

Title : Detection of diversity of golden apple snail genus *Pomacea* in Mae Kha Canal, Chiang Mai Province by using HAT-RAPD fingerprinting analysis

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ABSTRACT

Golden apple snails are invasive alien species that originated from South America and then were widespread around the world, including Thailand. They have also affected agricultural areas and disturbed organisms in the Mae Kha Canal area. This study aims to investigate the diversity of the genus *Pomacea* and their distribution in Mae Kha Canal, Chiang Mai Province, and to compare *Pomacea* species based on shell morphology and HAT-RAPD fingerprinting analysis. A total of 100 snail samples were collected between November and December 2024. They were classified into 2 species of golden apple snails as *Pomacea canaliculata* and *Pomacea* sp. The upstream area had the highest diversity, then downstream and midstream area, respectively (Shannon-Wiener Index; 0.26, 0.16 and 0.12, respectively). The physico-chemical parameters of water quality didn't affect the distribution of both snail species ($p < 0.05$). DNA fingerprinting analysis using the HAT-RAPD technique based on primers OPA02, OPA03, and OPA07 showed the significant different between both snail species ($p < 0.05$). The findings highlight the need to prevent future intentional imports and call for an assessment of the risk presented by golden apple snails in sensitive locations. The discrimination of the ecological impacts of different species will aid in the development of setting-specific management techniques in the future.

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