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