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| Table S1. Chromosome position, number of alleles, major allele frequency, genetic diversity and polymorphic information content (PIC) for the 53 markers evaluated in Iranian wheat landraces | | | | | |
| **Marker** | **Chromosome** | **Major allele frequency** | **Number of allele** | **Gene diversity** | **PIC** |
| Xwmc175 | 2D | 0.53 | 18.00 | 0.70 | 0.69 |
| Xwmc181 | 2D | 0.50 | 5.00 | 0.65 | 0.60 |
| Xwmc215 | 5D | 0.40 | 8.00 | 0.75 | 0.72 |
| Xwmc327 | 5A | 0.24 | 8.00 | 0.81 | 0.79 |
| Xbarc24 | 6B | 0.61 | 5.00 | 0.57 | 0.53 |
| Xbarc37 | 6A | 0.73 | 5.00 | 0.43 | 0.40 |
| Xbarc54 | 6D | 0.50 | 3.00 | 0.60 | 0.52 |
| Xbarc59 | 5B | 0.64 | 6.00 | 0.56 | 0.53 |
| Xbarc67 | 3A | 0.58 | 4.00 | 0.53 | 0.44 |
| Xbarc70-1 | 4A | 0.36 | 5.00 | 0.72 | 0.67 |
| Xbarc70-2 | 4A | 0.57 | 3.00 | 0.58 | 0.51 |
| Xbarc78 | 4A | 0.37 | 9.00 | 0.78 | 0.75 |
| Xbarc117 | 5A | 0.78 | 3.00 | 0.37 | 0.34 |
| Xbarc134 | 6B | 0.36 | 6.00 | 0.75 | 0.71 |
| Xbarc141 | 5A | 0.49 | 3.00 | 0.52 | 0.41 |
| Xbarc186 | 5A | 0.90 | 2.00 | 0.18 | 0.16 |
| Xgwm6 | 4B | 0.24 | 9.00 | 0.84 | 0.82 |
| XGWM11 | 1B | 0.48 | 5.00 | 0.61 | 0.54 |
| XGWM18 | 1B | 0.37 | 6.00 | 0.76 | 0.73 |
| XGWM35 | 2A | 0.32 | 11.00 | 0.84 | 0.82 |
| XGWM60 | 7A | 0.65 | 4.00 | 0.53 | 0.49 |
| XGWM129 | 5A | 0.48 | 3.00 | 0.59 | 0.50 |
| XGWM130 | 7B | 0.43 | 10.00 | 0.75 | 0.73 |
| XGWM135 | 1A | 0.26 | 8.00 | 0.81 | 0.78 |
| XGWM149 | 4B | 0.49 | 4.00 | 0.61 | 0.53 |
| XGWM159 | 5B | 0.88 | 3.00 | 0.23 | 0.21 |
| XGWM186 | 5A | 0.36 | 6.00 | 0.73 | 0.69 |
| XGWM192 | 4A | 0.68 | 3.00 | 0.47 | 0.41 |
| XGWM212 | 5D | 0.58 | 3.00 | 0.57 | 0.51 |
| XGWM219 | 6B | 0.31 | 7.00 | 0.78 | 0.75 |
| XGWM232 | 1D | 0.51 | 3.00 | 0.62 | 0.55 |
| XGWM257 | 2B | 0.32 | 4.00 | 0.74 | 0.69 |
| XGWM272 | 5D | 0.64 | 4.00 | 0.53 | 0.48 |
| XGWM296 | 2A | 0.74 | 4.00 | 0.42 | 0.38 |
| XGWM319 | 2B | 0.92 | 3.00 | 0.16 | 0.15 |
| XGWM368 | 4B | 0.42 | 7.00 | 0.71 | 0.66 |
| XGWM369 | 3A | 0.39 | 8.00 | 0.74 | 0.70 |
| XGWM374 | 1B | 0.65 | 6.00 | 0.54 | 0.51 |
| XGWM388 | 2B | 0.54 | 5.00 | 0.64 | 0.61 |
| XGWM400 | 7B | 0.27 | 6.00 | 0.80 | 0.77 |
| XGWM408 | 5B | 0.30 | 7.00 | 0.78 | 0.75 |
| XGWM410 | 2B | 0.36 | 5.00 | 0.72 | 0.67 |
| XGWM413 | 1B | 0.17 | 11.00 | 0.88 | 0.86 |
| XGWM473 | 2A | 0.73 | 4.00 | 0.44 | 0.41 |
| XGWM480 | 3A | 0.25 | 9.00 | 0.85 | 0.83 |
| XGWM494 | 6A | 0.49 | 3.00 | 0.57 | 0.48 |
| XGWM499 | 5B | 0.48 | 10.00 | 0.70 | 0.66 |
| XGWM526 | 7A | 0.41 | 4.00 | 0.70 | 0.65 |
| XGWM538 | 4B | 0.33 | 5.00 | 0.75 | 0.70 |
| XGWM544 | 5B | 0.19 | 11.00 | 0.87 | 0.86 |
| XGWM570 | 6B | 0.23 | 8.00 | 0.82 | 0.80 |
| XGWM617 | 5A | 0.29 | 6.00 | 0.79 | 0.76 |
| XGWM674 | 3A | 0.70 | 4.00 | 0.46 | 0.42 |
| Mean |  | 0.48 | 5.89 | 0.64 | 0.60 |

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| Figure. S1. Analysis of the population structure of 395 wheat landraces. Estimation of the number of populations for K ranging from 1 to 12 by calculating delta K values. |

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| Figure. S2. LD plot for 1378 locus pairs were detected in the 395 Iranian wheat landraces collection using TASSEL software. Red colors show significant LD between markers. |