**Supplementary Table S1.** List of markers used for foreground and background selection in the present study

| **Sl.** | **Marker** | **Chromosome No.** | **Chromosome Position** | **Forward Marker** | **Reverse Marker** |
| --- | --- | --- | --- | --- | --- |
| **Foreground marker** |
| 1 | RM431 | 1 | 37.38 | GCTTGCTTGTATCTGCATTGGTAGG  | GGGATGATCCACTCTCTGTTTGG |
| **Background marker** |
| 2 | RM3825 | 1 | 36.47 | AAAGCCCCCAAAAGCAGTAC | GTGAAACTCTGGGGTGTTCG |
| 3 | RM14 | 1 | 8.67 | CCGAGGAGAGGAGTTCGAC | GTGCCAATTTCCTCGAAAAA |
| 4 | RM5 | 1 | 9.87 | TGCAACTTCTAGCTGCTCGA | GCATCCGATCTTGATGGG |
| 5 | RM572 | 1 | 9.87 | CGGTTAATGTCATCTGATTGG | TTCGAGATCCAAGACTGACC |
| 6 | RM1359 | 1 | 20.04 | CTCGCGAGGAAGAAGACAAC | CGCCGGCTGGTTAATTAATC |
| 7 | RM8068 | 1 | 1.65 | AAACCTCTCGCTGTAATTAG | TGAACATTTATTGATATGGTAAA |
| 8 | RM129 | 1 | 19 | TCTCTCCGGAGCCAAGGCGAGG | CGAGCCACGACGCGATGTACCC |
| 9 | HV01-64 | 1 | 26.2 | CGATAGGCTAATCAATCCAC  | GTAGTGGGAAGATGTGTGGT |
| 10 | RM1152 | 1 | 6.2 | GCCTTTGTCCTTCAGTAGGC | AGAGCGCCTGGGTATAATTG |
| 11 | RM493 | 1 | 12.26 | TAGCTCCAACAGGATCGACC | GTACGTAAACGCGGAAGGTG |
| 12 | RM1344 | 1 | 7.02 | AATGTTCCTGCAATCCGAGTAGG | CACAGAATGTGAGCATTCACTCC |
| 13 | HV01-79 | 1 | 34.76 | AATGTATGGGAATATCGTGC  | TCTTCACCACATTGCTGTTA |
| 14 | HV02-68 | 2 | 27.08 | TGCTACTCCTAGCTGCTACC  | TTACAGGCGGAATCTGTAAT |
| 15 | RM110 | 2 | 1.33 | TCGAAGCCATCCACCAACGAAG | TCCGTACGCCGACGAGGTCGAG |
| 16 | RM5460 | 2 | 33.77 | ACAACCACAGCTGCTTGAATTGC | AGAGGAACCCACTGCCCTTGC |
| 17 | RM71 | 2 | 8.76 | ACGCACAAGCAGATGATGAG | GGGAGAAGACGAATGTTTGC |
| 18 | RM13263 | 2 | 18.18 | AAGATTGCACACTGGTGTTCTCC | AGAAGAGCCGGTCTTTGTCTCC |
| 19 | RM166 | 2 | 36.6 | GGTCCTGGGTCAATAATTGGGTTACC | TTGCTGCATGATCCTAAACCGG |
| 20 | RM12476 | 2 | 2.79 | GACGAGTGATGTCAGCACATAAACC | ACTATCCACAGCAGCCATTGTCG |
| 21 | RM5916 | 2 | 34.08 | GCTATAAGAATCGTATTAAG | TACTGCTATTAAAGTCAGAA |
| 22 | HV02-10 | 2 | 4.29 | GAACTGGAGTTGCAGATTTC  | GTTCATGATGCTTGTTGCTA |
| 23 | HV02-80 | 2 | 30.89 | TGATGGATATAGAGCGACCT  | AATATGTTTCATCAAACCCG |
| 24 | RM6247 | 2 | 5.79 | CGCTCTTGTCTTTACTCCCG | GCTGCTGCTGCTTCTTTTTC |
| 25 | RM138 | 2 | 35.7 | AGCGCAACAACCAATCCATCCG | AAGAAGCTGCCTTTGACGCTATGG |
| 26 | RM520 | 3 | 30.71 | AGGAGCAAGAAAAGTTCCCC | GCCAATGTGTGACGCAATAG |
| 27 | RM186 | 3 | 28.8 | TCCTCCATCTCCTCCGCTCCCG | GGGCGTGGTGGCCTTCTTCGTC |
| 28 | OSR-13 | 3 | 7.09 | CATTTGTGCGTCACGGAGTA | AGCCACAGCGCCCATCTCTC |
| 29 | RM489 | 3 | 4.31 | ACTTGAGACGATCGGACACC | TCACCCATGGATGTTGTCAG |
| 30 | RM14639 | 3 | 6.94 | ATAAGAGGACTACGCCAAACAACACC | ATGGCTGGAATCCATTCTTTGG |
| 31 | RM3864 | 3 | 5.82 | AGTCAACCTTGGGGGTAAGG | AGATACTGCCCGTGTCATCC |
| 32 | RM55 | 3 | 33.64 | CGTCGCCGTAGTAGAGAAG | TCCCGGTTATTTTAAGGCG |
| 33 | HV03-93 | 3 | 34.55 | GACTGACTTCGGTGTTCATT  | TGCGTTCTTATATATGGGCT |
| 34 | HV03-2 | 3 | 1.01 | TAGCGGAGTTGGAATAACAC  | CTGCACTGCATACCTCATAA |
| 35 | RG1140 | 3 | 27.23 | ATATGCGCTTCCTCTTCGTT | AAATTCACAAACTCTCGCTATT |
| 36 | HV03-12 | 3 | 4.92 | TTGTACTTCCTTCCCTGAAA  | GTCAGGATGTTACCTAAGCG |
| 37 | RM22 | 3 | 15 | GGTTTGGGAGCCCATAATCT | CTGGGCTTCTTTCACTCGTC |
| 38 | RM551 | 4 | 0.17 | AGCCCAGACTAGCATGATTG | GAAGGCGAGAAGGATCACAG |
| 39 | RM470 | 4 | 28.09 | TCCTCATCGGCTTCTTCTTC | AGAACCCGTTCTACGTCACG |
| 40 | RM1153 | 4 | 32.85 | ACCAACGCCAAAAGCTACTG | TACTCGCCCTGCATGAGC |
| 41 | RM1155 | 4 | 20.34 | GGGAGTGTGGCAACTATGC | GGGAGGAGTGAGAAGGGATC |
| 42 | RM280 | 4 | 35.2 | ACACGATCCACTTTGCGC | TGTGTCTTGAGCAGCCAGG |
| 43 | HV04-15 | 4 | 11.31 | TAGGTTTGGGTCCTTAAATG | GCCATTCAAGCAATTGTAA |
| 44 | HV04-21 | 4 | 15.57 | ATTCTCTGTTTGCCTCCATT | CCCTGTCTTGTTTAGTGTCTTT |
| 45 | **NKS4-11** | 4 | 0.77 | CCATCAGTTGAAGGGCTCTC | CTTTTATGGCATGGGCAACT  |
| 46 | RM6840 | 4 | 43.16 | TACCAAGACTCCGCTATGGC | GAAGAAGGGATCATGGATCG |
| 47 | **NKS4-19** | 4 | 0.78 |  CTGGAATCACAAACCACGAC | GCTACCTCAAGCTCCACGAC  |
| 48 | RM499 | 4 | 0.38 | TACCAAACACCAACACTGCG | ACCTGCAGTATCCAAGTGTACG |
| 49 | RM13 | 5 | 28.6 | TCCAACATGGCAAGAGAGAG | GGTGGCATTCGATTCCAG |
| 50 | RM31 | 5 | 28.45 | GATCACGATCCACTGGAGCT | AAGTCCATTACTCTCCTCCC |
| 51 | RM3476 | 5 | 23.76 | GATTCTCGTCGTAATCAAGA | ATCCACGGTTAAGATAAATG |
| 52 | RM538 | 5 | 25.88 | GGTCGTTGAAGCTTACCAGC | ACAAGCTCTCAAAACTCGCC |
| 53 | RM122 | 5 | 0.31 | GAGTCGATGTAATGTCATCAGTGC | GAAGGAGGTATCGCTTTGTTGGAC |
| 54 | RM7588 | 5 | 9.3 | GCAATTTCCGAAGCCCATGACG | GCCCATGGGTACGTGCTATGATCC |
| 55 | RM18371 | 5 | 14.23 | GTGTGCATGTGTAGTGGAGACC | CTGTGGACATTGGTAGATGTGG |
| 56 | RM159 | 5 | 0.48 | GGGGCACTGGCAAGGGTGAAGG | GCTTGTGCTTCTCTCTCTCTCTCTCTCTC |
| 57 | HV05-64 | 5 | 26.59 | GAGTACCCTGTTCCACCATA  | CACAAACAACAGCATTTCAC |
| 58 | RM162 | 6 | 24.04 | GCCAGCAAAACCAGGGATCCGG | CAAGGTCTTGTGCGGCTTGCGG |
| 59 | RM19268 | 6 | 0.81 | CTGATTTGCACGATGAGAACTACC | CTTCATCTCCTTTGTGCAGAAGC |
| 60 | RM19291 | 6 | 1.21 | CACTTGCACGTGTCCTCTGTACG | GTGTTTCAGTTCACCTTGCATCG |
| 61 | RM589 | 6 | 1.38 | ATCATGGTCGGTGGCTTAAC | CAGGTTCCAACCAGACACTG |
| 62 | HVSSR06-40 | 6 | 16.03 | CTCTTCCGTGGTTAAAGAAA | CACTGGTATGATCTCCGACT |
| 63 | RM469 | 6 | 5.64 | AGCTGAACAAGCCCTGAAAG | GACTTGGGCAGTGTGACATG |
| 64 | RM527 | 6 | 9.87 | GGCTCGATCTAGAAAATCCG | TTGCACAGGTTGCGATAGAG |
| 65 | RM528 | 6 | 26.17 | GGCATCCAATTTTACCCCTC | AAATGGAGCATGGAGGTCAC |
| 66 | RM21384 | 7 | 10.72 | CTCCTCCCATTGTTCACCACTCC | AGGAGGATGGAAGGGCACTAGC |
| 67 | RM5436 | 7 | 9.1 | CAAAGGGGGTGTCCTCTATG | GTTGCTCGTCCTACATGTGC |
| 68 | RM2 | 7 | 16 | ACGTGTCACCGCTTCCTC | ATGTCCGGGATCTCATCG |
| 69 | RM7 | 7 | 9.83 | TTCGCCATGAAGTCTCTCG | CCTCCCATCATTTCGTTGTT |
| 70 | HV7-22 | 7 | 6.89 | TAGCTACCCTCAACAAGAGC | CCCTTACCTCACATCACCTA |
| 71 | RM432 | 7 | 18.9 | TTCTGTCTCACGCTGGATTG | AGCTGCGTACGTGATGAATG |
| 72 | RM5499 | 7 | 10.02 | TGGAGTACGACGTGATCGTG | CAGAAACGGGAGGGGATC |
| 73 | RM1132 | 7 | 23.93 | ATCACCTGAGAAACATCCGG | CTCCTCCCACGTCAAGGTC |
| 74 | RM21930 | 7 | 24.51 | TAGCTGTTGTGCATGATGTTCG | GCTGGACTCCTCTTGATCTCTCC |
| 75 | RM3691 | 7 | 19.23 | GCTGATGGTCAAAGATCAGG | ATGTGTCTGCTGGCACAGAG |
| 76 | HVSSR7-01 | 7 | 0.15 | TGCTCCAAGAGACTTGATCT  | GAGTACCAATTCAGCGACAT |
| 77 | HVSSR7-12 | 7 | 2.3 | GCCTCTAGCTAAACCTCAAA | ACAGTAGCAGTGAAGGTGCT |
| 78 | RM21800 | 7 | 22.05 | GTGAAATTTGCCTCGCTGTAACG | CATCTAACCCTGCTTTGGACTGG |
| 79 | RM25 | 8 | 4.38 | GGAAAGAATGATCTTTTCATGG | CTACCATCAAAACCAATGTTC |
| 80 | RM1308 | 8 | 27.9 | ATGGAACCGTTCTTCATACA | GTGACCAGTGGTGCTCTTTA |
| 81 | RM404 | 8 | 15.43 | CCAATCATTAACCCCTGAGC | GCCTTCATGCTTCAGAAGAC |
| 82 | RM80 | 8 | 24.47 | TTGAAGGCGCTGAAGGAG | CATCAACCTCGTCTTCACCG |
| 83 | RM5637 | 8 | 21.23 | CAACTCCAACGACGATGAAC | TGGTGAAGTGGAGTGGAGTG |
| 84 | HVSSR8-24 | 8 | 9.3 | CGACTACGTACTTCCTTCCA | ATGAACGGAGGTGTACTTGT |
| 85 | RM22832 | 8 | 11.6 | ACGCCACACCTCTCCTCATCTCC | AGATCGATCCATGCCGCTAGTGC |
| 86 | RM22825 | 8 | 11.8 | AGCACATCACAAACCTACCCTACC | CCTAATTAATCCCGCGGAACC |
| 87 | RM22804 | 8 | 11.3 | GGACCAACCTAAGCAGTGACTCG | CTGAAGAGCGATCATCAAATGTGG |
| 88 | RM257 | 9 | 17.71 | CAGTTCCGAGCAAGAGTACTC | GGATCGGACGTGGCATATG |
| 89 | RM20A | 9 | 0.97 | ATCTTGTCCCTGCAGGTCAT | GAAACAGAGGCACATTTCATTG |
| 90 | RM285 | 9 | 20.52 | CTGTGGGCCCAATATGTCAC | GGCGGTGACATGGAGAAAG |
| 91 | HV09-25 | 9 | 14.56 | GTCGATCGAGGAGTAAACTG | GGTGTCACTGGTTTGTTTCT |
| 92 | RM571 | 9 | 33.2 | GGAGGTGAAAGCGAATCATG | CCTGCTGCTCTTTCATCAGC |
| 93 | RM3283 | 10 | 11.86 | AGCGGAATCAGATTGTGACGAACTCC | CTCCCTGCCGATGAGCAAGTATCG |
| 94 | RM467 | 10 | 13.49 | GGTCTCTCTCTCTCTCTCTCTCTC | CTCCTGACAATTCAACTGCG |
| 95 | RM1937 | 10 | 18 | AATAAATAAAAATCCAGCAC | AGATCAGATATGGCATTAAG |
| 96 | RM258 | 10 | 18.09 | TGCTGTATGTAGCTCGCACC | TGGCCTTTAAAGCTGTCGC |
| 97 | RM304 | 10 | 18.6 | TCAAACCGGCACATATAAGAC | GATAGGGAGCTGAAGGAGATG |
| 98 | RM1812 | 11 | 2.41 | CAGCTAGTGAGCTCCTAGTG | GCTAACCCACCAACTTATTC |
| 99 | RM552 | 11 | 4.85 | CGCAGTTGTGGATTTCAGTG | TGCTCAACGTTTGACTGTCC |
| 100 | RM7226 | 11 | 14.93 | GCGGCGTATTAGCGTTGTA | CCATAAGGTTCTAGCCCATG |
| 101 | RM287 | 11 | 16.61 | TTCCCTGTTAAGAGAGAAATC | GTGTATTTGGTGAAAGCAAC |
| 102 | RM7221 | 11 | 26.42 | GGATGCCACATGTCGATTTAGG | CTCCCTCCGTTTCACAATATAAGG |
| 103 | RM209 | 11 | 17.8 | ATATGAGTTGCTGTCGTGCG | CAACTTGCATCCTCCCCTCC |
| 104 | RM26323 | 11 | 7.4 | ACACGCCTTGACGAGGTGTCTCC | CGCCGTGTTCACGTTACAGAGG |
| 105 | RM2197 | 11 | 27.4 | ACTGAGAACTTTAATCATCG | GAACAACTTTGAAGAGAAAC |
| 106 | RM144 | 11 | 28.2 | TGCCCTGGCGCAAATTTGATCC | GCTAGAGGAGATCAGATGGTAGTGCATG |
| 107 | RM495 | 12 | 0.21 | AATCCAAGGTGCAGAGATGG | CAACGATGACGAACACAACC |
| 108 | RM1227 | 12 | 27.37 | CATGGTAGCACACACCCTTG | CATCGACATGTGGACCACTC |
| 109 | RM519 | 12 | 19.9 | AGAGAGCCCCTAAATTTCCG | AGGTACGCTCACCTGTGGAC |
| 110 | RM1261 | 12 | 17.54 | GTCCATGCCCAAGACACAAC | GTTACATCATGGGTGACCCC |
| 111 | RM1246 | 12 | 19.15 | CTCGATCCCCTAGCTCTC | TCACCTCGTTCTCGATCC |
| 112 | RM491 | 12 | 3.6 | ACATGATGCGTAGCGAGTTG | CTCTCCCTTCCCAATTCCTC |
| 113 | RM247 | 12 | 3.2 | TAGTGCCGATCGATGTAACG | CATATGGTTTTGACAAAGCG |
| 114 | RM313 | 12 | 20 | TGCTACAAGTGTTCTTCAGGAC | GCTCACCTTTTGTGTTCCAC |

**Supplementary table S2.** Agro-morphological parameters indicating the relative performance PB1 NILs and parents under stressed (S) and unstressed (NS) conditions during 2017, 2018 and 2019.

| **NILs** | **Season** | **DFF** | **PH** | **NT** | **PL** | **SF** |
| --- | --- | --- | --- | --- | --- | --- |
| **S** | **NS** | **S** | **NS** | **S** | **NS** | **S** | **NS** | **S** | **NS** |
| NIL1 | 2017 | 100.5b-e | 99.5a-d | 74.1cd | 107.5b | 9.1bc | 12.4a-e | 24.2bc | 29.0a | 52.5abc | 85.7a-d |
| 2018 | 109.0a | 102.5a | 85.1b | 112.8c | 11.0abc | 15.4abc | 23.2a | 29.1a | 45.4b | 82.4a-d |
| 2019 | 116.0a | 109.0a | 75.3ef | 103.8c | 15.8a | 16.0ab | 25.0a | 28.5a | 52.4de | 72.3f |
| NIL2 | 2017 | 99.5b-e | 97.5bcd | 70.6cd | 102.3bc | 10.6abc | 12.3a-e | 28.6a | 28.6a | 51.5abc | 90.1ab |
| 2018 | 101.0abc | 99.5a | 91.4b | 107.5c | 12.7abc | 13.9c | 25.4a | 28.7a | 71.1ab | 82.5a-d |
| 2019 | 110.0b | 105.5a | 80.7cde | 104.9c | 13.8a | 15.7ab | 25.7a | 28.1a | 64.3a-e | 78.6c-f |
| NIL3 | 2017 | 98.0de | 96.0cd | 70.6cd | 99.5bc | 10.6abc | 11.6a-e | 26.6ab | 28.4a | 48.7abc | 91.4ab |
| 2018 | 101.5abc | 99.5a | 88.2b | 108.5c | 12.4abc | 15.4abc | 25.0a | 28.0ab | 61.9ab | 79.1bcd |
| 2019 | 111.5b | 105.0a | 81.0cde | 101.6c | 12.5ab | 14.1ab | 25.4a | 28.2a | 69.8a-d | 77.9def |
| NIL4 | 2017 | 100.5b-e | 100.5ab | 73.6cd | 103.9bc | 11.2abc | 11.3a-e | 26.5ab | 28.3a | 50.3abc | 86.7a-d |
| 2018 | 104.0ab | 104.5a | 91.8b | 112.0c | 12.1abc | 15.1bc | 24.8a | 28.7a | 75.6a | 86.4ab |
| 2019 | 109.5b | 108.5a | 76.4ef | 103.8c | 11.3ab | 18.3a | 24.6a | 27.6ab | 66.4a-d | 74.8f |
| NIL5 | 2017 | 98.5cde | 98.5a-d | 73.1cd | 100.0bc | 9.6abc | 11.1b-e | 26.4ab | 29.0a | 60.6ab | 88.1a-d |
| 2018 | 101.0abc | 101.5a | 89.4b | 109.6c | 12.0abc | 14.5c | 25.1a | 29.7a | 62.0ab | 85.3abc |
| 2019 | 110.5b | 107.5a | 79.7cde | 105.3c | 12.2ab | 16.3ab | 25.1a | 28.3a | 72.8ab | 81.7b-f |
| NIL6 | 2017 | 97.0e | 95.5d | 73.4cd | 102.6bc | 10.2abc | 11.6a-e | 27.2a | 28.6a | 51.4abc | 91.1ab |
| 2018 | 100.5a-d | 100.5a | 87.0b | 111.0c | 12.7abc | 15.3abc | 24.4a | 28.7a | 54.6ab | 83.8a-d |
| 2019 | 109.0b | 107.5a | 79.5cde | 104.0c | 11.9ab | 17.1ab | 24.9a | 28.3a | 67.2a-d | 85.3a-d |
| NIL7 | 2017 | 98.5cde | 97.5bcd | 69.9cd | 102.5bc | 12.9ab | 13.6abc | 28.2a | 28.7a | 42.4c | 87.2a-d |
| 2018 | 102.0abc | 101.0a | 89.1b | 111.4c | 14.5a | 16.5abc | 24.8a | 29.7a | 61.2ab | 83.9a-d |
| 2019 | 107.5b | 105.0a | 86.3c | 103.0c | 13.1ab | 16.9ab | 26.1a | 28.8a | 69.7a-d | 83.2a-d |
| NIL8 | 2017 | 100.5 b-e | 100.5ab | 70.4cd | 106.1bc | 11.1abc | 12.2a-e | 27.2a | 28.7a | 49.1abc | 83.1b-e |
| 2018 | 105.0ab | 100.5a | 86.8b | 109.0c | 12.2abc | 16.1abc | 24.5a | 28.1ab | 63.1ab | 76.6cd |
| 2019 | 109.5b | 107.0a | 81.3cde | 101.9c | 13.5a | 15.3ab | 25.2a | 28.8a | 67.5a-d | 80.0c-f |
| NIL9 | 2017 | 102.5bc | 99.5a-d | 74.9cd | 108.6b | 8.6c | 10.7b-e | 27.0ab | 28.8a | 48.3abc | 79.7de |
| 2018 | 98.5a-d | 101.5a | 90.7b | 111.2c | 12.9abc | 14.6bc | 25.0a | 29.2a | 64.7ab | 89.1a |
| 2019 | 110.0b | 108.0a | 75.1ef | 101.0c | 13.3a | 16.1ab | 24.3a | 28.2a | 65.5a-e | 80.9b-f |
| NIL10 | 2017 | 103.5b | 99.0a-d | 74.5cd | 99.0bcd | 9.4abc | 10.4cde | 27.3a | 28.7a | 52.5abc | 79.0de |
| 2018 | 102.5abc | 102.0a | 86.3b | 110.1c | 11.6abc | 14.7bc | 22.9a | 28.7a | 71.6ab | 86.4ab |
| 2019 | 110.5b | 109.0a | 75.2ef | 100.8c | 11.7ab | 17.3ab | 24.6a | 27.8ab | 65.9a-d | 83.9a-e |
| NIL11 | 2017 | 100.0b-e | 102.0a | 73.5cd | 101.8bc | 9.2abc | 13.9ab | 27.4a | 29.1a | 49.8abc | 75.4e |
| 2018 | 103.5ab | 100.0a | 85.5b | 111.8c | 10.6bc | 18.2ab | 23.1a | 29.9a | 52.8ab | 86.8ab |
| 2019 | 110.0b | 107.5a | 77.9def | 101.1c | 12.0ab | 14.3ab | 25.4a | 29.5a | 68.9a-d | 82.1b-f |
| NIL12 | 2017 | 99.5b-e | 99.5a-d | 76.3bcd | 101.2bc | 8.5c | 9.7de | 28.2a | 28.6a | 54.7abc | 80.1cde |
| 2018 | 102.0abc | 101.0a | 88.9b | 112.1c | 11.6abc | 16.2abc | 24.9a | 29.5a | 62.5ab | 81.0a-d |
| 2019 | 108.5b | 105.5a | 81.4cde | 105.9c | 11.8ab | 14.3ab | 24.7a | 30.1a | 70.2a-d | 81.1b-f |
| NIL13 | 2017 | 98.5cde | 96.5bcd | 75.8bcd | 96.2bcd | 8.1c | 10.3de | 28.7a | 27.9a | 51.5abc | 79.1de |
| 2018 | 104.0ab | 102.0a | 86.7b | 114.7c | 12.3abc | 14.8bc | 24.5a | 29.7a | 56.0ab | 84.1a-d |
| 2019 | 108.5b | 106.0a | 81.5cde | 102.3c | 11.5ab | 15.2ab | 25.8a | 29.3a | 63.4b-e | 77.1def |
| NIL14 | 2017 | 98.5cde | 96.5bcd | 74.3cd | 92.2cd | 9.9abc | 11.3a-e | 27.8a | 28.4a | 64.8a | 89.1abc |
| 2018 | 102.0abc | 100.5a | 83.1b | 107.8c | 12.0abc | 15.8abc | 23.0a | 29.4a | 54.2ab | 81.7a-d |
| 2019 | 108.5b | 105.0a | 74.8ef | 100.2c | 11.5ab | 14.7ab | 25.6a | 28.7a | 62.0cde | 75.9ef |
| NIL15 | 2017 | 97.5de | 97.0bcd | 77.6bc | 101.2bc | 9.5abc | 9.2e | 27.5a | 29.2a | 65.5a | 87.7a-d |
| 2018 | 100.0a-d | 101.0a | 86.5b | 109.7c | 10.7bc | 16.9abc | 22.9a | 28.0ab | 63.4ab | 74.6d |
| 2019 | 109.5b | 106.0a | 80.4cde | 101.8c | 13.5a | 13.2b | 25.0a | 28.5a | 67.5a-d | 79.2c-f |
| NIL16 | 2017 | 101.5bcd | 99.5a-d | 77.4bc | 103.8bc | 9.2abc | 11.3a-e | 26.9ab | 30.0a | 57.3abc | 86.1a-d |
| 2018 | 101.0abc | 103.5a | 89.1b | 110.3c | 12.2abc | 14.6bc | 23.7a | 28.7a | 51.8ab | 80.1a-d |
| 2019 | 109.0b | 108.0a | 75.9ef | 104.1c | 11.4ab | 12.5b | 24.4a | 29.5a | 62.9b-e | 79.9c-f |
| NIL17 | 2017 | 99.0cde | 100.0abc | 77.4bc | 105.4bc | 9.9abc | 12.8a-d | 27.4a | 29.6a | 61.1ab | 85.7a-d |
| 2018 | 103.5ab | 101.5a | 89.0b | 111.3c | 14.2a | 18.8a | 24.5a | 30.2a | 55.0ab | 81.1a-d |
| 2019 | 109.0b | 106.5a | 77.9def | 104.6c | 12.1ab | 13.9ab | 25.3a | 28.9a | 74.6a | 85.6abc |
| NIL18 | 2017 | 100.5b-e | 100.0abc | 79.4bc | 103.7bc | 11.0abc | 12.3a-e | 28.4a | 28.9a | 56.7abc | 86.7a-d |
| 2018 | 104.5ab | 105.0a | 85.0b | 112.5c | 10.3c | 15.8abc | 23.3a | 28.7a | 61.4ab | 80.2a-d |
| 2019 | 109.0b | 107.0a | 81.5cde | 102.4c | 11.2ab | 13.3b | 26.4a | 29.4a | 67.1a-d | 78.3def |
| PB1 | 2017 | 97.5de | 95.5d | 70.3cd | 93.0cd | 10.3abc | 11.4a-e | 26.9ab | 28.2a | 45.9bc | 76.5e |
| 2018 | 100.0a-d | 101.0a | 86.7b | 112.9c | 12.5abc | 15.7abc | 22.7a | 29.5a | 47.1ab | 75.2d |
| 2019 | 109.5b | 105.5a | 84.2cd | 105.8c | 7.9b | 15.8ab | 26.1a | 29.6a | 59.6e | 81.2b-f |
| N22 | 2017 | 84.5f | 84.0e | 88.3ab | 126.1a | 13.4a | 11.7a-e | 18.1d | 23.4b | 61.5ab | 93.4a |
| 2018 | 84.0de | 82.0b | 119.4ab | 130.3b | 13.5c | 14.5c | 17.0b | 23.5c | 57.5ab | 87.0ab |
| 2019 | 84.0d | 81.0c | 101.9b | 123.1b | 13.3a | 16.7ab | 19.5b | 22.1c | 68.1a-d | 84.9a-d |
| IR86918-B-B-305 | 2017 | 75.5g | 74.5f | 96.9a | 123.5a | 11.9abc | 11.1b-e | 22.4c | 23.3b | 53.3abc | 84.0b-e |
| 2018 | 80.5e | 80.5b | 130.6a | 153.5a | 11.4c | 15.8abc | 20.5a | 25.4bc | 61.9ab | 83.9a-d |
| 2019 | 82.5d | 81.5c | 117.6a | 131.6a | 13.2a | 15.3ab | 20.8b | 24.1bc | 70.7abc | 91.4a |
| IR64 | 2017 | 112.5a | 87.5e | 63.8d | 85.0d | 10.4abc | 14.5a | 21.7c | 22.6b | 48.5abc | 79.4de |
| 2018 | 90.0b-e | 86.5b | 87.0b | 96.8d | 12.3c | 14.1c | 23a | 25.7bc | 66.4ab | 81.0a-d |
| 2019 | 93.5c | 89.0b | 71.0f | 87.9d | 10.7ab | 14.4ab | 20.9b | 23.4c | 67.3a-e | 87.1abc |
| SE | 2017 | 1.47 | 1.36 | 1.42 | 1.89 | 0.29 | 0.28 | 0.55 | 0.44 | 1.30 | 1.09 |
| 2018 | 1.43 | 1.43 | 2.41 | 2.26 | 0.23 | 0.26 | 0.40 | 0.35 | 1.62 | 0.82 |
| 2019 | 1.80 | 1.76 | 2.14 | 1.77 | 0.32 | 0.31 | 0.38 | 0.44 | 1.00 | 0.98 |
| LSD (5%) | 2017 | 2.08 |  | 8.58 |  | 3.23 |  | 1.41 |  | 6.96 |  |
| 2018 | 3.91 |  | 2.0 |  | 3.67 |  | 2.21 |  | 9.61 |  |
| 2019 | 2.34 |  | 3.69 |  | 2.94 |  | 1.82 |  | 4.63 |  |

DF, days to 50% Flowering; PH, plant height in cm; NT, number of reproductive tillers; PL, panicle length in cm; SF, spikelet fertility %; SE, standard error; LSD, least significant difference

Means followed by same letters are statistically at par based on the least significant difference test at 95% confidence level.

**Supplementary table S3.**  Drought tolerance indices and grain yield of PB1 NILs along with checks and parents under stressed and unstressed conditions during 2017, 2018 and 2019.

| **Entries** | **Year** | **Grain Yield (Kg/ha)** | **%R** | **DYI** | **STI** | **SSI** |
| --- | --- | --- | --- | --- | --- | --- |
| **Stressed** | **Unstressed** |
| NIL1 | 2017 | 645.8ab | 5803.5a | 88.9ab | 1.57ab | 0.11a | 1.11ab |
| 2018 | 325.8j | 5216.6c-f | 93.8a | 2.79b | 0.05i | 1.17a |
| 2019 | 745.4lm | 5614.8bc | 86.7a | 1.31a | 0.13kl | 1.08ab |
| NIL2   | 2017 | 581.7ab | 5933.8a | 90.2ab | 1.78ab | 0.11a | 1.12ab |
| 2018 | 1300.7b-g | 5404.5c-f | 75.9cde | 0.73b | 0.22b-f | 0.95cde |
| 2019 | 1389.3g-j | 5932.8ab | 76.6b-f | 0.75b-g | 0.25f-i | 0.95c-f |
| NIL3  | 2017 | 689.8ab | 5922.1a | 88.4ab | 1.50ab | 0.13a | 1.10ab |
| 2018 | 1526.2a-f | 5955.3bcd | 74.4cde | 0.68b | 0.28bc | 0.93cde |
| 2019 | 1671.4fg | 5953.9ab | 71.9f-i | 0.62e-i | 0.30ef | 0.90fgh |
| NIL4   | 2017 | 440.3ab | 5848.2a | 92.5ab | 2.32ab | 0.08a | 1.15ab |
| 2018 | 1210.5b-h | 5023.8ef | 75.9cde | 0.72b | 0.19d-g | 0.95cde |
| 2019 | 1054.1kl | 5754.7ab | 81.7ab | 0.95b | 0.19jk | 1.02abc |
| NIL5   | 2017 | 598.7ab | 6355.0a | 90.6ab | 1.85ab | 0.12a | 1.13ab |
| 2018 | 1497.3a-f | 5366.1c-f | 72.1de | 0.63b | 0.25b-e | 0.90cde |
| 2019 | 1613.7fgh | 5798.2ab | 72.2e-i | 0.63e-i | 0.29efg | 0.90e-h |
| NIL6   | 2017 | 673.5ab | 6089.8a | 88.9ab | 1.58ab | 0.13a | 1.11ab |
| 2018 | 1377.2b-g | 5548.3c-f | 75.2cde | 0.70b | 0.23b-e | 0.94cde |
| 2019 | 2175.8cd | 5885.0ab | 63.0kl | 0.47hij | 0.39c | 0.79ij |
| NIL7   | 2017 | 518.4ab | 5798.9a | 91.1ab | 1.95ab | 0.09a | 1.13ab |
| 2018 | 1555.2a-e | 5766.8b-e | 73.0cde | 0.65b | 0.27bcd | 0.91cde |
| 2019 | 2106.2d | 6049.7ab | 65.2jkl | 0.50g-j | 0.39c | 0.81ij |
| NIL8   | 2017 | 423.2ab | 6315.5a | 93.3ab | 2.60ab | 0.08a | 1.16ab |
| 2018 | 914.2f-j | 5059.2ef | 81.9bcd | 0.97b | 0.14fgh | 1.02bcd |
| 2019 | 1301.5h-k | 5594.9bc | 76.7b-f | 0.75b-f | 0.22g-j | 0.96c-f |
| NIL9   | 2017 | 504.2ab | 5541.5a | 90.9ab | 1.92ab | 0.09a | 1.13ab |
| 2018 | 793.3g-h | 4733.1f | 83.2a-d | 1.04b | 0.11ghi | 1.04a-d |
| 2019 | 1123.1ijk | 5698.7ab | 80.3bc | 0.89bcd | 0.20ij | 1.00bcd |
| NIL10   | 2017 | 463.3ab | 6167.1a | 92.5ab | 2.32ab | 0.09a | 1.15ab |
| 2018 | 630.0h-j | 5273.6c-f | 88.1ab | 1.46b | 0.10hi | 1.10ab |
| 2019 | 1084.4jk | 5855.9ab | 81.5ab | 0.94bc | 0.19ij | 1.02a-d |
| NIL11   | 2017 | 666.9ab | 5947.1a | 88.8ab | 1.56ab | 0.12a | 1.11ab |
| 2018 | 1150.0b-i | 5204.3def | 77.9bcd | 0.79b | 0.18e-h | 0.97bcd |
| 2019 | 1550.1fgh | 5882.9ab | 73.7d-h | 0.66d-i | 0.28e-h | 0.92efg |
| NIL12   | 2017 | 859.7ab | 5939.5a | 85.5ab | 1.21ab | 0.16a | 1.07ab |
| 2018 | 1109.5c-i | 5465.2c-f | 79.7bcd | 0.86b | 0.19e-h | 0.99bcd |
| 2019 | 1794.5ef | 5761.8ab | 68.9h-k | 0.56e-j | 0.32de | 0.86ghi |
| NIL13   | 2017 | 541.4ab | 5892.7a | 90.8ab | 1.90ab | 0.10a | 1.13ab |
| 2018 | 821.9g-j | 5083.3ef | 83.8abc | 1.08b | 0.13ghi | 1.04abc |
| 2019 | 1235.3ijk | 5771.1ab | 78.6bcd | 0.82b-e | 0.22hij | 0.98cde |
| NIL14 | 2017 | 942.1ab | 5999.9a | 84.3ab | 1.11b | 0.17a | 1.05ab |
| 2018 | 958.9e-i | 4982.1ef | 80.8bcd | 0.91b | 0.15fgh | 1.01bcd |
| 2019 | 1249.0ijk | 5661.8bc | 77.9b-e | 0.79b-e | 0.22ij | 0.97c-f |
| NIL15 | 2017 | 797.0ab | 6094.4a | 86.9ab | 1.33ab | 0.15a | 1.08ab |
| 2018 | 1136.8b-i | 5625.9cde | 79.8bcd | 0.86b | 0.20c-g | 0.99bcd |
| 2019 | 1782.5ef | 5919.5ab | 69.9g-j | 0.58e-j | 0.32de | 0.87ghi |
| NIL16   | 2017 | 786.8ab | 6206.7a | 87.3ab | 1.38ab | 0.15a | 1.09ab |
| 2018 | 1028.6d-i | 5631.9cde | 81.7bcd | 0.96b | 0.18e-h | 1.02bcd |
| 2019 | 1052.0kl | 5976.6ab | 82.4ab | 0.99b | 0.19jk | 1.03abc |
| NIL17   | 2017 | 1007.9ab | 6136.9a | 83.6ab | 1.06b | 0.19a | 1.04ab |
| 2018 | 1654.8a-d | 6041.5bc | 72.6cde | 0.64b | 0.31ab | 0.90cde |
| 2019 | 2484.8bc | 6190.4a | 59.9l | 0.43ij | 0.47ab | 0.75j |
| NIL18   | 2017 | 1015.6a | 5719.4a | 82.2b | 0.98b | 0.18a | 1.02b |
| 2018 | 867.4g-j | 5371.3c-f | 83.9abc | 1.08b | 0.14fgh | 1.04abc |
| 2019 | 1432.5ghi | 5777.5ab | 75.2c-g | 0.70c-h | 0.25f-i | 0.94d-g |
| PB1   | 2017 | 309.9b | 5581.7a | 94.5a | 3.14a | 0.05a | 1.18a |
| 2018 | 573.4g-j | 5291.7c-f | 89.2ab | 1.61b | 0.09hi | 1.11ab |
| 2019 | 709.8m | 5553.5bc | 87.2a | 1.37a | 0.12l | 1.09a |
| Nagina 22   | 2017 | 926.5ab | 5458.3a | 83.0ab | 1.03b | 0.15a | 1.03ab |
| 2018 | 1795.9ab | 5033.8ef | 64.3e | 0.49b | 0.28bcd | 0.80e |
| 2019 | 2596.1ab | 5193.6c | 50.0m | 0.35j | 0.41bc | 0.62k |
| IR86918-B-B-305   | 2017 | 549.5ab | 4633.2b | 88.1ab | 1.47ab | 0.08a | 1.10ab |
| 2018 | 1748.7b-h | 6896.6ab | 74.6bcd | 0.69b | 0.37b-e | 0.93a-d |
| 2019 | 2820.6a | 5715.9ab | 50.7m | 0.35j | 0.49a | 0.63k |
| IR64   | 2017 | 388.0ab | 5790.6a | 93.3a | 2.60ab | 0.07a | 1.16a |
| 2018 | 1197.0abc | 6484.6a | 81.5cde | 0.95b | 0.24a | 1.02cde |
| 2019 | 1981.7de | 6052.5ab | 67.3ijk | 0.53f-j | 0.37cd | 0.84hi |
| LSD (0.05) | 2017 | 704.4 | 980.9 | 11.6 | 1.13 | 0.13 | 0.13 |
| 2018 | 552.6 | 863.3 | 11.6 | 1.40 | 0.10 | 0.15 |
| 2019 | 318.8 | 541.5 | 6.2 | 0.39 | 0.06 | 0.09 |

%R, percentage reduction in yield; DYI, drought yield index; STI, stress tolerance index; SSI, stress susceptibility index. Means followed by same letters are statistically at par based on the least significant difference test at 95% confidence level.