Supplementary Table 1 - The name, the geographical location, level of tolerance (submergence and salinity) of the rice land races used in this study.

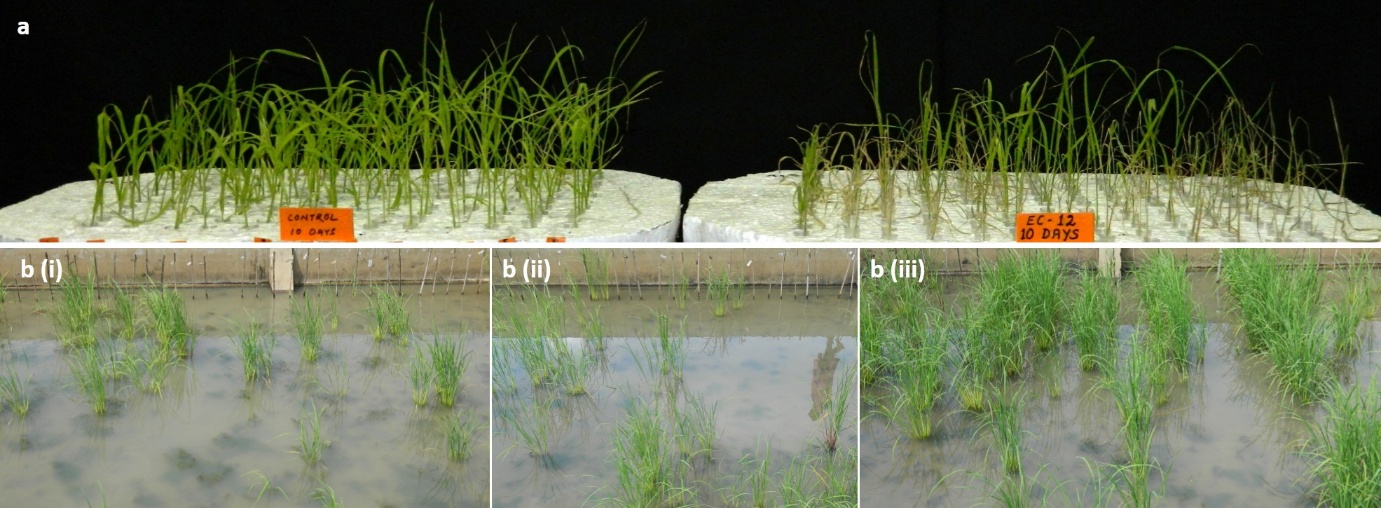
|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Accession number | Cultivar | Village/  District | State | Submergence  Tolerance | Salinity Tolerance |
| FR13A |  |  |  | HT | - |
| FL478 |  |  |  | - | T |
| IR42 |  |  |  | HS | - |
| IR29 |  |  |  | - | HS |
| IC145150-B | - | - | - | MT | S |
| IC203801 | - | [Wayanad](https://en.wikipedia.org/wiki/Wayanad_district) | Kerala | T | HS |
| IC203801-1 | - | - | Kerala | HS | MT |
| IC203815 | - | Kannur | Kerala | HS | MT |
| IC203817 | - | [Wayanad](https://en.wikipedia.org/wiki/Wayanad_district) | Kerala | HS | S |
| IC203817-1 | - | - | Kerala | HS | HS |
| IC203821 | - | Kannur | Kerala | HS | HS |
| IC203821-A | - | - | Kerala | HS | T |
| IC203778 | - | Kannur | Kerala | T | S |
| IC203778-2 | - | - | Kerala | HS | MT |
| IC203821-1 | - | Kannur | Kerala | HS | T |
| IC211147 | - | - | - | HS | S |
| IC211188 | RDR 294 | Ruddur | AP | HS | S |
| IC211188-1 |  |  | AP | HS | T |
| IC211189 | RDR 756 | Ruddur | AP | T | S |
| IC211197 | RDR -8702 | Ruddur | AP | T | S |
| IC256282 | - | - | - | HS | S |
| IC256282-1 | - | - | - | S | S |
| IC256282-IV | - | - | - | HS | S |
| IC264718 | Karavala | Alappuzha | Kerala | MT | S |
| IC264724 | 2001 | Kollam | Kerala | MT | T |
| IC264727 | Cherumallaran | Kollam | Kerala | S | MT |
| IC264727-1 | Cherumallaran | Kollam | Kerala | S | S |
| IC264727-2 | Cherumallaran | Kollam | Kerala | S | S |
| IC264764 | Chettivirippu | Alappuzha | Kerala | HS | S |
| IC264764-1 | Chettivirippu | Alappuzha | Kerala | HS | HS |
| IC264764-2 | Chettivirippu | Alappuzha | Kerala | T | S |
| IC264727-3 | Cherumallaran | Kollam | Kerala | T | S |
| IC264766 | Kuruka | Alappuzha | Kerala | T | S |
| IC264766-1 | Kuruka | Alappuzha | Kerala | HS | S |
| IC32458gA | Pokkali | Ernakulam | Kerala | MT | S |
| IC324580 | Pokkali | Ernakulam | Kerala | T | S |
| IC324582A | Pokkali | Ernakulam | Kerala | T | S |
| IC324582 | Pokkali | Ernakulam | Kerala | T | S |
| IC324583 | Pokkali | Ernakulam | Kerala | T | HS |
| IC324584-A | Pokkali | Ernakulam | Kerala | HS | HS |
| IC324584 | Pokkali | Ernakulam | Kerala | T | HS |
| IC324584-A2 | Pokkali | Ernakulam | Kerala | HS | MT |
| IC324584-1 | Pokkali | Ernakulam | Kerala | T | S |
| IC324584-2 | Pokkali | Ernakulam | Kerala | T | S |
| IC324587-A | Pokkali | Ernakulam | Kerala | HS | S |
| IC324598 | Pokkali | Alleppey | Kerala | HS | S |
| IC324598-1 | Pokkali | Alleppey | Kerala | HS | S |
| IC324607 | Pallippuram Pokkali | Alleppey | Kerala | HS | S |
| IC324607-2 | Pallippuram Pokkali | Alleppey | Kerala | HS | S |
| IC324608 | Elamkulam Pokkali | Ernakulam | Kerala | HS | S |
| IC324608-1 | Elamkulam Pokkali | Ernakulam | Kerala | HS | S |
| IC324610 | Vadanakkudi Pokkali | Ernakulam | Kerala | HS | S |
| IC324610-1 | Vadanakkudi Pokkali | Ernakulam | Kerala | S | MT |
| IC413607 | Chettivirippu | Alappuzha | Kerala | HS | S |
| IC413608 | Pokkali | Alappuzha | Kerala | T | MT |
| IC413609 | Kuruka | Alappuzha | Kerala | T | S |
| IC413612 | Kuruka | Alappuzha | Kerala | MT | S |
| IC413613 | Chettivirippu | Alappuzha | Kerala | MT | S |
| IC413614 | Virippu | Alappuzha | Kerala | HS | S |
| IC413616 | Virippu | Alappuzha | Kerala | HS | S |
| IC413617 | Kuruka | Ernakulam | Kerala | HS | S |
| IC413629 | Pokkali | Ernakulam | Kerala | T | MT |
| IC413630 | Pokkali | Ernakulam | Kerala | T | S |
| IC413631 | Pokkali | Ernakulam | Kerala | HS | S |
| IC413633 | Pokkali | Ernakulam | Kerala | MT | S |
| IC413634 | Pokkali | Ernakulam | Kerala | MT | S |
| IC413636 | Ayyampilly Pokkali | Ernakulam | Kerala | T | S |
| IC413636-1 | Ayyampilly Pokkali | Ernakulam | Kerala | HS | S |
| IC413638 | Vytilla-4 | Ernakulam | Kerala | T | S |
| IC413639 | Ayyampilly Pokkali | Ernakulam | Kerala | T | S |
| IC413640 | Nedungodu Pokkali | Ernakulam | Kerala | T | MT |
| IC413643 | D1 (culture) | Ernakulam | Kerala | T | S |
| IC413644 | Cherayi Pokkali | Ernakulam | Kerala | MT | S |
| IC413645 | Kuzhippuli Pokkali | Ernakulam | Kerala | T | S |
| IC413646 | Kuzhippuli Pokkali | Ernakulam | Kerala | T | S |
| IC536558 | Sulochana | Malappuram | Kerala | T | T |
| IC536559 | Aivirammeni | Malappuram | Kerala | T | T |
| IC536604 | Kunjukunju | Malappuram | Kerala | T | T |
| IC536604-1 | Kunjukunju | Malappuram | Kerala | T | T |
| IC399100 | Nikunja | SouthParganas | WB | HS | S |
| IC594019 | Nonabokra | 24Parganas (S) | WB | S | T |
| IC594004 | Getu | 24Parganas (S) | WB | S | MT |
| AC-34902 | Canning7 | - | WB | T | T |
| IC264730 | Orumundukan | Alappuzha | Kerala | HS | MT |
| IC324589 | Pokkali | Ernakulam | Kerala | T | T |
| Lunibokra | Lunibokra | - | WB | S | T |
| Nagarmutha | Nagarmutha | - | WB | HS | S |
| Pateni-23 | Pateni 23 | - | WB | S | MT |
| IC594004-1 | Getu | 24Parganas (S) | WB | T | S |
| Lunibakra | lunibakra | - | WB | HS | T |
| Lunidhan | Lunidhan | - | WB | HS | S |
| IC462840 | Leelabati | Dhenkanal | Odisha | HS | S |
| IC594005 | Rupsal | 24 Parganas (S) | WB | HS | S |
| Pateni | Pateni | - | WB | HS | S |
| Patri | Patri | - | WB | HS | S |
| AC-42461 | Asphal | - | WB | HS | S |
| IC283126 | Bhaluki | Kendrapara | Odisha | HS | S |
| AC-42415 | Nagarsali | - | WB | HS | S |
| Ladu | Ladu | - | WB | HS | S |
| IC593999 | Marisal | 24 Parganas (S) | WB | HS | S |
| AC-35710 | Matiya | - | WB | HS | S |
| Bhunurati | Bhunurati | - | WB | HS | S |

Note – HS: highly susceptible; S: susceptible; MT: moderately tolerant; T: tolerant: HT: highly tolerant

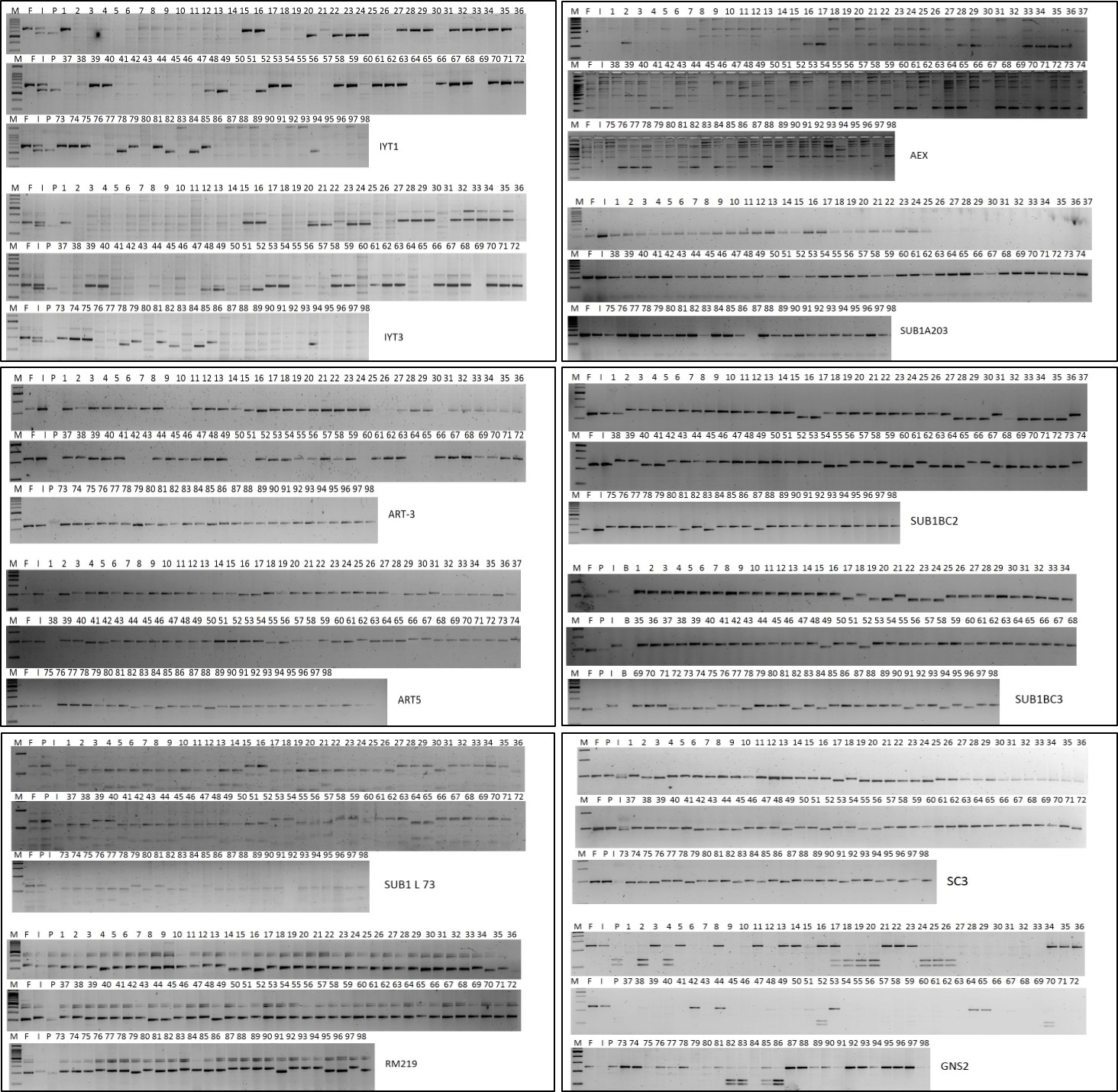
Supplementary Table 2 – Physiological response of the genotypes under salinity and submergence condition

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| ***Ac. No.*** | **Salinity** | | **Submergence** | | |
|  | ***SES*** | ***SUR%*** | ***SES*** | ***SUR%*** | ***ELOG%*** |
| **Control (+ve)** | 3 | 85 | 1 | 95 | 125 |
| **Control (-ve)** | 9 | 12 | 9 | 15 | 220 |
| IC145150-B | 7 | 26 | 5 | 55 | 146 |
| IC203801 | 9 | 14 | 3 | 75 | 153 |
| IC203801-1 | 5 | 47 | 9 | 11 | 170 |
| IC203815 | 5 | 45 | 9 | 7 | 155 |
| IC203817 | 7 | 31 | 9 | 12 | 115 |
| IC203817-1 | 9 | 18 | 9 | 9 | 209 |
| IC203821 | 9 | 13 | 9 | 16 | 245 |
| IC203821-A | 3 | 77 | 9 | 18 | 197 |
| IC203778 | 7 | 27 | 3 | 79 | 50 |
| IC203778-2 | 5 | 58 | 9 | 12 | 167 |
| IC203821-1 | 3 | 72 | 9 | 11 | 198 |
| IC211147 | 7 | 24 | 9 | 16 | 190 |
| IC211188 | 7 | 25 | 9 | 17 | 145 |
| IC211188-1 | 3 | 73 | 9 | 19 | 151 |
| IC211189 | 7 | 37 | 3 | 71 | 132 |
| IC211197 | 7 | 22 | 3 | 76 | 118 |
| IC256282 | 7 | 31 | 9 | 16 | 115 |
| IC256282-1 | 7 | 34 | 7 | 29 | 108 |
| IC256282-2 | 7 | 26 | 9 | 12 | 175 |
| IC264718 | 7 | 35 | 5 | 59 | 165 |
| IC264724 | 3 | 73 | 5 | 56 | 145 |
| IC264727 | 5 | 56 | 7 | 37 | 135 |
| IC264727-1 | 7 | 33 | 7 | 32 | 120 |
| IC264727-2 | 7 | 35 | 7 | 34 | 121 |
| IC264764 | 7 | 38 | 9 | 12 | 139 |
| IC264764-1 | 9 | 16 | 9 | 16 | 100 |
| IC264764-2 | 7 | 33 | 3 | 75 | 147 |
| IC264727 | 7 | 40 | 3 | 73 | 155 |
| IC264766 | 7 | 23 | 3 | 75 | 170 |
| IC264766-1 | 7 | 34 | 9 | 16 | 250 |
| IC32458gA | 7 | 26 | 5 | 56 | 119 |
| IC324580 | 7 | 27 | 3 | 76 | 117 |
| IC324582A | 7 | 25 | 3 | 72 | 102 |
| IC324582 | 7 | 26 | 3 | 77 | 117 |
| IC324583 | 9 | 12 | 3 | 76 | 131 |
| IC324584-A | 9 | 17 | 9 | 11 | 159 |
| IC324584 | 9 | 10 | 3 | 75 | 157 |
| IC324584-A-2 | 5 | 54 | 9 | 15 | 190 |
| IC324584-1 | 7 | 36 | 3 | 77 | 126 |
| IC324584-2 | 7 | 34 | 3 | 79 | 123 |
| IC324587-A | 7 | 23 | 9 | 13 | 176 |
| IC324598 | 7 | 39 | 9 | 17 | 146 |
| IC324598-1 | 7 | 32 | 9 | 18 | 149 |
| IC324607 | 7 | 33 | 9 | 16 | 132 |
| IC324607-2 | 7 | 28 | 9 | 15 | 290 |
| IC324608 | 7 | 25 | 9 | 16 | 255 |
| IC324608-1 | 7 | 21 | 9 | 16 | 227 |
| IC324610 | 7 | 39 | 9 | 14 | 290 |
| IC324610-1 | 5 | 55 | 7 | 29 | 168 |
| IC413607 | 7 | 25 | 9 | 17 | 175 |
| IC413608 | 5 | 45 | 3 | 70 | 95 |
| IC413609 | 7 | 38 | 3 | 75 | 100 |
| IC413612 | 7 | 35 | 5 | 55 | 75 |
| IC413613 | 7 | 35 | 5 | 51 | 95 |
| IC413614 | 7 | 31 | 9 | 13 | 210 |
| IC413616 | 7 | 27 | 9 | 11 | 226 |
| IC413617 | 7 | 35 | 9 | 17 | 176 |
| IC413629 | 5 | 59 | 3 | 79 | 250 |
| IC413630 | 7 | 20 | 3 | 75 | 120 |
| IC413631 | 7 | 29 | 9 | 13 | 145 |
| IC413633 | 7 | 39 | 5 | 58 | 140 |
| IC413634 | 7 | 25 | 5 | 48 | 155 |
| IC413636 | 7 | 26 | 3 | 76 | 170 |
| IC413636-1 | 7 | 24 | 9 | 19 | 120 |
| IC413638 | 7 | 36 | 3 | 77 | 222 |
| IC413639 | 7 | 31 | 3 | 73 | 105 |
| IC413640 | 5 | 55 | 3 | 78 | 167 |
| IC413643 | 7 | 27 | 3 | 77 | 110 |
| IC413644 | 7 | 28 | 5 | 51 | 150 |
| IC413645 | 7 | 36 | 3 | 78 | 62 |
| IC413646 | 7 | 35 | 3 | 75 | 95 |
| IC536558 | 3 | 78 | 3 | 70 | 112 |
| IC536559 | 3 | 72 | 3 | 67 | 134 |
| IC536604 | 3 | 77 | 3 | 72 | 126 |
| IC536604-1 | 3 | 79 | 3 | 79 | 111 |
| IC-399100 | 7 | 35 | 9 | 14 | 145 |
| IC-594019 | 3 | 80 | 9 | 15 | 190 |
| IC-594004 | 5 | 45 | 7 | 31 | 156 |
| AC-34902 | 3 | 71 | 3 | 75 | 132 |
| IC264730 | 5 | 45 | 9 | 15 | 128 |
| IC324589 | 3 | 78 | 3 | 79 | 127 |
| LUNIBOKRA | 3 | 78 | 7 | 32 | 165 |
| NAGARMUTHA | 7 | 29 | 9 | 13 | 155 |
| PATENI-23 | 5 | 56 | 7 | 34 | 178 |
| IC594004 | 7 | 39 | 3 | 78 | 119 |
| LUNIBAKRA | 3 | 77 | 9 | 12 | 174 |
| LUNIDHAN | 7 | 25 | 9 | 14 | 320 |
| IC462840 | 7 | 33 | 9 | 16 | 233 |
| IC594005 | 7 | 32 | 9 | 19 | 287 |
| PATENI | 7 | 29 | 9 | 16 | 341 |
| PATRI | 7 | 22 | 9 | 15 | 310 |
| AC42461 | 7 | 27 | 9 | 12 | 220 |
| IC283126 | 7 | 27 | 9 | 11 | 267 |
| AC42415 | 7 | 26 | 9 | 12 | 298 |
| LADU | 7 | 36 | 9 | 16 | 312 |
| IC593999 | 7 | 29 | 9 | 17 | 246 |
| AC35710 | 7 | 25 | 9 | 18 | 205 |
| BHUNURATI | 7 | 25 | 9 | 14 | 210 |

Supplementary Fig. 1 – Recovery of tolerant/survived plants after (a) salinity and (b) submergence stress.



Supplementary Fig. 2 – Gel picture depicting allelic variation among genotypes for *Sub1* QTL linked markers



Supplementary Fig. 3 – Gel picture depicting allelic variation among genotypes for *Saltol* QTL linked markers

