Medicinal Plant Images

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Figure 1. Acanthosicyos horridus (commonly known as nara melon) is a member of the watermelon family that grows most prevalently in the coastal regions of the Namib desert, Namibia. It also occurs as far south as Northern Cape province in South Africa and as far north as southern Angola. The fruit can be eaten raw although it contains cucurbitacins (which irritate the mouth) and was traditionally eaten dried. The nuts inside the fruit have been a staple diet of the Topnaar people of the Namib Desert for millennia.^[1, 2] Nara also has uses in traditional medicine. The fresh fruit is used to relieve stomach pains, oils from the seeds are used to protect from sunburn and as a moisturiser, and a decoction of the roots is used in the treatment of a wide variety of ailments including nausea, stomach disorders, STI's, kidney disorders, arteriosclerosis, wounds and chest pains.^[1] This photograph was taken in in the Namib Desert near Walvis Bay, Namibia in December 2012 by Dr Ian Cock.



Figure 2. Syzygium leuhmannii leaves and flowers. Syzygium is a large genus of evergreen flowering plants of the family Myrtaceae which consists of approximately 500 species. Plants of this genus are widespread, occurring in tropical and subtropical regions of South-East Asia, Australia and Africa. Many Syzygium species produce edible fruits and berries (eg. Syzygium jambos, commonly known as rose apple). In the commercially most important species Syzygium aromaticum (clove), the unopened flower bud is used as a spice. This plant also has uses in traditional medicine due to its anaesthetic properties.^[3] The antibacterial activity of S. aromaticum is also well known. Numerous studies have reported on the antibacterial^[4] and antifungal^[5] activities of oils and extracts from this plant. Other Syzygium species from Africa^[6] South East Asia (Syzygium jambos),^[7] India (Syzygium lineare and Syzygium cumini)^[8] and Australia^[9-13] have also been shown to have antimicrobial activity. Recent reports have also highlighted Syzygium australe (Bush Cherry) and Syzygium leuhmannii (Riberry) extracts as having exceptionally high antioxidant contents.^[14] Antioxidants have been associated with the prevention of cancer, cardiovascular disease and neurological degenerative disorders.^[15-17] They are also linked with anti-diabetic bioactivities and have been associated with the reduction of obesity. Antioxidants can directly scavenge free radicals, protecting cells against oxidative stress related damage to proteins, lipids and nucleic acids.^[18] Thus the Syzygiums have potential in the treatment of a significant number of diseases and medical conditions related to cellular redox state. This photograph was taken in Brisbane, Australia in 2014 by Dr Ian Cock.

REFERENCES

- 1. Van Damme P, Van Den Eynden V. Succulent and xerophytic plants used by the Topnaar of Namibia. Haseltonia 2000. 7: 53–62.
- Dentlinger U. The !Nara plant in the Topnaar Hottentot culture of Namibia: Ethnobotanical clues to an 8,000-year-old tradition. Munger Africana Library Notes 1977. 38.
- Cai L, Wu CD. Compounds from Syzygium aromaticum possessing growth inhibitory activity against oral pathogens. Journal of Natural Products 1996. 59: 987–990.
- Arora DS, Kaur GJ. Antibacterial activity of some Indian medicinal plants. Journal of Natural Medicine 2007. 61: 313–317.
- Park MJ, Gwak KS, Yang I, Choi WS, Jo HJ, Chang JW, Jeung EB, Choi IG. Antifungal activities of the essential oils of *Syzygium aromaticum* (L.) Mer. Et Perry and *Leptospermum petersonii* Bailey and their constituents against various dermatophytes. Journal of Microbiology 2007. 45 (5): 460–465.
- Cock IE, van Vuuren SF. Anti-Proteus activity of some South African medicinal plants: their potential for the prevention of rheumatoid arthritis. Inflammopharmacology 2014. 22: 23–36. doi:10.1007/s10787-013-0179-3
- Mohanty S, Cock IE. Bioactivity of Syzygium jambos methanolic extracts: Antibacterial activity and toxicity. Pharmacognosy Research 2010. 2 (1): 4–9.
- Duraipandiyan V, Ayyanar M Ignacimuthu S. Antimicrobial activity of some ethnomedicinal plants used by Paliyar tribe from Tamil Nadu, India. BMC Complimentary and Alternative Medicine 2006. 6 (35): 1–7.

- Sautron C, Cock IE. Antimicrobial activity and toxicity of Syzygium australae and Syzygium leuhmannii fruit extracts. Pharmacognosy Communications 2014. 53–60.
- Chikowe G, Mpala L, Cock IE. Antibacterial activity of selected Australian Syzygium species. Pharmacognosy Communications 2013; 3 (4): 77–83.
- Cock IE. Antibacterial activity of Syzygium australe and Syzygium leuhmannii leaf methanolic extracts. Pharmacognosy Communications 2012. 2 (2): 71–77.
- 12. Cock IE. Antibacterial activity of selected Australian plant extracts. The Internet Journal of Microbiology 2008. 4. 2.
- Cock IE, Medicinal and aromatic plants Australia. In Ethnopharmacology, Encyclopedia of Life Support Systems (EOLSS) 2011. Developed under the auspices of UNESCO, EOLSS Publishers, Oxford, UK [http://www. eolss.net].
- Netzel M, Netzel G, Tian Q, Schwartz S, Konczak I. Native Australian fruits – a novel source of antioxidants for food. Innov Food Sci Emerg Technol 2007. 8: 339–46.
- Potter JD. Cancer prevention: epidemiology and experiment. Cancer Lett 1997. 114: 7–9.
- Mohanty S, Cock IE. The chemotherapeutic potential of *Terminalia ferdinandiana*: Phytochemistry and bioactivity. Pharmacognosy Reviews 2012. 6 (11): 29–36.
- Cock IE. Problems of reproducibility and efficacy of bioassays using crude extracts, with reference to *Aloe vera*. Pharmacognosy Communications 2011. 1 (1): 52–62.
- 18. Rice-Evans C, Miller N, Paganga. Antioxidant properties of phenolic compound. Trends Plant Sci 1997. 2(4): 152–9.