

The Janus Corner



Kakadu plum in the treatment of Giardiasis

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Giardiasis (caused by protozoal parasites of the genus *Giardia*) is a crippling gastrointestinal disease. A recent report by researchers at Griffith University, Australia has reported that extracts prepared from *Terminalia ferdinandiana* (Kakadu plum) fruits are effective in the inhibition of growth of *Giardia duodenalis* trophozoites.¹ Fruit extracts prepared with water were particularly effective inhibitors but anti-Giardial activity was also detected in methanolic, ethyl acetate and chloroform extracts. Through these results, the authors identified several compounds likely attributing to the inhibitory activity of *G. duodenalis*. This study offers an innovative approach to the prevention of giardiasis and further highlights the significance of Kakadu plum in the treatment and prevention of microbially caused diseases. This is a significant finding in the treatment of giardiasis as currently there are limited options from a chemotherapeutic standpoint. The ability of the aqueous fruit extract to act as a

potent inhibitor offers a natural means of treatment as preparation can be achieved without the use of a chemical solvent. Furthermore, ingestion of Kakadu plum as a natural food source may offer a means of giardiasis prevention. Finally, there have been numerous reports of *G. duodenalis* resistances to metronidazole (the gold standard) and other drugs² and this paper offers an additional means of treatment. The authors suggest a ground-breaking approach to the management of giardiasis as well as present Kakadu plum as an excellent natural resource for drug development.

1. Rayan P, Matthews B, McDonnell PA, et al. *Terminalia ferdinandiana* extracts as inhibitors of *Giardia duodenalis* proliferation: a new treatment for giardiasis. *Parasitology Research*. 2015;114(7):2611-20. DOI 10.1007/s00436-015-4465-4.
2. Ansell BRE, McConville MJ, Ma'ayeh SY, et al. Drug resistance in *Giardia duodenalis*. *Biotechnology Advances*. 2015;33(6):888-901.

Nobel Prizes Awarded to 3 Pharmacognosists

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The year 2015 was noteworthy for the field of Pharmacognosy as the Nobel prize in the field of Physiology or Medicine was shared by the 3 Pharmacognosist scientists. Dr Youyou Tu of China was awarded the prestigious prize for her discovery of the compound artemisinin from the native Chinese plant *Artemisia annua* (commonly known as sweet wormwood) during the period of China's Cultural Revolution. The discovery provided one of the most effective malarial treatments to date. It was a timely discovery as artemisinin was an improvement on the then gold standard drug chloroquine and was discovered at a time when chloroquine was becoming less effective due to the development of resistant malarial parasites.

Dr Satoshi Ōmura and Dr William Campbell jointly received their award for their discovery of avermectin. Derivatives of avermectin have

dramatically decreased the incidence of river blindness and lymphatic filariasis, both of which are caused by round worm parasites. Ōmura and Campbell isolated a strain of the bacterium *Streptomyces avermitilis* and discovered that it was effective against a variety of parasites. The compound avermectin was isolated and used as a molecular template to produce the more potent semi-synthetic analogue ivermectin. These 2 examples of innovative science demonstrate the potential of nature to produce cures for many ailments and highlight the valuable contribution that pharmacognosy makes to the fields of Physiology or Medicine.

1. Nobel prize.org. Press release.

http://www.nobelprize.org/nobel_prizes/medicine/laureates/2015/press.html

Accessed 11 January 2016.

Book Review: Bush Sense. Australian Essential oils and Aromatic Compounds. By Mark A. Webb

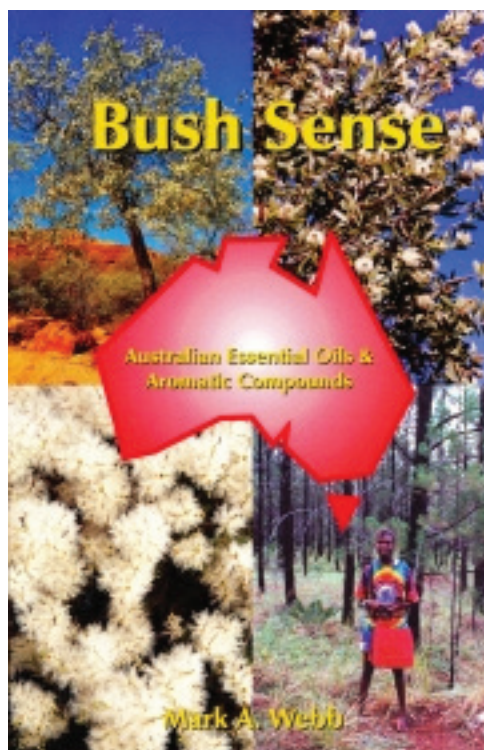
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In the book “Bush Sense. Australian Essential oils and aromatic compounds” author Mark Webb has provided a concise reference to the aromatic plants of Australia. Each plant is listed by its current scientific classification, with previous and common names also listed. Each plant listing is divided into subsections including distribution, a concise description of the plant, ethnobotany, which parts were used and how they were used, the known phytochemistry of the essential oils and the therapeutic properties of the constituents when known, therapeutic dosage as well as any known counter-indications and cautions that the reader should be aware of. Thus the presentation is reminiscent of a ‘Materia Medica’ format. The background of the author gives a well-rounded perspective. Mark has a Bachelors qualification in biochemistry and plant biology as well as a Diploma in Botanical Medicine. He has also worked as a clinical aroma therapist as well as a consultant for the essential oil industry as well as for growers. Thus Mark has an understanding of multiple aspects of this field, which is evident in the book. The result is a volume which is easy for the lay person to comprehend, yet provides a handy reference for aroma therapists as well as an easy starting point for researchers in this field. The inclusion of personal anecdotes makes the book readable and indeed, occasionally funny. The book is quite concise with 128 pages. The author does not try to cover every aromatic Australian plant, but instead limits himself to some of the most commonly used species and alludes to related species. The book is illustrated, mainly with black and white figures, but also with several colour pages in the middle of the book.



1. Webb MA. Bush Sense. Australian Essential oils and aromatic compounds. Griffin Press, 2000, Adelaide Australia.