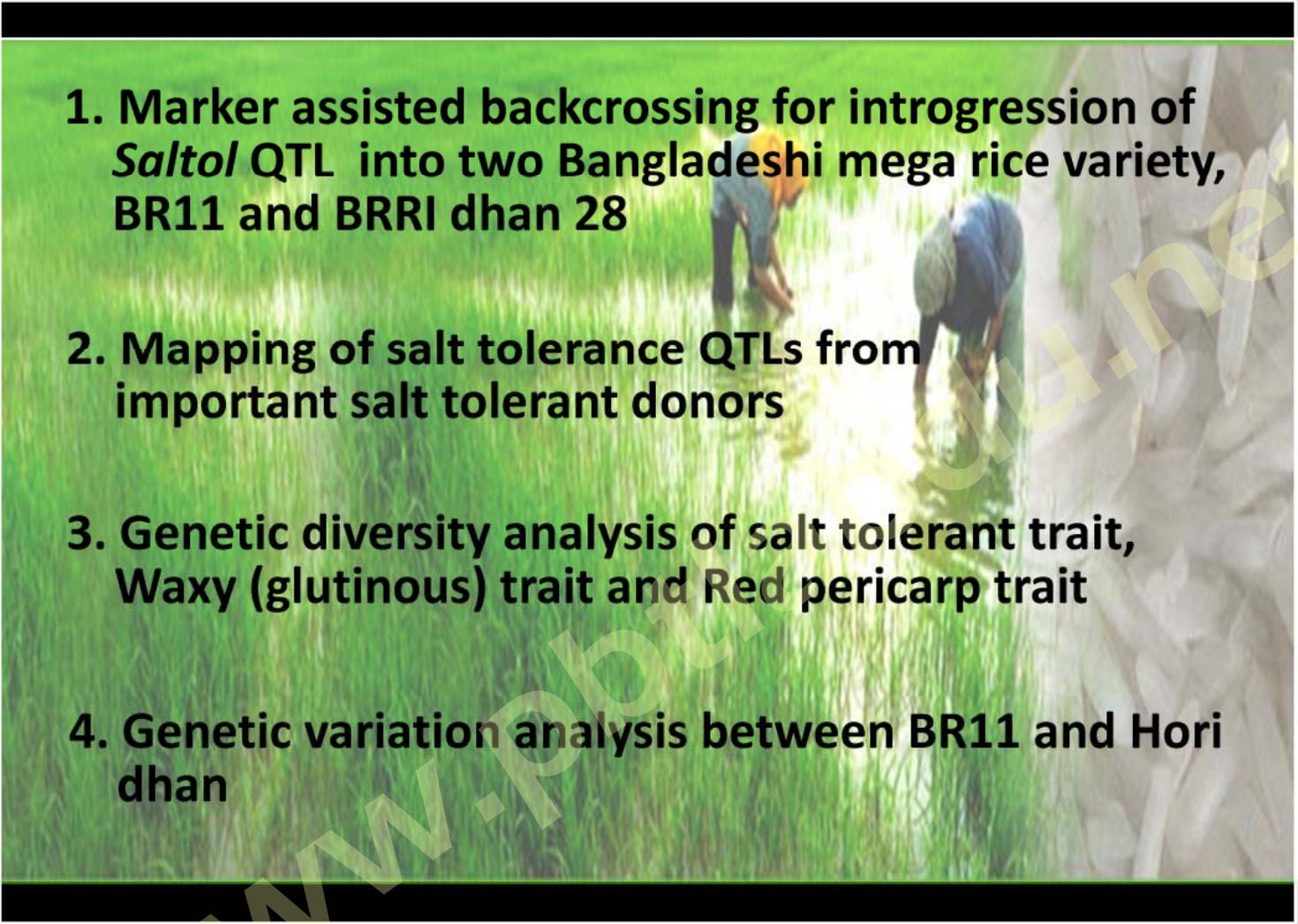


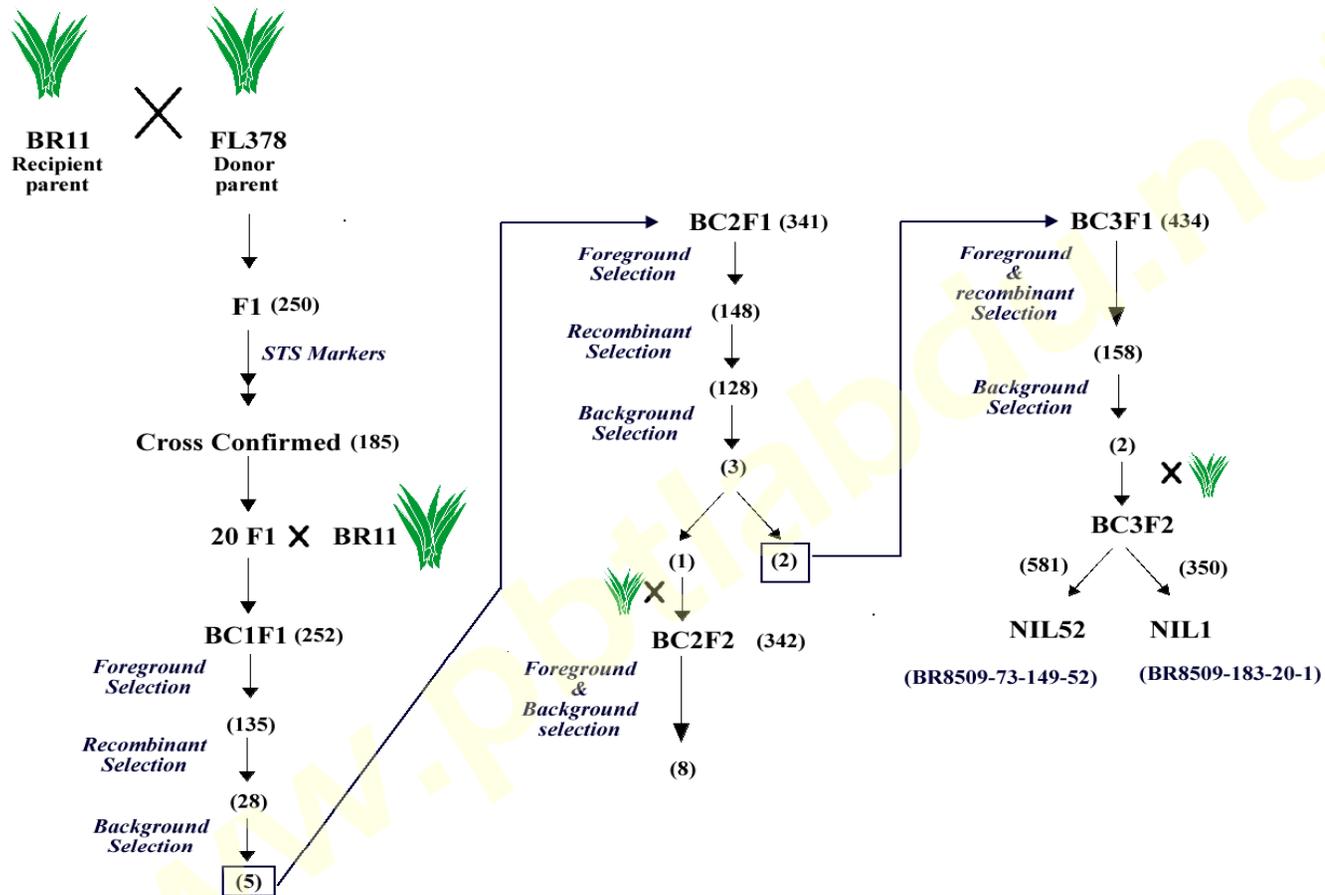
The image shows four wooden bowls filled with different types of rice, arranged in a 2x2 grid. The top-left bowl contains a mix of black and white rice. The top-right bowl contains white rice. The bottom-left bowl contains yellow rice. The bottom-right bowl contains brown rice. The bowls are set against a background of vertical wooden slats.

Rice Research using Molecular Marker

- 
1. Marker assisted backcrossing for introgression of *Saltol* QTL into two Bangladeshi mega rice variety, BR11 and BRRI dhan 28
 2. Mapping of salt tolerance QTLs from important salt tolerant donors
 3. Genetic diversity analysis of salt tolerant trait, Waxy (glutinous) trait and Red pericarp trait
 4. Genetic variation analysis between BR11 and Hori dhan

Use of Molecular Markers in Rice Breeding

Marker Assisted Backcrossing : Development of Salt tolerant version of BR11 (BR11-saltol)





Parents (BR11 and FL378) grown in the field for Hybridization



Emasculation of recipient parent for Hybridization



Dusting of pollen from donor parent into emasculated spikelets of recipient parent



Panicles wrapped with paper bags after hybridization to prevent cross-pollination



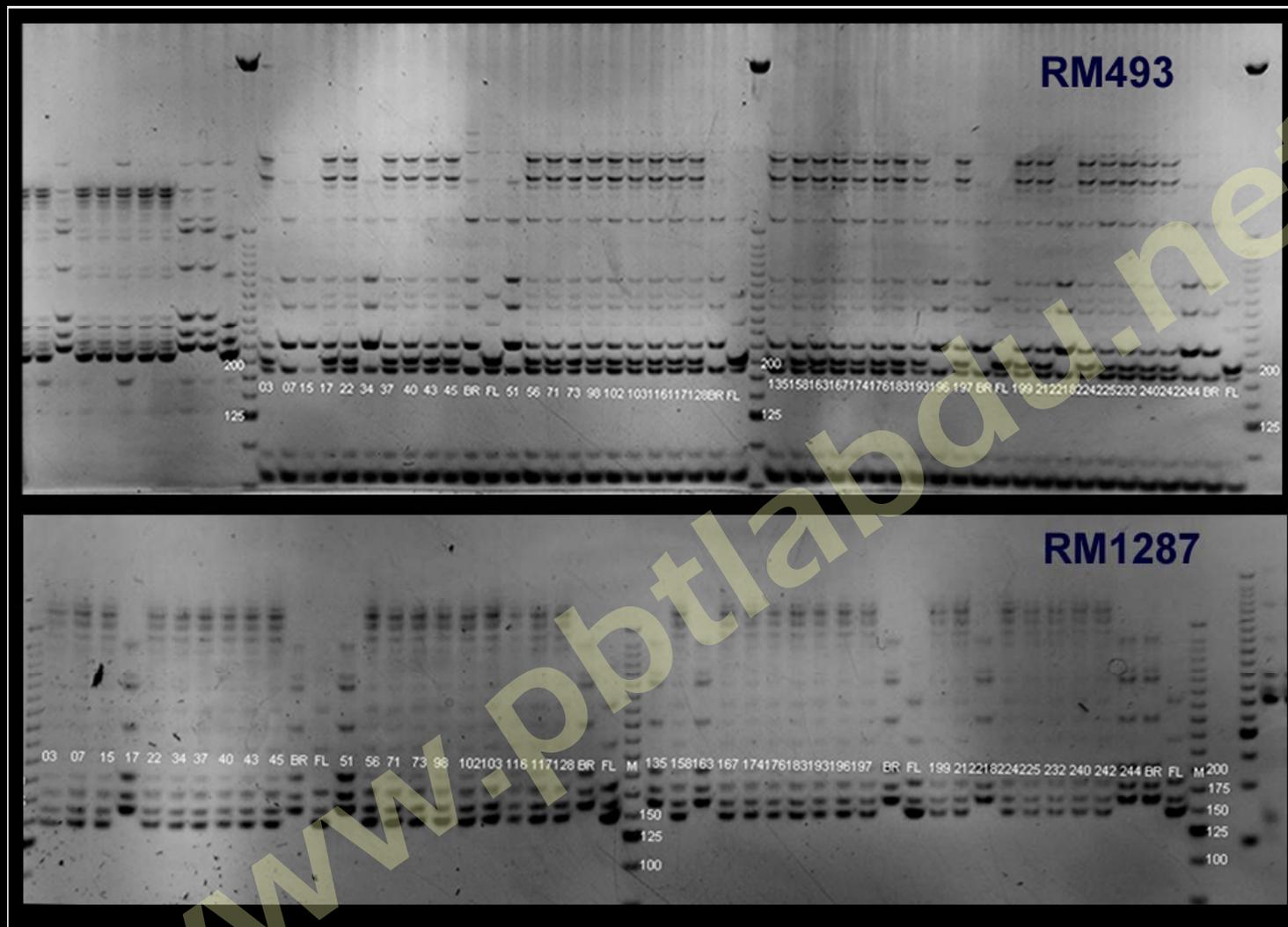
Backcross progenies planted in the field for genotyping and subsequent backcrossing of selected progeny



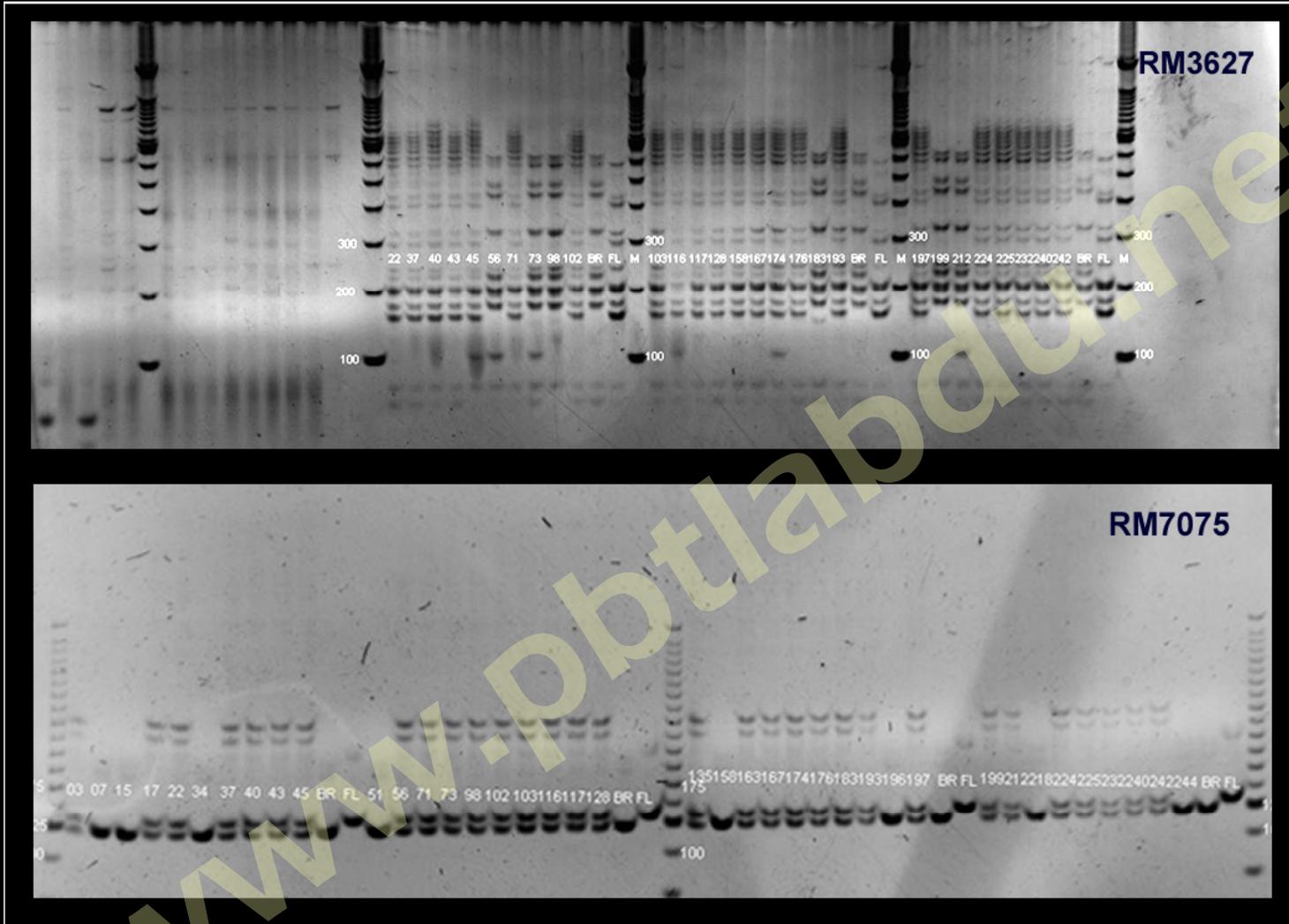
Leaf collection for DNA isolation and genotyping with SSR markers



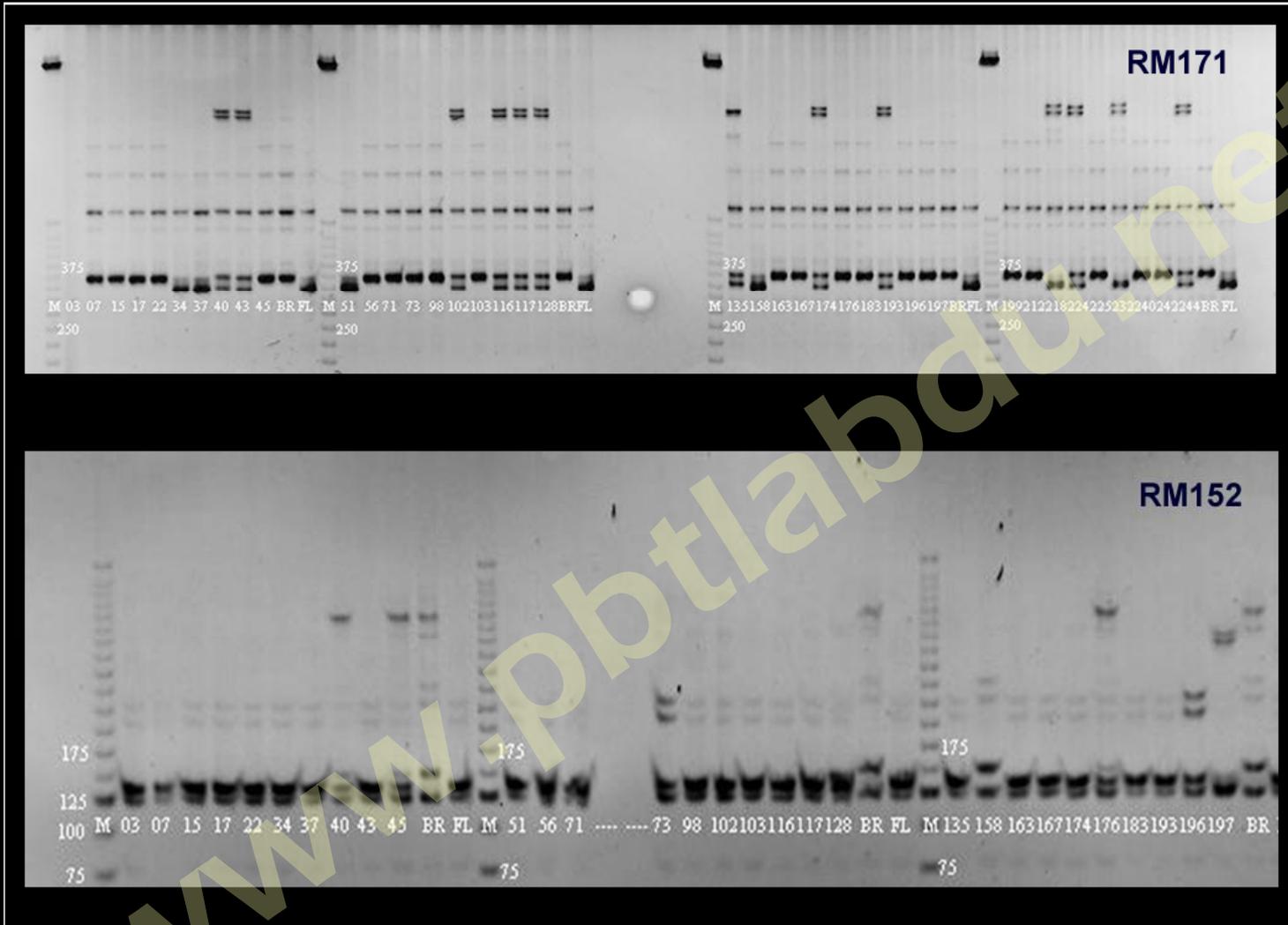
PAGE loading for visualization and scoring



Foreground Selection



Recombinant Selection



Background Selection



Checking phenotype at advanced backcross stage



**After 3 backcrossing and genotyping, the fixed BR11-
Saltol lines in the field**



Seed multiplication of BR11-*Saltol* lines in the field condition at BRRI (Boro, 2009-10)



**Screening against salinity at seedling stage of some early lines
at second backcross stage**



QTL mapping from Bangladeshi salt tolerant donor Boilam



Leaf collection for genotyping of segregating progenies of Boilam reproductive stage QTL mapping

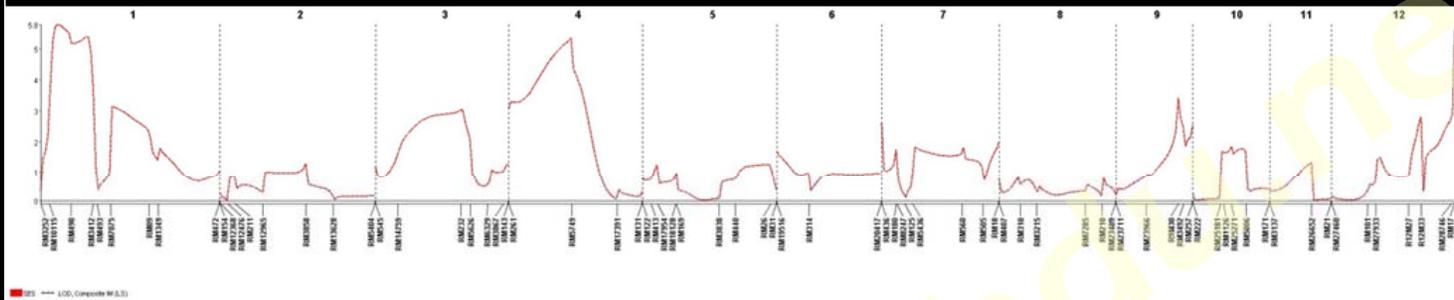


Screening for reproductive stage QTL mapping from Boilam

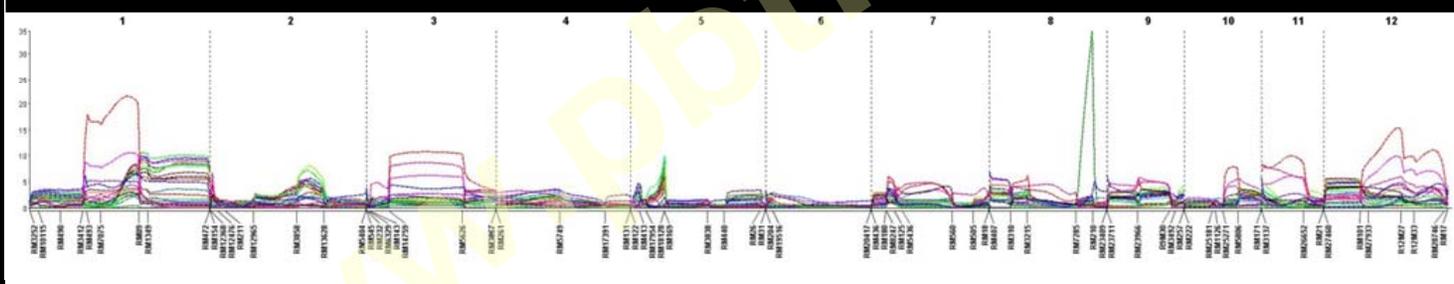


Checking the salt injury on the reproductive organ of segregating progenies

QTLs identified at seedling stage from Boilam

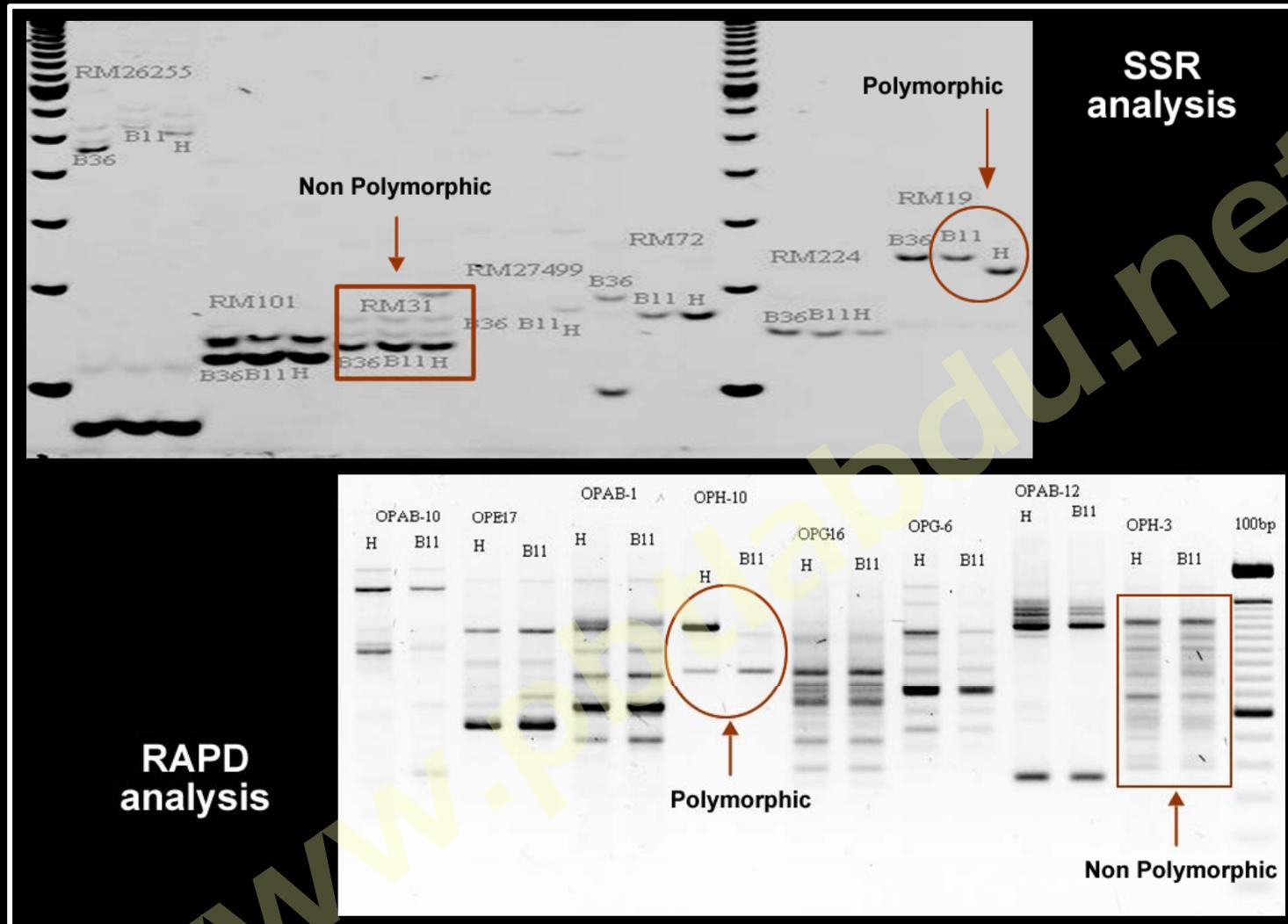


QTLs identified at reproductive stage from Boilam

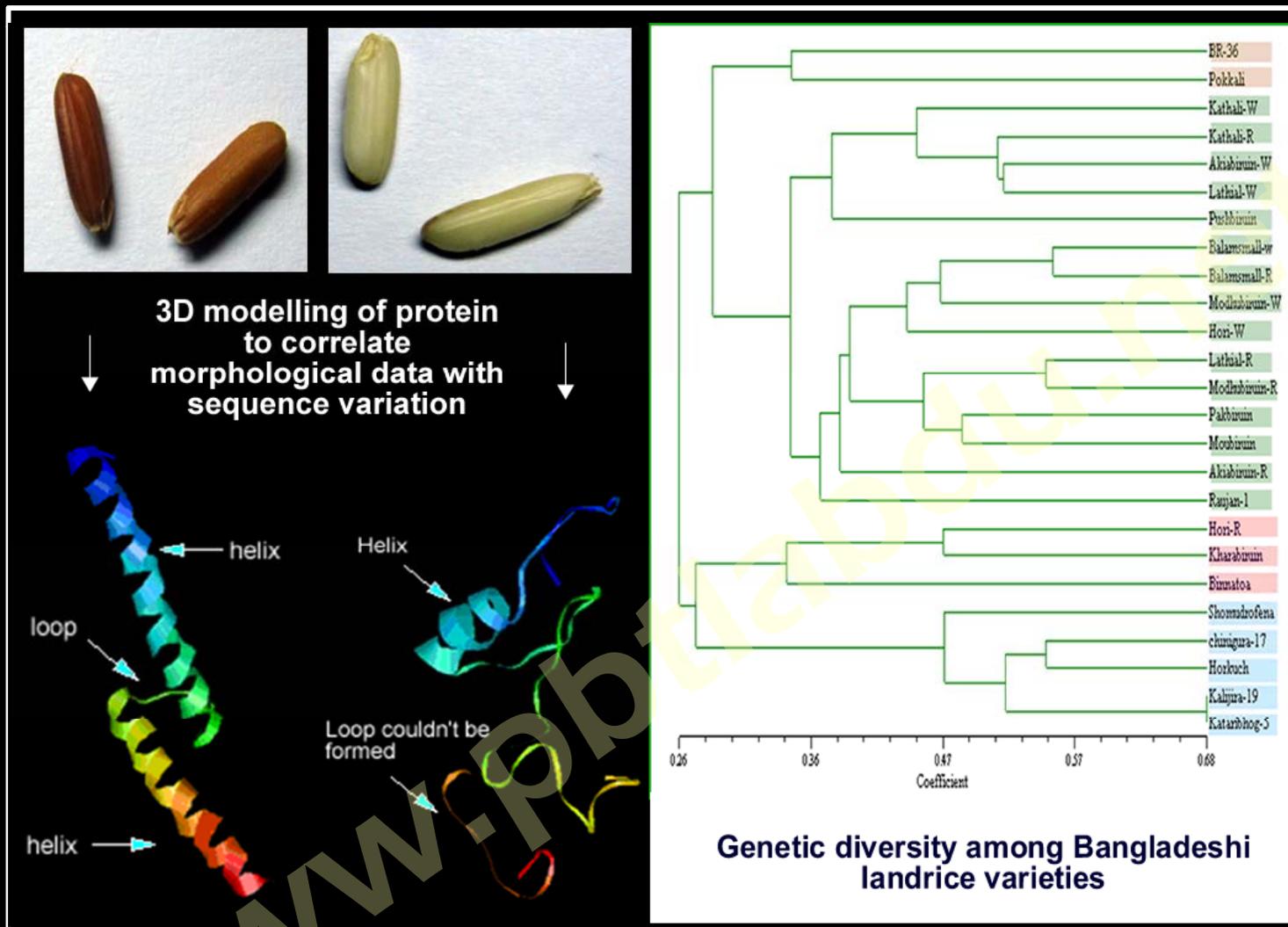




Genetic Diversity between Horidhan and BR11



SSR and RAPD Analysis



Sequence variation between red and white rice of Bangladesh