

# Foreword

Welcome to the first issue of 2023 for 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 20 articles; three review articles, one short communication, and the rest are regular articles. The authors of these articles come from different countries namely Germany, Indonesia, Jamaica, Kingdom of Saudi Arabia, Malaysia, Nigeria, Sudan, Thailand, United Kingdom, and United State of America.

A selected article, by Nurdianah Harif Fadzilah and Wan Adnan Wan Omar from Universiti Sains Malaysia, evaluated the therapeutic effect of ethanolic bee pollen extract (BPE) from Malaysian stingless bee in cultured breast adenocarcinoma human cell lines (MCF-7) and mammary epithelial human cell lines (MCF-10A). Three stingless bee species were used to prepare bee pollen ethanolic extracts: *Geniotrigona thoracica*, *Heterotrigona itama*, and *Tetrigona apicalis*. The trypan blue exclusion assay was applied for cell proliferation activity in MCF-7 and MCF-10A. Besides that, the therapeutic index (TI) was analyzed to assess the relative antiproliferative activity of BPE on cancer versus normal cells. The results showed that the therapeutic index of *G. thoracica* BPE was the highest, which is potentially developing as a chemotherapeutic agent. The detailed information of this article is available on page 37.

Another article entitled “The Effect of Cadmium, Copper, and Lead on *Brassica juncea* in Hydroponic Growth Medium” investigated the accumulation of heavy metals, including copper, cadmium, and lead, in the different parts of *Brassica juncea* planted by the hydroponic method. The research results show that the accumulation of these heavy metals in the different parts of *B. juncea* varied over time. Full information of this study is presented on page 253.

A regular article entitled “Phylogeny Study of 20 Selected Species of Zingiberaceae from *Ex situ* Collections in Peninsular Malaysia” provided additional biological information to the 20 selected Zingiberaceae species, which were collected from the Agricultural Conservatory Park, Institute of Bioscience, Universiti Putra Malaysia. The combined random amplified polymorphic DNA (RAPD) and inter simple sequence repeat unweighted pair group method with arithmetic mean (ISSR UPGMA) phylogenetic tree classed them according to their three tribes (Alpinieae, Zingiberaceae, and Globbeae). The further details of this study are found on page 329.

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.

A special thanks to the Editor-in-Chief, Prof. Dr. Amin Ismail for serving *Pertanika Journal of Tropical Agricultural Science* for the past two years, in ensuring *Pertanika* plays a vital role in shaping the minds of researchers, enriching their lives, and encouraging them to continue their quest for new knowledge. We welcome the new Editor-in-Chief, Assoc. Prof. Dr. Phebe Ding on board. We hope that her involvement and contributions towards *Pertanika* would not only improve its quality but also support the development efforts in making it an international journal of good standing.

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.

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.

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

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