



IPH Newsletter October 2018

“A Community Not for Profit Association”

Welcome to the October edition of our Indigenous Plants for Health newsletter. We hope you will find the topics in each of our newsletters helpful and of interest to you. The plan is for newsletter to gradually expand into a leading publication focused on Australian native medicinal and edible plants. We welcome comments and contributions from members, please forward them to trueunicorn11@gmail.com.

Plant of the month

Smilax glycyphylla Sm.

Family: Smilacaceae

Common name Native Sarsaparilla, sweet tea



Description

This is a slender evergreen vine with alternately arranged dark green ovate leaves with entire margins, and black berries appearing in umbel formation. Leaves have sweet, liquorice-like flavour with slight bitterness

Distribution

Common in bushland throughout eastern Australia – from coast to rainforest

Part used

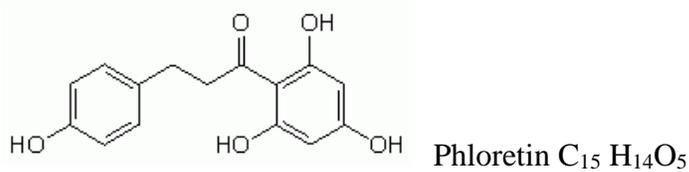
Fresh or dried leaf

Constituents (Huang et al. 2016)

Glycyphyllin A, B, C (sweet principles), categorized as dihydrochalcone rhamnopyranosides

Glycyphyllin A, first isolated in 1886, was determined to be a rhamnoside of phloretin - a natural constituent of apple root extract. Phloridzin, another glycoside of phloretin, is an anti-diabetic agent found in apple peel

Flavonoids: catechin, kaempferol-3-O- β -d-glucopyranoside, quercetin-3-O- β -d-glucopyranoside, kaempferol-3-O- β -neohesperidoside, and 2R,3R-dihydrokaempferol-3-O- β -d-glucopyranoside.



Actions

Tonic, antiscorbutic, hypoglycemic

Pharmacology

- Known pharmacological activity of phloretin
 - calcium channel antagonist, protein kinase C inhibitor, anti-tumour, hypoglycaemic and oestrogenic agent.
- Readily soluble in hot water
- It is the active component of glycyphyllin, provided it is efficiently metabolised in the gut.
- Anticancer, antiosteoclastogenic, antifungal, antiviral, anti-inflammatory, antibacterial and estrogenic activities
- Able to increase the fluidity of biological membranes and penetration of administered drugs (Behzad et al, 2017)
- Hot water extracts of *S. glycyphylla* leaves were subjected to the following in vitro assays:
(Cox, Jayashinghe, & Markham 2005)
 - Level of antioxidant and Fe chelating activity may be sufficient to reduce oxidative damage in the GIT by taking as a tea.
 - Possible protective effect against stomach, colon and rectal cancer.
 - Lipid peroxidation, superoxide quenching
 - Deoxyribose degradation by combination of Fe³⁺, ascorbic acid and H₂O₂
 - Total radical-antioxidant potential (TRAP)

Traditional uses

- Aboriginal Medicine
 - Eora people made a tea, used for internal pains such as belly ache (Stewart & Percival, 1997).
 - The berries are eaten, and contain equal levels of vitamin C to tomatoes (Isaacs, 1987)
 - For Garby Elders sucking on the leaves of the other locally common species of sarsaparilla, *Smilax australis*, will soothe a dry throat (Arrawarra sharing culture).
- Colonial medicine:
 - Used for cough, colds and bronchitis
 - Reputation among colonials as antiscorbutic – value as a tonic and a scurvy preventative was recorded in 1790 by the Surgeon-General, John White.
 - Some sources doubt the truth of that reputation, though according to Jenny Isaacs, a cupful of berries a day could prevent scurvy.
 - Leaves from Botany Bay once used as a tea: leaves preserved in Mitchell State Library. The Convict's tea (Sydney Living Museums)
 - Once marketed as a tonic, it was an item of trade and valued by colonial herbalists



Leaves preserved in the Mitchell State Library
(Image from Wikipedia Commons).

Modern uses

Fresh leaf chewed. Young reddish-coloured tender leaves are best, as the older leaves become rather tough to chew. They make an excellent bushwalking snack
Dried or fresh leaves made into a tea by infusion or decoction. The natural sweetness and general tonifying properties of *S. glycyphylla* render it useful in combination with other less tasty herb ingredients.

There is potential for glycyphyllin or *S. glycyphylla* extracts as food additives, and as a good dietary source of polyphenol antioxidants

The sweet flavour offers advantages over other 'nutriceutical' agents used in this way

Sweet tea recipe (Based on recipe by Bruneteau, 1996)

Take 15 *S. glycyphylla* leaves, dry them out for 3-4 days

Place dried leaves in 500mL of water, bring to the boil and simmer for 10 minutes
Strain and drink

Toxicity

None known

References

Arrawarra sharing culture Retrieved from:

http://www.arrawarraculture.com.au/fact_sheets/pdfs/14_Leaves.pdf

Behzad, S. Sureda, A. Barreca, D. Nabavi, SF. Rastrelli, L. & Nabav, SM. 2017. Health effects of phloretin: from chemistry to medicine. *Phytochem. Rev.* 16 (3): 527–533

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Cox, S.D. Jayashinghe, K.C. & Markham, J.L 2005. Antioxidant activity in Australian native sarsaparilla (*Smilax glycyphylla*). *J. Ethnopharmacology* 101: 162-168

Huang, A-C, Wilde, A. Ebmeyer, J. Skouroumounis, GK. & Taylor, DK. 2013. Examination of the Phenolic Profile and Antioxidant Activity of the Leaves of the Australian Native Plant *Smilax glycyphylla*. *J. Nat. Prod* 76 (10): 1930–1936

Isaacs, J. 1987. *Bush Food. Aboriginal Food and Herbal Medicine*. New Holland Pubs. Sydney.

Smilax glycyphylla fact sheet. Retrieved from: http://keys.trin.org.au/key-server/data/0e0f0504-0103-430d-8004-060d07080d04/media/Html/taxon/Smilax_glycyphylla.htm

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Stewart, K. & Percival, B. 1997. *Bush Foods of New South Wales*. Royal Botanic Gardens Sydney.

Sydney Living Museum. Retrieved from: <http://blogs.sydneylivingmuseums.com.au/cook/escapee-tea/>



Research Report

With the geebung fruiting season now upon us, this is the time to start collecting the fruit for investigations into the composition and antimicrobial activity over the coming months. Since previous studies were based on the “partially ripe” fruit, we will be collecting fruit at various stages of ripeness, starting with unripe. There are a number of variables as pointed out previously, including the different species (*Persoonia. lineris/P. pinifolius*), locations, stages of ripeness etc. We also plan to test the leaf for activity.

We are fortunate that one of our newest members, Dr. Richard Carney – a microbiologist and herbalist – has agreed to join in the project and perform the antimicrobial studies himself at the University of Technology Sydney. The following is an outline of the projected study:

The effectiveness of Geebung Fruit extract as an antibacterial agent will be assessed using the Kirby-Bauer disc diffusion test. This approach will determine the minimum

inhibitory concentration (MIC) required for Geebung Fruit extract to inhibit the growth of a selected group of bacterial pathogens, chosen for their high public health importance, and compare these results to reference antibiotic compounds. Depending on the outcomes from the initial tests, we also plan to screen Geebung Fruit extract against antibiotic resistant strains of bacterial pathogens. This will provide novel insight into the potential merits of Geebung Fruit extract as an additional tool for the treatment of antibiotic resistant bacterial infections.

We still plan to go ahead with the phytochemical analysis at the University of Newcastle. The stratagem is to perform the antimicrobial assessment initially, then select the most potent samples for the phytochemical analysis. This is a more logical and cost-effective approach, since we can focus effort on the samples with the best antimicrobial activity, and not use up resources analysing samples that are likely to be clinically less effective.

During October we have a special event on which we hope you can attend, focusing on one of our indigenous health-promoting plant species – *Dodonaea viscosa*. Information on the event has already been circulated but just as a reminder please put this in your diary.

Community presentation on hop bush at Wollombi



**Do you know what it is? Do you know its' unique medicinal properties?
If you want to find out come and listen to Dr Andrew Pengelly give a
lecture on the Hop Bush.**

**Dr Andrew Pengelly has lectured in the USA and
Australia and is an expert on the Hop Bush. In fact, he gained his
doctorate on the research he did on this unique Australian plant.**

**Join us at 3.00 PM Saturday, 20th October, 2018
at Wollombi School**

Your membership

As a valued association member your membership fees go towards research projects, we are a not for profit association. We believe that the intellectual property rights and any future revenue from products developed through our research will go to the benefit of local Koori communities.

If you have any questions or feedback, we would welcome them through our contact page on our website www.indigenousplantsforhealth.com

If you have friends who may be interested in the work of the association please pass on our contact, the more members we have the more we can achieve through the spreading of knowledge and our ability to get funding for research projects.

Committee update

We regret to inform you that President, Stephen Balogh, has decided to resign from this role due to health issues, although he will continue to participate in the association. In the meantime, Julie Brown will take on the role of acting President in addition to being Treasurer.

We currently have some vacancies on our committee, if you are interested in taking a more active role we would welcome your participation. Please contact the Secretary on 0431320933 or 0468535234

IPH Committee Members

Acting President and Treasurer: Julie Brown

Vice President: Denis Stewart

Research Director, Newsletter editor: Andrew Pengelly

Secretary: Kathleen Bennett

Regulatory Affairs: Rob Santich

Indigenous Plants for Health (IPH) is an incorporated association formed with the objectives of raising awareness, sourcing grants and sponsorship for sustainable production of indigenous plant-based products.

indigenousplantsforhealth.com