|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **S.No** | **Accession No.** | **IRGC No.** | **Variety** | **Origin** | **Biological status of accession** |
| 1 | EC 861784 | 105015 | Etranger | Guinea | Traditional cultivar/ Landrace |
| 2 | EC 861785 | 105016 | Nanke | Guinea | Traditional cultivar/ Landrace |
| 3 | EC 861786 | 105017 | Dossari | Guinea | Traditional cultivar/ Landrace |
| 4 | EC 861787 | 105018 | Tog 14357 | Guinea | Traditional cultivar/ Landrace |
| 5 | EC 861790 | 105021 | Tongbon | Guinea | Traditional cultivar/ Landrace |
| 6 | EC 861791 | 105022 | Bayogo | Guinea | Traditional cultivar/ Landrace |
| 7 | EC 861792 | 105023 | Massal/Yg485 | Guinea | Traditional cultivar/ Landrace |
| 8 | EC 861794 | 105026 | Salifore | Guinea | Traditional cultivar/ Landrace |
| 9 | EC 861795 | 105027 | Saali | Guinea | Traditional cultivar/ Landrace |
| 10 | EC 861796 | 105028 | Malefore | Guinea | Traditional cultivar/ Landrace |
| 11 | EC 861797 | 105029 | Malegbeli | Guinea | Traditional cultivar/ Landrace |
| 12 | EC 861799 | 105032 | Bindje Gbeli | Guinea | Traditional cultivar/ Landrace |
| 13 | EC 861801 | 105034 | Bindje Fore | Guinea | Traditional cultivar/ Landrace |
| 14 | EC 861802 | 105035 | Bindje Gbeli | Guinea | Traditional cultivar/ Landrace |
| 15 | EC 861803 | 105036 | Salli | Guinea | Traditional cultivar/ Landrace |
| 16 | EC 861804 | 105037 | Dissi | Guinea | Traditional cultivar/ Landrace |
| 17 | EC 861805 | 105038 | Saali | Guinea | Traditional cultivar/ Landrace |
| 18 | EC 861807 | 105040 | Kuntun Kaasa | Guinea | Traditional cultivar/ Landrace |
| 19 | EC 861808 | 105041 | Maasali | Guinea | Traditional cultivar/ Landrace |
| 20 | EC 861809 | 105042 | Kountoun Kassa | Guinea | Traditional cultivar/ Landrace |
| 21 | EC 861810 | 105043 | Millcciv Blanc | Guinea | Traditional cultivar/ Landrace |
| 22 | EC 861811 | 105044 | Lunduko Sondu | Guinea | Traditional cultivar/ Landrace |
| 23 | EC 861812 | 105045 | Tog 14375 | Guinea | Traditional cultivar/ Landrace |
| 24 | EC 861813 | 105046 | Kebele | Guinea | Traditional cultivar/ Landrace |
| 25 | EC 861814 | 105048 | Shawhon | Guinea | Traditional cultivar/ Landrace |
| 26 | EC 861815 | 105049 | Gbeke 1 | Guinea | Traditional cultivar/ Landrace |
| 27 | EC 861816 | 105050 | Que | Guinea | Traditional cultivar/ Landrace |
| 28 | EC 861817 | 105051 | Dossari Noir | Guinea | Traditional cultivar/ Landrace |
| 29 | EC 861818 | 105052 | Dissi Pala | Guinea | Traditional cultivar/ Landrace |
| 30 | EC 861819 | 105187 | Mow | Malaysia | Wild |
| 31 | EC 861820 | 105189 | Mouli | Malaysia | Wild |

**Table S1. List of *Oryza glaberrima* accessions used in the present study**

**Table S2. Analysis of variance (Mean sum of squares) for yield and its component traits of two seasons in *O. glaberrima* accessions**

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Source of variation** | **d.f** | **Season** | **Mean sum of square** | | | | | | |
| **Days to 50% flowering** | **Plant height (cm)** | **No. of productive tillers** | **Panicle length (cm)** | **No. of spikelets/panicle** | **1000 seed weight (g)** | **Grain yield per plant (g)** |
| Replications | 1 | *Kharif* 2016 | 3.28 | 824.82 | 12.35 | 32.72 | 829.37 | 1.37 | 7.29 |
| *Kharif* 2017 | 35.63 | 4.18 | 1.68 | 1.52 | 0.39 | 18.54 | 1.45 |
| Accessions | 30 | *Kharif* 2016 | 214.3\*\* | 117.49\*\* | 9.98\*\* | 7.93\*\* | 359.37\*\* | 5.57\*\* | 19.4\*\* |
| *Kharif* 2017 | 299.63\*\* | 214.82\*\* | 35.12\*\* | 8.16\*\* | 603.74\*\* | 15.24\*\* | 3.54\*\* |
| Error | 30 | *Kharif* 2016 | 5.13 | 43.24 | 3.54 | 6.68 | 135.92 | 1.78 | 4.83 |
| *Kharif* 2017 | 12.93 | 57.84 | 1.35 | 3.83 | 274.65 | 5.09 | 0.36 |

**Table S3. Mean performance of *O. glaberrima* accessions combined over two seasons for yield and yield attributing traits**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **S.No.** | **ACCESSION** | **Days to 50% flowering** | **Plant height (cm)** | **No. of productive tillers** | **Panicle length (cm)** | **No. of spikelets per panicle** | **1000 Seed weight (g)** | **Yield per**  **Plant (g)** |
| 1 | EC 861784 | 126.5 | 104.7 | 10.3 | 23.7 | 98.2 | 19.45 | 11.6 |
| 2 | EC 861785 | 126.8 | 120.7 | 12.1 | 24.3 | 88.2 | 18.40 | 10.2 |
| 3 | EC 861786 | 137.3 | 114.9 | 10.5 | 22.0 | 98.1 | 18.38 | 11.1 |
| 4 | EC 861787 | 126.8 | 106.8 | 9.1 | 22.7 | 114.9 | 19.75 | 10.7 |
| 5 | EC 861790 | 134.0 | 104.2 | 11.8 | 24.0 | 99.5 | 19.18 | 10.6 |
| 6 | EC 861791 | 138.0 | 107.2 | 9.8 | 22.7 | 74.5 | 18.68 | 8.6 |
| 7 | EC 861792 | 128.5 | 118.1 | 12.2 | 22.5 | 108.5 | 19.80 | 14.2 |
| 8 | EC 861794 | 120.3 | 106.7 | 12.8 | 25.1 | 108.5 | 19.80 | 12.6 |
| 9 | EC 861795 | 115.5 | 116.6 | 8.7 | 22.4 | 95.1 | 19.38 | 9.9 |
| 10 | EC 861796 | 117.5 | 113.6 | 9.5 | 24.6 | 93.7 | 22.03 | 9.0 |
| 11 | EC 861797 | 122.0 | 99.2 | 8.3 | 23.9 | 100.5 | 19.33 | 11.1 |
| 12 | EC 861799 | 118.0 | 100.0 | 12.5 | 22.9 | 73.7 | 21.10 | 8.9 |
| 13 | EC 861801 | 121.0 | 105.8 | 6.2 | 24.0 | 82.7 | 19.63 | 8.4 |
| 14 | EC 861802 | 121.5 | 102.6 | 9.7 | 23.0 | 89.2 | 20.15 | 10.9 |
| 15 | EC 861803 | 118.0 | 108.1 | 9.9 | 23.0 | 90.1 | 19.43 | 9.9 |
| 16 | EC 861804 | 102.5 | 106.7 | 10.1 | 21.0 | 67.2 | 23.43 | 6.5 |
| 17 | EC 861805 | 113.3 | 109.1 | 10.0 | 21.3 | 71.6 | 17.08 | 12.1 |
| 18 | EC 861807 | 110.0 | 109.9 | 11.7 | 24.7 | 83.6 | 22.13 | 8.5 |
| 19 | EC 861808 | 115.0 | 103.2 | 10.7 | 20.7 | 90.3 | 20.20 | 7.5 |
| 20 | EC 861809 | 107.0 | 106.0 | 11.2 | 28.0 | 82.8 | 20.08 | 11.3 |
| 21 | EC 861810 | 111.3 | 92.3 | 8.8 | 21.5 | 93.2 | 21.63 | 8.6 |
| 22 | EC 861811 | 116.5 | 112.5 | 7.8 | 23.7 | 91.0 | 20.53 | 10.1 |
| 23 | EC 861812 | 122.0 | 104.9 | 10.5 | 20.9 | 83.5 | 23.08 | 11.4 |
| 24 | EC 861813 | 130.0 | 105.8 | 14.1 | 21.9 | 99.7 | 19.58 | 14.6 |
| 25 | EC 861814 | 110.5 | 110.6 | 6.3 | 22.8 | 90.4 | 21.35 | 10.3 |
| 26 | EC 861815 | 111.5 | 118.7 | 11.7 | 23.0 | 98.5 | 18.43 | 10.4 |
| 27 | EC 861816 | 89.8 | 91.5 | 7.0 | 21.1 | 82.4 | 19.93 | 6.7 |
| 28 | EC 861817 | 106.8 | 109.3 | 9.7 | 22.8 | 92.3 | 21.65 | 10.5 |
| 29 | EC 861818 | 115.0 | 114.2 | 7.2 | 21.5 | 94.3 | 20.45 | 8.9 |
| 30 | EC 861819 | 107.8 | 110.8 | 9.4 | 21.5 | 75.3 | 23.53 | 10.8 |
| 31 | EC 861820 | 114.3 | 115.5 | 11.6 | 24.9 | 77.3 | 23.40 | 10.0 |

**Table S4. Direct and indirect effects of different characters on grain yield per plant at phenotypic level in *Oryza glaberrima* accessions**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | **Days to 50% flowering** | **Plant height (cm)** | **Productive tillers** | **Panicle length (cm)** | **Spikelets per panicle** | **1000 Seed Weight (g)** |
| **Days to 50% flowering** | **-0.0046** | -0.0028 | -0.0013 | 0.0002 | -0.0024 | -0.0002 |
| **Plant height (cm)** | 0.0760 | **0.1253** | 0.0277 | 0.0098 | 0.0684 | 0.0134 |
| **Productive tillers** | 0.1644 | 0.1279 | **0.5793** | 0.0550 | 0.0885 | 0.0505 |
| **Panicle length (cm)** | 0.0031 | -0.0068 | -0.0082 | **-0.0862** | -0.0087 | -0.0135 |
| **Spikelets per panicle** | 0.2161 | 0.2291 | 0.0641 | 0.0425 | **0.4195** | -0.0497 |
| **1000 Seed Weight (g)** | 0.0064 | 0.0183 | 0.0149 | 0.0268 | -0.0203 | **0.1708** |
| **Yield per plant (g)** | 0.4615 | 0.4911 | 0.6765 | 0.0481 | 0.5451 | 0.1712 |
| **Partial R²** | -0.0021 | 0.0616 | 0.3919 | -0.0042 | 0.2287 | 0.0293 |

**Table S5. Selection of accessions based on PC score in each component having positive values (>1.0) in each PCs**

|  |  |
| --- | --- |
| **PC 1** | **PC 2** |
| EC 861792 (3.179) | EC 861820 (2.812) |
| EC 861813 (2.774) | EC 861809 (2.196) |
| EC 861794 (2.338) | EC 861807 (1.825) |
| EC 861786 (2.067) | EC 861819 (1.224) |
| EC 861785 (1.835) | EC 861796 (1.141) |
| EC 861790 (1.784) | EC 861804 (1.081) |
| EC 861787 (1.378) |  |
| EC 861784 (1.281) |  |

**Table S6. Average Inter and intra cluster distances of 31 accessions of *O. glaberrima* obtained by D² analysis using 7 yield and yield contributing traits**

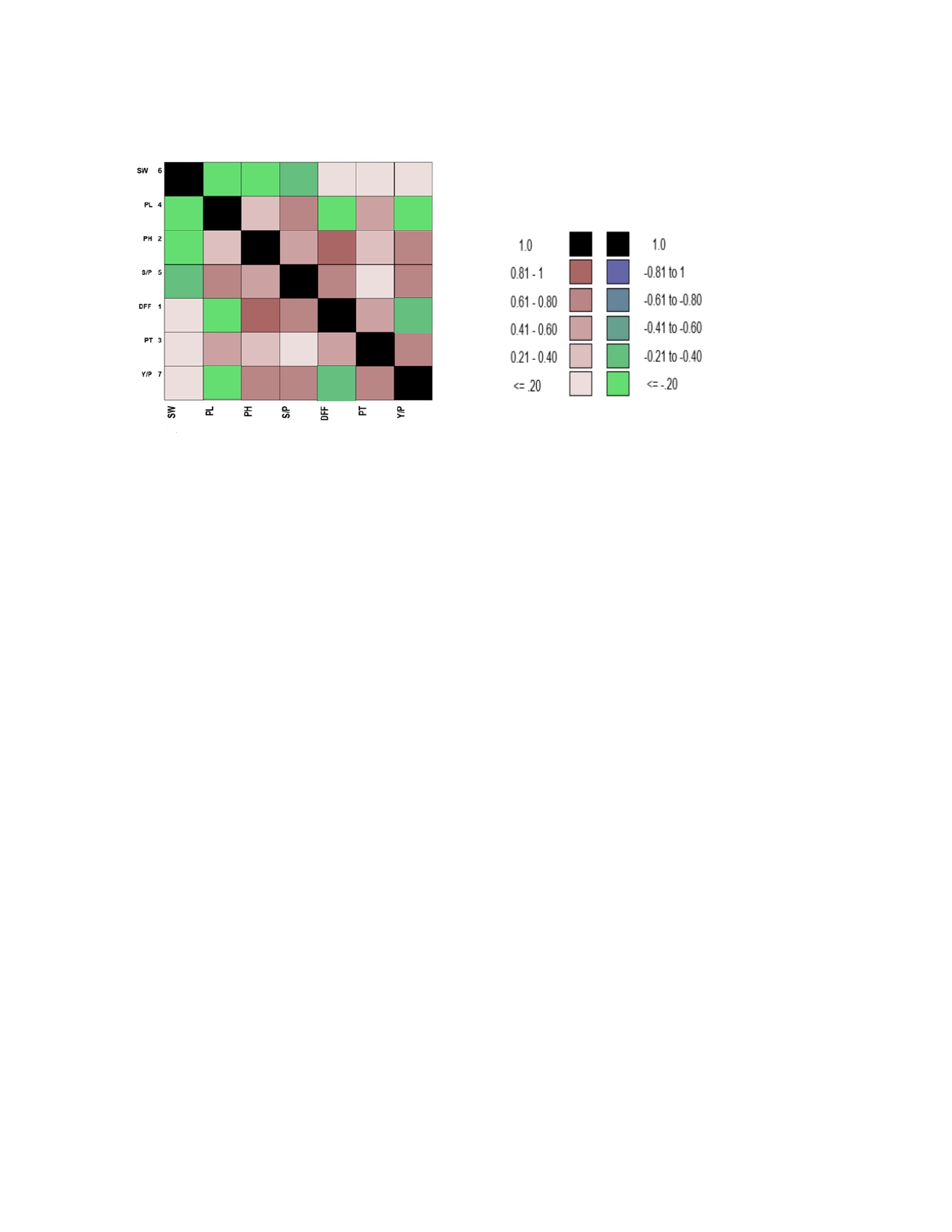
|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | Cluster 1 | Cluster 2 | Cluster 3 | Cluster 4 | Cluster 5 | Cluster 6 |
| Cluster 1 | **5.05** | 10.10 | 9.88 | 10.26 | 14.17 | 22.18 |
| Cluster 2 |  | **1.93** | 23.27 | 21.52 | 34.04 | 48.15 |
| Cluster 3 |  |  | **0.00** | 14.52 | 15.33 | 13.07 |
| Cluster 4 |  |  |  | **0.00** | 11.32 | 12.11 |
| Cluster 5 |  |  |  |  | **0.00** | 12.44 |
| Cluster 6 |  |  |  |  |  | **0.00** |

**Table S7. Cluster Means : Tocher Method**

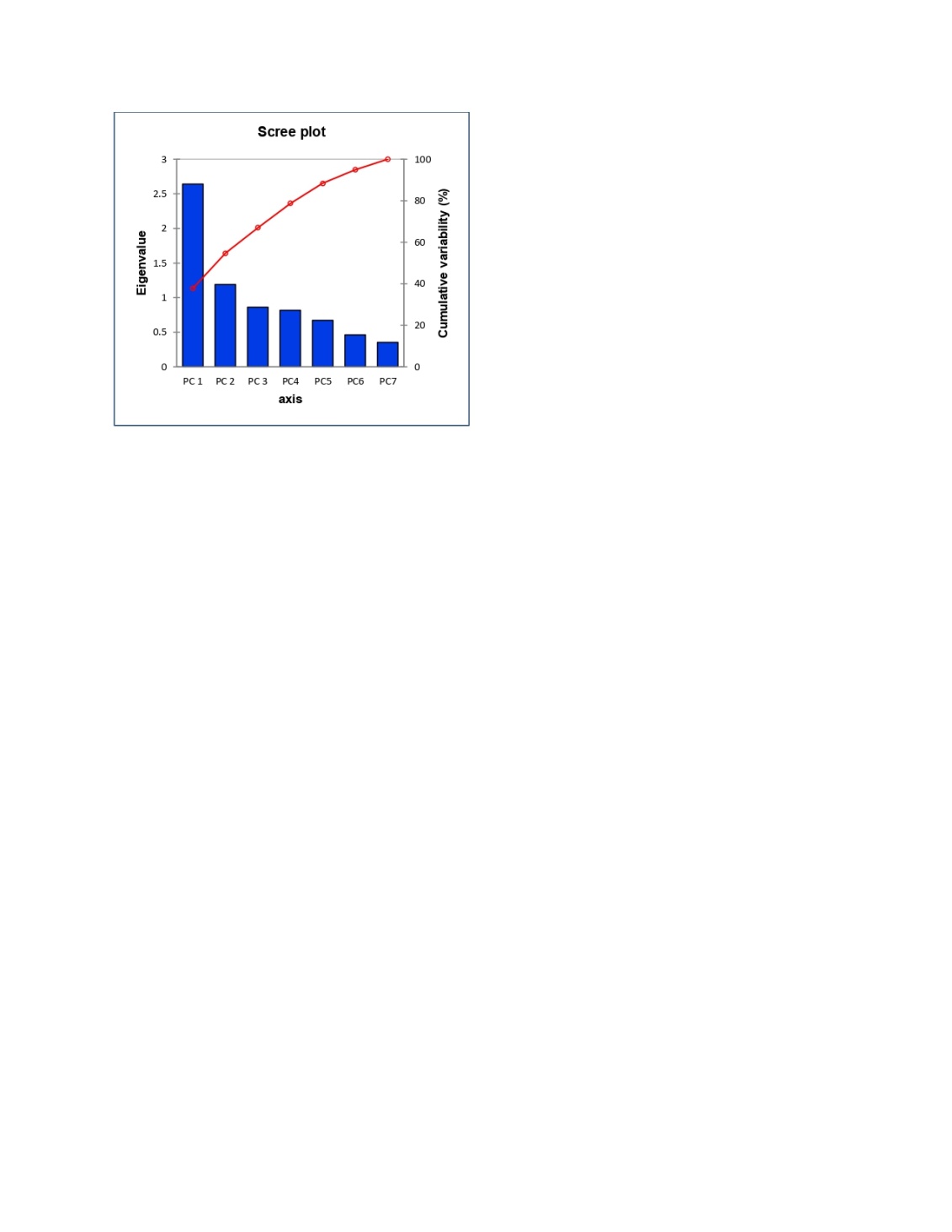
|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | Days to 50% flowering | Plant height (cm) | Productive tillers | Panicle length (cm) | Spikelets per panicle | 1000 seed weight | Yield per plant (g) |
| Cluster 1 | 118.67 | 108.57 | 10.09 | 23.03 | 92.48 | 20.5 | 10.38 |
| Cluster 2 | 137.63 | 111.08 | 10.18 | 22.33 | 86.30 | 18.5 | 9.83 |
| Cluster 3 | 102.50 | 106.65 | 10.10 | 20.95 | 67.15 | 23.5 | 6.50 |
| Cluster 4 | 113.25 | 109.15 | 10.00 | 21.30 | 71.60 | 17.0 | 12.10 |
| Cluster 5 | 107.00 | 106.00 | 11.15 | 28.00 | 82.85 | 20.0 | 11.30 |
| Cluster 6 | 89.75 | 91.50 | 7.00 | 21.10 | 82.40 | 20.0 | 6.70 |

**Table S8. Relative contribution of different characters to genetic diversity in *O. glaberrima***

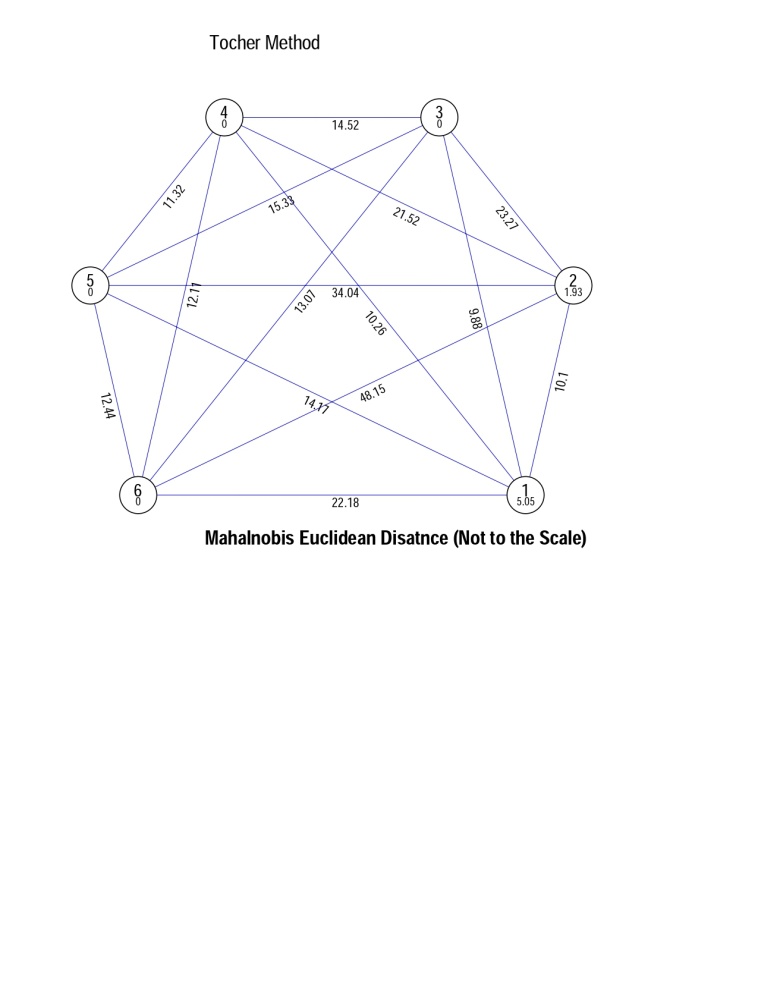
|  |  |  |
| --- | --- | --- |
| **S.No** | **Characters** | **Contribution (%)** |
| 1 | Days to 50 % flowering | 43.01 |
| 2 | Yield per plant (g) | 12.90 |
| 3 | Productive tillers | 10.75 |
| 4 | Panicle length (cm) | 9.89 |
| 5 | Plant height (cm) | 8.60 |
| 6 | 1000 seed weight (g) | 8.17 |
| 7 | Spikelets per panicle | 6.66 |



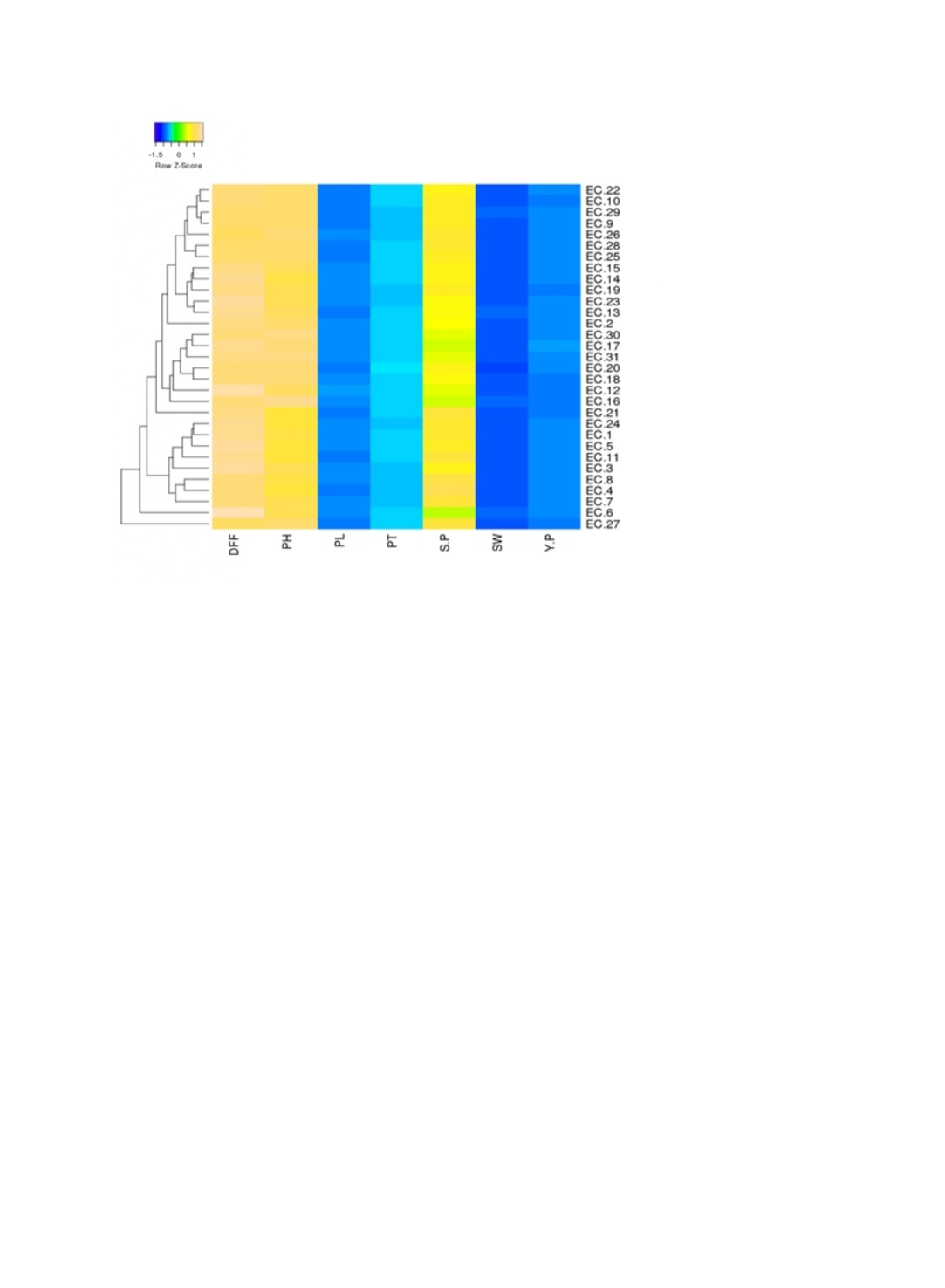
**Fig S1. Correlogram visualizing the correlation in yield and its attributing traits in *O. glaberrima* accessions**



**Fig S2. Scree plot showing Eigen value and percentage of cumulative variability in *O. glaberrima* accessions**

**.**

**Fig S3. Cluster diagram of 31 accessions of *O. glaberrima* based on D2 values by Tocher method**

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**Figure S4. Heatmap depicting the genetic variability in *O. glaberrima* accessions for yield and its attributing traits**