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RE-EVALUATING THE SPECIES LIMITS OF *Aponogeton kannangarae* AND *Aponogeton jacobsenii* USING ISSR DATA

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Based on the available literature and previous taxonomical studies, there are six *Aponogeton* species in Sri Lanka, *viz. Aponogeton rigidifolius, A. jacobsenii, A. crispus*, *A. natans, A. kannangarae* and *A. dassanayakei.* Among those species, the recently described *A. kannangarae* closely resembles *A. jacobsenii* in leaf morphology, especially colour, shape and size. Even though differences in leaf base and folical coat are recognized between the two species, a recent study questions the contribution of these morphological characters in distinguishing the species. Therefore, there are confusions in the identification of *A. jacobsenii* and *A. kannangarae* as two different taxa. Since morphological data did not provide adequate strength to resolve the ambiguities, ISSR (Inter Simple Sequence Repeats) based molecular markers that identify genome-wide sequence characters were utilized to gain additional evidence. Along with *A. jacobsenii* and *A. kannangarae*, two other species that are morphologically similar *A. rigidifolius* and *A. dassanayakei* were studied by ISSR-PCR amplification, and similarities between species were predicted by cluster analysis based on the stable amplified fragments using Minitab (version 16). According to the cluster analysis, *A. rigidifolius* and *A. dassanayakei* showed the highest level of similarity (49.47%). *A. jacobsenii* showed the least similarity (11.27%) to any of the other three species. Therefore, although *A. kannangarae* and *A. jacobsenii* were morphologically similar, those were distinctly different genetically. Therefore, the present molecular analysis strongly supports that *A. kannangarae* and *A. jacobsenii* are two different species, resolving the confusion on their species limits and contributing for their conservation as two distinct taxa.

Keywords: *Aponogeton*, ISSR- PCR amplification, Molecular analysis, Morphology