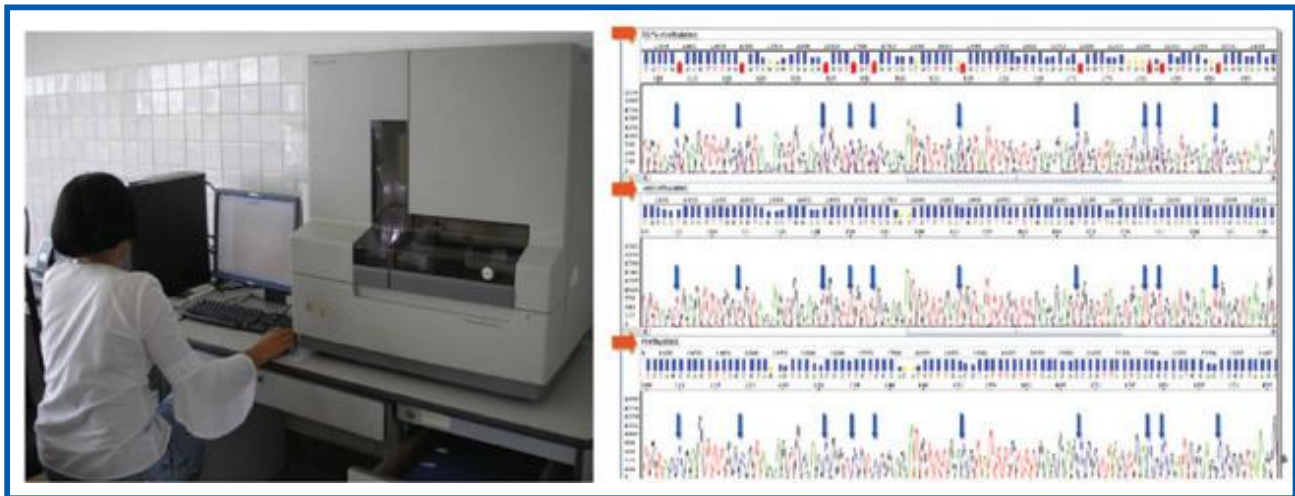


# GENOMIC ANALYSIS & CROP BREEDING IN VIETNAM - A CASE STUDY OF *ORYZA SATIVA* L.

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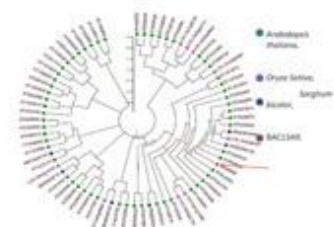
Model species have genetic, reproductive, or trait-related characteristics that facilitate the understanding of other species. Rice (*Oryza sativa* L.) has been considered a model species as well as *Arabidopsis thaliana*. The use of model species saves time and is cost-effective as compared to develop similar information across all species of interest. Rice, the

defining their function. In Vietnam, elucidation of the association between nucleotide changes and phenotypic changes has been a big challenge in the molecular genetics and breeding of rice. The efforts have revealed new opportunities to accelerate both the genetic dissection of complex traits and the integration of genomics with rice breeding.



Positional QTL clones via 18,000 BACs to detect the target regions.

world's most important food crop, is the primary staple for the poorest people. All efforts to overcome poverty must include a rice component. Increased productivity through plant tolerance of flooding, drought, and salinity will help reduce poverty and provide farmers with option. New ideas are really tested with model species. Sequencing costs have decreased by three orders of magnitude over the past decade allowing species with larger genomes to become model species with novel approaches of "editing", "in silico sequencing" in rice genome. To further understand intra-specific variation and facilitate genetic improvement of rice, a comparative genomics approach will be necessary to make a more integrated and detailed map that collects all kinds of genetic variations. The significantly differential transcriptional activity genes were also detected between two subspecies (indica and japonica). Knowledge of the full genome sequence is clearly just the beginning and work now will turn to elucidating all of the genes and the hard work of



The sequence detected by BAC clones (BAC1100) to identify the region, which controls drought tolerance