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| Table S1. Shannon-Weaver diversity index (H`) for different traits of pigeonpea germplasm | | | | | | | |  | |
| from Caribbean and Central American region, evaluated at ICRISAT, India. | | | | | | | |  | |
| Traits | Entire | Cluster1 | Cluster2 | Cluster3 | Cluster4 | Mean | SE± | |
| Leaflet-size (cm2) | 0.612 | 0.496 | 0.582 | 0.611 | 0.622 | 0.578 | 0.029 | |
| Plant height (cm) | 0.630 | 0.584 | 0.533 | 0.626 | 0.628 | 0.593 | 0.022 | |
| Primary branches per plant (no.) | 0.514 | 0.573 | 0.526 | 0.536 | 0.423 | 0.514 | 0.032 | |
| Secondary branches per plant (no.) | 0.522 | 0.450 | 0.565 | 0.583 | 0.596 | 0.549 | 0.033 | |
| Tertiary branches per plant (no.) | 0.259 | 0.351 | 0.517 | 0.288 | 0.283 | 0.360 | 0.055 | |
| Days to 50% flowering | 0.609 | 0.575 | 0.423 | 0.545 | 0.614 | 0.539 | 0.041 | |
| Days to 75% maturity | 0.545 | 0.568 | 0.473 | 0.501 | 0.609 | 0.538 | 0.031 | |
| Racemes per plant (no.) | 0.400 | 0.506 | 0.603 | 0.567 | 0.527 | 0.550 | 0.022 | |
| Pod bearing length (cm) | 0.554 | 0.582 | 0.573 | 0.589 | 0.548 | 0.573 | 0.009 | |
| Pod length (cm) | 0.612 | 0.578 | 0.507 | 0.576 | 0.603 | 0.566 | 0.020 | |
| Pods per plant (no.) | 0.400 | 0.547 | 0.533 | 0.557 | 0.480 | 0.529 | 0.017 | |
| Seeds per pod (no.) | 0.626 | 0.568 | 0.554 | 0.632 | 0.591 | 0.586 | 0.017 | |
| 100 Seed weight (g) | 0.616 | 0.565 | 0.565 | 0.626 | 0.615 | 0.593 | 0.016 | |
| Shelling percentage | 0.625 | 0.590 | 0.561 | 0.616 | 0.640 | 0.602 | 0.017 | |
| Seed yield per plant (g) | 0.450 | 0.524 | 0.553 | 0.595 | 0.543 | 0.554 | 0.015 | |
| Harvest index (%) | 0.599 | 0.595 | 0.580 | 0.631 | 0.589 | 0.599 | 0.011 | |
| Seed protein (%) | 0.618 | 0.594 | 0.574 | 0.614 | 0.631 | 0.603 | 0.012 | |
| Mean | 0.541 | 0.544 | 0.543 | 0.570 | 0.561 | 0.554 | 0.007 | |
| SE± | 0.026 | 0.015 | 0.011 | 0.020 | 0.022 |  |  | |

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| Table S2. Phenotypic correlation coefficients\* for different trait combinations of pigeonpea germplasm from Caribbean and Central American region, evaluated at ICRISAT, India. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Trait\*\* | | 1 | | 2 | | 3 | | 4 | | 5 | | 6 | | 7 | | 8 | | 9 | | 10 | | 11 | | 12 | | 13 | | 14 | | 15 | | 16 | |
| 2 | -0.016 | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |
| 3 | -0.007 | | 0.050 | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |
| 4 | -0.184 | | 0.168 | | 0.144 | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |
| 5 | -0.105 | | 0.161 | | 0.081 | | 0.528 | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |
| 6 | -0.047 | | 0.432 | | -0.101 | | 0.018 | | 0.055 | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |
| 7 | -0.054 | | 0.306 | | -0.013 | | 0.155 | | 0.128 | | 0.749 | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |
| 8 | -0.266 | | 0.139 | | 0.192 | | 0.619 | | 0.546 | | -0.151 | | 0.024 | |  | |  | |  | |  | |  | |  | |  | |  | |  | |
| 9 | -0.243 | | -0.013 | | 0.014 | | 0.194 | | 0.149 | | -0.100 | | 0.136 | | 0.435 | |  | |  | |  | |  | |  | |  | |  | |  | |
| 10 | 0.300 | | -0.051 | | -0.070 | | -0.378 | | -0.309 | | -0.029 | | -0.230 | | -0.513 | | -0.442 | |  | |  | |  | |  | |  | |  | |  | |
| 11 | -0.262 | | 0.090 | | 0.189 | | 0.631 | | 0.613 | | -0.126 | | 0.035 | | 0.914 | | 0.484 | | -0.526 | |  | |  | |  | |  | |  | |  | |
| 12 | 0.214 | | -0.069 | | -0.148 | | -0.253 | | -0.169 | | 0.006 | | -0.100 | | -0.302 | | -0.160 | | 0.441 | | -0.295 | |  | |  | |  | |  | |  | |
| 13 | 0.079 | | 0.116 | | -0.134 | | -0.331 | | -0.231 | | 0.227 | | 0.069 | | -0.451 | | -0.312 | | 0.348 | | -0.455 | | 0.103 | |  | |  | |  | |  | |
| 14 | -0.073 | | -0.076 | | 0.048 | | 0.017 | | 0.097 | | -0.383 | | -0.486 | | 0.202 | | -0.064 | | -0.022 | | 0.186 | | -0.017 | | -0.134 | |  | |  | |  | |
| 15 | -0.087 | | 0.103 | | 0.167 | | 0.533 | | 0.625 | | -0.230 | | -0.158 | | 0.737 | | 0.200 | | -0.268 | | 0.744 | | -0.118 | | -0.319 | | 0.405 | |  | |  | |
| 16 | -0.008 | | -0.205 | | 0.060 | | 0.083 | | 0.178 | | -0.514 | | -0.500 | | 0.355 | | 0.001 | | -0.028 | | 0.329 | | 0.029 | | -0.231 | | 0.703 | | 0.608 | |  | |
| 17 | -0.075 | | -0.131 | | -0.088 | | 0.034 | | -0.100 | | -0.014 | | 0.096 | | 0.026 | | 0.083 | | -0.092 | | 0.006 | | 0.023 | | -0.186 | | -0.037 | | -0.094 | | -0.061 | |
| \* Correlations > 0.080 are significant at p=0.05% and > 0.113 are significant at p=0.01%. | | | | | | | | | | | | | | | | | |  | |  | |  | |  | |  | |  | |  | |  | |

\*\*1. Leaflet size (cm2), 2. Plant height (cm), 3. Primary branches per plant (no.), 4. Secondary branches per plant (no.), 5. Tertiary branches per plant (no.), 6. Days to 50% flowering, 7. Days to 75% maturity, 8. Racemes per plant (no.), 9. Pod bearing length (cm), 10. Pod length (cm), 11. Pods per plant (no.), 12. Seeds per pod (no.), 13. 100 Seed weight (g), 14. Shelling percentage, 15. Seed yield per plant (g), 16. Harvest index (%) and 17. Seed protein (%).