

12th World Congress on

STRUCTURAL BIOLOGY

May 14-15, 2018 Osaka, Japan

Molecular identification of sour (*Tamarindus indica* L.) and sweet tamarind (*Tamarindus indica* L.var. Aglibut) using ITS, rbcL and matK DNA markersJacob Anderson C Sanchez¹, Rubie Laine H Morales¹ and Grecebio Jonathan D Alejandro²¹Pampanga State Agricultural University, Philippines²University of Santo Tomas, Philippines

Aglibut sweet tamarind is a priority commodity of the Pampanga State Agricultural University (PSAU). However, this variety looks like sour tamarind especially when they are still seedlings. This may result in potential economic loss for farmers or business capitalists who would venture in this lucrative business. Therefore, this study aimed to obtain their molecular identification using cpDNA (rbcL, matK) and nrDNA (ITS) markers; to determine the relationships of the samples using Maximum Likelihood and Maximum Parsimony Cladograms and to evaluate the universality of ITS, rbcL and matK in tamarind. BLAST results showed that majority of the samples belong to *Tamarindus indica* with 99-100% homology. Maximum Parsimony (MP) and Maximum Likelihood (ML) for matK showed that Aglibut sweet tamarind formed a monophyletic group with PSAU's sour tamarind and paraphyletic to wild-type sour tamarind obtained from Lubao, Pampanga. On the other hand, MP and ML for ITS did not show a fully resolved tree. For the universality, results showed that matK had 100% PCR and sequencing success rates. Meanwhile, ITS showed 100% PCR success rate and 83% sequencing success, whereas rbcL did not work well for the samples. Hence, we conclude that DNA barcodes matK and ITS are the genetic markers that can be used for molecular identification of Aglibut and sour tamarind samples. More importantly, we report that Aglibut sweet tamarind has closer genetic relationship with the PSAU sour tamarind than other varieties

Biography

Jacob Anderson C Sanchez is a Faculty/Researcher of the Pampanga State Agricultural University. His main objective is to conduct researches related to the development of Aglibut sweet tamarind using molecular biology techniques. He is passionate in conducting researches that are essential in ensuring the profit of the marginalized sector. He has also presented his various researches in international conferences at Singapore, Japan, and France.

jacobsanchezphl@gmail.com

Notes: