**Supplementary Table 1A**: Details of number of polymorphic markers used in the background analysis of NLR 34449 derived lines for BB *(Xa21, xa13 & xa5)* resistance

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **S. No** | **Primer name** | **Chr No.** | **Forward Primer Sequence** | **Reverse Primer Sequence** | **Physical position (Mb)** |
| **1** | RM3870 | 5 | GGAGTAGATGTAAAGCCAAAGGATGC | CATGTCTGAGTATGACGGAGTATTGC | 22.81 |
| **2** | RM18616 | 5 | TCTAGGCAGTTGGTGTAACTCAGTGG | AACTCAAGTCTCAAGCCATCTACAGG | 19.11 |
| **3** | RM159 | 5 | GGGGCACTGGCAAGGGTGAAGG  | GCTTGTGCTTCTCTCTCTCTCTCTCTCTC | 0.40 |
| **4** | RM18600 | 5 | ACGAATCTGGAGAGAAGCATCCAACC | CTGCAATTTGCGACAAGGGTTCC | 18.90 |
| **5** | RM1386 | 5 | TCAAGCTGCATTAGGAAGACACC | AACTTAGCTGAAACGCAACACG | 19.90 |
| **6** | RM592 | 5 | TCTTTGGTATGAGGAACACC  | AGAGATCCGGTTTGTTGTAA | 0.12 |
| **7** | RM18516 | 5 | CTTTCGTCCTGTACGTAAACC | TCAAACTACCCTCACATTCTCC | 17.35 |
| **8** | RM507 | 5 | TGCCCATGTATGTGAGGTACTCC | GCCTAATCCAGGACAAGCTACGG | 0.71 |
| **9** | RMES5-1 | 5 | TATGATAGCGCCTTCGGAGT | GAGATTAACGTGCGCTCCTC | 1.00 |
| **10** | RM413 | 5 | CCAATCTTGTCTTCCGGATCTTGC | AGATAGCCATGGGCGATTCTTGG | 2.10 |
| **11** | RM548 | 5 | GCTCTTCCAAACAACACCTTAGC | GACAAGAGAACATCGCTAGGAAGC | 2.75 |
| **12** | RM17950 | 5 | GGAAATGTGCATAGGTAGTTCAGG | GAGTTGGGAACTGCTACAAACG | 3.40 |
| **13** | JGT05-5 | 5 | TGTAGGAAGACATGTGGCAGCT | TACAACTAGATGCAATGGCACC | 5.00 |
| **14** | RM18270 | 5 | GTGTACATCCTGTTGTTGACTGC | AAGAACATCTCTCCTTCTGTGC | 11.51 |
| **15** | RM18362 | 5 | TTACCAACCGGGACTAAAGATCG | CACCGGTCCTTAGCTTCTGAGC | 14.08 |
| **16** | RM5933 | 8 | AGCGATTCAGAACGAATCAACG | TGCCAAAGCTACACAAATCTGACC | 27.46 |
| **17** | RM458 | 8 | GGTGATCTGCATTGTCAACG | TGCAATGGATCTAGCGACTG |  27.35 |
| **18** | RM042 | 8 | ATCCTACCGCTGACCATGAG | TTTGGTCTACGTGGCGTACA | 21.46 |
| **19** | RM22362 | 8 | GCCGATCGAGATTCTACTGATAAGG | GATAAAGAGCACCAGAGCGTTCC | 26.60 |
| **20** | RM22585 | 8 | CACCGATTATTGTCGTATGG | AGTGAGGAAGGGAAGAATACG | 6.00 |
| **21** | RM22622 | 8 | TAGGCCGTTCTGACGTAATACCC | CAGTGATGGTGATGCGATTTAGC | 7.08 |
| **22** | RM22864 | 8 | CGGGTGGTGTGAACCTATTCC | CACAACACAACTCACCACAGTGC | 13.57 |
| **23** | RM23237 | 8 | TAAAGCATTTGGACGGTGGATGG | GAGGTGGGTGTGACCCTTGG | 22.30 |
| **24** | RM22612 | 8 | CTGATATGATGATCCCAACCTTGC | GAGCTAGGCATAGAGCGAGAGG | 6.7 |
| **25** | RM22299 | 8 | ACGCTTCACATTGTAACACACAGG | GATCGATTGATCGGTGCTTTCC | 1.20 |
| **26** | RM22977 | 8 | ATGCATGGGCTAAATGATGAGC | TGCAGACCACAAAGAAGTTTGC | 16.93 |
| **27** | RM23029 | 8 | GGTGAATTCTACTACGACGGATCG | GGTCGTGCTCATGACAATTAAGG | 18.51 |
| **28** | JGT08-19.5 | 8 | TTCTGAAAAAGCTCTGACCAAGC | ACTAGCTACATGCTGCAGTGCAT | 19.50 |
| **29** | RM23096 | 8 | GTGCAATCATGTTCACATCAGC | AAATAGACTACTGGGTGCGTTCG | 19.90 |
| **30** | RM22359 | 8 | TAGGAATAATCGCTGCATGG | GGCTTGAGAGCGTTTGTAGG | 26.20 |
| **31** | RM286 | 11 | GGCTTCATCTTTGGCGAC  | CCGGATTCACGAGATAAACTC | 0.30 |
| **32** | RM27322 | 11 | AGAGCCCATGTAGCTACGCCTTCG | AATCATGCCGGCTGAAATTGTACC | 27.55 |
| **33** | Chr11-8.9 | 11 | TTGAACACCCATAGACAAACAGC | TGGCAAGTGGTATTCTTCCTTCC | 8.90 |
| **34** | Chr11-11.4 | 11 | AGAGCATCTGTGTTGGTAAGTTGG | CGAGGCATCTTTGAGGTCTATCC | 11.40 |
| **35** | Chr11-28.1 | 11 | ACATATCGACGGTGGATGAGAGC | TCCGTGTGCATACATTCTTGAGC | 28.10 |
| **36** | Chr11-21.1 | 11 | CTCACACTTGCAACATCCTAGC | AAGGCTCTAGTTGGTGAAGACC | 21.10 |
| **37** | RM21 | 11 | ACAGTATTCCGTAGGCACGG | GCTCCATGAGGGTGGTAGAG | 22.04 |
| **38** | RM26567 | 11 | CTGTGGTAGGACCGGCTCTATGAAGG | GGGAGGTTGGTGTGACCCTTGG | 12.83 |
| **39** | RM26123 | 11 | CACGTCTAGCCGAAATCATAGAGG | CCCGACAAATGGATAGACAGTCC | 3.00 |
| **40** | RM209 | 11 | ATATGAGTTGCTGTCGTGCG  | CAACTTGCATCCTCCCCTCC | 17.80 |
| **41** | RM27096 | 11 | AGTTAGGATCGCTTCCAGGTTCC | TCCAACTGGAATATCGTCTTGTAGGC | 23.40 |
| **42** | RM287 | 11 | GGCTACACCTACACGCGAGAACC | AGATGCATGGAATGCCTGTTTGG | 16.70 |
| **43** | RM26784 | 11 | CGTTATTGCGGATGACAGAAACG | GGCATGAGACACAACCAGATCG | 17.53 |
| **44** | Chr11-17.9 | 11 | TATGGCGTGTAAGAGGATTAGAGG | TCTTGGTGGTCGTGTAAGATTAGC | 17.90 |
| **45** | Chr11-19.5 | 11 | CATGTAACTCCTCTTGCCTCTGC | CATGTAACTCCTCTTGCCTCTGC | 19.50 |
| **46** | Chr11-20.5 | 11 | AGAGGATGAACTACAGGGCAAGC | GTGAGGTGGGAACTAATCCATCG | 20.50 |
| **47** | Chr11-23.1 | 11 | CCACGTGTCAGTCATCCATCTAGG | GGTCTGCTCGATTACCATCAAACTCC | 23.10 |
| **48** | Chr11-23.7 | 11 | TTGTGAAGAAGAGCGATGGTTTCC | TAGCGTGGAGATCTGTGTTGACAGC | 23.70 |
| **49** | Chr11-5.8 | 11 | AAGACAAGGAGGTTCCAGTGTCC | GCCCTAAACCCAAATAGAAGAACG | 5.80 |
| **50** | RM27034 | 11 | AGGCCCTCGCGTGTACATACC | ATCCGACCCACGGTAATCTGAGG | 22.30 |
| **51** | RM330 | 11 | CAATGAAGTGGATCTCGGAG  | CATCAATCAGCGAAGGTCC | 25.10 |

Parental polymorphic primers represented along with sequences and physical position in the vicinity of *xa5, xa13* and *Xa21* genes on respective chromosome 5, 8 and 21.

**Supplementary table 1B:** List of Microsatellite markers that are polymorphic between NLR 34449 and ISM

|  |  |  |  |
| --- | --- | --- | --- |
| **Chromosome number** | **No. of markers used for analysis** | **No. of polymorphic markers** | **Name of the polymorphic primer** |
| 1 | 66 | 10 | JGT 01-16.2, RM10111, RM10078, RM10033, RM3148, RM6324, RM10115, RM3412, RM493, RM10816 |
| 2 | 39 | 7 | Chr2-0.12, Chr2-6.7, RM3443, RMES2-1, RM6942, RM13263, RM1385 |
| 3 | 38 | 7 | RM14250, RM15404, RM15203, HRM15679, RM14931, RM15326, RM15630 |
| 4 | 94 | 7 | RM16945, RMES4-2, RM16738, RM5742, RM6909, RM5953, RM17600 |
| 5 | 61 | 16 | RM3870, RM18616, RM159, RM18600, RM1386, RM592, RM18516, RM507, RMES5-1, RM413, RM548, RM17950,JGT05-5.0, RM18270, RM18362. |
| 6 | 75 | 7 | Chr6-29.6, RM589, RM19291, RM19691, ESSR06-7.1, RM19417, RM287 |
| 7 | 106 | 12 | RM21435, RM6697, RM21605, RM172, RM21976, RM21039, RM118, RM21260, RM21103, RM21435, RM21693, RM21749 |
| 8 | 88 | 15 | RM5933, RM458, RM042, RM22362, RM22585, RM22622, RM22864, RM23237, RM22612, RM22299, RM22977, RM23029, JGT08-19.5, RM23096, RM22359 |
| 9 | 50 | 7 | RMES9-2, SSR9-19.9, SSR-9-12.7, SSR-9-5.5, SSR-9-2.4, SSR9-13, HRM 24199 |
| 10 | 45 | 7 | RM258, RM171, Chr10-14, Chr10-17.9, JGT10-0.3, RM25262, RM484 |
| 11 | 78 | 22 | RM286, RM27322, RM224, Chr11-8.9, Chr11-11.4, Chr11-28.1, Chr11-21.1, RM21, RM26567, RM26213, RM209, RM27096, RM287, RM26784, Chr11-17.9, Chr11-19.5, Chr11-20.5, RM27034,, Chr11-23.1, Chr11-23.7, RM330, Chr11-5.8. |
| 12 | 50 | 10 | RM28610, RM28067, RM28157, RM28277, ESSR12-20.2, RM6869, RM235, ESSR12-23.4, RM277, RM28424 |
| Total | 790 | 127 |  |

Genomic DNA was isolated, PCR was performed and polymorphisms analysed between recurrent and donor parents. A total of 127 markers observed to be polymorphic between NLR 34449 and ISM along all the 12 chromosomes of rice. The marker details such as chromosome number, number of markers analyzed for polymorphic survey, name and number of polymorphic primers observed in polymorphic survey.

NLR 34449: Nellore Mahsuri; ISM: Improved Samba Mahsuri