CaHMRI News

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Herbal medicines today

Around the world today, groups of scientists are researching herbal remedies for proper evidence that they work. In 2008, the Herbal Institute (CaHMRI) at the University of Trinidad and Tobago started with the aim of proving whether selected local herbal medicinal products help patients without unduly doing harm. CaHMRI also disseminates the best information to healthcare practitioners, students, industry personnel and consumers, about the attributes of Caribbean medicinal plants and the benefits and risks of taking herbal medicines.

Medicinal Plants in Trinidad and Tobago

In Trinidad, Tobago and the rest of the Caribbean Region, numerous plants have been used as the sources of folk remedies (bush teas) for a variety of health conditions, for hundreds of years. A guide to the medicinal plants of Trinidad and Tobago was written by Compton Seaforth and colleagues, which was published in 1985 by the Commonwealth Secretariat in London, England. One decade later, several plants were described by Richard Howard among the "eighteenth century West Indian pharmaceuticals" (Howard RA. 1994. ***Harvard Papers in Botany***. No. 5: 69-91). Because they are tropical and mainly of the New World, such plants remain among the least documented systematically in the scientific literature. Although the country is quite small (5,128 sq km), over one hundred medicinal plant species have been identified in Trinidad and Tobago alone. This indicates a very rich diversity of species in these islands. Several medicinal plants are introductions from other tropical parts of the world e.g. *Aloe vera* originated in southern and eastern parts of Africa, Ginger (*Zingiber officinale*), Fever grass (*Cymbopogon*

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citratus) and Karaile (*Momordica charantia*) came from India and S.E. Asia. Shado beni (*Eryngium foetidum*) is native to the Caribbean region. It is a very popular spice plant, and it is used in Trinidad and elsewhere as a folk remedy for fevers, colds and other ailments.
It has been established that some medicinal plants are harmful, such as Kayakeet (*Lantana camara*), whose constituents (lantadenes) are liver-damaging (Sharma OP. et al. 2007. ***Critical Reviews in Toxicology***, **37** (4): 313-352). This toxic plant is also known in Trinidad and Tobago by other local names, such as Cariaquite, Red sage, Grater wood and Ramongsi.

Ginger (*Zingiber officinale)*

During the 1980's, a network of scientists, led by Dr. Lionel Robineau, initiated the "TrAditional Medicines in the (Caribbean) Islands" (TRAMIL) programme, seeking to evaluate the local medicinal plants. No clinical studies were pursued, but extracts of selected plants were tested in experimental animals. So far the TRAMIL programme has produced the elements of a herbal pharmacopoeia. The TRAMIL publications include a range of popular documents with many recommendations as to the appropriate use of certain medicinal plants as "non-prescribable" herbal remedies in all tropical lands.
Christophine (*Sechium edule*) originated in Mexico, and it has become a significant medicinal food plant cultivated in Trinidad and Tobago. It is also known as Cho cho

Karaile (*Momordica charantia*)

(Jamaican), and by other common names. Preliminary tests done at the University of the West Indies in Jamaica demonstrated that its fruit extracts can lower blood pressure in anaesthetized rats in the laboratory. But such findings must not be over-extrapolated to suggest a similar result in human beings (Gordon EA. **et al**. 2000. ***West Indian Medical Journal***, 49 (1): 27-31). Of course, we are living in the age of evidence-based medicine; and the testing of herbal medicinal extracts by means of clinical trials in human volunteers is both feasible and desirable. Such research work should be encouraged and given adequate financial support.

Does aspirin grow on trees?

…..INSIDE THE LABORATORY OF BAYER COMPANY ….ASPIRIN IS NOT GROWN ON TREES

"Quinine and aspirin are medicines derived from plants and trees", is a statement made in at least one article in the biomedical sciences literature. But is this really true? The chemical drug called acetylsalicylic acid was given the name aspirin in 1897. But this is not a known plant constituent or phytochemical. By contrast, caffeine, nicotine and quinine are phytochemicals - chemicals made by plants. Aspirin's name was coined from "A" for acetylsalicylic acid, "SPIR" for the plant called ***Spiraea ulmaria***, and "IN" because it completed "ASPIR" with an authoritative-sounding, yet pleasing to the ear finish. Back in 1835, a French chemist had extracted pure salicylic acid (not acetylsalicylic acid) from the meadowsweet herb (***Spiraea ulmaria***). Thus salicylic acid

Meadowsweet

is a plant chemical or phytochemical. (Native to countries in Europe, meadow sweet is an aromatic plant, recently renamed ***Filipendula ulmaria***, and used traditionally as a remedy for headache). Among other chemicals, salicin and other salicylates were isolated from willow (***Salix species***) trees and from aromatic European plants, by the middle of the 19th century. These phytochemicals could be easily decomposed to produce salicylic acid. For the first time, synthetic salicylic acid was made in the laboratory, starting from phenol and carbon dioxide, by Hermann Kolbe in 1859. Kolbe stimulated his student Friedrich von

Aspirin cont'd

Heyden to further improve the technique so as to make salicylic acid on an industrial scale. By 1874, large quantities of salicylic acid had become available in Germany for subsequent chemical transformation into acetylsalicylic acid (aspirin) at the Bayer Company.
Working inside the laboratory of Bayer Company, the German chemist Felix Hoffmann is credited with having converted salicylic acid into acetylsalicylic acid, for the first time, in a stable form usable for medical applications. This happened on August 10, 1897, and aspirin (acetylsalicylic acid) allegedly started the modern pharmaceuticals industry. In short, aspirin is not grown in trees.
In order to access up-to-date reliable information about the benefits, risks and other attributes of the salicylates and acetylsalicylic acid, we urge the health care professional to read Karsten Schror's new book: "***Acetylsalicylic Acid***" (2009. WILEY-VCH Publishers, 376pp: ISBN 978 -3-527-32109-4). Dr. Schror is a Professor of Pharmacology and Clinical Pharmacology in Dusseldorf, Germany.
To date, we have found no documentation of analytical procedures which demonstrate the presence of acetylsalicylic acid (aspirin) among any products of nature.

Vets and traditional herbalists get together

One of the most rapidly growing forms of self-medication in the world today is the use of herbal remedies or extracts, whether as teas or as supplements. All of these herbal medicinal products have a common attribute – which is that they are not single-chemical entities. In fact, in each case the herbal medicine consists of a multi-component mixture of natural chemicals. People seem to have always tried their herbal remedies also on ailing animals in their care. Practical experiences over the ages have led to the emergence of ethno veterinary know-how. Folk knowledge has combined with people's traditional beliefs about the care of their domestic pets and farm animals to become a key component of ethno veterinary medicine: and such information has traditionally been passed down by word of mouth from generation to generation amongst livestock owners.

The need to document and to attempt to validate ethno veterinary practices spread rapidly around the world during the early 1980's. Numerous studies followed, many reports have been produced, and various conferences and workshops held. These activities actually saved the knowledge in ethno veterinary medicine from extinction. The usage of ethnovet medicines for horses in Trinidad and Tobago and in British Columbia, Canada has been published by Cheryl Lans and her colleagues in 2006 (***Journal of Ethnobiology and Ethnomedicine***, 2: 31).
As announced in the Journal of the American Veterinary Medical Association, the Veterinary Botanical Medical Association (VBMA) was established in 2002. The VBMA was founded particularly to encourage international interaction among veterinarians, herbalists, pharmacologists, botanists and educators, its ultimate goal being to increase the safety and efficacy of herbal medicinal products used in animals. (Visit: www.avma.org). Towards this end several re-

INFORMATION HAS TRADITIONALLY BEEN PASSED DOWN BY WORD OF MOUTH FROM GENERATION TO GENERATION AMONGST LIVESTOCK OWNERS.

Vets and Herbalists cont'd

search projects have been supported, some of which include randomized controlled studies to assess herbal supplements for efficacy in animals (Cavaliere C. 2009. ***HerbalGram***, 82: 34-41)
A number of serious publications have appeared during the past ten years, including the 416-page long book: "***Ethnoveterinary Botanical Medicine: Herbal Medicines for Animal Health***", edited by Katere RD. and Luseba D., and published by CRC Press. In this book, a multidisciplinary approach is described to evaluate efficacy, and issues are addressed concerning information retrieval and access to benefit-sharing, intellectual property rights issues, and the Convention on biodiversity.

Titles for future Issues

- Wormgrass is Chenopodium ambrosioides
- Ethnomedicines, nutraceuticals, phytomedicines etc
- Legendary herbal aphrodisiacs
- The Cold season herbs
- Phytomedicines from Ginseng root
- Soursop and its phytochemicals.

Fever grass (*Cymbopogon citratus*)

To send us your comments about this newsletter, please contact:

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