**Table 1. Mean performance of hybrids pooled over seasons.**

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Hybrids** | **Days to 50% flowering** | **Plant height (cm)** | **Head diameter(cm)** | **Stem diameter(cm)** |  **Days to maturity** | **100 seed weight(g)** | **Volume weight(g/100ml)** | **Seed yield(Kg/ha)** | **Hull content(%)** | **Seed filling percent** | **Oil content(%)** | **Oil yield(Kg/ha)** |
| ARG-2-1-2 x GKVK-3 | 59.75 | 164.00 | 13.80 | 2.29 | 91.00 | 5.25 | 46.42 | 1902.64 | 28.69 | 91.76 | 35.55 | 676.87 |
| ARG-2-1-2 x RHA 6D-1 | 57.25 | 166.00 | 14.90 | 2.37 | 87.50 | 5.59 | 45.20 | 1976.25 | 28.16 | 93.34 | 38.81 | 768.61 |
| ARG-2-1-2 x 95-C-1 | 58.00 | 179.50 | 14.75 | 2.33 | 88.00 | 5.74 | 44.69 | 2195.41 | 27.24 | 94.89 | 37.12 | 819.58 |
| ARG-2-1-2 x LTRR-822 | 58.25 | 168.10 | 14.35 | 2.33 | 90.00 | 5.38 | 42.63 | 2369.30 | 24.17 | 95.18 | 36.89 | 876.03 |
| ARG-2-1-2 x M-17-R | 56.25 | 152.35 | 13.35 | 2.20 | 86.00 | 4.48 | 47.23 | 1745.69 | 29.06 | 92.70 | 38.24 | 668.22 |
| ARG-2-1-2 x MR-1 | 55.75 | 169.40 | 14.30 | 2.37 | 87.25 | 4.67 | 45.25 | 2019.30 | 29.57 | 90.81 | 38.58 | 780.08 |
| ARG-2-1-2 x RHA 272-II | 55.75 | 164.20 | 14.55 | 2.25 | 88.50 | 5.41 | 43.36 | 2035.97 | 31.74 | 89.39 | 34.67 | 706.98 |
| ARG-2-1-2 x X-15-NB-10 | 57.00 | 173.00 | 14.00 | 2.28 | 89.25 | 4.41 | 39.46 | 1885.97 | 30.79 | 91.48 | 37.61 | 710.16 |
| ARG-2-1-2 x GKVK-2 | 53.50 | 170.68 | 14.10 | 2.08 | 85.25 | 5.12 | 46.88 | 2158.19 | 30.76 | 88.88 | 36.99 | 798.75 |
| ARG-2-1-2 x RHA-93 | 54.50 | 148.38 | 14.25 | 2.16 | 86.00 | 5.33 | 42.55 | 2306.80 | 22.65 | 95.34 | 38.10 | 879.73 |
| MUT-2-8-3-2 x GKVK-3 | 61.50 | 166.13 | 14.95 | 2.44 | 94.00 | 5.45 | 47.61 | 2397.08 | 26.78 | 94.80 | 32.18 | 772.48 |
| MUT-2-8-3-2 x RHA 6D-1 | 60.25 | 170.80 | 14.00 | 2.20 | 93.50 | 4.29 | 45.59 | 1609.58 | 29.76 | 90.46 | 29.82 | 480.47 |
| MUT-2-8-3-2 x 95-C-1 | 59.25 | 177.88 | 13.85 | 2.38 | 92.00 | 5.27 | 45.24 | 1977.64 | 28.80 | 89.50 | 31.94 | 632.09 |
| MUT-2-8-3-2 x LTRR-822 | 59.25 | 170.80 | 13.90 | 2.28 | 90.25 | 4.80 | 43.81 | 1788.75 | 25.07 | 91.16 | 29.53 | 529.13 |
| MUT-2-8-3-2 x M-17-R | 54.50 | 155.60 | 13.08 | 2.12 | 87.75 | 3.82 | 46.99 | 1512.36 | 26.30 | 85.74 | 30.80 | 466.96 |
| MUT-2-8-3-2 x MR-1 | 57.00 | 157.60 | 13.63 | 2.28 | 90.50 | 4.63 | 47.22 | 2076.25 | 29.41 | 93.14 | 30.43 | 632.76 |
| MUT-2-8-3-2 x RHA 272-II | 57.50 | 170.00 | 13.93 | 2.28 | 89.75 | 5.26 | 45.05 | 1810.97 | 34.58 | 92.70 | 29.88 | 543.92 |
| MUT-2-8-3-2 x X-15-NB-10 | 58.00 | 161.05 | 14.20 | 2.21 | 90.50 | 5.19 | 39.91 | 1929.03 | 33.91 | 91.34 | 30.19 | 583.22 |
| MUT-2-8-3-2 x GKVK-2 | 60.00 | 173.10 | 13.40 | 2.17 | 92.00 | 4.38 | 44.94 | 1679.03 | 27.45 | 90.17 | 31.58 | 531.14 |
| MUT-2-8-3-2 x RHA-93 | 57.00 | 156.08 | 13.98 | 2.25 | 91.00 | 5.13 | 42.80 | 2269.30 | 28.56 | 93.14 | 30.82 | 700.71 |
| E002 x GKVK-3 | 61.50 | 164.90 | 13.90 | 2.33 | 93.75 | 4.59 | 43.61 | 1867.91 | 29.62 | 90.98 | 35.15 | 657.16 |
| E002 x RHA 6D-1 | 57.25 | 162.70 | 13.83 | 2.29 | 90.00 | 4.42 | 40.83 | 1829.19 | 29.26 | 93.54 | 36.32 | 665.87 |
| E002 x 95-C-1 | 58.75 | 171.15 | 14.68 | 2.41 | 91.75 | 4.73 | 43.06 | 2002.64 | 31.87 | 92.92 | 33.92 | 680.31 |
| E002 x LTRR-822 | 59.50 | 161.05 | 14.05 | 2.33 | 93.25 | 4.50 | 36.78 | 1856.80 | 28.76 | 88.06 | 36.43 | 677.05 |
| E002 x M-17-R | 54.75 | 154.33 | 13.83 | 2.06 | 85.50 | 4.42 | 47.02 | 2035.97 | 31.89 | 91.71 | 33.76 | 687.47 |
| E002 x MR-1 | 56.50 | 152.13 | 14.03 | 2.27 | 89.50 | 4.76 | 40.26 | 2010.97 | 31.41 | 92.22 | 34.94 | 703.22 |
| E002 x RHA 272-II | 54.75 | 149.30 | 13.98 | 2.12 | 87.00 | 4.75 | 41.80 | 1795.69 | 31.58 | 82.83 | 35.25 | 633.73 |
| E002 x X-15-NB-10 | 57.00 | 154.10 | 13.88 | 2.36 | 89.50 | 4.37 | 41.68 | 1813.75 | 29.43 | 94.97 | 37.85 | 686.99 |
| E002 x GKVK-2 | 56.50 | 150.40 | 13.50 | 2.20 | 89.00 | 4.85 | 43.70 | 1991.53 | 32.34 | 91.75 | 35.34 | 705.41 |
| E002 x RHA-93 | 56.25 | 137.55 | 13.65 | 2.21 | 89.00 | 4.27 | 41.53 | 1949.30 | 31.01 | 91.71 | 32.31 | 631.00 |
| ARG 3 x GKVK-3 | 64.00 | 150.98 | 13.95 | 2.31 | 97.50 | 4.20 | 43.36 | 2070.69 | 29.97 | 91.15 | 31.47 | 652.15 |
| ARG 3 x RHA 6D-1 | 60.00 | 155.20 | 14.18 | 2.37 | 97.50 | 4.57 | 42.11 | 1915.14 | 31.09 | 90.04 | 32.43 | 622.68 |
| ARG 3 x 95-C-1 | 61.00 | 157.65 | 14.50 | 2.32 | 94.50 | 4.51 | 43.44 | 1876.25 | 32.73 | 89.99 | 34.11 | 641.69 |
| ARG 3 x LTRR-822 | 61.00 | 154.93 | 13.60 | 2.24 | 90.00 | 4.47 | 38.17 | 1862.91 | 31.16 | 87.24 | 31.48 | 587.99 |
| ARG 3 x M-17-R | 56.50 | 151.98 | 13.73 | 2.30 | 88.00 | 4.34 | 45.86 | 1848.80 | 32.82 | 88.57 | 33.26 | 615.57 |
| ARG 3 x MR-1 | 56.25 | 150.33 | 13.65 | 2.25 | 88.50 | 4.34 | 41.99 | 1973.47 | 29.72 | 88.29 | 32.22 | 636.91 |
| ARG 3 x RHA 272-II | 56.50 | 152.35 | 13.90 | 2.30 | 87.75 | 4.65 | 41.99 | 1630.41 | 30.78 | 81.61 | 31.89 | 519.86 |
| ARG 3 x X-15-NB-10 | 58.75 | 151.48 | 13.40 | 2.27 | 91.50 | 4.68 | 41.22 | 1788.75 | 28.61 | 88.76 | 31.84 | 570.56 |
| ARG 3 x GKVK-2 | 55.75 | 139.75 | 12.60 | 1.87 | 86.75 | 4.78 | 44.59 | 1872.08 | 32.84 | 84.78 | 32.90 | 617.19 |
| ARG 3 x RHA-93 | 58.25 | 136.20 | 13.43 | 2.14 | 90.50 | 4.98 | 41.77 | 1938.75 | 30.27 | 85.49 | 28.35 | 553.98 |
| ARG-6-3-1-4 x GKVK-3 | 62.00 | 153.33 | 12.73 | 2.16 | 94.50 | 5.56 | 48.83 | 2031.80 | 30.76 | 93.04 | 36.04 | 734.39 |
| ARG-6-3-1-4 x RHA 6D-1 | 61.00 | 158.83 | 13.60 | 2.08 | 93.00 | 4.61 | 46.97 | 2051.80 | 22.72 | 91.31 | 40.39 | 829.62 |
| ARG-6-3-1-4 x 95-C-1 | 63.00 | 190.90 | 14.78 | 2.41 | 96.50 | 4.56 | 46.56 | 2142.91 | 24.32 | 92.55 | 41.03 | 877.68 |
| ARG-6-3-1-4 x LTRR-822 | 62.00 | 180.80 | 14.20 | 2.41 | 94.50 | 4.84 | 42.33 | 2021.25 | 27.01 | 88.04 | 39.52 | 801.08 |
| ARG-6-3-1-4 x M-17-R | 58.75 | 177.65 | 13.80 | 2.28 | 91.00 | 4.62 | 48.21 | 2017.91 | 22.97 | 91.08 | 38.42 | 776.06 |
| ARG-6-3-1-4 x MR-1 | 59.50 | 181.23 | 14.85 | 2.42 | 92.25 | 4.89 | 45.48 | 2277.64 | 27.99 | 94.90 | 38.64 | 881.49 |
| ARG-6-3-1-4 x RHA 272-II | 59.50 | 166.13 | 14.65 | 2.38 | 89.50 | 4.80 | 44.76 | 1757.30 | 28.19 | 87.70 | 35.97 | 632.98 |
| ARG-6-3-1-4 x X-15-NB-10 | 60.25 | 168.20 | 14.00 | 2.35 | 91.00 | 4.77 | 41.40 | 2037.36 | 29.09 | 92.83 | 36.94 | 754.41 |
| ARG-6-3-1-4 x GKVK-2 | 58.00 | 173.10 | 14.45 | 2.44 | 89.50 | 4.85 | 48.10 | 2124.86 | 30.12 | 89.09 | 38.03 | 808.54 |
| ARG-6-3-1-4 x RHA-93 | 58.50 | 150.43 | 13.73 | 2.14 | 90.25 | 4.54 | 44.55 | 2259.58 | 28.84 | 91.52 | 38.26 | 864.61 |

**Table 2. Mean performance of parents pooled over seasons.**

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Lines** | **Days to 50% flowering** | **Plant height (cm)** | **Head diameter(cm)** | **Stem diameter(cm)** |  **Days to maturity** | **100 seed weight(g)** | **Volume weight(g/100ml)** | **Seed yield(Kg/ha)** | **Hull content(%)** | **Seed filling percent** | **Oil content(%)** | **Oil yield(Kg/ha)** |
| ARG-2-1-2 | 58.00 | 144.48 | 13.11 | 1.87 | 88.75 | 4.71 | 45.80 | 973.12 | 28.27 | 94.00 | 36.69 | 357.51 |
| MUT-2-8-3-2 | 54.50 | 133.97 | 11.84 | 1.96 | 86.25 | 4.22 | 41.58 | 669.71 | 25.30 | 93.58 | 35.11 | 235.27 |
| E002 | 56.00 | 133.37 | 13.46 | 1.83 | 86.00 | 3.72 | 40.41 | 681.64 | 29.13 | 88.90 | 37.01 | 252.60 |
| ARG 3 | 54.75 | 137.89 | 12.36 | 2.05 | 84.75 | 4.02 | 43.99 | 714.56 | 26.38 | 93.87 | 36.89 | 263.88 |
| ARG-6-3-1-4 | 55.50 | 176.13 | 14.59 | 2.28 | 85.50 | 4.44 | 46.25 | 870.67 | 30.27 | 93.00 | 36.43 | 317.30 |
|  Testers |  |
| GKVK-3 | 64.25 | 126.15 | 12.24 | 2.03 | 98.25 | 3.62 | 43.48 | 587.02 | 25.27 | 95.25 | 36.46 | 214.30 |
| RHA-6D-1 | 62.25 | 138.53 | 11.32 | 2.16 | 93.50 | 3.39 | 42.85 | 503.20 | 21.20 | 91.71 | 37.59 | 190.03 |
| RHA-95-C-1 | 60.25 | 145.91 | 13.02 | 1.99 | 92.75 | 3.22 | 42.28 | 940.54 | 27.03 | 94.61 | 40.08 | 376.42 |
| LTRR-822 | 60.00 | 134.02 | 10.86 | 1.79 | 89.50 | 3.95 | 42.79 | 675.65 | 28.40 | 90.92 | 36.26 | 245.01 |
| M17-R | 58.00 | 135.33 | 9.21 | 1.79 | 91.50 | 3.05 | 38.55 | 355.36 | 27.10 | 88.51 | 36.48 | 128.78 |
| MR-1 | 57.75 | 118.40 | 10.17 | 1.71 | 92.50 | 3.45 | 41.09 | 464.04 | 25.48 | 89.60 | 38.76 | 179.83 |
| RHA-272-II | 58.75 | 115.85 | 11.62 | 2.01 | 92.00 | 3.90 | 45.01 | 575.34 | 22.10 | 94.02 | 39.06 | 224.67 |
| X-15-NB-10 | 56.00 | 138.13 | 12.87 | 1.91 | 87.75 | 5.01 | 41.74 | 697.15 | 26.48 | 93.77 | 39.63 | 276.50 |
| GKVK-2 | 56.00 | 105.36 | 9.19 | 1.70 | 87.00 | 3.19 | 41.70 | 343.90 | 30.46 | 88.62 | 36.67 | 126.29 |
| RHA-93 | 54.75 | 102.78 | 8.05 | 1.84 | 85.25 | 2.89 | 45.16 | 241.33 | 25.69 | 91.27 | 38.97 | 94.32 |