**Table S1.** Details of the seed material

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| S. N. | IC Number | Cultivar Name | District | S. N. | IC Number | Cultivar Name | District |
| Himachal Pradesh | 50 | IC595395 | Thanga gehun | Almora |
| 1 | IC381111 | Sherwan | Chamba | 51 | IC260857 | Dhudgahun | Bageshwar |
| 2 | IC381124 | Gandham | Chamba | 52 | IC260858 | Dhudia | Bageshwar |
| 3 | IC381190 | Amreek Gandham | Chamba | 53 | IC266976 | Thangi | Bageshwar |
| 4 | IC208899 | Unknown | Hamirpur | 54 | IC266977 | Bhati | Bageshwar |
| Garhwal Region, Uttarakhand |   | 55 | IC266978 | Rati | Bageshwar |
| 5 | IC260865 | Gahun | Chamoli | 56 | IC393109 | Gehun | Bageshwar |
| 6 | IC260866 | Gahun | Chamoli | 57 | IC393110 | Gehun | Bageshwar |
| 7 | IC260868 | Gahun | Chamoli | 58 | IC393112 | Gehun | Bageshwar |
| 8 | IC260869 | Gahun | Chamoli | 59 | IC393113 | Gehun | Bageshwar |
| 9 | IC260871 | Gahun | Chamoli | 60 | IC393114 | Gehun | Bageshwar |
| 10 | IC260877 | Gahun | Chamoli | 61 | IC393115 | Gehun | Bageshwar |
| 11 | IC260890 | Chudi Gahun | Chamoli | 62 | IC393116 | Gehun | Bageshwar |
| 12 | IC383581 | Lakha Gainhu | Chamoli | 63 | IC393117 | Gehun | Bageshwar |
| 13 | IC383592 | Wheat | Chamoli | 64 | IC393118 | Gehun | Bageshwar |
| 14 | IC383593 | Lakha Gainhu | Chamoli | 65 | IC398292 | Lal Gehun | Bageshwar |
| 15 | IC345589 | Ghaon | Dehradun | 66 | IC398294 | Juinsi Ninsa | Bageshwar |
| 16 | IC345598 | Ghawn | Dehradun | 67 | IC398296 | Setta | Bageshwar |
| 17 | IC345604 | Ghaon | Dehradun | 68 | IC398297 | Tank | Bageshwar |
| 18 | IC345620 | Ghaun | Dehradun | 69 | IC398298 | Sathi | Bageshwar |
| 19 | IC345671 | Gahoun | Dehradun | 70 | IC398302 | Thaenkna | Bageshwar |
| 20 | IC345673 | Gahoun | Dehradun | 71 | IC398303 | Chini | Bageshwar |
| 21 | IC345687 | Gahoun | Dehradun | 72 | IC398305 | Munnar | Bageshwar |
| 22 | IC345688 | Gahoun | Dehradun | 73 | IC398307 | Thull | Bageshwar |
| 23 | IC345690 | Gahoun | Dehradun | 74 | IC398309 | Safed Jhusial | Bageshwar |
| 24 | IC430330 | Gahun | Pauri | 75 | IC266764 | Gehun | Champawat |
| 25 | IC430369 | Donia | Pauri | 76 | IC266789 | Jhausa | Champawat |
| 26 | IC430373 | Chudiya | Pauri | 77 | IC266791 | Gerua | Champawat |
| 27 | IC564090 | Mundari | Pauri | 78 | IC392578 | Guhu | Champawat |
| 28 | IC564096 | Bareek lal | Pauri | 79 | IC406688 | Mishri Gehun | Champawat |
| 29 | IC564113 | Lal mundiya | Pauri | 80 | IC406690 | Jusia Gehun | Champawat |
| 30 | IC564114 | Safed mundiya | Pauri | 81 | IC406715 | Dolat kani | Champawat |
| 31 | IC564159 | Safed mundari | Pauri | 82 | IC406724 | Safed Gehun | Champawat |
| 32 | IC260880 | Gahun | Rudraprayag | 83 | IC595382 | Ratuva gehun | Chappawat |
| 33 | IC260887 | Mundarigaun | Rurdaprayag | 84 | IC260845 | Jhusia | Nainital |
| 34 | IC260888 | Gahun | Rudraprayag | 85 | IC573137 | Ryat gaun | Nainital |
| 35 | IC260894 | Lal Gahun | Rudraprayag | 86 | IC573138 | Syat gyan | Nainital |
| 36 | IC260895 | Lal Gahun | Rudraprayag | 87 | IC573140 | Chnosi | Nainital |
| 37 | IC260901 | Gahun | Rudraprayag | 88 | IC573157 | Munda | Nainital |
| 38 | IC260902 | Gahun | Rudraprayag | 89 | IC266831 | Munara | Pithoragarh |
| 39 | IC382649 | Cheuri | Rudraprayag | 90 | IC266847 | Gerua | Pithoragarh |
| 40 | IC382653 | Muneri | Rudraprayag | 91 | IC266852 | Dudh Gehun | Pithoragarh |
| 41 | IC382658 | Muneri | Rudraprayag | 92 | IC266854 | Unknown | Pithoragarh |
| 42 | IC382664 | Deshigenhun (Sona) | Rudraprayag | 93 | IC266872 | Dapati Gehun | Pithoragarh |
| 43 | IC393131 | Gehun | Rudraprayag | 94 | IC266884 | Mota gehun | Pithoragarh |
| 44 | IC589303 | Baniya gehun | Tehri | 95 | IC266921 | Mota Gehun | Pithoragarh |
| 45 | IC589276 | Hasia Gehun | Uttarakashi | 96 | IC406697 | Mundia | Pithoragarh |
| 46 | IC589278 | Lal mishri | Uttarakashi | 97 | IC444217 | Daapti Gehun | Pithoragarh |
| 47 | IC589300 | Lal Mishri Gehun | Uttarakashi | 98 | IC444226 | Raje Gehun | Pithoragarh |
| Kumaon Region, Uttarakhand | 99 | IC444229 | Bhotta Gehun | Pithoragarh |
| 48 | IC260848 | Mishrygahun | Almora | 100 | IC444232 | Bhotia Gehun | Pithoragarh |
| 49 | IC260854 | Mishrygahun | Almora |   |   |   |   |

**Table S2.** Physical seed parameters of different wheat landraces

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | Landrace | Growth index | Hardness(newton) | L×W(mm2) | Test weight(gms) | Seed colour |
|  | IC208899 | 0.52±0.14 | 87.2±6.1 | 15.3±0.7 | 3.85±0.11 | G |
|  | IC260845 | 1.63±0.05 | 47.9±1.5 | 19.2±0.8 | 4.29±0.08 | W |
|  | IC260848 | 0.74±0.05 | 73.5±1.3 | 13.2±0.2 | 3.01±0.08 | W |
|  | IC260854 | 1.60±0.16 | 73.5±5.6 | 15.7±0.6 | 3.63±0.07 | R |
|  | IC260857 | 1.27±0.04 | 72.4±2.0 | 19.1±1.6 | 4.88±0.13 | G |
|  | IC260858 | 1.45±0.07 | 80.5±4.2 | 18.3±0.8 | 3.46±0.04 | W |
|  | IC260865 | 1.56±0.11 | 77.0±2.7 | 16.7±0.8 | 3.72±0.10 | R |
|  | IC260866 | 0.62±0.10 | 77.4±3.8 | 12.7±0.3 | 3.13±0.06 | G |
|  | IC260868 | 1.60±0.03 | 82.0±2.7 | 16.5±0.5 | 3.30±0.04 | G |
|  | IC260869 | 1.39±0.13 | 85.0±2.3 | 13.3±0.7 | 3.64±0.07 | R |
|  | IC260871 | 1.62±0.08 | 52.5±1.3 | 22.2±0.9 | 5.23±0.03 | R |
|  | IC260877 | 1.47±0.09 | 64.8±2.1 | 20.1±0.4 | 4.03±0.12 | R |
|  | IC260880 | 1.75±0.06 | 63.4±1.5 | 19.8±0.7 | 3.96±0.14 | R |
|  | IC260887 | 1.59±0.08 | 71.1±2.0 | 17.8±0.9 | 4.06±0.05 | R |
|  | IC260888 | 1.51±0.06 | 61.6±1.3 | 14.4±0.4 | 3.92±0.12 | G |
|  | IC260890 | 1.04±0.08 | 79.7±1.5 | 20.3±0.3 | 3.47±0.16 | G |
|  | IC260894 | 1.56±0.10 | 66.6±1.4 | 17.7±0.5 | 4.65±0.06 | G |
|  | IC260895 | 1.71±0.10 | 42.2±0.4 | 15.6±0.6 | 4.47±0.24 | W |
|  | IC260901 | 1.65±0.10 | 82.7±3.8 | 21.9±1.0 | 4.70±0.15 | R |
|  | IC260902 | 1.63±0.12 | 78.0±2.5 | 21.7±0.8 | 4.59±0.09 | R |
|  | IC266764 | 1.36±0.08 | 76.3±1.8 | 17.5±1.1 | 3.90±0.08 | R |
|  | IC266789 | 1.01±0.06 | 97.4±3.4 | 15.2±1.3 | 3.36±0.13 | G |
|  | IC266791 | 1.32±0.22 | 83.8±1.7 | 22.7±1.1 | 4.97±0.20 | G |
|  | IC266831 | 0.46±0.07 | 78.9±2.0 | 14.2±1.0 | 2.84±0.16 | R |
|  | IC266847 | 1.32±0.07 | 53.6±0.9 | 13.5±0.7 | 3.50±0.06 | R |
|  | IC266852 | 1.32±0.16 | 87.7±3.5 | 14.1±1.0 | 3.78±0.13 | R |
|  | IC266854 | 1.39±0.12 | 50.7±1.7 | 16.5±0.6 | 3.02±0.15 | G |
|  | IC266872 | 0.47±0.04 | 70.0±1.3 | 13.2±0.9 | 2.24±0.03 | G |
|  | IC266884 | 0.80±0.03 | 96.8±3.5 | 11.0±1.2 | 2.72±0.08 | G |
|  | IC266921 | 1.45±0.09 | 65.5±1.4 | 17.8±0.7 | 2.94±0.07 | R |
|  | IC266976 | 1.05±0.04 | 86.0±2.3 | 19.4±1.3 | 2.22±0.04 | R |
|  | IC266977 | 0.96±0.11 | 89.5±8.6 | 15.9±1.1 | 2.41±0.15 | R |
|  | IC266978 | 1.44±0.07 | 59.6±2.4 | 17.7±2.2 | 3.78±0.12 | G |
|  | IC345589 | 1.78±0.02 | 76.6±2.0 | 27.5±1.6 | 5.89±0.05 | R |
|  | IC345598 | 1.85±0.04 | 47.3±2.7 | 21.3±0.9 | 5.77±0.02 | G |
|  | IC345604 | 1.45±0.03 | 87.5±4.2 | 20.9±0.4 | 4.84±0.24 | W |
|  | IC345620 | 1.73±0.02 | 63.1±2.2 | 23.8±1.4 | 4.88±0.08 | W |
|  | IC345671 | 1.77±0.04 | 64.3±1.8 | 24.5±1.2 | 5.29±0.08 | R |
|  | IC345673 | 1.65±0.10 | 83.9±3.9 | 18.2±0.3 | 5.32±0.10 | R |
|  | IC345687 | 1.78±0.08 | 60.5±1.3 | 17.8±0.9 | 5.39±0.07 | G |
|  | IC345688 | 1.65±0.07 | 55.2±2.3 | 22.3±1.2 | 4.24±0.17 | R |
|  | IC345690 | 1.64±0.17 | 37.3±2.9 | 16.8±0.7 | 4.72±0.17 | R |
|  | IC381111 | 1.15±0.08 | 77.9±1.1 | 13.2±0.7 | 3.18±0.07 | R |
|  | IC381124 | 1.66±0.02 | 66.3±5.4 | 18.0±1.1 | 4.37±0.15 | G |
|  | IC381190 | 1.44±0.05 | 83.2±1.6 | 15.7±1.1 | 3.18±0.09 | R |
|  | IC382649 | 1.42±0.07 | 83.6±3.3 | 15.7±0.9 | 3.48±0.02 | R |
|  | IC382653 | 1.42±0.12 | 59.3±1.2 | 15.5±1.3 | 2.87±0.04 | R |
|  | IC382658 | 1.38±0.10 | 34.7±1.3 | 17.0±0.4 | 3.27±0.07 | R |
|  | IC382664 | 1.02±0.02 | 92.9±2.5 | 15.8±0.8 | 3.06±0.04 | R |
|  | IC383581 | 1.50±0.14 | 95.5±1.9 | 17.8±0.6 | 3.47±0.18 | R |
|  | IC383592 | 0.96±0.04 | 79.8±2.1 | 14.3±1.9 | 3.13±0.07 | G |
|  | IC383593 | 1.17±0.14 | 89.8±6.3 | 12.9±0.7 | 3.85±0.05 | G |
|  | IC392578 | 0.44±0.03 | 92.3±3.3 | 13.3±0.2 | 2.87±0.06 | W |
|  | IC393109 | 0.40±0.08 | 70.1±1.6 | 19.3±0.6 | 4.09±0.10 | R |
|  | IC393110 | 0.96±0.05 | 96.2±1.2 | 10.6±0.5 | 3.17±0.08 | R |
|  | IC393112 | 1.66±0.06 | 89.8±4.4 | 13.9±0.4 | 3.42±0.11 | W |
|  | IC393113 | 1.70±0.04 | 62.4±4.2 | 22.0±0.5 | 3.98±0.22 | G |
|  | IC393114 | 1.47±0.11 | 55.9±2.0 | 20.6±0.8 | 4.31±0.13 | G |
|  | IC393115 | 1.58±0.11 | 70.6±2.3 | 17.0±0.7 | 4.24±0.12 | R |
|  | IC393116 | 1.36±0.04 | 70.7±2.4 | 21.6±0.4 | 5.32±0.20 | R |
|  | IC393117 | 1.71±0.09 | 52.4±1.3 | 23.7±0.6 | 3.60±0.06 | R |
|  | IC393118 | 1.79±0.08 | 72.0±1.1 | 18.7±1.0 | 3.48±0.08 | R |
|  | IC393131 | 1.49±0.05 | 62.6±5.0 | 22.6±1.6 | 2.68±0.17 | G |
|  | IC398292 | 1.46±0.05 | 72.2±1.7 | 22.6±1.9 | 3.80±0.07 | R |
|  | IC398294 | 1.49±0.03 | 95.6±3.2 | 16.6±1.4 | 4.28±0.10 | W |
|  | IC398296 | 0.96±0.05 | 70.2±3.9 | 17.2±1.9 | 3.68±0.07 | G |
|  | IC398297 | 0.67±0.07 | 98.9±4.5 | 10.8±0.4 | 3.15±0.08 | G |
|  | IC398298 | 1.51±0.17 | 62.8±1.4 | 25.7±2.1 | 4.57±0.07 | W |
|  | IC398302 | 0.68±0.08 | 92.0±4.2 | 12.5±0.7 | 3.30±0.01 | W |
|  | IC398303 | 1.36±0.11 | 64.5±1.8 | 18.0±1.2 | 3.26±0.04 | R |
|  | IC398305 | 1.35±0.13 | 70.8±1.6 | 24.3±1.2 | 4.12±0.07 | G |
|  | IC398307 | 1.10±0.09 | 68.4±3.5 | 17.7±0.9 | 2.81±0.08 | G |
|  | IC398309 | 1.69±0.03 | 71.5±2.2 | 18.0±1.5 | 3.62±0.10 | G |
|  | IC406688 | 1.07±0.08 | 61.4±1.2 | 17.6±0.7 | 3.47±0.16 | R |
|  | IC406690 | 1.58±0.07 | 81.1±4.4 | 26.1±1.0 | 5.06±0.14 | R |
|  | IC406697 | 1.34±0.03 | 87.1±2.5 | 10.8±0.8 | 3.37±0.13 | R |
|  | IC406715 | 1.50±0.15 | 41.1±2.2 | 18.8±0.8 | 3.13±0.04 | G |
|  | IC406724 | 1.70±0.10 | 75.3±0.3 | 15.0±1.7 | 4.36±0.15 | R |
|  | IC430330 | 0.74±0.10 | 72.8±2.3 | 10.9±0.3 | 3.11±0.08 | R |
|  | IC430369 | 0.84±0.14 | 63.0±1.5 | 12.8±0.4 | 2.95±0.09 | W |
|  | IC430373 | 1.56±0.14 | 94.6±2.6 | 12.3±0.3 | 3.02±0.08 | G |
|  | IC444217 | 0.49±0.09 | 84.0±3.5 | 12.7±1.0 | 4.16±0.11 | R |
|  | IC444226 | 1.50±0.03 | 78.9±1.1 | 15.2±0.7 | 3.11±0.10 | R |
|  | IC444229 | 1.11±0.15 | 63.3±1.8 | 12.4±0.8 | 2.98±0.08 | W |
|  | IC444232 | 1.57±0.02 | 79.4±2.5 | 15.1±1.0 | 3.23±0.11 | W |
|  | IC564090 | 1.56±0.07 | 60.5±1.9 | 15.9±0.7 | 3.06±0.07 | W |
|  | IC564096 | 1.69±0.05 | 30.7±1.3 | 15.5±1.0 | 3.31±0.07 | G |
|  | IC564113 | 1.67±0.02 | 82.8±1.0 | 17.8±0.7 | 3.36±0.07 | G |
|  | IC564114 | 1.52±0.10 | 86.3±2.3 | 16.3±0.7 | 3.43±0.14 | G |
|  | IC564159 | 1.46±0.15 | 41.0±4.5 | 16.3±0.5 | 3.51±0.04 | G |
|  | IC573137 | 1.21±0.17 | 75.1±7.2 | 17.5±0.8 | 3.39±0.13 | G |
|  | IC573138 | 0.85±0.07 | 96.8±5.1 | 13.6±0.3 | 3.00±0.14 | G |
|  | IC573140 | 1.71±0.03 | 76.9±3.1 | 23.1±1.2 | 5.06±0.12 | G |
|  | IC573157 | 1.74±0.06 | 79.7±1.2 | 17.8±1.3 | 4.61±0.10 | W |
|  | IC589276 | 0.33±0.08 | 112.1±2.6 | 13.2±0.7 | 4.00±0.10 | G |
|  | IC589278 | 1.06±0.10 | 96.1±2.0 | 14.9±0.7 | 3.64±0.08 | G |
|  | IC589300 | 1.45±0.06 | 66.8±2.4 | 13.8±0.9 | 3.29±0.14 | G |
|  | IC589303 | 1.30±0.04 | 45.0±1.5 | 25.6±1.1 | 3.58±0.06 | G |
|  | IC595382 | 1.69±0.09 | 73.0±1.5 | 17.0±0.4 | 5.12±0.12 | R |
|  | IC595395 | 1.71±0.17 | 81.6±6.7 | 22.8±0.5 | 4.45±0.08 | G |
|  | Local check | 1.82±0.09 | 46.4±1.2 | 23.5±0.3 | 5.23±0.08 | R |

G, green; R, red; W, white; L×W, length × width

**Table** **S3.** Frequency distribution of wheat landraces on the basis of GI of *Sitophilus oryzae*

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Parameters |  | Resistant | Moderately resistant | Moderately susceptible | Susceptible | Total |
| Growth index | Minimum  | 0.33 | 0.52 | 1.01 | 1.51 | 0.33 |
| Maximum | 0.49 | 0.97 | 1.50 | 1.86 | 1.86 |
| Mean | 0.43 | 0.76 | 1.30 | 1.65 | 1.34 |
| Seed hardness (newton) | Minimum  | 70.0 | 63.0 | 34.7 | 30.73 | 30.73 |
| Maximum | 112.12 | 98.9 | 97.4 | 94.58 | 112.12 |
| Mean | 88.9 | 83.45 | 73.1 | 67.94 | 72.61 |
| Seed length × width (mm2) | Minimum  | 10.6 | 10.8 | 10.8 | 12.3 | 10.6 |
| Maximum | 14.2 | 17.2 | 25.6 | 27.5 | 27.5 |
| Mean | 12.9 | 13.3 | 17.4 | 19.06 | 17.4 |
| Test weight (gms) | Minimum  | 2.24 | 2.41 | 2.22 | 3.02 | 2.21 |
| Maximum | 4.00 | 4.16 | 4.97 | 5.89 | 5.90 |
| Mean | 3.21 | 3.12 | 3.55 | 4.26 | 3.79 |