

Foreword

Welcome to the fourth issue of 2026 of the *Pertanika Journal of Tropical Agricultural Science* (PJTAS)!

PJTAS is an open-access journal for studies in Tropical Agricultural Science published by Universiti Putra Malaysia Press. It is independently owned and managed by the university for the benefit of the world-wide science community.

This issue contains 25 articles: one short communication; one review article; and the rest are regular articles. The authors of these articles come from different countries namely Africa, Brunei Darussalam, China, Indonesia, Malaysia, Nigeria, Pakistan, Philippines, Thailand, and Vietnam.

The regular article entitled “Evaluating Ovarian Maturation Stages of Banana Shrimp, *Penaeus merguensis*” presents a comprehensive morphological and histological characterisation of female banana shrimp (*P. merguensis*) to support broodstock selection and captive breeding programs. Through visual observation and tissue analysis across 50 female specimens, the study established five distinct ovarian developmental stages: immature, premature, mature, fully mature, and spent. Morphologically, ovaries progressed from transparent to yellowish-white, light green, dark green, and finally pale cream, which correlated with significant increases in both the gonadosomatic index (GSI) and oocyte diameter up to the fully mature stage. Histologically, the transition was marked by the shift from perinucleolar and yolkless oocytes to yolky oocytes, with fully mature ovaries uniquely featuring elongated cortical rods essential for egg protection during fertilisation. These findings clarify the vitellogenesis process in *P. merguensis*, offering valuable baseline metrics for optimising timing in wild broodstock harvesting, spawning induction, and sustainable aquaculture management. Further details of this study can be found on page 1567.

The regular article entitled “Life Cycle Assessment of Conventional Broiler Farm System in Malaysia and Carbon Footprint Mitigating Strategies” evaluates the environmental impacts of commercial broiler production using a cradle-to-farm-gate Life Cycle Assessment (LCA) framework aligned with IPCC guidelines. Analysing data from an intensive closed-house production system in Johor, Malaysia, the study established a baseline emission intensity of 1.54 kg CO₂-eq per kg of live weight, totalling 63.97 tCO₂-eq per house per 62-day cycle. Hotspot analysis revealed that upstream feed procurement contributed the largest share of

greenhouse gas emissions (39%), followed by operational energy consumption (37%) and on-farm manure management (24%). The authors further modelled three poultry litter (PL) management strategies, finding that while selling raw PL yielded the highest nominal farm-gate carbon reduction (29.87%), converting PL into biochar (20.13% reduction) or compost (15.58% reduction) provided superior long-term environmental sustainability by stabilising organic carbon, preventing nutrient leaching, and suppressing gas volatilisation. Full details of this study are available on page 1577.

The regular article entitled “Assessing the Impact of Land Use on Arbuscular Mycorrhizal Root Colonisation Rate, Phosphorus and Nitrogen Uptake in Ife Bimpe Cowpea” examines how pre-existing soil land-use histories and organic inputs influence arbuscular mycorrhizal fungi (AMF) symbiosis and growth performance in tropical legumes. Utilising soils from three land-use origins—African Star Apple (ASAR), Cassava Root (CRR), and Bush Fallow (BFR)—amended with poultry manure, cow dung, or their combination, the authors evaluated AMF spore abundance, root colonisation rates, and nutrient availability. Results indicated distinct soil- and amendment-specific responses: CRR soils and poultry manure applications significantly enhanced AMF root colonisation (reaching up to 48% and 44%, respectively), whereas ASAR soils and cow dung amendments optimised total spore abundance and *Gigaspora* spp. sporulation. Ultimately, ASAR soils amended with organic manure supported superior vegetative growth by Week 9, highlighting that matching specific organic amendments with land-use histories can optimise AMF-mediated nutrient uptake and crop productivity in nutrient-limited tropical soils. Further detailed information can be found on page 2031.

We anticipate that you will find the evidence presented in this issue to be intriguing, thought-provoking and useful in reaching new milestones in your own research. Please recommend the journal to your colleagues and students to make this endeavour meaningful.

All the papers published in this edition underwent Pertanika’s stringent peer-review process involving a minimum of two reviewers comprising internal as well as external referees. This was to ensure that the quality of the papers justified the high ranking of the journal, which is renowned as a heavily-cited journal not only by authors and researchers in Malaysia but by those in other countries around the world as well.

We would also like to express our gratitude to all the contributors, namely the authors, reviewers and Editorial Board Members of PJTAS, who have made this issue possible.

PJTAS is currently accepting manuscripts for upcoming issues based on original qualitative or quantitative research that opens new areas of inquiry and investigation.

Editor-in-Chief
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