Supplementary data

[Supplementary figure1 Population structure of 73 rice accessions.](#OLE_LINK1)

[Supplementary figure2 Cluster analysis based on genetic similarity coefficient.](#OLE_LINK2)

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| Fig. S2 Population structure of 73 rice accessions |
| **Fig. S1.** Population structure of 73 rice accessions. (A) Line chart of Mean L (K) with the change of K; (B) Line chart of ΔK with the change of K; (C) Population structure of 73 rice accessions. Blue, red, green and yellow represents four subgroups, respectively. The numbers are sample symbols corresponding to Table S1. |

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| Fig |
| **Fig. S2.** Cluster analysis based on genetic similarity coefficient. |

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| Fig. S4 |
| **Fig. S3.** Heat map of kinship. The numbers are sample symbols corresponding to Table S1. |

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| **Table S1**  The name of 73 rice materials. |
| |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | | No. | Lines | No. | Lines | No. | Lines | No. | Lines | | 1 | CG133R | 20 | Shuhui 881 | 39 | Beijing | 58 | Xikehui 2928 | | 2 | Lehui188 | 21 | Shuhui 885 | 40 | HD63 | 59 | Xikehui 2918 | | 3 | CG173R | 22 | Shuhui 9804 | 41 | Shuhui 527 | 60 | Xikehui 2938 | | 4 | CG132R | 23 | XKN149R | 42 | Minhui 3301 | 61 | Xikehui 2948 | | 5 | H7 | 24 | Fuhui 838 | 43 | Teqing | 62 | Xikehui 646 | | 6 | H9 | 25 | Zhehui 7954 | 44 | Yangdao 6 | 63 | Xikehui 1646 | | 7 | H10 | 26 | Zhonghui 9308 | 45 | Huazhan | 64 | Xikehui 3948 | | 8 | H12 | 27 | 198R | 46 | 9527R | 65 | Xikehui 768 | | 9 | 1639 | 28 | 974R | 47 | STLT | 66 | Xikehui 1288 | | 10 | 1178 | 29 | Lianhui99 | 48 | 263 | 67 | Xikehui 1288 | | 11 | CG131R | 30 | Xianghui 4 | 49 | C4637 | 68 | Xikehui 7728 | | 12 | Shuhui 316 | 31 | Xianghui | 50 | 265 | 69 | Yueguang | | 13 | Shuhui 600 | 32 | 5055 | 51 | 02428 | 70 | Qiuguang | | 14 | Shuhui 785 | 33 | Xuedao | 52 | Zhonghua 9 | 71 | Songjing 2 | | 15 | Shuhui 1314 | 34 | Misuidao | 53 | Nipponbare | 72 | Songjing 22 | | 16 | Jinchao 1 | 35 | X150 | 54 | Xijing | 73 | Daohuaxiang | | 17 | Guichao 2 | 36 | Haimagu | 55 | JT |  |  | | 18 | Fenzhidao | 37 | 1611 | 56 | Jing 925 |  |  | | 19 | GCT | 38 | Guangluai 4 | 57 | Xikehui 7253 |  |  | |

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| **Table S2**  Information of 42 pairs of SSR markers. |
| |  |  |  |  | | --- | --- | --- | --- | | Chr. | Primers | Chr. | Primers | | 1 | RM5, RM128, RM259 | 7 | RM11, RM180, RM234, RM336 | | 2 | RM211, RM263, RM475, RM525 | 8 | RM223, RM264, RM308 | | 3 | RM251, RM489, RM514, RM520 | 9 | RM205, RM242, RM316, RM566, OSR28 | | 4 | RM252, RM255, RM335, RM471 | 10 | RM216, RM258, RM333, RM474 | | 5 | RM122, RM289 | 11 | RM332, RM286 | | 6 | RM412, RM528, RM585, RM587 | 12 | RM101, RM17, RM519 | |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Table S3**  Primer information of 18 starch synthesis-related genes.   | Gene | Molecular marker | | Sequence of primers (5′→3′) | Marker type | | --- | --- | --- | --- | --- | | *AGPlar* | *AGPlar* M1 | | [F] CGTTCAGGTTCAGGCAATCA  [R] GGAAGGGTGGTGATGTGGAG | STS | | *AGPlar* M2 | | [F] GCGTGAACTGAACATCCATCT  [R] GGTTCAAGCCTTCAGGTCAG | CAPS (*Tsp*4*5*I ) | | *AGPiso* | *AGPiso* M2 | | [F] CAATCGCTGCCATCGGTTG  [R] TTCCACATCGTTAGGTACACG | STS | | *AGPiso* M3 | | [F] TGGAATGGGAACTCTATTATTGG  [R] TCCCAACCTCTACCTTCAAATG | CAPS (*Eco* RI) | | *AGPsma* | *AGPsma* M1 | | [F] TCTATTCTCAGCCCTCCAACC  [R] GTGTGTTTAGAGGTGCTTTTCG | STS | | *AGPsma* M2 | | [F] GTGTGTTTAGAGGTGCTTTTCG  [R] TATCTTCCCAGTAACCATCA | STS | | *GBSSII* | *GBSSII* | | [F] TTGCTGCGAATTATCTGCG  [R] ACCTCCTCCCACTTCTTTGC | STS | | *SSI* | *SSI* M1 | | [F] GGTAGGGTAGGTCAATCTGGC  [R] ATAGAGAAGACAATGTGGCAACC | CAPS (*Nru* I) | | *SSI* M2 | | [F] CTTCTATCCATTCCTTAATCCCA  [R] ATGCTATTGATGTTAAGAGGGC | STS | | *SSI* M3 | | [F] GACCCACCTCGCTATCTGTTG  [R] GGAAACACCAGACATCAACCAG | CAPS (*Apa* I ) | | *SSII-1* | *SSII-1* M1 | | [F] CACCCCACCGTTCTACTATGC  [R] TCCATAGTTTCATTGAGATTGCTC | STS | | *SSII-1* M2 | | [F] CAAGTTGGTGACGATAGTGATGA  [R] AACAGAGCCTCCATTACCTTTAC | CAPS (*Age* I) | |  | *SSII-1* M3 | | [F] AGAGATCAAATCGTGGAAC  [R] TGGAGTGAAGTAGTGGAAT | STS | |  | *SSII-1* M4 | [F] ATCTTTAGACGATTAGCG  [R] AAGTCACAAGTAGAAGGG | | STS | | | *SSII-2* | *SSII-2* M1 | [F] AGATTTGAACTCAGGACTTGGTG  [R] TCTATGGGCTCTATCCTTACTAGG | | STS | | | *SSII-2* M2 | [F] CGCTCGTTGCCTAGCTAGC  [R] GGCGAGGAAGCGATTGCC | | STS | | | *SSII-2* M3 | [F] ACAGTATGTTTGCCTCAGCG  [R] GTAAATCCACCCAGCCAGTC | | STS | | | *SSII-3* | *SSII-3* M1 | [F]CCAATACCGTAAACTAGCGACTATG  [R] TACAGGTAGAATGGCAGTGGTG | | STS | | | *SSII-3* M2 | [F] GGTTCTCGGTGAAGATGGC  [R] GTGGTCCCAGCTGAGGTCC | | CAPS (*Ban* II) | | | *SSII-3* M3 | [F] AACTGACTCATACACGGATAACG  [R] CACGCACGAACGGAAACC | | CAPS (*Nhe* I) | | | *SSIII-1* | *SSIII-1* M1 | [F] AAGAAGGGAAGGGAGTCAGC  [R] GCCATCTCCATTGCCAGC | | STS | | | *SSIII-1* M2 | [F] CAAGCAATGATTCAGGCACA  [R] GGAGACAGGAGCAAAAGGC | | CAPS (*Eco* RI) | | | *SSIII-1* M3 | [F] CAAATCAACTGTAAGTGCTGGAG  [R] GAGAACGGAGAAAATGGCAT | | CAPS *(Nde* I) | | | *SSIII-1* t1 | [F] GGAGCAATAGGTGGTTCAA  [R] GCCAAATCTACTCTCGTCA | | CAPS (*Eco* R72I) | | | *SSIII-2* | *SSIII-2 CAPS* | [F] TTGGAACTTTGGTTGGTATATCG  [R] CTTACCTTTGCAATGGGTGC | | CAPS (*Mlu* C I) | | | *SSIV-1* | *SSIV-1* M1 | [F] CATTGTGTCTTGAAGTCTGTGCT  [R] CGATGGGTTAGTGCTGTGG | | CAPS (*Nde* I) | | | *SSIV-2* | *SSIV-2* M1 | [F] CTTCTGATTGATGGTTGGTTGC  [R]GGAAGAATAATCTCTACTAGGTGGC | | CAPS (*Sph*I) | | | *SSIV-2* M2 | [F] TTCCCTTGGTGGTGCGTG  [R] TAAAGCGTTCCGACAGTA | | STS | | | *SSIV-2* M3 | [F] TCAAGTATGGTTTACCTATG  [R] TTTCCCAATGACTTCTAA | | CAPS (*Eco*72I) | | | *SBE1* | *SBE1* M1 | [F] GCTACATAACACGCATACAAAGT  [R]AGACAAAAGCGAAAGGTAATGAG | | STS | | | *SBE1* M2 | [F] GTGGGGAAAACAAGTAAGTCTG  [R] AGTTCCATCAGAAGAATCAGGG | | STS | | | *SBE1* M3 | [F] GGAAATGGGAGTCGCC  [R] CGAAGAAACCACGCTCA | | STS | | | *SBE1* M4 | [F] ATTGTTGCTGAAGATGTTT  [R] ACGGTTGATGGTAGGTG | | CAPS (*Taq* I) | | | *SBE3* | *SBE3* M1 | [F] AAGGTTAGCATTGGTTGGTGAG  [R] TCTCCTTGAACAGCGACAGC | | STS | | | *SBE3* t1 | [F] TTCCATTATTTCTTTGCA  [R] TATCCTCCCTGAACCAC | | STS | | | *SBE4* | *SBE4*M1 | [F] CACCAATTATATTAGCGTGCTCC  [R] CGTGGCTCTTGGCTCTCTTG | | STS | | | *SBE4* M2 | [F] CCATCACCTCAAATACATCACTC  [R] AGACTGGAATGCCCCTTAGG | | STS | | | *ISA* | *ISA* M1 | [F] ATAGATGCTAATGTGATGTGGC  [R] TGGTATAGGCACAACCGTAGA | | STS | | | *ISA* M2 | [F] ACAAGCACACGACACCTA  [R] CAACAAACCAAACTCATT | | CAPS (*Hind* III) | | | *ISA* M3 | [F] TGTGGGAATACCTTCAACTG  [R] ATAAAACCCTTACAGGCTTG | | STS | | | *PUL* | *PUL* M2 | [F] GACAACCGTCCGCTTTAGTTTC  [R] GCATTTGAGAGGGTTTGGATTC | | STS | | | *PUL* M6 | [F] ATTTAACTGTATGGACTGAG  [R] GATACCAACCAAACAAGA | | STS | | | *Wx* | Wx M1  PCR-ACCI  Wx EX10 | [F] CACAGCAACAGCTAGACAACCAC  [R] CACGACGACGGAGGGGAAC  [F] GCTTCACTTCTCTGCTTGTG  [R] ATGATTTAACGAGAGTTAA  [F] GCATCACCGGCATCGTC  [R] GCTCCGGCCATGATGAGATG | | STS  CAPS (*ACC*I)  CAPS (*Apa*I) | | |

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| **Table S4**  Primer information of Real-time PCR. |
| |  |  |  |  | | --- | --- | --- | --- | | Gene | Type | Primer | Locus ID | | *Actin* | Real-time PCR | F:TCAGCAACTGGGATGATATGGAG  R:GCCGTTGTGGTGAATGAGTAAC | LOC4333919 | | *Wx* | Real-time PCR | [F] 5'-TTCCTGGAGAAGGTTTGGG-3'  [R] 5'-AACGCATCTGGTTGTCTTTG-3' | LOC4340018 | | *SSI* | Real-time PCR | [F] 5’ CCAGTCTTGTGCCAGTCCTT 3’  [R] 5’ ATTCAGGTGGCAATCCCAGG 3’ | LOC9269493 | | *SSII-2* | Real-time PCR | [F] 5’ ACAGGGTAGCTGGACAGGAT 3’  [R] 5’ CATTGTGCCGGTGTCGAAAG 3’ | LOC4330709 | | *SSII-3* | Real-time PCR | [F] 5’ GGCTGCTGAATGTTCTCCCT 3’  [R] 5’ CCGCGTAATCACCGTACCTT 3’ | LOC4340567 | | *PUL* | Real-time PCR | [F] 5’ GTGGCTGAGAAGTTCCCGTT 3’  [R] 5’TCTTGATGCCTCCCATGAGC 3’ | LOC4335042 | |

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| **Table S5**  The genetic diversity of SSR markers in rice. |
| |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | | Marker | Allele numbers | PIC | Marker | Allele numbers | PIC | Marker | Allele numbers | PIC | | RM5 | 3 | 0.465 | RM122 | 3 | 0.488 | RM316 | 2 | 0.223 | | RM128 | 3 | 0.456 | RM289 | 3 | 0.530 | RM566 | 4 | 0.533 | | RM259 | 3 | 0.511 | RM412 | 3 | 0.223 | OSR28 | 5 | 0.665 | | RM211 | 3 | 0.375 | RM528 | 4 | 0.592 | RM216 | 2 | 0.273 | | RM263 | 5 | 0.585 | RM585 | 6 | 0.603 | RM258 | 3 | 0.478 | | RM475 | 4 | 0.676 | RM587 | 3 | 0.490 | RM333 | 8 | 0.692 | | RM525 | 6 | 0.499 | RM11 | 4 | 0.594 | RM474 | 7 | 0.647 | | RM251 | 5 | 0.595 | RM180 | 2 | 0.209 | RM332 | 4 | 0.480 | | RM489 | 2 | 0.273 | RM234 | 2 | 0.262 | RM286 | 3 | 0.581 | | RM514 | 6 | 0.703 | RM336 | 5 | 0.503 | RM101 | 3 | 0.285 | | RM520 | 3 | 0.507 | RM223 | 4 | 0.406 | RM17 | 3 | 0.393 | | RM252 | 4 | 0.588 | RM264 | 4 | 0.604 | RM519 | 2 | 0.268 | | RM255 | 3 | 0.554 | RM308 | 2 | 0.027 | Mean | 3.786 | 0.474 | | RM335 | 5 | 0.751 | RM205 | 5 | 0.416 |  |  |  | | RM471 | 2 | 0.176 | RM242 | 6 | 0.723 |  |  |  |   PIC, polymorphism information content. |

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| **Table S6**  The Q value of 73 rice accessions. |
| | No. | Cluster1 | Cluster2 | Cluster3 | Cluster4 | No. | Cluster1 | Cluster2 | Cluster3 | Cluster4 | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | 1 | 0.002 | 0.008 | 0.534 | 0.456 | 38 | 0.001 | 0.976 | 0.010 | 0.013 | | 2 | 0.095 | 0.307 | 0.010 | 0.589 | 39 | 0.838 | 0.068 | 0.044 | 0.049 | | 3 | 0.002 | 0.191 | 0.296 | 0.511 | 40 | 0.007 | 0.364 | 0.003 | 0.626 | | 4 | 0.005 | 0.426 | 0.016 | 0.553 | 41 | 0.001 | 0.227 | 0.009 | 0.763 | | 5 | 0.001 | 0.003 | 0.994 | 0.003 | 42 | 0.007 | 0.434 | 0.007 | 0.553 | | 6 | 0.001 | 0.005 | 0.991 | 0.004 | 43 | 0.002 | 0.992 | 0.003 | 0.002 | | 7 | 0.001 | 0.002 | 0.996 | 0.002 | 44 | 0.002 | 0.992 | 0.004 | 0.002 | | 8 | 0.001 | 0.002 | 0.996 | 0.002 | 45 | 0.002 | 0.992 | 0.003 | 0.002 | | 9 | 0.007 | 0.861 | 0.013 | 0.118 | 46 | 0.02 | 0.024 | 0.020 | 0.936 | | 10 | 0.003 | 0.967 | 0.019 | 0.011 | 47 | 0.006 | 0.01 | 0.308 | 0.676 | | 11 | 0.002 | 0.549 | 0.04 | 0.409 | 48 | 0.001 | 0.373 | 0.049 | 0.576 | | 12 | 0.001 | 0.004 | 0.986 | 0.009 | 49 | 0.02 | 0.967 | 0.005 | 0.008 | | 13 | 0.003 | 0.273 | 0.016 | 0.707 | 50 | 0.003 | 0.748 | 0.003 | 0.245 | | 14 | 0.022 | 0.002 | 0.973 | 0.003 | 51 | 0.907 | 0.078 | 0.004 | 0.011 | | 15 | 0.001 | 0.002 | 0.995 | 0.002 | 52 | 0.611 | 0.370 | 0.005 | 0.014 | | 16 | 0.002 | 0.458 | 0.005 | 0.535 | 53 | 0.996 | 0.001 | 0.002 | 0.001 | | 17 | 0.001 | 0.903 | 0.015 | 0.081 | 54 | 0.990 | 0.002 | 0.005 | 0.002 | | 18 | 0.106 | 0.235 | 0.426 | 0.233 | 55 | 0.996 | 0.001 | 0.002 | 0.001 | | 19 | 0.002 | 0.709 | 0.005 | 0.285 | 56 | 0.984 | 0.003 | 0.008 | 0.006 | | 20 | 0.003 | 0.985 | 0.002 | 0.010 | 57 | 0.006 | 0.064 | 0.013 | 0.917 | | 21 | 0.002 | 0.655 | 0.005 | 0.338 | 58 | 0.007 | 0.005 | 0.007 | 0.981 | | 22 | 0.002 | 0.448 | 0.007 | 0.544 | 59 | 0.002 | 0.002 | 0.003 | 0.994 | | 23 | 0.004 | 0.958 | 0.034 | 0.004 | 60 | 0.002 | 0.003 | 0.008 | 0.987 | | 24 | 0.001 | 0.992 | 0.005 | 0.002 | 61 | 0.001 | 0.002 | 0.007 | 0.990 | | 25 | 0.002 | 0.979 | 0.012 | 0.006 | 62 | 0.001 | 0.004 | 0.003 | 0.992 | | 26 | 0.268 | 0.412 | 0.235 | 0.085 | 63 | 0.049 | 0.017 | 0.032 | 0.901 | | 27 | 0.001 | 0.014 | 0.030 | 0.955 | 64 | 0.001 | 0.245 | 0.014 | 0.739 | | 28 | 0.023 | 0.411 | 0.014 | 0.553 | 65 | 0.002 | 0.032 | 0.215 | 0.752 | | 29 | 0.015 | 0.429 | 0.090 | 0.465 | 66 | 0.001 | 0.003 | 0.169 | 0.827 | | 30 | 0.002 | 0.003 | 0.257 | 0.738 | 67 | 0.001 | 0.004 | 0.003 | 0.992 | | 31 | 0.027 | 0.851 | 0.008 | 0.113 | 68 | 0.001 | 0.007 | 0.307 | 0.685 | | 32 | 0.070 | 0.268 | 0.354 | 0.308 | 69 | 0.996 | 0.001 | 0.001 | 0.001 | | 33 | 0.032 | 0.117 | 0.524 | 0.327 | 70 | 0.997 | 0.001 | 0.001 | 0.001 | | 34 | 0.024 | 0.768 | 0.107 | 0.101 | 71 | 0.996 | 0.001 | 0.001 | 0.002 | | 35 | 0.003 | 0.581 | 0.276 | 0.140 | 72 | 0.997 | 0.001 | 0.001 | 0.001 | | 36 | 0.007 | 0.772 | 0.016 | 0.205 | 73 | 0.996 | 0.001 | 0.001 | 0.001 | | 37 | 0.479 | 0.007 | 0.185 | 0.329 |  |  |  |  |  | |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Accession** | ***AGPlarM1*** | ***AGPlarM2*** | ***AGPisoM2*** | ***AGPisoM3*** | ***AGPsma M2*** | ***AGPsma 1*** | ***GBSSⅡM1*** | ***SSI M1*** | ***SSI M2*** | ***SSI M3*** | ***SSIIc M1*** | ***SSIIc M2*** | ***SSIIc M3*** | ***SSIIc M4*** | ***SSIIb M1*** | ***SSIIb M2*** | ***SSIIb M3*** | ***SSIIa M1*** | ***SSIIa M2*** | ***SSIIa M3*** | ***SSIIIb M1*** | ***SSIIIb M2*** | ***SSIIIb M3*** | ***SSIIIb t1*** | ***SSIIIa M1*** | ***SSIIIa M2*** | ***SSIVa*** | ***SSIVb M1*** | ***SSIVb M2*** | ***SSIVb M3*** | ***SBE1 M1*** | ***SBE1 M2*** | ***SBE1 M3*** | ***SBE2 M4*** | ***SBEIIb M1*** | ***SBEIIb t1*** | ***SBEIIa M1*** | ***SBEIIa M2*** | ***ISA M1*** | ***ISA M2*** | ***ISA M3*** | ***PUL M1*** | ***PUL M2*** | ***PUL M3*** | ***PUL M4*** | ***PUL M5*** | ***PUL M6*** | ***PCR ACCI*** |
| 1 | a | b | a | a | a | a | a | a | a | a | a | b | a | a | a | a | a | a | a | b | a | b | b | b | b | a | a | a | a | a | a | a | a | a | a | a | a | a | a | a | a | a | a | a | a | a | a | b |
| 2 | a | b | a | a | a | a | b | a | a | a | a | b | a | a | a | a | a | a | a | b | b | b | b | a | b | a | a | b | a | b | a | a | a | a | a | a | a | a | a | a | a | a | a | a | a | a | a | a |
| 3 | a | b | a | a | a | a | a | b | a | a | a | b | a | a | a | a | a | b | a | a | a | b | b | b | b | a | a | b | a | b | a | a | a | a | a | a | a | a | a | a | a | a | b | a | a | a | a | b |
| 4 | a | b | a | a | a | a | a | a | a | a | a | b | a | a | a | a | a | a | a | b | a | a | b | b | b | a | a | a | a | a | a | a | a | a | b | b | a | a | a | a | a | a | b | a | a | a | a | b |
| 5 | a | b | a | a | a | a | b | a | a | a | a | b | a | a | a | a | a | b | a | a | b | b | b | a | b | a | a | b | a | b | a | a | a | a | b | b | a | a | a | a | a | a | b | a | a | a | a | b |
| 6 | a | b | a | a | a | a | b | a | a | a | a | b | a | a | a | a | a | b | a | a | b | b | b | a | b | a | b | b | a | b | a | a | a | a | b | b | a | a | a | a | a | a | b | a | a | a | a | a |
| 7 | a | b | a | a | a | a | b | a | a | a | a | b | a | a | a | a | a | b | a | a | b | b | b | a | b | a | b | b | a | b | a | a | a | a | b | b | a | a | a | a | a | a | b | a | a | a | a | b |
| 8 | a | b | a | a | a | a | b | a | a | a | a | b | a | a | a | a | a | b | a | a | b | b | b | a | b | a | b | b | a | b | a | a | a | a | b | b | a | a | a | a | a | a | b | a | a | a | a | b |
| 9 | b | a | a | a | a | a | b | a | a | a | a | b | a | a | a | a | a | a | a | b | a | a | b | b | b | a | b | a | a | a | a | a | a | a | b | b | a | a | a | a | a | a | b | a | a | a | a | a |
| 10 | b | a | a | a | a | a | b | a | a | a | a | b | a | a | a | a | a | b | a | a | c | a | a | b | b | a | b | a | a | a | a | a | a | a | b | b | a | a | a | a | a | a | b | a | a | a | a | a |
| 11 | a | b | a | a | a | a | b | a | a | a | a | b | a | a | a | a | a | b | a | a | a | b | b | b | b | a | b | a | a | a | a | a | a | a | b | b | a | a | a | a | a | b | a | b | b | b | b | b |
| 12 | a | b | a | a | a | a | b | a | a | a | a | b | a | a | a | a | a | b | a | a | b | b | b | a | b | a | b | b | a | b | a | a | a | a | b | b | a | a | a | a | a | a | b | a | a | a | a | b |
| 13 | a | b | a | a | a | a | b | a | a | a | a | b | a | a | a | a | a | b | a | a | a | a | b | b | b | a | b | a | a | a | a | a | a | a | b | b | a | a | a | a | a | a | a | a | a | a | a | b |
| 14 | a | b | a | a | a | a | b | a | a | a | a | b | a | a | a | a | a | b | a | a | b | b | b | a | b | a | b | b | a | b | a | a | a | a | b | b | a | a | a | a | a | a | b | a | a | a | a | b |
| 15 | a | b | a | a | a | a | b | a | a | a | a | b | a | a | a | a | a | b | a | a | b | b | b | a | b | a | b | b | a | b | a | a | a | a | b | b | a | a | a | a | a | a | b | a | a | a | a | b |
| 16 | a | b | a | a | a | a | a | a | a | a | a | b | a | a | a | a | a | a | a | b | a | a | b | b | b | a | b | b | a | b | a | a | a | a | b | b | a | a | a | a | a | a | b | a | a | a | a | b |
| 17 | c | b | a | a | a | a | a | a | a | a | a | b | a | a | a | a | a | a | a | b | a | a | b | b | b | a | b | a | a | a | a | a | a | a | b | b | a | a | a | a | a | a | c | b | b | b | b | b |
| 18 | b | a | a | a | a | a | b | b | a | a | a | b | a | a | a | b | a | a | a | b | a | b | b | b | b | a | b | b | a | b | a | a | a | a | b | b | a | a | a | a | a | a | a | a | a | a | a | a |
| 19 | c | b | a | a | a | a | a | a | a | a | a | b | a | a | a | a | a | a | a | b | a | a | b | b | b | a | a | a | a | a | a | a | a | a | b | b | a | a | a | a | a | a | b | a | a | a | a | b |
| 20 | a | b | a | a | a | a | a | a | a | a | a | b | a | a | a | a | a | a | a | b | c | a | a | b | b | a | b | a | a | a | a | a | a | a | b | b | a | a | a | a | a | a | c | b | b | b | b | a |
| 21 | c | b | a | a | a | a | a | a | a | a | a | b | a | a | a | a | a | a | a | b | a | a | b | b | b | a | a | a | a | a | a | a | a | a | b | b | a | a | a | a | a | a | b | a | a | a | a | b |
| 22 | d | c | a | c | a | a | b | b | a | a | a | b | a | a | b | a | b | c | a | c | e | c | b | b | b | a | b | c | a | d | a | a | a | a | b | b | a | a | a | a | a | a | a | a | a | a | a | c |
| 23 | c | b | a | a | a | a | a | a | b | b | a | b | a | a | a | b | a | a | a | b | a | b | b | b | b | a | a | b | a | b | a | a | a | a | b | b | b | b | a | a | a | a | a | a | a | a | a | a |
| 24 | a | b | a | a | a | a | b | a | a | a | a | b | a | a | a | a | a | b | a | a | c | a | a | b | b | a | b | a | a | a | a | a | a | a | b | b | a | a | a | a | a | a | a | a | a | a | a | a |
| 25 | a | b | a | a | a | a | a | a | b | b | a | b | a | a | a | b | a | a | a | b | a | b | b | b | b | a | a | b | a | b | a | a | a | a | b | c | b | b | a | a | a | a | a | a | a | a | a | b |
| 26 | b | a | a | a | a | b | a | a | a | a | a | b | a | a | a | a | a | b | a | a | a | a | b | b | a | a | b | b | a | b | a | a | a | a | b | b | b | b | a | a | a | b | a | b | b | b | b | a |
| 27 | a | b | a | a | a | a | a | b | a | a | a | b | a | a | a | b | a | a | a | b | a | b | b | b | b | a | b | b | a | b | a | a | a | a | a | a | a | a | a | a | a | a | a | a | a | a | a | a |

**Table S7** The results of gene genotyping for 73 rice accessions.

**Table S7** Continued

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Accession** | ***AGPlarM1*** | ***AGPlarM2*** | ***AGPisoM2*** | ***AGPisoM3*** | ***AGPsma M2*** | ***AGPsma 1*** | ***GBSSⅡM1*** | ***SSI M1*** | ***SSI M2*** | ***SSI M3*** | ***SSIIc M1*** | ***SSIIc M2*** | ***SSIIc M3*** | ***SSIIc M4*** | ***SSIIb M1*** | ***SSIIb M2*** | ***SSIIb M3*** | ***SSIIa M1*** | ***SSIIa M2*** | ***SSIIa M3*** | ***SSIIIb M1*** | ***SSIIIb M2*** | ***SSIIIb M3*** | ***SSIIIb t1*** | ***SSIIIa M1*** | ***SSIIIa M2*** | ***SSIVa*** | ***SSIVb M1*** | ***SSIVb M2*** | ***SSIVb M3*** | ***SBE1 M1*** | ***SBE1 M2*** | ***SBE1 M3*** | ***SBE2 M4*** | ***SBEIIb M1*** | ***SBEIIb t1*** | ***SBEIIa M1*** | ***SBEIIa M2*** | ***ISA M1*** | ***ISA M2*** | ***ISA M3*** | ***PUL M1*** | ***PUL M2*** | ***PUL M3*** | ***PUL M4*** | ***PUL M5*** | ***PUL M6*** | ***PCR ACCI*** |
| 28 | b | a | a | a | a | a | b | a | a | a | a | b | a | a | a | a | a | b | a | a | c | a | a | b | b | a | b | b | a | b | a | a | a | a | b | b | a | a | a | a | a | a | b | a | a | a | a | a |
| 29 | d | c | a | a | a | a | b | a | a | a | a | b | a | a | c | a | c | b | a | a | e | c | b | b | b | a | b | c | a | d | a | a | a | a | a | a | a | a | a | a | a | a | a | a | a | a | a | a |
| 30 | a | b | a | a | a | a | b | b | a | a | a | b | a | a | a | b | a | a | a | b | a | b | b | b | b | a | b | b | a | b | a | a | a | a | a | a | a | a | a | a | a | a | a | a | a | a | a | a |
| 31 | d | c | a | a | a | a | b | b | a | a | a | b | a | a | a | a | a | b | a | a | c | a | a | b | b | a | b | a | a | a | a | a | a | a | b | b | a | a | a | a | a | a | a | a | a | a | a | a |
| 32 | a | b | a | a | a | a | b | b | a | a | a | b | a | a | a | a | a | a | a | b | a | b | b | b | b | a | b | b | a | b | a | c | a | c | a | a | a | a | a | a | a | c | d | a | a | a | a | a |
| 33 | a | b | a | a | a | a | b | a | a | a | a | b | a | a | a | a | a | a | a | b | a | b | b | b | b | a | b | b | a | b | a | c | a | c | a | a | a | a | a | a | a | c | d | a | a | a | a | a |
| 34 | a | b | a | c | a | a | b | a | a | a | a | b | a | a | a | a | a | a | a | b | e | c | c | b | b | a | b | b | a | b | a | a | a | a | b | b | b | b | a | a | a | a | c | b | b | b | b | a |
| 35 | d | c | b | b | a | a | b | b | a | a | a | b | a | a | c | a | c | c | a | c | a | a | b | b | b | a | b | a | a | a | a | a | a | a | b | b | a | a | a | a | a | a | a | a | a | a | a | c |
| 36 | b | a | a | a | a | a | b | a | a | a | a | b | a | a | a | a | a | a | a | b | a | a | b | b | b | a | b | a | a | a | a | a | a | a | b | b | a | a | a | a | a | a | b | a | a | a | a | b |
| 37 | a | b | a | a | a | b | b | b | a | a | a | b | a | a | a | b | a | a | a | b | a | b | b | b | b | a | b | b | a | b | a | a | a | a | a | a | b | b | a | a | a | a | a | a | a | a | a | a |
| 38 | c | b | a | a | a | a | b | a | b | b | a | a | b | b | a | a | a | b | a | a | c | b | a | b | b | a | b | a | a | a | a | a | a | a | a | a | a | a | a | a | a | a | c | b | b | b | b | b |
| 39 | b | a | a | a | b | b | a | b | a | a | b | a | a | a | a | a | a | a | a | b | b | b | b | b | b | b | a | b | a | b | a | a | a | b | a | a | b | b | b | b | b | a | a | b | b | b | b | b |
| 40 | b | a | a | a | a | a | b | a | b | b | a | b | a | a | a | a | a | b | a | a | a | a | b | b | b | a | b | a | a | a | a | a | a | a | b | b | a | a | a | a | a | a | b | a | a | a | a | a |
| 41 | a | b | a | a | a | a | b | a | a | a | a | b | a | a | a | a | a | b | a | a | a | a | b | b | b | a | b | a | a | a | a | a | a | a | a | a | a | a | a | a | a | a | a | a | a | a | a | b |
| 42 | a | b | a | a | a | a | b | a | a | a | a | b | a | a | a | a | a | b | a | a | a | b | b | b | b | a | b | a | a | a | a | a | a | a | b | b | a | a | a | a | a | b | a | b | b | b | b | a |
| 43 | a | b | a | a | a | a | b | a | a | a | a | b | a | a | a | a | a | a | a | b | a | a | b | b | b | a | b | a | a | a | a | a | a | a | b | b | a | a | a | a | a | a | b | a | a | a | a | a |
| 44 | a | b | a | a | a | a | b | a | a | a | a | b | a | a | a | a | a | a | a | b | a | a | b | b | b | a | b | a | a | a | a | a | a | a | b | b | a | a | a | a | a | a | b | a | a | a | a | a |
| 45 | a | b | a | a | a | a | b | a | a | a | a | b | a | a | a | a | a | a | a | b | a | a | b | b | b | a | b | a | a | a | a | a | a | a | b | b | a | a | a | a | a | a | b | a | a | a | a | a |
| 46 | a | b | a | a | a | a | b | b | a | a | a | b | a | a | a | a | a | b | a | a | a | b | b | b | b | a | b | b | a | b | a | a | a | a | b | b | a | a | a | a | a | a | b | a | a | a | a | a |
| 47 | a | b | a | a | a | a | a | a | a | a | a | b | a | a | a | a | a | a | a | b | a | b | b | b | b | a | b | a | a | a | a | a | a | a | a | a | a | a | a | a | a | a | a | a | a | a | a | b |
| 48 | b | a | a | a | a | a | b | a | a | a | a | b | a | a | a | a | a | a | a | b | a | a | b | b | b | a | b | a | a | a | a | a | a | a | b | b | a | a | a | a | a | a | a | a | a | a | a | b |
| 49 | a | b | a | a | a | a | b | a | a | a | a | b | a | a | a | a | a | b | a | a | a | b | b | b | b | a | b | a | a | a | a | a | a | a | b | b | a | a | a | a | a | a | c | b | b | b | b | a |
| 50 | a | b | a | a | a | a | b | a | a | a | a | b | a | a | a | a | a | b | a | a | a | b | b | b | b | a | b | a | a | a | a | a | a | a | b | b | a | a | a | a | a | a | c | b | b | b | b | a |
| 51 | b | a | b | b | a | b | a | b | a | a | a | a | b | b | b | a | b | a | a | b | b | b | b | a | b | a | a | a | a | a | a | a | a | a | b | b | b | b | b | b | b | a | a | a | a | a | a | a |
| 52 | c | b | b | b | a | b | b | b | a | a | a | b | a | a | b | a | b | a | a | b | d | a | b | b | a | a | a | b | a | b | a | a | a | a | b | b | b | b | a | a | a | a | b | a | a | a | a | a |
| 53 | b | a | b | b | a | b | a | b | a | a | a | a | b | b | b | a | b | a | a | b | d | a | b | b | a | a | a | b | a | b | b | b | a | b | a | a | b | b | b | b | b | b | a | b | b | b | b | a |
| 54 | b | a | b | b | a | b | a | b | a | a | a | a | b | b | b | a | b | a | a | b | d | a | b | b | b | b | a | b | a | b | b | b | a | b | a | a | b | b | b | b | b | b | a | b | b | b | b | a |

**Table S7** Continued

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Accession** | ***AGPlarM1*** | ***AGPlarM2*** | ***AGPisoM2*** | ***AGPisoM3*** | ***AGPsma M2*** | ***AGPsma 1*** | ***GBSSⅡM1*** | ***SSI M1*** | ***SSI M2*** | ***SSI M3*** | ***SSIIc M1*** | ***SSIIc M2*** | ***SSIIc M3*** | ***SSIIc M4*** | ***SSIIb M1*** | ***SSIIb M2*** | ***SSIIb M3*** | ***SSIIa M1*** | ***SSIIa M2*** | ***SSIIa M3*** | ***SSIIIb M1*** | ***SSIIIb M2*** | ***SSIIIb M3*** | ***SSIIIb t1*** | ***SSIIIa M1*** | ***SSIIIa M2*** | ***SSIVa*** | ***SSIVb M1*** | ***SSIVb M2*** | ***SSIVb M3*** | ***SBE1 M1*** | ***SBE1 M2*** | ***SBE1 M3*** | ***SBE2 M4*** | ***SBEIIb M1*** | ***SBEIIb t1*** | ***SBEIIa M1*** | ***SBEIIa M2*** | ***ISA M1*** | ***ISA M2*** | ***ISA M3*** | ***PUL M1*** | ***PUL M2*** | ***PUL M3*** | ***PUL M4*** | ***PUL M5*** | ***PUL M6*** | ***PCR ACCI*** |
| 55 | b | a | b | b | a | b | a | b | a | a | a | a | b | b | b | a | b | a | a | b | d | a | b | b | a | a | a | b | a | b | b | b | a | b | a | a | b | b | b | b | b | b | a | b | b | b | b | a |
| 56 | b | a | b | b | a | b | a | b | a | a | a | a | b | b | b | a | b | a | a | b | d | a | b | b | a | a | a | b | a | b | a | a | a | b | a | a | b | b | a | a | a | b | a | b | b | b | b | a |
| 57 | a | b | a | a | a | a | b | a | a | a | a | b | a | a | a | a | a | b | a | a | b | b | b | a | b | a | b | b | a | b | a | a | a | a | b | b | a | a | a | a | a | a | a | a | a | a | a | a |
| 58 | c | b | a | a | a | a | b | a | a | a | a | b | a | a | a | a | a | b | a | a | a | a | b | b | b | a | b | a | a | a | a | a | a | a | b | b | a | a | a | a | a | a | b | a | a | a | a | b |
| 59 | a | b | a | a | a | a | b | a | a | a | a | b | a | a | a | b | a | b | a | a | a | a | b | b | b | a | b | b | a | b | a | a | a | a | b | b | a | a | a | a | a | a | b | a | a | a | a | a |
| 60 | c | b | a | a | a | a | b | a | a | a | a | b | a | a | a | a | a | b | a | a | a | a | b | b | b | a | b | a | a | a | a | a | a | a | b | b | a | a | a | a | a | a | b | a | a | a | a | b |
| 61 | a | b | a | a | a | a | b | a | a | a | a | b | a | a | a | a | a | b | a | a | a | a | b | b | b | a | b | a | a | a | a | a | a | a | b | b | a | a | a | a | a | a | b | a | a | a | a | b |
| 62 | a | b | b | b | a | a | b | a | a | a | a | b | a | a | a | a | a | b | a | a | d | a | b | b | b | a | b | a | a | a | a | a | a | a | b | b | a | a | a | a | a | a | a | a | a | a | a | a |
| 63 | a | b | a | a | a | a | b | a | a | a | a | b | a | a | b | a | b | b | a | a | d | a | b | b | b | a | b | a | a | a | a | a | a | a | b | b | b | b | a | a | a | a | a | a | a | a | a | a |
| 64 | a | b | a | a | a | a | b | b | a | a | a | b | a | a | a | a | a | b | a | a | a | b | b | b | b | a | b | a | a | a | a | a | a | a | b | b | a | a | a | a | a | a | a | a | a | a | a | a |
| 65 | a | b | a | a | a | a | b | a | a | a | a | b | a | a | a | a | a | b | a | a | a | a | b | b | b | a | b | b | a | b | a | a | a | a | a | a | a | a | a | a | a | a | b | a | a | a | a | b |
| 66 | a | b | a | a | a | a | b | a | a | a | a | b | a | a | a | a | a | b | a | a | a | b | b | b | b | a | b | b | a | b | a | a | a | a | b | b | a | a | a | a | a | a | a | a | a | a | a | a |
| 67 | a | b | a | a | a | a | b | a | a | a | a | b | a | a | a | a | a | b | a | a | a | b | b | b | b | a | b | b | a | b | a | a | a | a | b | b | a | a | a | a | a | a | a | a | a | a | a | a |
| 68 | c | b | a | a | a | a | b | a | a | a | a | b | a | a | a | a | a | a | a | b | a | a | b | b | b | a | b | b | a | b | a | a | a | a | b | b | a | a | a | a | a | a | b | a | a | a | a | b |
| 69 | b | a | a | a | a | b | a | b | a | a | a | a | b | b | b | a | b | a | a | b | d | a | b | b | a | a | a | b | a | b | b | b | a | b | a | a | b | b | b | b | b | b | a | b | b | b | b | a |
| 70 | b | a | b | b | a | b | a | b | a | a | a | a | b | b | b | a | b | a | a | b | d | a | b | b | a | a | a | b | a | b | b | b | a | b | a | a | b | b | b | b | b | b | a | b | b | b | b | a |
| 71 | b | a | b | b | a | b | a | b | a | a | a | a | b | b | b | a | b | a | a | b | d | a | b | b | a | a | a | b | a | b | b | b | a | b | a | a | b | b | b | b | b | b | a | b | b | b | b | a |
| 72 | b | a | b | b | a | b | a | b | a | a | a | a | b | b | b | a | b | a | a | b | d | a | b | b | a | a | a | b | a | b | b | b | a | b | a | a | b | b | b | b | b | b | a | b | b | b | b | a |
| 73 | b | a | a | a | a | b | a | b | a | a | a | a | b | b | b | a | b | a | a | b | d | a | b | b | a | a | a | b | a | b | a | a | a | a | a | a | b | b | b | b | b | b | a | b | b | b | b | a |

a, b, c, d, e, f indicated the types of genetic polymorphisms in 73 rice accessions under specific molecular marker