 | \* | 0.02 | 7.7 | 1.5 - 2.7 |
| Days to flowering | 16431.89 | \*\*\* | 58.54 | \*\*\* | 19.59 | \*\*\* | 8.01 | 5.2 | 40 - 83 |
| Flower position | 4.55 | ns | 1.95 | ns | 1.76 | ns | 1.56 | 24.4 | 19.3 % pendant; 55.7 % intermediate; 25.0 % erect |
| Corolla spot color | 58.91 | \*\*\* | 3.73 | \*\* | 2.08 | ns | 2.02 | 78.2 | 79.5 % without spot; 20.5 % purple |
| Corolla shape | 0.56 | ns | 0.14 | ns | 0.19 | ns | 0.17 | 23.4 | 22.7 % rotate; 77.3 % campanulate |
| Corolla length | 75.74 | \*\*\* | 1.01 | \*\*\* | 0.45 | ns | 0.41 | 5.0 | 10.7 - 15.9 mm |
| Anther length | 1.09 | \*\*\* | 0.07 | \*\*\* | 0.03 | ns | 0.02 | 5.1 | 2.5 - 3.6 mm |
| Filament length | 53.10 | \*\*\* | 0.16 | \*\*\* | 0.05 | ns | 0.05 | 5.2 | 3.1 - 5.5 mm |
| Stigma exsertion | 216.41 | \*\*\* | 1.98 | ns | 1.65 | ns | 1.44 | 20.3 | 15.6 % inserted; 23.9 % same level; 60.5 % exserted |
| Calyx pigmentation | 0.64 | \*\*\* | 0.09 | ns | 0.08 | \*\*\* | 0.03 | 26.2 | 94.0 % absent; 6.0 % present |
| Calyx margin | 0.00 | - | 0.05 | \*\*\* | 0.00 | - | 0.00 | 0.0 | 0.6 % intermediate; 99.4 % dentate |
| Petals number | 0.01 | ns | 0.14 | \* | 0.10 | ns | 0.08 | 4.6 | 5 - 7 |
| Days to fruiting | 20725.57 | \*\*\* | 66.11 | \*\*\* | 21.98 | \*\* | 14.42 | 6.3 | 44 - 94 |
| Anthocyanin spot on immature fruit | 3.89 | \*\*\* | 0.17 | ns | 0.17 | \*\*\* | 0.00 | 50.7 | 89.5 % absent; 10.5 % present |
| Immature fruit color | 0.00 | ns | 1.75 | \*\*\* | 0.00 | ns | 0.07 | 11.2 | 10.2 % lime green; 39.2 % médium green; 49.4 % dark green |
| Fruit color at intermediate stage | 0.00 | ns | 0.35 | \*\*\* | 0.00 | ns | 0.00 | 1.7 | 90.1 % green; 9.9 % orange |
| Fruit set | 4.10 | \*\*\* | 0.48 | ns | 0.49 | \*\*\* | 0.17 | 6.0 | 1.4 % low; 3.1 % intermediate; 95.5 % high |
| Fruit-bearing period | 33813.92 | \*\*\* | 76.63 | \*\*\* | 28.77 | \* | 18.61 | 3.1 | 85 – 159 days |
| Fruits number per plant | 619.57 | \*\*\* | 15.16 | \*\*\* | 6.78 | \* | 4.32 | 35.3 | 5 - 22 |
| Fruit yield per plant | 40118.79 | \* | 9312.67 | \* | 6419.92 | ns | 5639.83 | 38.6 | 15.2 - 624.7 g |
| Fruit color at mature stage | 0.64 | ns | 21.92 | \*\*\* | 0.24 | ns | 0.17 | 4.1 | 1.1 % light red; 44.6 % red; 5.4 % dark red; 7.7 % brown; 40.1 % chocolate; 1.1 % black |
| Fruit shape | 0.23 | \* | 0.21 | \*\*\* | 0.04 | \* | 0.03 | 5.5 | 95.2 % triangular; 3.7 % campanulate; 1.1 % blocky |
| Fruit length | 3.42 | ns | 2.87 | \*\*\* | 1.22 | ns | 0.98 | 10.4 | 4.1 - 13.0 cm |
| Fruit width | 8.62 | \*\*\* | 2.15 | \*\*\* | 0.31 | ns | 0.29 | 9.4 | 3.3 - 9.1 cm |
| Fruit length/width index | 0.40 | \*\* | 0.14 | \*\*\* | 0.03 | ns | 0.03 | 9.9 | 1.0 - 2.4 |
| Fruit shape at pedicel attachment | 0.48 | ns | 0.78 | \*\*\* | 0.35 | \* | 0.23 | 10.4 | 8.8 % truncate; 17.3 % cordate; 73.9 % lobute |
| Fruit shape blossom end | 1.64 | \*\*\* | 0.12 | ns | 0.13 | \* | 0.09 | 14.8 | 6.0 % pointed; 88.6 % blunt; 5.4 % sunken |
| Fruit blossom end appendage | 15.98 | \*\*\* | 0.36 | \*\* | 0.19 | \* | 0.12 | 69.3 | 50.3 % absent; 49.7 % present |
| Fruit surface | 0.56 | \*\* | 0.05 | ns | 0.05 | ns | 0.05 | 20.3 | 94.9 % smooth; 5.1 % wrinkled |
| Fruit weight | 68.87 | ns | 1538.93 | \*\*\* | 355.76 | ns | 375.81 | 33.2 | 12.0 - 204.2 g |
| Fruit pedicel length | 7.03 | ns | 90.88 | \*\*\* | 28.56 | ns | 29.34 | 13.7 | 25.0 - 91.7 mm |
| Fruit wall thickness | 5.59 | \*\*\* | 0.85 | \*\*\* | 0.12 | ns | 0.11 | 10.7 | 1.2 - 4.4 mm |
| Fruit cross-sectional corrugation | 49.50 | \*\*\* | 3.15 | \* | 2.10 | ns | 1.64 | 30.0 | 54.3 % poco corrugado; 27.8 % intermedio; 17.9 muy corrugado |
| Number of locules in the fruit | 0.14 | ns | 0.60 | \*\*\* | 0.20 | \* | 0.14 | 15.2 | 2 - 4 |
| Placenta length | 175.26 | \*\*\* | 10.82 | \*\* | 6.51 | ns | 8.40 | 13.0 | 13.4 - 43.4 mm |
| Seed size | 14.08 | \*\*\* | 1.58 | \*\* | 0.87 | ns | 0.68 | 13.9 | 52.3 % intermediate; 46.9 % large |
| Seed diameter | 1.74 | \*\*\* | 0.10 | \*\*\* | 0.03 | ns | 0.04 | 4.4 | 3.7 - 5.3 mm |
| 1000-seed weight | 1.51 | ns | 2.43 | \*\*\* | 0.76 | ns | 0.98 | 13.2 | 4.1 - 12.5 mm |
| Seed weight per fruit | 2.64 | \*\*\* | 0.43 | \*\*\* | 0.17 | ns | 0.15 | 23.1 | 0.5 - 3.7 g |
| Number of seed per fruit | 28141.61 | \*\* | 4173.53 | \* | 2526.29 | ns | 1980.78 | 19.6 | 91 - 394 |

Loc: localities, Pop: populations, CV: coefficient of variation, ns: non-significant statistical differences, \*, \*\*, \*\*\*: statistically significant differences at 95, 99 and 99.9 % probability, -: there were no numerical differences in the means.