

## THE NATURAL PRODUCTS INSTITUTE

Trevor H. Yee, BSc (Hons), PhD UWI, MBA (Hons) *Nova*  
– Executive Director

### WORK OF THE INSTITUTE

The Extraction Process invented by Dr. Trevor Yee of the Institute and Prof. Helen Jacobs of the Dept. of Chemistry for the extraction of the active ingredients of Bitterwood, has now been awarded a United States Patent. We have been advised that this is the first US Patent, granted to the UWI, Mona Campus. There is also an application for a European Patent for the invention, pending. Research continues on making the process more efficient, and grants have been applied for, to research the inventory of the tree locally, the identification and propagation of the highest yielding varieties, and to construct a pilot plant for the present process.



Our ultimate aim is to identify a commercial partner for establishing a local processing plant for these chips, which are currently exported as raw materials for processing overseas.

Two of our M. Phil. graduates have gone on to commence their PhD degrees, one at the North Western University in Chicago, Illinois, while the other is doing so at Georgia State University, both in the U.S.A. Several other graduate students have commenced their research at the Institute, including a Commonwealth scholar from England.

Much effort and progress were made to initiate an anti-cancer screening facility by the Institute staff, with support and collaboration from Clemson University, South Carolina. Effort continues to raise the necessary capital to maintain this project in an on-going basis

Dr. Yee was invited by three international research journals and Dr. Delgoda by two, to be referees for papers submitted for publication to these journals, and submitted their reviews of these papers.

## RESEARCH IN PROGRESS

The research projects in the Institute continue to grow, some having being initiated in the past 2 years, and others originating in the 2007/2008 academic year.

Research is continuing in the study of a number of essential oils, which are being researched for their commercial potential as well as investigations into their properties. Research is also continuing on a novel potential control measure for a pest of Citrus.

The investigation of a number of natural and synthetic compounds, isolated by staff at the Chemistry Department, has resulted in their being screened for bioactivity at the Institute. The bioactivity investigated includes potential chemoprotectors and anti-TB compounds.

## PAPERS PRESENTED

### T. Yee

- Shirlene Jackson, Helen Jacobs, and, **Trevor Yee**. "The essential oil compositions of *Amyris balsamifera* L., *A. elemifera* L., and *A. plumieri* DC., Prodr., the three species of *Amyris* spp. (Rutaceae) in Jamaica". The First Joint IOCD-ISDNP International Symposium on Natural Products, Kasane, Botswana, Feb. 25-29, 2008.

### R.Delgoda

- Badal M, Shields M, Reese P, Jacobs H, Jackson Y, Gallimore W, Sutcliffe MJ and **Delgoda R**, "Screening for potential chemoprotective properties of natural and synthetic compounds", 8<sup>th</sup> conference of the Faculty of Pure and Applied Sciences. UWI, Mona February 26-28, 2008
- Badal M, Shields M, Niazi U, Reese P, Jacobs H, Sutcliffe MJ and **Delgoda R**, "Screening natural products for CYP1 inhibitors", 17<sup>th</sup> International Symposium on Microsomes and Drug Oxidation., Saratoga Springs, New York, USA, July 6-10, 2008

## UNITES STATES LETTERS PATENT

Trevor Yee of the Institute and Helen Jacobs of the Dept. of Chemistry

United States Patent Application No. 0060281808, "Process to Extract Quassinoids", filed June 12, 2006 has been awarded a U.S. Patent in September, 2008.

## PUBLICATIONS

### Refereed Journal Articles

- \* Grace-Ann O. Junor, Roy B. R. Porter, and Trevor H. Yee, "The Chemical Composition of the Essential Oils from the Leaves, Bark, and Fruits of *Bursera simaruba* (L.) Sarg. from Jamaica". 2008, J. Essen. Oil Res. 20, 426-429.
- \* Badal S, Shields M, Niazi U, Jacobs H, Sutcliffe MJ and Delgoda R. "Screening Natural Products for CYP1 Inhibitors, Proceedings of the 17<sup>th</sup> International Symposium on Microsomes and Drug Oxidations", Saratoga Springs, New York, U.S.A, July 2008.

### Book Chapter

Trevor H. Yee

- \* "The Fungi of the Blue and John Crown Mountains", in The Natural History Society of Jamaica, Guide to the Blue and John Crow Mountains. Ed by Margaret Hodges, Ian Randle Publishers, 2008, 155-160.

## INCOME GENERATION

From its client services, which included assistance with a local roots wine formulation, a herbal preparation targeted to men, etc., the institute earned J\$270,000 for the year.

## **PUBLIC SERVICE**

### **Dr. T. Yee**

- Treasurer, the International Society for the Development of Natural products.
- President, the Natural History Society of Jamaica
- Member, Steering Committee: Towards a National Bioprospecting Programme, National Commission of Science and Technology, Office of the Prime Minister.

### **Dr. R. Delgoda**

- Executive Committee Member, Jamaica-Sri Lanka Friendship Association.