

Editorial

The South Pacific Journal of Natural and Applied Sciences (SPJNAS) is an international journal dedicated to the latest advancement of natural and applied sciences and provides a platform for scientists and academics in diverse areas of research.

The University of the South Pacific (USP) is the premier provider of tertiary education in the Pacific region and an international centre of excellence for teaching, research consulting and training on all aspects of Pacific culture, environment and human resource development needs. **SPJNAS** is USP's open access, peer-reviewed, multidisciplinary, scientific journal that publishes original research findings, review articles and short communications. The journal focusses on academic excellence, research rigidity, knowledge distribution, and reciprocated scholarly efforts in order to endorse theoretical, experimental and applied research at national and international levels, especially in the South Pacific region.

The present issue of **SPJNAS** contains three quality research papers on topics of both fundamental and applied interest and they are summarized below.

Once a pest or disease has started to attack a crop, the damage cannot be repaired and control becomes increasingly difficult. Where possible, it is essential to use natural techniques to avoid or prevent pest and disease attack in the first place. The natural control methods restore a balance between pest and predator and keep pests and diseases at an acceptable level. In this context, deeper understanding of the lifecycle of pests assumes importance. The first paper describes research in this field in the South Pacific region. It details the oviposition periodicity, egg morphology and life history of the large cabbage moth *Crociodolomia pavonana* population in Samoa. The study showed that *C. pavonana* completes its life cycle in 24–35 days. Females emerge, mate and oviposit (as egg mass) during the scotophase. The Samoan *C. pavonana* oviposits small egg masses. This information could be used to develop effective pest management techniques using the recently-identified egg parasitoid *Trichogramma chilonis*.

Fiji is the home of a wide diversity of plants containing essential oils (EO). The second paper discusses the antimicrobial effect of EO of some Fijian medicinal plant leaves on pathogenic bacteria. The EO extracted was screened against Gram-negative bacteria (*Salmonella typhimurium*, *Pseudomonas aeruginosa*) and Gram-positive bacteria (*Staphylococcus aureus*, *Enterococcus faecalis* and *Bacillus subtilis*) and antibacterial properties were shown against all except *Pseudomonas aeruginosa*. The findings will be helpful in raising awareness of the Pacific people to the use of the studied plants leaves as an antimicrobial agent instead of using costly synthetic chemicals.

Because of its wide environmental tolerance, Taro (*Colocasia esculenta*) is widely grown in the humid tropics for its edible leaves, petioles and corms which are a major source of protein and vitamins; taro is also a source of income for farmers in the South Pacific region. Since taro production is highly susceptible to leaf blight, sustained efforts from plant breeders have evolved new disease-resistant taro varieties. The third paper analyses plant growth and dry matter development in two new taro (*Colocasia esculenta* (L.) Schott) cultivars and indicates that an

understanding of these physiological characteristics is important in finding ways to further increase their crop yields.

I hope that readers of **SPJNAS** will find these articles of great value. I would like to thank the authors for their contributions to this volume/issue of **SPJNAS**, and to acknowledge the kind cooperation of associate editors and the reviewers for their time, and in maintaining the high standard of the journal. I wish to acknowledge the continuing support of the Dean of the Faculty of the Science, Technology and Environment, Assoc. Prof. Anjeela Jokhan and Associate Dean, Research & Graduate Affairs, Prof. Sushil Kumar. I also thank Ms. Prayna Maharaj, for her expertise in formatting all the papers, inserting corrections and preparing the table of contents, and Dr Helen Malin (CSIRO Publishing), for her help in various ways.

Finally, my deepest gratitude is to the Vice Chancellor & President of USP, Professor Rajesh Chandra for signing the MoU with CSIRO Publishing to integrate **SPJNAS** into its portal and make it an open access journal whereby the research findings of the contributing scientists are readily accessible to interested readers.

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