**Supplementary Table 1.List of Simple sequence repeat (SSR) used for genotyping of bakanae resistance in rice varieties.**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Sl No** | **Marker** | **Chromosome** | **Repeat Motif** | **Annealing Temperature** | **Expected amplicon size** | **Sequence Forward (5’-3’)** | **Sequence Reverse (5’-3’)** | **Reference** |
| **1** | RM9 | 1 | (GA)15GT(GA)2 | 55 | 136 bp | ggtgccattgtcgtcctc | acggccctcatcaccttc | Fiyaz*et al.* 2016 |
| **2** | RM11282 | 1 | (TAAT)5 | 55 | 225 bp | ctgcattgcctccatcaacc | gcgttaagagatagcgaacacagg | Fiyaz*et al.* 2016 |
| **3** | RM10153 | 1 | (TC)10 | 55 | 226 bp | gcgaccgaataaatttccaagg | aaatacgagagccctttccatcc | Fiyaz*et al.* 2016 |
| **4** | RM5336 | 1 | (TC)12 | 55 | 117 bp | tcgatttggtcgcgattg | agaaatccccgaccacctc | Fiyaz*et al.* 2016 |
| **5** | RM10271 | 1 | (CT)14 | 55 | 319 bp | gcctgctgataaggatgttagc | tagacagcgttgatggtaaagc | Fiyaz*et al.* 2016 |
| **6** | RM35 | 1 | (GA)19 | 55 | 207 bp | tggttaatcgatcggtcgcc | cgacggcagatatacacgg | Fiyaz*et al.* 2016 |
| **7** | RM411 | 1 | (GTT)7 | 55 | 110 bp | acaccaactcttgcctgcat | tgaagcaaaaacatggctagg | Fiyaz*et al.* 2016 |
| **8** | RM3698 | 1 | (GA)15 | 55 | 177 bp | cagttccgttacaacctagtcg | aatctccagctgctgtagcg | Fiyaz*et al.* 2016 |
| **9** | RM7180 | 1 | (ATAG)6 | 55 | 209 bp | gtgtttataggggtgccacg | tgttggtggtgcaggtaaag | Yang *et al.* 2006 |
| **10** | RM486 | 1 | (CT)14 | 55 | 104 bp | cccccctctctctctctctc | tagccacatcaacagcttgc | Yang *et al.* 2006 |
| **11** | RM 8144 | 1 | (TA)31 | 55 | 185 bp | aaaagtagctatattttgggatggag | gtgaggaaattatcgaaacagataaa | Hur et al. 2015 |
| **12** | RM 11295 | 1 | (TA)14 | 55 | 152 bp | ggcgtacgggtgtactagataggg | cacgtacgaccatttcacaaacg | Hur et al. 2015 |

**Supplementary Table 2: Major allele frequency, gene diversity and polymorphism information content of 12 bakanae resistance markers in 121 varieties.**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Locus** | **Na** | **HO** | **HExp** | **PIC** | **F(Null)** | **Ne** | **I** | **uHe** |
| **RM9** | 2 | 0 | 0.496 | 0.372 | 0.9994 | 1.978 | 0.688 | 0.496 |
| **RM11282** | 2 | 0 | 0.498 | 0.373 | 0.9995 | 1.984 | 0.689 | 0.498 |
| **RM10153** | 2 | 0 | 0.032 | 0.031 | 0.4388 | 1.033 | 0.083 | 0.032 |
| **RM5336** | 2 | 0 | 0.177 | 0.161 | 0.9022 | 1.214 | 0.320 | 0.177 |
| **RM10271** | 2 | 0 | 0.164 | 0.15 | 0.8842 | 1.195 | 0.301 | 0.164 |
| **RM35** | 2 | 0 | 0.315 | 0.265 | 0.9859 | 1.458 | 0.494 | 0.315 |
| **RM411** | 2 | 0 | 0.273 | 0.235 | 0.9736 | 1.374 | 0.444 | 0.273 |
| **RM3698** | 2 | 0 | 0.499 | 0.374 | 0.9995 | 1.989 | 0.690 | 0.499 |
| **RM7180** | 2 | 0 | 0.492 | 0.37 | 0.9994 | 1.963 | 0.684 | 0.492 |
| **RM486** | 2 | 0 | 0.498 | 0.373 | 0.9995 | 1.984 | 0.689 | 0.498 |
| **RM8144** | 2 | 0 | 0.478 | 0.363 | 0.9992 | 1.908 | 0.669 | 0.478 |
| **RM11275** | 2 | 0 | 0.108 | 0.102 | 0.7712 | 1.120 | 0.218 | 0.108 |

Note: Na =Number of alleles per locus; N= Number of individuals; HO= Observed heterozygosity; HE= Expected heterozygosity; PIC= Polymorphic information content; F(null)= Estimated null allele frequency; Ne= Effective number of alleles per locus; I= Shannon’s information index; uHe = Unbiased Expected Heterozygosity

Na, N, HO, HE, PIC and F(null) were estimated using Cervus 3.0 software (Field Genetics Ltd., London, England) and Ne, I and uHe were calculated using GenAlEx 6.5 software (Peakall, R. and Smouse P.E. (2012) GenAlEx 6.5: genetic analysis in Excel. Population genetic software for teaching and research – an update. Bioinformatics 28, 2537-2539).

**Supplementary Table 3: Percentage of variation explained by the first 3 axes using bakanae disease resistance genes in PCoA analysis.**

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Axis** | | |
| **1** | **2** | **3** |
| **Variation of Individual axis (%)** | 17.78 | 14.61 | 13.43 |
| **Cumulative variation (%)** | 17.78 | 32.39 | 45.82 |

**Supplementary Table 4: Association of reported bakanae resistance molecular markers with bakanae resistance in 121 released varieties.**

|  |  |  |  |
| --- | --- | --- | --- |
| **Marker** | **marker\_F** | **p** | **marker\_R2** |
| RM9 | 0.70192 | 0.40379 | 0.00577 |
| RM11282 | 1.84497 | 0.1769 | 0.01502 |
| RM10153 | 0.42291 | 0.51672 | 0.00348 |
| RM5336 | 0.02519 | 0.87416 | 2.08E-04 |
| RM10271 | 0.24979 | 0.61813 | 0.00206 |
| RM35 | 0.3762 | 0.54079 | 0.0031 |
| RM411 | 0.35179 | 0.55421 | 0.0029 |
| RM3698 | 11.21293 | 0.00108 | 0.08481 |
| RM7180 | 0.49858 | 0.48148 | 0.0041 |
| RM486 | 0.19503 | 0.65955 | 0.00161 |
| RM8144 | 0.00667 | 0.93503 | 5.51E-05 |
| RM11275 | 0.00174 | 0.96681 | 1.44E-05 |