Table S1. Details of SSR primers with source, forward and reverse Sequence, linkage group.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **S. No.** | **Primer** | **Source** | **Sequence** | **Linkage Group** |
|  | AA-103 | Genomic | F: 5’-AAGTGTGAAAGTTTGCCAGGTC-3’  R: 5’-CGGGTACGGGTTATGTTGTC-3’ | 6 |
|  | AD-60 | Genomic | F: 5’AATTAATGCCAATCCTAAGGTATT-3’  R: 5’-GGTTGCACTATTTTCGTTCTC-3’ | 7 |
|  | AB-25 | Genomic | F: 5’-TTTTCACTCAAAACACTCGGCT-3’  R: 5’-GATGCCATTGCTGAAGGAGATT-3’ | 3 |
|  | AD-147 | Genomic | F: 5’-AGCCCAAGTTTCTTCTGAATCC-3’  R: 5’-AAATTCGCAGAGCGTTTGTTAC-3’ | 1 |
|  | AA-67 | Genomic | F: 5’-CCCATGTGAAATTCTCTTGAAGA-3’  R: 5’-GCATTTCACTTGATGAAATTTCG-3’ | 1 |
|  | AC-75 | Genomic | F: 5’-CGCTCACCAAATGTAGATGATAA-3’  R: 5’-TCATGCATCAATGAAAGTGATAAA-3’ | 1 |
|  | AA-37 | Genomic | F: 5’-TCCACCTTCAAAGTTGATACAGT-3’  R: 5’-GGGCTTTTTAGCTTGTAGACCA-3’ | 1 |
|  | AB-72 | Genomic | F: 5’-ATCTCATGTTCAACTTGCAACCTTTA-3’  R: 5’-TTCAAAACACGCAAGTTTTCTGA-3’ | 2 |
|  | AD-83 | Genomic | F: 5’-CACATGAGCGTGTGTATGGTAA-3’  R: 5’-GGGATAAGAAGAGGGAGCAAAT-3’ | 2 |
|  | AB-30 | Genomic | F: 5’-GATTCTTGAACATCGTGCAGTG-3’  R: 5’-CATTTGAGCTTTCTGGATGACG-3’ | 3 |
|  | A-9 | Genomic | F: 5’-GTGCAGAAGCATTTGTTCAGAT-3’  R: 5’-CCCACATATATTTGGTTGGTCA-3’ | 4 |
|  | AB-23 | Genomic | F: 5’-TCAGCCTTTATCCTCCGAACTA-3’  R: 5’-GAACCCTTGTGCAGAAGCATTA-3’ | 5 |
|  | AD-158 | Genomic | F: 5’-AGATAGGTAGGAATGGGTGAAGG-3’  R: 5’-GCATTCATTGCGGTTGTGT-3’ | 5 |
|  | AA-335 | Genomic | F: 5’-ACGCACACGCTTAGATAGAAAT-3’  R: 5’-ATCCACCATAAGTTTTGGCATA-3’ | 6 |
|  | AA-374 | Genomic | F: 5’-GTCAATATCTCCAATGGTAACG-3’  R: 5’-GCATTTGTGTAGTTGTAATTTCAT-3’ | 3 |
|  | A-5 | Genomic | F: 5’-GTAAAGCATAAGGGGATTCTCAT-3’  R: 5’-CAGCTTTTAACTCATCTGACACA-3’ | 2 |
|  | AB-71 | Genomic | F: 5’-CCAACCATTTGTGAGTTCCCTT-3’  R: 5’-TTCGTCGAACCACGAGAATAGA-3’ | 6 |
|  | AB-45 | Genomic | F: 5’-ATTACACCAACAATCTCCCACT-3’  R: 5’-TGTAGAAGCATTTGGGTAGTTG-3’ | 4 |

Table S2. Details regarding the number of alleles (k), number of individuals typed (N) and polymorphic information content (PIC) generated using SSR primers.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Sr. No.** | **Primers** | **K** | **N** | **PIC value** |
| 1 | AA103 | 3 | 4 | 0.511 |
| 2 | AB45 | 2 | 4 | 0.375 |
| 3 | AA335 | 2 | 4 | 0.359 |
| 4 | AA374 | 2 | 3 | 0.346 |
| 5 | AD147 | 2 | 4 | 0.375 |
| 6 | AA67 | 2 | 4 | 0.375 |
| 7 | AB30 | 2 | 4 | 0.359 |
| 8 | A9 | 2 | 4 | 0.305 |
| 9 | A5 | 3 | 4 | 0.582 |
| 10 | AB25 | 2 | 4 | 0.305 |
| 11 | AA37 | 2 | 3 | 0.375 |
| 12 | AD83 | 2 | 4 | 0.195 |

Table S3. Jaccard’s similarity coefficient of the 4 parents based on polymorphic markers.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **Azad P-1** | **Palam Sumool** | **Pb-89** | **Palam Priya** |
| **Azad P-1** | 1.000 |  |  |  |
| **Palam Sumool** | 0.528 | 1.000 |  |  |
| **Pb-89** | 0.523 | 0.611 | 1.000 |  |
| **Palam Priya** | 0.694 | 0.500 | 0.667 | 1.000 |

Table S4. Analysis of variance for different characters in garden pea during the years 2014/15 and 2015/16 and pooled years.

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Source** |  | **Mean sum of squares due to** | | | | | | | | | | |
| **Characters** |  | **Replication** | | **Genotype (G)** | | **Error** | | **Genotype (G)** | **Environment (E)** | **G×E** | **Error** | **F-test (Homogeniety test)** |
|  |  | **2014/15** | **2015/16** | **2014/15** | **2015/16** | **2014/15** | **2015/16** |  | **Pooled years** |  |  |  |
|  | **df** | **2** | | **39** | | **78** | | **39** | **1** | **39** | **156** |  |
| First flower node | | 2.65 | 0.31 | 2.14\* | 1.16\* | 0.44 | 0.19 | 1.78 | 320.07 | 1.53\* | 0.32 | 5.36\* |
| Days to flowering | | 114.50 | 8.80 | 20.84\* | 64.94\* | 6.29 | 12.33 | 64.47 | 82.83 | 21.29\* | 9.30 | 3.84\* |
| Days to first picking | | 425.78 | 10.23 | 62.68\* | 13.84\* | 8.42 | 3.68 | 49.04 | 1926.67 | 27.48\* | 6.07 | 5.24\* |
| Plant height (cm) | | 65.43 | 2.379 | 209.1\* | 186.27\* | 29.42 | 14.80 | 261.5 | 163.05 | 133.84\* | 22.11 | 3.95\* |
| Pod length (cm) | | 1.380 | 0.949 | 2.57\* | 1.63\* | 0.23 | 0.229 | 3.509 | 13.98 | 0.69\* | 0.230 | 1.01 |
| Seeds /pod | | 0.440 | 0.130 | 2.09\* | 1.92\* | 0.18 | 0.149 | 3.077 | 93.14 | 0.94\* | 0.162 | 1.46 |
| Shelling (%) | | 5.050 | 3.695 | 57.78\* | 44.39\* | 11.67 | 7.893 | 86.50 | 2150.29 | 15.60\* | 9.78 | 2.19\* |
| Pods/plant | | 6.121 | 2.295 | 6.61\* | 35.90\* | 0.426 | 1.835 | 30.19 | 3220.4 | 12.33\* | 1.13 | 18.55\* |
| Pod yield/plant (g) | | 233.34 | 123.51 | 420.12\* | 1383.92\* | 16.34 | 32.78 | 1400.48 | 109658.03 | 403.56\* | 24.55 | 4.02\* |
| Average pod weight (g) | | 0.441 | 0.044 | 1.42\* | 1.78\* | 0.091 | 0.169 | 2.38 | 1.712 | 0.819\* | 0.130 | 3.45\* |
| Total soluble solids (oBrix) | | 0.097 | 0.015 | 2.68\* | 1.23\* | 0.568 | 0.099 | 2.172 | 20.30 | 1.73\* | 0.334 | 32.92\* |
| Ascorbic acid (mg) | | 1.828 | 3.358 | 17.90\* | 19.73\* | 2.002 | 3.611 | 25.78 | 7.350 | 11.85\* | 2.807 | 3.25\* |

**\*** Significant at P < .05

Table S5. Mean performance of 40 genotypes of garden pea for earliness and growth traits during 2014/15, 2015/16 and pooled years.

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Characters** | **First flower Node** | | | **Days to flowering** | | | **Days to picking** | | | **Plant Height (cm)** | | |
| **Genotype** | **Y 1** | **Y 2** | **P** | **Y 1** | **Y 2** | **P** | **Y 1** | **Y 2** | **P** | **Y1** | **Y2** | **P** |
| Palam Priya | 14.20 | 12.00 | 13.10 | 96.33 | 93.00 | 94.67 | 136.67 | 124.33 | 130.50 | 71.41 | 69.64 | 70.52 |
| Pb 89 | 13.27 | 11.24 | 12.25 | 89.67 | 87.67 | 88.67 | 123.33 | 119.33 | 121.33 | 58.00 | 63.95 | 60.98 |
| AP-1 | 15.53 | 12.00 | 13.77 | 95.00 | 98.00 | 96.50 | 127.33 | 121.33 | 124.33 | 64.27 | 58.73 | 61.50 |
| Palam Sumool | 14.53 | 11.55 | 13.04 | 95.67 | 95.33 | 95.50 | 120.33 | 122.33 | 121.33 | 77.14 | 77.85 | 77.49 |
| DPP-SP-3 | 13.47 | 11.56 | 12.51 | 88.33 | 85.00 | 86.67 | 125.00 | 121.67 | 123.33 | 66.41 | 74.61 | 70.51 |
| DPP-SP-6 | 13.13 | 10.53 | 1183 | 88.00 | 87.00 | 87.50 | 122.00 | 122.33 | 122.17 | 66.55 | 64.62 | 65.59 |
| DPP-SP-7 | 13.27 | 10.47 | 11.87 | 87.00 | 87.33 | 87.17 | 129.00 | 122.67 | 125.83 | 78.50 | 76.02 | 77.26 |
| DPP-SP-11 | 12.60 | 11.44 | 12.02 | 88.33 | 96.67 | 92.50 | 125.67 | 126.67 | 126.17 | 61.88 | 77.30 | 69.59 |
| DPP-SP-14 | 14.67 | 11.33 | 13.00 | 90.33 | 89.33 | 89.83 | 125.67 | 123.00 | 124.33 | 65.66 | 68.31 | 66.99 |
| DPP-SP-15 | 14.87 | 12.00 | 13.43 | 91.67 | 95.67 | 93.67 | 124.00 | 123.00 | 123.50 | 72.78 | 64.44 | 68.61 |
| DPP-SP-16 | 14.53 | 11.13 | 12.83 | 91.67 | 96.00 | 93.83 | 127.33 | 124.67 | 126.00 | 77.45 | 67.50 | 72.48 |
| DPP-SP-17 | 13.80 | 11.53 | 12.67 | 88.67 | 87.33 | 88.00 | 124.67 | 122.00 | 123.33 | 64.83 | 66.87 | 65.85 |
| DPP-SP-20 | 13.60 | 10.67 | 12.13 | 89.67 | 88.33 | 89.00 | 124.00 | 121.67 | 122.83 | 56.25 | 59.69 | 57.97 |
| DPP-SP-22 | 12.93 | 11.02 | 11.98 | 87.33 | 86.33 | 86.83 | 123.00 | 120.67 | 121.83 | 64.93 | 66.11 | 65.52 |
| DPP-SP-23 | 13.07 | 11.83 | 12.45 | 92.33 | 97.00 | 94.67 | 130.33 | 121.33 | 125.83 | 67.70 | 71.86 | 69.78 |
| DPP-SP-24 | 13.13 | 11.15 | 12.14 | 87.33 | 87.33 | 87.33 | 124.67 | 122.33 | 123.50 | 59.40 | 60.11 | 59.76 |
| DPP-SP-25 | 13.27 | 10.93 | 12.10 | 88.67 | 89.33 | 89.00 | 126.33 | 122.67 | 124.50 | 65.85 | 65.33 | 65.59 |
| DPP-SP-29 | 12.53 | 11.95 | 12.24 | 89.00 | 103.00 | 96.00 | 128.67 | 124.33 | 126.50 | 66.77 | 67.31 | 67.04 |
| DPP-SP-32 | 15.53 | 11.29 | 13.41 | 95.33 | 102.67 | 99.00 | 136.33 | 128.67 | 132.50 | 54.33 | 63.00 | 58.67 |
| DPP-SP-33 | 16.60 | 10.49 | 13.54 | 96.00 | 100.67 | 98.33 | 131.67 | 128.67 | 130.17 | 60.64 | 57.80 | 59.22 |
| DPP-SP-38 | 13.93 | 12.07 | 13.00 | 91.33 | 96.00 | 93.67 | 123.67 | 126.67 | 125.17 | 69.57 | 51.07 | 60.32 |
| DPP-SN-5 | 13.53 | 11.67 | 12.60 | 88.33 | 88.00 | 88.17 | 127.00 | 124.00 | 125.50 | 73.30 | 79.02 | 76.16 |
| DPP-SN-6 | 13.53 | 11.60 | 12.57 | 88.33 | 85.00 | 86.67 | 125.33 | 122.67 | 124.00 | 67.63 | 85.57 | 76.60 |
| DPP-SN-8 | 14.67 | 12.07 | 13.37 | 92.33 | 91.67 | 92.00 | 130.67 | 126.33 | 128.50 | 80.43 | 84.88 | 82.66 |
| DPP-SN-10 | 13.40 | 11.69 | 12.54 | 92.67 | 89.00 | 90.83 | 132.67 | 122.00 | 127.33 | 51.73 | 64.13 | 57.93 |
| DPP-SN-13 | 14.13 | 12.20 | 13.17 | 93.00 | 97.00 | 95.00 | 130.00 | 121.67 | 125.83 | 63.07 | 59.93 | 61.50 |
| DPP-SN-15 | 14.00 | 11.22 | 12.61 | 92.33 | 93.67 | 93.00 | 134.33 | 122.33 | 128.33 | 66.68 | 84.67 | 75.68 |
| DPP-SN-16 | 13.00 | 10.80 | 11.90 | 89.33 | 89.33 | 89.33 | 134.33 | 126.00 | 130.17 | 57.67 | 69.70 | 63.68 |
| DPP-SN-1 | 14.00 | 11.33 | 12.67 | 88.67 | 93.00 | 90.83 | 130.33 | 123.33 | 126.83 | 74.65 | 78.73 | 76.69 |
| DPP-SN-2 | 13.10 | 11.27 | 12.18 | 89.33 | 93.00 | 91.17 | 131.33 | 123.67 | 127.50 | 59.57 | 62.91 | 61.24 |
| DPP-SN-4 | 13.67 | 11.73 | 12.70 | 90.00 | 89.00 | 89.50 | 131.33 | 122.33 | 126.83 | 57.30 | 72.40 | 64.85 |
| DPP-SN-7 | 13.73 | 11.96 | 12.85 | 93.67 | 96.00 | 94.83 | 133.00 | 124.33 | 128.67 | 83.60 | 67.04 | 75.32 |
| DPP-SN-8 -1 | 14.53 | 11.33 | 12.93 | 93.00 | 92.67 | 92.83 | 134.33 | 124.00 | 129.17 | 78.11 | 71.79 | 74.95 |
| DPP-SN-9 | 13.77 | 13.13 | 13.45 | 94.33 | 94.33 | 94.33 | 131.00 | 128.33 | 129.67 | 71.35 | 71.07 | 71.21 |
| DPP-SN-10-1 | 13.33 | 11.67 | 12.50 | 92.33 | 90.33 | 91.33 | 133.33 | 125.33 | 129.33 | 67.76 | 70.43 | 69.10 |
| DPP-SN-11 | 14.40 | 12.20 | 13.30 | 92.67 | 89.67 | 91.17 | 131.67 | 124.33 | 128.00 | 70.87 | 70.59 | 70.73 |
| DPP-SN-12 | 14.47 | 11.60 | 13.03 | 92.33 | 88.33 | 90.33 | 137.67 | 122.33 | 130.00 | 64.73 | 79.00 | 71.87 |
| DPP-SA-1 | 13.33 | 12.02 | 12.68 | 89.00 | 94.67 | 91.83 | 136.00 | 124.00 | 130.00 | 63.99 | 78.46 | 71.23 |
| DPP-SA-3 | 14.13 | 13.18 | 13.66 | 89.00 | 89.67 | 89.33 | 134.00 | 122.67 | 128.33 | 82.21 | 66.00 | 74.11 |
| DPP-SA-4 | 14.67 | 12.62 | 13.64 | 91.00 | 93.00 | 92.00 | 132.00 | 123.33 | 127.67 | 86.86 | 69.31 | 78.09 |
| MEAN | 13.89 | 11.59 | 12.74 | 90.98 | 92.15 | 91.57 | 129.25 | 123.58 | 126.41 | 67.80 | 69.44 | 68.62 |
| CD | 1.07 | 0.72 | 0.64 | 4.05 | 5.68 | 3.33 | 4.69 | 3.10 | 2.78 | 8.76 | 6.22 | 5.32 |
| CV | 4.77 | 3.84 | 4.43 | 2.76 | 3.81 | 3.45 | 2.24 | 1.55 | 1.94 | 8.00 | 5.54 | 6.85 |

Y1: Year 1 (2014/15); Y2: Year 2 (2015/16); P: Pooled data; CD: Critical difference; CV: Coefficient of variation

Table S6. Mean performance of 40 genotypes of garden pea for yield, yield contributing and quality traits during 2014/15, 2015/16 and pooled years.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Characters** | **Pod length (cm)** | | | **Seeds / pod** | | | **Shelling (%)** | | | **Pods per plant** | | | **Average pod weight (g)** | | | **Pod yield/ plant (g)** | | | **Total soluble solids** | | | **Ascorbic Acid (mg/ 100g)** | | |
| **Genotype** | **Y1** | **Y2** | **P** | **Y1** | **Y2** | **P** | **Y1** | **Y2** | **P** | **Y1** | **Y2** | **P** | **Y1** | **Y2** | **P** | **Y1** | **Y2** | **P** | **Y1** | **Y2** | **P** | **Y1** | **Y2** | **P** |
| Palam Priya | 7.97 | 8.63 | 8.30 | 5.53 | 6.77 | 6.15 | 40.74 | 44.74 | 42.74 | 7.07 | 14.60 | 10.83 | 5.16 | 5.16 | 5.16 | 36.52 | 75.33 | 55.93 | 16.47 | 15.40 | 15.93 | 21.00 | 21.67 | 21.33 |
| Pb 89 | 10.22 | 10.09 | 10.16 | 8.00 | 8.80 | 8.40 | 47.06 | 50.78 | 48.92 | 9.80 | 17.77 | 13.78 | 5.69 | 6.57 | 6.13 | 55.62 | 114.00 | 84.81 | 17.60 | 16.97 | 17.28 | 20.00 | 24.17 | 22.08 |
| AP-1 | 9.24 | 9.50 | 9.37 | 7.07 | 6.83 | 6.95 | 40.55 | 48.74 | 44.65 | 6.03 | 22.60 | 14.32 | 5.68 | 5.53 | 5.61 | 34.26 | 104.67 | 69.46 | 17.67 | 14.33 | 16.00 | 22.17 | 21.67 | 21.92 |
| Palam Sumool | 11.54 | 12.32 | 11.93 | 6.40 | 6.60 | 6.50 | 39.03 | 45.15 | 42.09 | 5.93 | 11.90 | 8.92 | 5.51 | 7.64 | 6.57 | 35.70 | 102.67 | 69.18 | 17.33 | 16.43 | 16.88 | 23.33 | 25.00 | 24.17 |
| DPP-SP-3 | 10.62 | 10.40 | 10.51 | 7.93 | 9.17 | 8.55 | 49.33 | 51.68 | 50.51 | 9.10 | 20.63 | 14.87 | 6.33 | 6.81 | 6.57 | 57.72 | 126.67 | 92.19 | 15.40 | 16.27 | 15.83 | 23.33 | 22.50 | 22.92 |
| DPP-SP-6 | 11.78 | 11.52 | 11.65 | 8.27 | 10.20 | 9.23 | 50.00 | 52.48 | 51.24 | 9.83 | 21.53 | 15.68 | 8.71 | 7.85 | 8.28 | 82.75 | 137.33 | 110.04 | 18.00 | 16.60 | 17.30 | 26.97 | 21.83 | 24.40 |
| DPP-SP-7 | 10.95 | 11.24 | 11.09 | 6.50 | 6.97 | 6.73 | 48.06 | 51.45 | 49.76 | 9.17 | 14.97 | 12.07 | 6.85 | 7.41 | 7.13 | 62.77 | 110.00 | 86.38 | 16.60 | 14.37 | 15.48 | 23.33 | 26.50 | 24.92 |
| DPP-SP-11 | 9.83 | 10.02 | 9.93 | 5.87 | 8.80 | 7.33 | 36.82 | 48.85 | 42.83 | 6.04 | 15.60 | 10.82 | 5.57 | 5.28 | 5.42 | 34.67 | 82.33 | 58.50 | 17.07 | 16.27 | 16.67 | 25.17 | 27.77 | 26.47 |
| DPP-SP-14 | 10.99 | 10.32 | 10.66 | 7.43 | 8.30 | 7.87 | 42.20 | 49.71 | 45.95 | 7.30 | 16.70 | 12.00 | 6.38 | 5.43 | 5.90 | 46.55 | 90.67 | 68.61 | 16.00 | 15.40 | 15.70 | 22.50 | 26.13 | 24.32 |
| DPP-SP-15 | 10.05 | 9.83 | 9.94 | 6.77 | 8.50 | 7.63 | 40.10 | 50.73 | 45.41 | 9.20 | 12.40 | 10.80 | 5.95 | 6.21 | 6.08 | 54.76 | 76.50 | 65.63 | 16.33 | 14.67 | 15.50 | 24.17 | 21.00 | 22.58 |
| DPP-SP-16 | 11.28 | 11.12 | 11.20 | 7.90 | 8.93 | 8.42 | 38.91 | 42.28 | 40.59 | 7.93 | 15.74 | 11.84 | 6.25 | 5.73 | 5.99 | 49.57 | 89.92 | 69.74 | 15.80 | 15.40 | 15.60 | 21.67 | 20.00 | 20.83 |
| DPP-SP-17 | 11.92 | 10.17 | 11.04 | 7.47 | 7.83 | 7.65 | 45.88 | 50.68 | 48.28 | 9.50 | 19.63 | 14.57 | 6.54 | 5.50 | 6.02 | 62.28 | 108.00 | 85.14 | 16.53 | 15.80 | 16.17 | 25.00 | 22.17 | 23.58 |
| DPP-SP-20 | 11.13 | 10.73 | 10.93 | 7.53 | 8.37 | 7.95 | 41.81 | 41.66 | 41.73 | 6.47 | 11.60 | 9.03 | 6.39 | 6.31 | 6.35 | 41.31 | 73.17 | 57.24 | 17.67 | 15.73 | 16.70 | 22.50 | 23.33 | 22.92 |
| DPP-SP-22 | 12.19 | 11.14 | 11.67 | 8.07 | 9.23 | 8.65 | 48.75 | 52.14 | 50.45 | 9.43 | 15.91 | 12.67 | 6.96 | 8.01 | 7.48 | 65.62 | 120.67 | 93.15 | 17.07 | 16.00 | 16.53 | 23.33 | 25.27 | 24.30 |
| DPP-SP-23 | 11.17 | 11.92 | 11.55 | 5.13 | 8.03 | 6.58 | 39.62 | 50.69 | 45.16 | 7.73 | 14.53 | 11.13 | 6.54 | 7.03 | 6.78 | 50.68 | 107.33 | 79.00 | 15.80 | 15.67 | 15.73 | 23.33 | 21.50 | 22.42 |
| DPP-SP-24 | 11.85 | 11.27 | 11.56 | 8.33 | 9.07 | 8.70 | 49.98 | 51.33 | 50.65 | 9.43 | 16.27 | 12.85 | 6.82 | 6.68 | 6.75 | 64.31 | 111.33 | 87.82 | 17.07 | 16.40 | 16.73 | 23.17 | 21.67 | 22.42 |
| DPP-SP-25 | 11.23 | 11.43 | 11.33 | 7.27 | 8.73 | 8.00 | 43.02 | 47.02 | 45.02 | 6.63 | 13.87 | 10.25 | 6.83 | 6.34 | 6.58 | 45.20 | 88.00 | 66.60 | 15.53 | 16.07 | 15.80 | 24.00 | 24.17 | 24.08 |
| DPP-SP-29 | 11.24 | 9.99 | 10.61 | 7.50 | 7.23 | 7.37 | 44.03 | 50.50 | 47.27 | 5.70 | 6.17 | 5.94 | 7.17 | 5.69 | 6.43 | 40.94 | 35.14 | 38.04 | 16.33 | 15.40 | 15.87 | 24.83 | 25.00 | 24.92 |
| DPP-SP-32 | 11.33 | 11.48 | 11.40 | 5.97 | 8.03 | 7.00 | 39.44 | 45.02 | 42.23 | 4.67 | 9.93 | 7.30 | 6.01 | 5.31 | 5.66 | 27.97 | 52.75 | 40.36 | 16.07 | 16.27 | 16.17 | 26.67 | 26.67 | 26.67 |
| DPP-SP-33 | 11.77 | 10.67 | 11.22 | 5.57 | 8.10 | 6.83 | 38.38 | 43.23 | 40.81 | 4.67 | 6.69 | 5.68 | 6.29 | 5.45 | 5.87 | 31.37 | 36.55 | 33.96 | 16.13 | 16.13 | 16.13 | 20.83 | 26.97 | 23.90 |
| DPP-SP-38 | 11.33 | 10.42 | 10.87 | 5.97 | 7.70 | 6.83 | 41.00 | 48.89 | 44.95 | 7.97 | 13.48 | 10.72 | 5.84 | 5.68 | 5.76 | 46.46 | 76.24 | 61.35 | 16.07 | 16.00 | 16.03 | 25.83 | 28.67 | 27.25 |
| DPP-SN-5 | 10.91 | 10.91 | 10.91 | 6.53 | 8.73 | 7.63 | 45.00 | 48.70 | 46.85 | 6.47 | 14.80 | 10.63 | 5.65 | 6.21 | 5.93 | 36.50 | 95.00 | 65.75 | 17.27 | 15.33 | 16.30 | 18.50 | 22.50 | 20.50 |
| DPP-SN-6 | 11.57 | 10.42 | 10.99 | 6.27 | 8.40 | 7.33 | 41.60 | 51.14 | 46.37 | 7.27 | 13.26 | 10.26 | 6.33 | 6.90 | 6.61 | 46.10 | 94.67 | 70.39 | 14.93 | 15.67 | 15.30 | 27.77 | 25.00 | 26.38 |
| DPP-SN-8 | 11.62 | 11.54 | 11.58 | 6.57 | 8.03 | 7.30 | 40.33 | 50.26 | 45.30 | 7.93 | 12.73 | 10.33 | 6.35 | 6.20 | 6.28 | 50.27 | 79.00 | 64.63 | 16.00 | 15.40 | 15.70 | 26.13 | 27.50 | 26.82 |
| DPP-SN-10 | 11.14 | 10.97 | 11.06 | 6.13 | 7.13 | 6.63 | 40.24 | 42.81 | 41.53 | 7.13 | 15.00 | 11.07 | 5.10 | 6.04 | 5.57 | 36.50 | 92.33 | 64.41 | 16.20 | 15.40 | 15.80 | 26.17 | 25.83 | 26.00 |
| DPP-SN-13 | 12.05 | 11.33 | 11.69 | 7.13 | 7.53 | 7.33 | 36.78 | 39.42 | 38.10 | 6.50 | 13.00 | 9.75 | 5.72 | 5.71 | 5.71 | 37.23 | 74.00 | 55.62 | 15.00 | 15.47 | 15.23 | 25.83 | 26.13 | 25.98 |
| DPP-SN-15 | 11.52 | 10.52 | 11.02 | 6.73 | 8.43 | 7.58 | 40.01 | 49.04 | 44.53 | 6.97 | 17.07 | 12.02 | 6.05 | 5.78 | 5.92 | 42.20 | 98.33 | 70.27 | 15.33 | 14.07 | 14.70 | 25.30 | 19.47 | 22.38 |
| DPP-SN-16 | 11.59 | 10.41 | 11.00 | 6.73 | 8.10 | 7.42 | 34.76 | 41.62 | 38.19 | 7.17 | 14.93 | 11.05 | 5.91 | 5.49 | 5.70 | 42.28 | 81.67 | 61.97 | 17.93 | 16.53 | 17.23 | 25.70 | 22.50 | 24.10 |
| DPP-SN-1 | 11.64 | 10.28 | 10.96 | 7.43 | 8.27 | 7.85 | 34.33 | 44.48 | 39.41 | 7.73 | 17.13 | 12.43 | 6.83 | 5.46 | 6.14 | 52.83 | 93.33 | 73.08 | 17.00 | 15.60 | 16.30 | 22.50 | 20.83 | 21.67 |
| DPP-SN-2 | 11.44 | 11.02 | 11.23 | 7.23 | 8.73 | 7.98 | 39.99 | 48.86 | 44.43 | 7.87 | 12.27 | 10.07 | 6.96 | 7.24 | 7.10 | 54.75 | 93.17 | 73.96 | 16.13 | 14.93 | 15.53 | 25.27 | 26.50 | 25.88 |
| DPP-SN-4 | 11.57 | 10.75 | 11.16 | 8.24 | 9.03 | 8.64 | 43.09 | 49.08 | 46.09 | 9.14 | 14.97 | 12.05 | 6.43 | 5.59 | 6.01 | 58.50 | 83.67 | 71.08 | 15.87 | 16.13 | 16.00 | 19.17 | 25.83 | 22.50 |
| DPP-SN-7 | 13.83 | 11.74 | 12.79 | 6.20 | 7.57 | 6.88 | 42.70 | 49.34 | 46.02 | 6.73 | 12.47 | 9.60 | 7.69 | 7.03 | 7.36 | 58.50 | 91.33 | 74.92 | 16.93 | 15.00 | 15.97 | 25.83 | 25.83 | 25.83 |
| DPP-SN-8 -1 | 12.55 | 11.39 | 11.97 | 6.90 | 7.43 | 7.17 | 37.27 | 46.75 | 42.01 | 6.60 | 13.70 | 10.15 | 7.27 | 6.03 | 6.65 | 48.06 | 82.00 | 65.03 | 14.07 | 16.07 | 15.07 | 22.50 | 22.50 | 22.50 |
| DPP-SN-9 | 11.57 | 11.36 | 11.46 | 6.47 | 6.90 | 6.68 | 37.43 | 41.81 | 39.62 | 4.33 | 7.70 | 6.02 | 6.29 | 5.77 | 6.03 | 27.20 | 44.33 | 35.77 | 15.13 | 15.87 | 15.50 | 25.00 | 28.57 | 26.78 |
| DPP-SN-10-1 | 11.80 | 12.21 | 12.00 | 5.97 | 8.80 | 7.38 | 40.53 | 40.81 | 40.67 | 4.87 | 13.40 | 9.13 | 6.61 | 6.94 | 6.77 | 32.19 | 92.67 | 62.43 | 15.07 | 15.47 | 15.27 | 24.17 | 24.17 | 24.17 |
| DPP-SN-11 | 11.38 | 10.86 | 11.12 | 5.83 | 7.57 | 6.70 | 33.93 | 40.59 | 37.26 | 7.37 | 16.17 | 11.77 | 5.96 | 5.47 | 5.72 | 43.93 | 95.67 | 69.80 | 16.33 | 15.87 | 16.10 | 25.83 | 25.83 | 25.83 |
| DPP-SN-12 | 11.65 | 10.77 | 11.21 | 6.33 | 7.40 | 6.87 | 34.02 | 47.03 | 40.53 | 7.87 | 17.40 | 12.63 | 5.79 | 5.19 | 5.49 | 45.45 | 90.00 | 67.73 | 14.67 | 16.40 | 15.53 | 26.13 | 22.13 | 24.13 |
| DPP-SA-1 | 12.00 | 10.66 | 11.33 | 6.33 | 7.57 | 6.95 | 46.05 | 51.51 | 48.78 | 5.93 | 15.63 | 10.78 | 6.56 | 5.73 | 6.14 | 38.93 | 89.50 | 64.22 | 15.53 | 15.93 | 15.73 | 18.47 | 19.47 | 18.97 |
| DPP-SA-3 | 11.10 | 10.50 | 10.80 | 7.50 | 8.10 | 7.80 | 45.13 | 50.86 | 47.99 | 7.03 | 13.87 | 10.45 | 6.62 | 6.17 | 6.40 | 46.37 | 85.00 | 65.68 | 16.40 | 15.53 | 15.97 | 19.33 | 22.50 | 20.92 |
| DPP-SA-4 | 10.81 | 10.22 | 10.52 | 6.93 | 7.83 | 7.38 | 44.61 | 50.12 | 47.37 | 5.97 | 15.50 | 10.73 | 5.87 | 6.16 | 6.01 | 35.07 | 95.00 | 65.03 | 17.27 | 16.10 | 16.68 | 20.83 | 20.83 | 20.83 |
| MEAN | 11.28 | 10.80 | 11.04 | 6.85 | 8.09 | 7.47 | 41.56 | 47.54 | 44.55 | 7.26 | 14.59 | 10.93 | 6.36 | 6.12 | 6.25 | 46.50 | 89.24 | 67.87 | 16.29 | 15.70 | 15.99 | 23.59 | 23.94 | 23.76 |
| CD | 0.78 | 0.77 | 0.54 | 0.68 | 0.62 | 0.46 | 5.52 | 4.54 | 3.54 | 1.06 | 2.19 | 1.20 | 0.49 | 0.67 | 0.41 | 6.53 | 9.26 | 5.61 | 1.22 | 0.50 | 0.65 | 2.29 | 3.07 | 1.90 |
| CV | 4.26 | 4.43 | 4.35 | 6.13 | 4.76 | 5.39 | 8.22 | 5.90 | 7.01 | 8.99 | 9.29 | 9.73 | 4.75 | 6.68 | 5.77 | 8.69 | 6.41 | 7.30 | 4.63 | 2.00 | 3.61 | 5.99 | 7.94 | 7.05 |

Y1: Year 1 (2014/15); Y2: Year 2 (2015/16); P: Pooled data; CD: Critical difference; CV: Coefficient of variation

Table S7. Duncan Multiple Range Test (DMRT) of earliness traits during 2014/15, 2015/16 and pooled years.

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Characters** | **First Flower Node** | | | **Days to flowering** | | | **Days to first picking** | | |
| **Genotype** | **Y1** | **Y2** | **Pooled** | **Y1** | **Y2** | **Pooled** | **Y1** | **Y2** | **Pooled** |
| Palam Priya | 14.20 cdefg | 12.00 bcdef | 13.10 abcdefghi | 96.33 a | 93.00 cdefghijk | 94.67 bcdef | 136.67 ab | 124.33  bcdefg | 130.50 ab |
| Pb 89 | 13.27 efgh | 11.24 defghijk | 12.25 jklmno | 89.67 efghi | 87.67  hijkl | 88.67 klmn | 123.33  mnop | 119.33 h | 121.33 p |
| AP-1 | 15.53 ab | 12.00 bcdef | 13.77 a | 95.00 abcd | 98.00 abc | 96.50 abc | 127.33 fghijklmno | 121.33  fgh | 124.33 ijklmnop |
| Palam Sumool | 14.53 bcde | 11.55 cdefghi | 13.04 abcdefghij | 95.67 ab | 95.33 bcdefg | 95.50 abcde | 120.33 p | 122.33 defgh | 121.33 p |
| DPP-SP-3 | 13.47 defgh | 11.56 cdefghi | 12.51 hijklmno | 88.33 ghi | 85.00 l | 86.67 n | 125.00 klmnop | 121.67  efgh | 123.33  lmnop |
| DPP-SP-6 | 13.13 fgh | 10.53 k | 11.83 o | 88.00 ghi | 87.00  jkl | 87.50 mn | 122.00 op | 122.33 defgh | 122.17 nop |
| DPP-SP-7 | 13.27 efgh | 10.47 k | 11.87 no | 87.00 i | 87.33 ijkl | 87.17 mn | 129.00 efghijklm | 122.67 cdefgh | 125.83 fghijklm |
| DPP-SP-11 | 12.60 h | 11.44 cdefghij | 12.02 mno | 88.33 ghi | 96.67 abcde | 92.50 cdefghijk | 125.67 ijklmnop | 126.67 ab | 126.17 efghijklm |
| DPP-SP-14 | 14.67 bcd | 11.33 cdefghijk | 13.00 abcdefghij | 90.33 cdefghi | 89.33 fghijkl | 89.83 hijklmn | 125.67 ijklmnop | 123.00 bcdefgh | 124.33 ijklmnop |
| DPP-SP-15 | 14.87 bc | 12.00 bcdef | 13.43 abcde | 91.67  abcdefghi | 95.67 bcdef | 93.67 cdefghi | 124.00 mnop | 123.00  bcdefgh | 123.50 klmnop |
| DPP-SP-16 | 14.53 bcde | 11.13 fghijk | 12.83 defghijkl | 91.67 abcdefghi | 96.00  bcdef | 93.83 cdefgh | 127.33 fghijklmno | 124.67 bcdef | 126.00 efghijklm |
| DPP-SP-17 | 13.80 cdefgh | 11.53 cdefghij | 12.67 efghijklmn | 88.67 fghi | 87.33  ijkl | 88.00  lmn | 124.67 lmnop | 122.00 efgh | 123.33 lmnop |
| DPP-SP-20 | 13.60 cdefgh | 10.67 jk | 12.13 klmno | 89.67 efghi | 88.33 ghijkl | 89.00 jklmn | 124.00 mnop | 121.67 efgh | 122.83 mnop |
| DPP-SP-22 | 12.93 gh | 11.02 ghijk | 11.98  mno | 87.33 hi | 86.33 kl | 86.83 n | 123.00 nop | 120.67 gh | 121.83 op |
| DPP-SP-23 | 13.07 gh | 11.83 bcdefg | 12.45 ijklmno | 92.33 abcdefgh | 97.00 abcd | 94.67 bcdef | 130.33 defghijkl | 121.33 fgh | 125.83 fghijklm |
| DPP-SP-24 | 13.13 fgh | 11.15 efghijk | 12.14 klmno | 87.33 hi | 87.33  ijkl | 87.33 mn | 124.67 lmnop | 122.33 defgh | 123.50 klmnop |
| DPP-SP-25 | 13.27 efgh | 10.93 hijk | 12.10 lmno | 88.67 fghi | 89.33 fghijkl | 89.00  jklmn | 126.33 hijklmno | 122.67 cdefgh | 124.50 ijklmnop |
| DPP-SP-29 | 12.53 h | 11.95 bcdef | 12.24 jklmno | 89.00 fghi | 103.00 a | 96.00 abcd | 128.67 efghijklmn | 124.33 bcdefg | 126.50 defghijkl |
| DPP-SP-32 | 15.53 ab | 11.29 defghijk | 13.41 abcdef | 95.33 abc | 102.67 a | 99.00 a | 136.33 abc | 128.67  a | 132.50 a |
| DPP-SP-33 | 16.60 a | 10.49 k | 13.54 abcd | 96.00 ab | 100.67 ab | 98.33 ab | 131.67 bcdefgh | 128.67 a | 130.17 abc |
| DPP-SP-38 | 13.93 cdefg | 12.07 bcd | 13.00 abcdefghij | 91.33 abcdefghi | 96.00 bcdef | 93.67 cdefghi | 123.67 mnop | 126.67 ab | 125.17 hijklmno |
| DPP-SN-5 | 13.53 defgh | 11.67 cdefghi | 12.60 ghijklmno | 88.33 ghi | 88.00 hijkl | 88.17 lmn | 127.00 ghijklmno | 124.00  bcdefg | 125.50 ghijklmn |
| DPP-SN-6 | 13.53 defgh | 11.60 cdefghi | 12.57 ghijklmno | 88.33 ghi | 85.00 l | 86.67 n | 125.33 jklmnop | 122.67 cdefgh | 124.00 jklmnop |
| DPP-SN-8 | 14.67 bcd | 12.07 bcd | 13.37 abcdefg | 92.33 abcdefgh | 91.67 cdefghijkl | 92.00 defghijkl | 130.67 cdefghijk | 126.33 abc | 128.50  bcdefgh |
| DPP-SN-10 | 13.40 defgh | 11.69 cdefgh | 12.54  hijklmno | 92.67 abcdefg | 89.00 fghijkl | 90.83 fghijklmn | 132.67 abcdefg | 122.00 efgh | 127.33 bcdefghij |
| DPP-SN-13 | 14.13 cdefg | 12.20 bc | 13.17 abcdefghi | 93.00 abcdefg | 97.00 abcd | 95.00 abcdef | 130.00 efghijkl | 121.67 efgh | 125.83 fghijklm |
| DPP-SN-15 | 14.00 cdefg | 11.22 defghijk | 12.61 fghijklmno | 92.33 abcdefgh | 93.67  cdefghij | 93.00 cdefghij | 134.33 abcde | 122.33 defgh | 128.33 bcdefgh |
| DPP-SN-16 | 13.00 gh | 10.80 ijk | 11.90 mno | 89.33 efghi | 89.33 fghijkl | 89.33 jklmn | 134.33 abcde | 126.00 abcd | 130.17 abc |
| DPP-SN-1 | 14.00 cdefg | 11.33 cdefghijk | 12.67 efghijklmn | 88.67 fghi | 93.00 cdefghijk | 90.83 fghijklmn | 130.33 defghijkl | 123.33 bcdefg | 126.83 cdefghijk |
| DPP-SN-2 | 13.10 fgh | 11.27 defghijk | 12.18 klmno | 89.33 efghi | 93.00 cdefghijk | 91.17 fghijklm | 131.33 bcdefghi | 123.67 bcdefg | 127.50 bcdefghi |
| DPP-SN-4 | 13.67 cdefgh | 11.73 cdefgh | 12.70 efghijklm | 90.00 defghi | 89.00 fghijkl | 89.50 ijklmn | 131.33 bcdefghi | 122.33 defgh | 126.83 cdefghijk |
| DPP-SN-7 | 13.73 cdefgh | 11.96 bcdef | 12.85 cdefghijkl | 93.67 abcdef | 96.00 bcdef | 94.83 bcdef | 133.00 abcdef | 124.33 bcdefg | 128.67 bcdefg |
| DPP-SN-8 -1 | 14.53 bcde | 11.33 cdefghijk | 12.93 bcdefghijk | 93.00 abcdefg | 92.67 cdefghijk | 92.83 cdefghijk | 134.33 abcde | 124.00 bcdefg | 129.17 abcdef |
| DPP-SN-9 | 13.77 cdefgh | 13.13 a | 13.45 abcde | 94.33 abcde | 94.33 bcdefghi | 94.33 bcdefg | 131.00 bcdefghij | 128.33 a | 129.67 abcd |
| DPP-SN-10-1 | 13.33 efgh | 11.67 cdefghi | 12.50 hijklmno | 92.33 abcdefgh | 90.33 defghijkl | 91.33 efghijklm | 133.33 abcde | 125.33 abcde | 129.33 abcde |
| DPP-SN-11 | 14.40 bcdef | 12.20 bc | 13.30 abcdefgh | 92.67 abcdefg | 89.67  efghijkl | 91.17 fghijklm | 131.67 bcdefgh | 124.33 bcdefg | 128.00 bcdefgh |
| DPP-SN-12 | 14.47 bcde | 11.60 cdefghi | 13.03 abcdefghij | 92.33 abcdefgh | 88.33 ghijkl | 90.33 ghijklmn | 137.67 a | 122.33 defgh | 130.00 abc |
| DPP-SA-1 | 13.33 efgh | 12.02 bcde | 12.68 efghijklm | 89.00 fghi | 94.67  bcdefgh | 91.83 defghijkl | 136.00 abcd | 124.00 bcdefg | 130.00 abc |
| DPP-SA-3 | 14.13 cdefg | 13.18 a | 13.66 ab | 89.00 fghi | 89.67  efghijkl | 89.33 jklmn | 134.00 abcde | 122.67 cdefgh | 128.33 bcdefgh |
| DPP-SA-4 | 14.67 bcd | 12.62 ab | 13.64  abc | 91.00 bcdefghi | 93.00  cdefghijk | 92.00 defghijkl | 132.00 bcdefgh | 123.33 bcdefg | 127.67 bcdefghi |

Note: Means with the same letter are not significantly different at 5% level

Table S8. Duncan Multiple Range Test (DMRT) of growth and pod traits during 2014/15, 2015/16 and pooled years.

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Characters** | **Plant height (cm)** | | | **Pod Length (cm)** | | | **Seeds/ pod** | | |
| **Genotpe** | **Y1** | **Y2** | **Pooled** | **Y1** | **Y2** | **Pooled** | **Y1** | **Y2** | **Pooled** |
| Palam Priya | 71.41 defghijk | 69.64  fghijkl | 70.52  efghijk | 7.97  m | 8.63 q | 8.30 o | 5.53 mn | 6.77 no | 6.15 m |
| Pb 89 | 58.00 mnop | 63.95 klmnop | 60.98 mnopq | 10.22  ijk | 10.09 lmnop | 10.16  lm | 8.00 abcd | 8.80 bcdef | 8.40 bc |
| AP-1 | 64.27 ijklmno | 58.73 op | 61.50 mnopq | 9.24  l | 9.50 p | 9.37 n | 7.07 fghi | 6.83 mno | 6.95 ijkl |
| Palam Sumool | 77.14 abcdefgh | 77.85 bcde | 77.49 abc | 11.54  cdefgh | 12.32 a | 11.93 b | 6.40 hijkl | 6.60 o | 6.50 lm |
| DPP-SP-3 | 66.41 hijklmn | 74.61 cdefg | 70.51 efghijk | 10.62 hijk | 10.40 hijklmnop | 10.51 klm | 7.93 abcde | 9.17 bc | 8.55 b |
| DPP-SP-6 | 66.55 hijklmn | 64.62 ijklmnop | 65.59 jklmno | 11.78 bcdef | 11.52 abcde | 11.65 bcd | 8.27 ab | 10.20 a | 9.23 a |
| DPP-SP-7 | 78.50 abcde | 76.02 cdef | 77.26  abcd | 10.95 fghi | 11.24 cdefghi | 11.09 cdefghijk | 6.50 ghijkl | 6.97 lmno | 6.73 kl |
| DPP-SP-11 | 61.88 klmnop | 77.30 cde | 69.59 fghijkl | 9.83 kl | 10.02 mnop | 9.93 mn | 5.87 lmn | 8.80 bcdef | 7.33 fghij |
| DPP-SP-14 | 65.66 ijklmn | 68.31 ghijkl | 66.99 ijklm | 10.99 efghi | 10.32 ijklmnop | 10.66 hijkl | 7.43 cdef | 8.30 defghi | 7.87 def |
| DPP-SP-15 | 72.78 cdefghij | 64.44 ijklmnop | 68.61 hijkl | 10.05  jkl | 9.83 op | 9.94 mn | 6.77 fghijk | 8.50 bcdefg | 7.63  defgh |
| DPP-SP-16 | 77.45 abcdefg | 67.50 ghijklm | 72.48 bcdefghi | 11.28 cdefgh | 11.12 cdefghijk | 11.20 cdefghij | 7.90 abcde | 8.93 bcde | 8.42 bc |
| DPP-SP-17 | 64.83 ijklmno | 66.87  hijklmn | 65.85 jklmn | 11.92 bcde | 10.17 klmnop | 11.04 cdefghijk | 7.47 bcdef | 7.83 ghijk | 7.65 defgh |
| DPP-SP-20 | 56.25 nop | 59.69 nop | 57.97 q | 11.13 defghi | 10.73 efghijklmno | 10.93 efghijk | 7.53 bcdef | 8.37 defgh | 7.95 cde |
| DPP-SP-22 | 64.93 ijklmno | 66.11 hijklmno | 65.52 jklmno | 12.19 bc | 11.14 cdefghij | 11.67 bcd | 8.07 abc | 9.23 b | 8.65 b |
| DPP-SP-23 | 67.70 fghijklm | 71.86 cdefghi | 69.78 fghijkl | 11.17 defgh | 11.92 abc | 11.55 bcdef | 5.13 n | 8.03 fghij | 6.58 lm |
| DPP-SP-24 | 59.40 lmnop | 60.11 mnop | 59.76 nopq | 11.85 bcdef | 11.27 cdefghi | 11.56 bcde | 8.33 a | 9.07 bcd | 8.70 b |
| DPP-SP-25 | 65.85 ijklmn | 65.33 hijklmno | 65.59 jklmno | 11.23 defgh | 11.43 abcdef | 11.33 bcdefgh | 7.27 cdefg | 8.73 bcdef | 8.00 cd |
| DPP-SP-29 | 66.77 ghijklmn | 67.31 ghijklm | 67.04  ijklm | 11.24 cdefgh | 9.99 nop | 10.61 ijkl | 7.50 bcdef | 7.23 klmno | 7.37 fghij |
| DPP-SP-32 | 54.33 op | 63.00 lmnop | 58.67 pq | 11.33 cdefgh | 11.48 abcde | 11.40 bcdefg | 5.97 klm | 8.03 fghij | 7.00  ijkl |
| DPP-SP-33 | 60.64  klmnop | 57.80 p | 59.22 opq | 11.77  bcdef | 10.67 efghijklmno | 11.22 cdefghi | 5.57 mn | 8.10 fghij | 6.83 jkl |
| DPP-SP-38 | 69.57 efghijkl | 51.07 q | 60.32 nopq | 11.33 cdefgh | 10.42 ghijklmnop | 10.87  fghijk | 5.97 klm | 7.70 hijkl | 6.83 jkl |
| DPP-SN-5 | 73.30 bcdefghij | 79.02  abc | 76.16 bcdef | 10.91 fghij | 10.91 defghijklmn | 10.91 efghijk | 6.53 ghijkl | 8.73 bcdef | 7.63 defgh |
| DPP-SN-6 | 67.63 fghijklm | 85.57 a | 76.60 abcde | 11.57 cdefgh | 10.42 ghijklmnop | 10.99 defghijk | 6.27 ijklm | 8.40 cdefgh | 7.33 fghij |
| DPP-SN-8 | 80.43 abcd | 84.88 ab | 82.66 a | 11.62 bcdefg | 11.54 abcde | 11.58 bcde | 6.57 ghijkl | 8.03 fghij | 7.30 ghij |
| DPP-SN-10 | 51.73  p | 64.13  jklmnop | 57.93 q | 11.14 defgh | 10.97 defghijklm | 11.06 cdefghijk | 6.13  jklm | 7.13  klmno | 6.63 klm |
| DPP-SN-13 | 63.07 jklmno | 59.93  mnop | 61.50 mnopq | 12.05 bcd | 11.33 bcdefgh | 11.69 bc | 7.13 efgh | 7.53 ijklm | 7.33 fghij |
| DPP-SN-15 | 66.68 hijklmn | 84.67 ab | 75.68 bcdef | 11.52 cdefgh | 10.52 fghijklmno | 11.02 cdefghijk | 6.73  fghijk | 8.43 cdefgh | 7.58 defgh |
| DPP-SN-16 | 57.67 mnop | 69.70  fghijkl | 63.68  lmnopq | 11.59 cdefg | 10.41 ghijklmnop | 11.00 defghijk | 6.73 fghijk | 8.10 fghij | 7.42 efghi |
| DPP-SN-1 | 74.65 bcdefghi | 78.73 abc | 76.69 abcde | 11.64 bcdefg | 10.28 jklmnop | 10.96 efghijk | 7.43 cdef | 8.27 efghi | 7.85 defg |
| DPP-SN-2 | 59.57 lmnop | 62.91 lmnop | 61.24 mnopq | 11.44 cdefgh | 11.02 cdefghijkl | 11.23 cdefghi | 7.23 defg | 8.73 bcdef | 7.98 cd |
| DPP-SN-4 | 57.30 mnop | 72.40 cdefgh | 64.85 klmnop | 11.57 cdefgh | 10.75 efghijklmno | 11.16 cdefghijk | 8.24 ab | 9.03 bcde | 8.64 b |
| DPP-SN-7 | 83.60  ab | 67.04 ghijklmn | 75.32 bcdefg | 13.83 a | 11.74 abcd | 12.79 a | 6.20 jklm | 7.57  ijklm | 6.88 ijkl |
| DPP-SN-8 -1 | 78.11 abcdef | 71.79 cdefghij | 74.95 bcdefgh | 12.55  b | 11.39 bcdef | 11.97 b | 6.90 fghij | 7.43 jklmn | 7.17 hijk |
| DPP-SN-9 | 71.35 defghijk | 71.07 defghijk | 71.21 cdefghijk | 11.57 cdefgh | 11.36 bcdefg | 11.46 bcdefg | 6.47 ghijkl | 6.90  mno | 6.68  kl |
| DPP-SN-10-1 | 67.76 fghijklm | 70.43  efghijkl | 69.10 ghijkl | 11.80 bcdef | 12.21 ab | 12.00 b | 5.97 klm | 8.80  bcdef | 7.38 fghij |
| DPP-SN-11 | 70.87  defghijk | 70.59 efghijkl | 70.73 defghijk | 11.38 cdefgh | 10.86 defghijklmn | 11.12  cdefghijk | 5.83 lmn | 7.57 ijklm | 6.70 kl |
| DPP-SN-12 | 64.73  ijklmno | 79.00 abc | 71.87 bcdefghij | 11.65 bcdefg | 10.77 efghijklmno | 11.21  cdefghi | 6.33 hijklm | 7.40 jklmn | 6.87 ijkl |
| DPP-SA-1 | 63.99 ijklmno | 78.46 abcd | 71.23 cdefghijk | 12.00 bcd | 10.66 efghijklmno | 11.33 bcdefgh | 6.33 hijklm | 7.57 ijklm | 6.95 ijkl |
| DPP-SA-3 | 82.21 abc | 66.00 hijklmno | 74.11 bcdefgh | 11.10 defghi | 10.50 fghijklmno | 10.80 ghijk | 7.50 bcdef | 8.10 fghij | 7.80 defg |
| DPP-SA-4 | 86.86 a | 69.31 fghijkl | 78.09 ab | 10.81 ghij | 10.22  jklmnop | 10.52 jklm | 6.93 fghij | 7.83 ghijk | 7.38  fghij |

Note: Means with the same letter are not significantly different at 5% level

Table S9. Duncan Multiple Range Test (DMRT) of pod related traits during 2014/15, 2015/16 and pooled years.

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Characters** | **Shelling (%)** | | | **Pods per plant** | | | **Average pod weight (g)** | | |
| **Genotype** | **Y1** | **Y2** | **Pooled** | **Y1** | **Y2** | **Pooled** | **Y1** | **Y2** | **Pooled** |
| Palam Priya | 40.74 efghijkl | 44.74 efghi | 42.74 fghijklmn | 7.07 bcdef | 14.60  fghijkl | 10.83 fghij | 5.16 a | 5.16 a | 5.16 a |
| Pb 89 | 47.06 abcde | 50.78  ab | 48.92 abcd | 9.80 a | 17.77 cd | 13.78 bc | 5.69 a | 6.57 a | 6.13 a |
| AP-1 | 40.55 efghijkl | 48.74 abcdef | 44.65 defghijklm | 6.03 efgh | 22.60  a | 14.32 b | 5.68 a | 5.53 a | 5.61 a |
| Palam Sumool | 39.03 ghijkl | 45.15 cdefgh | 42.09 ghijklmno | 5.93 fgh | 11.90 mno | 8.92 l | 5.51 a | 7.64 a | 6.57 a |
| DPP-SP-3 | 49.33 ab | 51.68 ab | 50.51 ab | 9.10 a | 20.63 ab | 14.87 ab | 6.33 a | 6.81 a | 6.57 a |
| DPP-SP-6 | 50.00 a | 52.58a | 51.24 a | 9.83 a | 21.53 ab | 15.68 a | 8.71 a | 7.85 a | 8.28  a |
| DPP-SP-7 | 48.06 abcd | 51.45 ab | 49.76 abc | 9.17 a | 14.97 efghijkl | 12.07 def | 6.85 a | 7.41 a | 7.13 a |
| DPP-SP-11 | 36.82  ijkl | 48.85 abcdef | 42.83 fghijklmn | 6.04 efgh | 15.60 defghij | 10.82 fghij | 5.57 a | 5.28 a | 5.42 a |
| DPP-SP-14 | 42.20 cdefghi | 49.71 abcdef | 45.95 cdefgh | 7.30 bcde | 16.70 def | 12.00 def | 6.38 a | 5.43 a | 5.90 a |
| DPP-SP-15 | 40.10 fghijkl | 50.73 abc | 45.41 cdefghi | 9.20 a | 12.40  klmno | 10.80 fghij | 5.95 a | 6.21 a | 6.08 a |
| DPP-SP-16 | 38.91 ghijkl | 42.28 ghi | 40.59 lmnop | 7.93 b | 15.74 defghi | 11.84 defg | 6.25 a | 5.73 a | 5.99 a |
| DPP-SP-17 | 45.88 abcdef | 50.68 abc | 48.28 abcde | 9.50 a | 19.63 bc | 14.57 ab | 6.54 a | 5.50  a | 6.02  a |
| DPP-SP-20 | 41.81 defghi | 41.66 ghi | 41.73 hijklmno | 6.47 defg | 11.60 no | 9.03 kl | 6.39 a | 6.31 a | 6.35 a |
| DPP-SP-22 | 48.75 abc | 52.14 ab | 50.45 ab | 9.43 a | 15.91 defghi | 12.67 cd | 6.96 a | 8.01 a | 7.48 a |
| DPP-SP-23 | 39.62 fghijkl | 50.69 abc | 45.16 defghij | 7.73 bcd | 14.53 fghijklm | 11.13 efghi | 6.54 a | 7.03 a | 6.78 a |
| DPP-SP-24 | 49.98 a | 51.33 ab | 50.65 ab | 9.43 a | 16.27 defg | 12.85 cd | 6.82 a | 6.68 a | 6.75 a |
| DPP-SP-25 | 43.02 bcdefghi | 47.02 abcdefg | 45.02 defghijk | 6.63 cdefg | 13.87 ghijklmn | 10.25 ijkl | 6.83 a | 6.34 a | 6.58 a |
| DPP-SP-29 | 44.03 abcdefgh | 50.50 abcd | 47.27 abcde | 5.70 ghi | 6.17 q | 5.94 n | 7.17 a | 5.69 a | 6.43 a |
| DPP-SP-32 | 39.44  fghijkl | 45.02 defgh | 42.23 ghijklmno | 4.67 ij | 9.93 op | 7.30 m | 6.01 a | 5.31 a | 5.66 a |
| DPP-SP-33 | 38.38  ghijkl | 43.23 ghi | 40.81 jklmnop | 4.67 ij | 6.69 q | 5.68 n | 6.29 a | 5.45 a | 5.87  a |
| DPP-SP-38 | 41.00 efghijk | 48.89 abcdef | 44.95 defghijkl | 7.97 b | 13.48 hijklmn | 10.72 fghij | 5.84 a | 5.68 a | 5.76 a |
| DPP-SN-5 | 45.00 abcdefg | 48.70 abcdef | 46.85 bcdef | 6.47 defg | 14.80 efghijkl | 10.63 fghij | 5.65 a | 6.21  a | 5.93  a |
| DPP-SN-6 | 41.60 defghij | 51.14 ab | 46.37 bcdefg | 7.27 bcde | 13.26 ijklmn | 10.26 ijkl | 6.33 a | 6.90 a | 6.61 a |
| DPP-SN-8 | 40.33 efghijkl | 50.26 abcde | 45.30 defghi | 7.93 b | 12.73 klmn | 10.33 hijkl | 6.35 a | 6.20  a | 6.28 a |
| DPP-SN-10 | 40.24 efghijkl | 42.81 ghi | 41.53 ijklmnop | 7.13 bcdef | 15.00 efghijk | 11.07 efghij | 5.10  a | 6.04 a | 5.57 a |
| DPP-SN-13 | 36.78 ijkl | 39.42  i | 38.10 op | 6.50 defg | 13.00 jklmn | 9.75 ijkl | 5.72 a | 5.71 a | 5.71  a |
| DPP-SN-15 | 40.01 fghijkl | 49.04 abcdef | 44.53 defghijklm | 6.97 bcdefg | 17.07 def | 12.02 def | 6.05 a | 5.78 a | 5.92  a |
| DPP-SN-16 | 34.76  jkl | 41.62 ghi | 38.19 op | 7.17 bcdef | 14.93 efghijkl | 11.05 efghij | 5.91 a | 5.49 a | 5.70 a |
| DPP-SN-1 | 34.33 kl | 44.48 fghi | 39.41 nop | 7.73 bcd | 17.13 def | 12.43 cde | 6.83 a | 5.46 a | 6.14 a |
| DPP-SN-2 | 39.99  fghijkl | 48.86 abcdef | 44.43 efghijklm | 7.87 bc | 12.27 lmno | 10.07 ijkl | 6.96 a | 7.24 a | 7.10 a |
| DPP-SN-4 | 43.09 bcdefghi | 49.08 abcdef | 46.09 cdefgh | 9.14 a | 14.97 efghijkl | 12.05 def | 6.43 a | 5.59 a | 6.01 a |
| DPP-SN-7 | 42.70 bcdefghi | 49.34 abcdef | 46.02 cdefgh | 6.73 bcdefg | 12.47  klmn | 9.60 jkl | 7.69 a | 7.03 a | 7.36 a |
| DPP-SN-8 -1 | 37.27 hijkl | 46.75 bcdefg | 42.01  ghijklmno | 6.60 cdefg | 13.70 ghijklmn | 10.15 ijkl | 7.27 a | 6.03 a | 6.65 a |
| DPP-SN-9 | 37.43 hijkl | 41.81 ghi | 39.62 nop | 4.33 j | 7.70 pq | 6.02  n | 6.29 a | 5.77 a | 6.03 a |
| DPP-SN-10-1 | 40.53  efghijkl | 40.81  hi | 40.67 klmnop | 4.87 hij | 13.40 ijklmn | 9.13 kl | 6.61 a | 6.94 a | 6.77 a |
| DPP-SN-11 | 33.93  l | 40.59 hi | 37.26 p | 7.37 bcd | 16.17 defgh | 11.77 defgh | 5.96 a | 5.47 a | 5.72 a |
| DPP-SN-12 | 34.02  l | 47.03 abcdefg | 40.53 mnop | 7.87 bc | 17.40 cde | 12.63 cd | 5.79 a | 5.19 a | 5.49 a |
| DPP-SA-1 | 46.05 abcdef | 51.51 ab | 48.78 abcde | 5.93 fgh | 15.63 defghij | 10.78 fghij | 6.56 a | 5.73 a | 6.14 a |
| DPP-SA-3 | 45.13 abcdefg | 50.86 ab | 47.99 abcde | 7.03 bcdef | 13.87 ghijklmn | 10.45 ghijk | 6.62 a | 6.17 a | 6.40 a |
| DPP-SA-4 | 44.61  abcdefg | 50.12 abcde | 47.37 abcde | 5.97 fgh | 15.50  defghij | 10.73 fghij | 5.87 a | 6.16 a | 6.01 a |

Note: Means with the same letter are not significantly different at 5% level

Table S10. Duncan Multiple Range Test (DMRT) of yield and quality traits during 2014/15, 2015/16 and pooled years.

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Characters** | **Pod yield/ plant (g)** | | | **Total soluble solids** | | | **Ascorbic acid (mg/ 100g)** | | |
| **Genotypes** | **Y1** | **Y2** | **Pooled** | **Y1** | **Y2** | **Pooled** | **Y1** | **Y2** | **Pooled** |
| Palam Priya | 36.52 t | 75.33 x | 55.93 y | 16.47 bcdefghij | 15.40 hijk | 15.93 cdefghi | 21.00 jklm | 21.67 fghi | 21.33 lmn |
| Pb 89 | 55.62 g | 114.00 d | 84.81 f | 17.60 abcd | 16.97 a | 17.28 a | 20.00 klm | 24.17 bcdefg | 22.08 ijklmn |
| AP-1 | 34.26 w | 104.67 h | 69.46 m | 17.67 abc | 14.33 mn | 16.00 cdefghi | 22.17 hijk | 21.67 fghi | 21.92 jklmn |
| Palam Sumool | 35.70 u | 102.67 i | 69.18 mn | 17.33 abcde | 16.43 abcd | 16.88 ab | 23.33 dfghij | 25.00 abcdef | 24.17 defghij |
| DPP-SP-3 | 57.72 f | 126.67 b | 92.19 c | 15.40 hijklmno | 16.27 bcde | 15.83 efghij | 23.33 dfghij | 22.50 defghi | 22.92 hijklm |
| DPP-SP-6 | 82.75 a | 137.33 a | 110.04 a | 18.00 a | 16.60 ab | 17.30 a | 26.97 ab | 21.83 fghi | 24.40 cdefghi |
| DPP-SP-7 | 62.77 d | 110.00 f | 86.38 e | 16.60 abcdefgh | 14.37 mn | 15.48 ghij | 23.33 dfghij | 26.50 abc | 24.92 bcdefgh |
| DPP-SP-11 | 34.67 vw | 82.33 u | 58.50 w | 17.07 abcdef | 16.27 bcde | 16.67 abcd | 25.17 abcdefg | 27.77 ab | 26.47 abcd |
| DPP-SP-14 | 46.55 m | 90.67 op | 68.61 n | 16.00 efghijkl | 15.40 hijk | 15.70 fghij | 22.50 ghijk | 26.13 abcd | 24.32 defghi |
| DPP-SP-15 | 54.76 h | 76.50 w | 65.63 qr | 16.33 cdefghijk | 14.67 lm | 15.50 fghij | 24.17 bcdefghi | 21.00 ghi | 22.58  hijklmn |
| DPP-SP-16 | 49.57 k | 89.92 q | 69.74 lm | 15.80 fghijkl | 15.40 hijk | 15.60 fghij | 21.67 ijkl | 20.00 hi | 20.83 mno |
| DPP-SP-17 | 62.28 d | 108.00 g | 85.14 f | 16.53 abcdefghi | 15.80 defghi | 16.17 bcdefg | 25.00 abcdefg | 22.17 efghi | 23.58 ghijkl |
| DPP-SP-20 | 41.31 q | 73.17  z | 57.24 x | 17.67 abc | 15.73 efghi | 16.70 abc | 22.50 ghijk | 23.33 cdefgh | 22.92 hijklm |
| DPP-SP-22 | 65.62 b | 120.67 c | 93.15 b | 17.07 abcdef | 16.00 bcdefgh | 16.53 abcde | 23.33 dfghij | 25.27 abcdef | 24.30 defghi |
| DPP-SP-23 | 50.68 j | 107.33 g | 79.00 g | 15.80 fghijkl | 15.67 efghi | 15.73 efghij | 23.33  dfghij | 21.50 fghi | 22.42 ijklmn |
| DPP-SP-24 | 64.31 c | 111.33 e | 87.82 d | 17.07 abcdef | 16.40 abcd | 16.73 abc | 23.17 fghij | 21.67 fghi | 22.42 ijklmn |
| DPP-SP-25 | 45.20 n | 88.00 r | 66.60 p | 15.53 ghijklm | 16.07 bcdefg | 15.80 efghij | 24.00 cdefghi | 24.17 bcdefg | 24.08 efghij |
| DPP-SP-29 | 40.94 q | 35.14 | 38.04 | 16.33 cdefghijk | 15.40 hijk | 15.87 defghij | 24.83 bcdefgh | 25.00 abcdef | 24.92 bcdefgh |
| DPP-SP-32 | 27.97 z | 52.75 | 40.36 z | 16.07 efghijkl | 16.27 bcde | 16.17 bcdefg | 26.67 abc | 26.67 abc | 26.67  abc |
| DPP-SP-33 | 31.37 y | 36.55 | 33.96 | 16.13 defghijkl | 16.13 bcdef | 16.13 bcdefg | 20.83 jklm | 26.97 abc | 23.90 fghijk |
| DPP-SP-38 | 46.46 m | 76.24 w | 61.35 v | 16.07 efghijkl | 16.00 bcdefgh | 16.03 cdefghi | 25.83 abcdef | 28.67 a | 27.25 a |
| DPP-SN-5 | 36.50 t | 95.00 kl | 65.75 q | 17.27 abcdef | 15.33 ijk | 16.30 bcdef | 18.50 m | 22.50 defghi | 20.50 no |
| DPP-SN-6 | 46.10 m | 94.67 l | 70.39 l | 14.93 klmno | 15.67 efghi | 15.30 hijk | 27.77 a | 25.00 abcdef | 26.38 abcde |
| DPP-SN-8 | 50.27 j | 79.00 v | 64.63 st | 16.00 efghijkl | 15.40 hijk | 15.70 fghij | 26.13 abcd | 27.50 ab | 26.82  ab |
| DPP-SN-10 | 36.50 t | 92.33 n | 64.41 st | 16.20 cdefghijk | 15.40 hijk | 15.80 efghij | 26.17 abc | 25.83 abcde | 26.00 abcdef |
| DPP-SN-13 | 37.23 s | 74.00 y | 55.62 y | 15.00 jklmno | 15.47 ghijk | 15.23 ijk | 25.83 abcdef | 26.13 abcd | 25.98  abcdef |
| DPP-SN-15 | 42.20 p | 98.33 j | 70.27 l | 15.33 hijklmno | 14.07 n | 14.70 k | 25.30 abcdef | 19.47 i | 22.38 ijklmn |
| DPP-SN-16 | 42.28 p | 81.67 u | 61.97 uv | 17.93 ab | 16.53 abc | 17.23 a | 25.70 abcdef | 22.50 defghi | 24.10 efghij |
| DPP-SN-1 | 52.83 i | 93.33 m | 73.08 j | 17.00 abcdefg | 15.60 fghij | 16.30 bcdef | 22.50 ghijk | 20.83 ghi | 21.67 klmn |
| DPP-SN-2 | 54.75 h | 93.17 m | 73.96 i | 16.13 defghijkl | 14.93 kl | 15.53 fghij | 25.27 abcdefg | 26.50 abc | 25.88 abcdefg |
| DPP-SN-4 | 58.50 e | 83.67 t | 71.08 k | 15.87  efghijkl | 16.13 bcdef | 16.00 cdefghi | 19.17 lm | 25.83 abcde | 22.50 ijklmn |
| DPP-SN-7 | 58.50 e | 91.33 o | 74.92 h | 16.93 abcdefg | 15.00 jkl | 15.97 cdefghi | 25.83 abcdef | 25.83 abcde | 25.83 abcdefg |
| DPP-SN-8 -1 | 48.06  l | 82.00  u | 65.03 rs | 14.07 mo | 16.07 bcdefg | 15.07 jk | 22.50 ghijk | 22.50 defghi | 22.50 ijklmn |
| DPP-SN-9 | 27.2 | 44.33 | 35.77 | 15.13 hijklmno | 15.87 defghi | 15.50 fghij | 25.00 abcdefg | 28.57 a | 26.78 ab |
| DPP-SN-10-1 | 32.19 x | 92.67 mn | 62.43 u | 15.07 ijklmno | 15.47 ghijk | 15.27 ijk | 24.17 bcdefghi | 24.17 bcdefg | 24.17 defghij |
| DPP-SN-11 | 43.93 o | 95.67 k | 69.80  lm | 16.33 cdefghijk | 15.87 defghi | 16.10 bcdefgh | 25.83 abcdef | 25.83 abcde | 25.83 abcdefg |
| DPP-SN-12 | 45.45 n | 90.00 pq | 67.73  o | 14.67 lmno | 16.40 abcd | 15.53 fghij | 26.13 abcd | 22.13 efghi | 24.13 defghij |
| DPP-SA-1 | 38.93  r | 89.50 q | 64.22  t | 15.53 ghijklm | 15.93  cdefghi | 15.73 efghij | 18.47 m | 19.47 i | 18.97 o |
| DPP-SA-3 | 46.37  m | 85.00 s | 65.68 qr | 16.40 cdefghijk | 15.53  fghijk | 15.97 cdefghi | 19.33 lm | 22.50 defghi | 20.92 mno |
| DPP-SA-4 | 35.07 v | 95.00 kl | 65.03 rs | 17.27 abcdef | 16.10 bcdefg | 16.68 abc | 20.83 jklm | 20.83 ghi | 20.83 mno |

Note: Means with the same letter are not significantly different at 5% level