

Plants As Medicines

The path a plant-derived medicine makes to your pharmacist's shelf is long and arduous. The 'active principles' must be isolated and identified. These 'active principles' have been recognized and applied by traditional plant medical practitioners and this is called ethnomedicine.

Extensive research is done by modern researchers to isolate 'active principles.' Once an 'active principle' is isolated and tested for medicinal value; it must then be tested on humans. This exercise can take 10-20 years, many doctors and scientists, and costs approximately \$250-500 million dollars. If the plant constituent is found to be beneficial to humans, the medicine can pass the rigorous FDA approval.

Because there is proprietary information, a patent must be secured. This process is costly. If the drug came from traditional peoples, a legal process can be a deterrent for pharmaceutical companies because of the many scientific disciplines involved, the long years of research, and the amount of money required upfront.

However herbal and dietary supplements are considered a food and are not subject to the rigorous process of FDA approval. There are no standards for cultivation or harvesting of plants; some are contaminated by toxic heavy metals, others are overharvested in natural populations. The dosages prescribed may not be accurate and contraindications are not stated leading to overmedication or adverse reactions. Unlike the European German Commission E no standardized system exists in the United States.



Caesalpinia gilliesii

Thank you to all those who donate time and work hard and make the Campus Arboretum at the University of Arizona a beautiful, soothing location to learn. The research begun by Robert Forbes in the early 1900's continues with researchers and the Director Elizabeth Davison in the Plant Science department (College of Agriculture and Life Sciences). Many students contribute time to enhance the splendor of the University of Arizona campus.

Special thanks goes to the friend of the Campus Arboretum who supported the mapping and research on this ethnobotanical project. Thanks also to Dr. Gunatilaka for his medicinal plants course.

For more information on the thousands of University of Arizona trees, see our website at:

<http://arboretum.arizona.edu>



CAMPUS ARBORETUM

THE UNIVERSITY OF ARIZONA

Medicinal Plant Walk



Dichrostachys cinerea



Aloe ferox

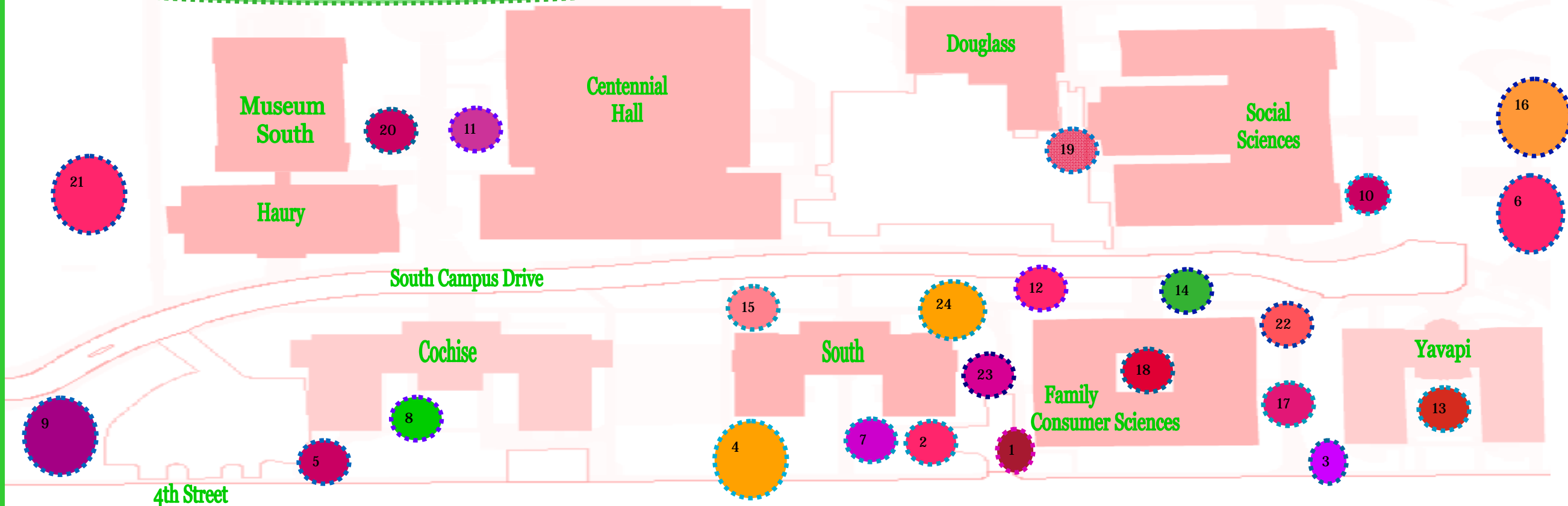


Laurus nobilis



Melaleuca leucadendra

Medicinal Plant Walk



1. *Acacia pennatula*- cytotoxic activity against human tumor cells (shows selectivity towards cancer over healthy cells).
2. *Acacia senegal senegal*- bark, when chewed, exhibits antimicrobial activity.
3. *Acacia victoriae*-potent anti-tumor properties regulating cell cycles.
4. *Acacia visco*-methanolic extract with anti-ulcerous activity.
5. *Acacia xanthophloea*-antimalarial.
6. *Aloe ferox*-leaf gel has antioxidant, anti-fungal and antimicrobial components. Aqueous extracts have anti-viral effects.
7. *Caesalpinia gilliesii*-anti-tumor properties.

8. *Citrus x paradisi*-aromatherapy massage reduces abdominal subcutaneous fat. Grapefruit juice prevents oxidative stress by raising liver antioxidant enzymes.
9. *Cupressus sempervirens*-antimicrobial.
10. *Dichrostachys cinerea*-antibacterial; roots are astringent, used in rheumatism and renal troubles.
11. *Eucalyptus torquata*-antimicrobial and antitumor properties.
12. *Ficus carica*-anti-helminthic, antitumorogenic. Fruits are antioxidant.
13. *Jacaranda mimosifolia*-antimicrobial.

14. *Laurus nobilis*-essential oil is an analgesic and anti-inflammatory. MRSA- resistant compounds found. Cytotoxic activity.
15. *Melaleuca leucadendra*-useful for severe headaches.
16. *Moringa oleifera*-essential oil is anti-fungal. Powerful antioxidant; radical scavenging activity protects LDL from oxidation.
17. *Parthenium sp.*-antitumor.
18. *Plumeria rubra*-anti HIV, inhibitor of RNA tumor-virus transference.
19. *Podocarpus macrophyllus*-prevents enzyme involved in causing human skin cancer.

20. *Punica granatum*-chemopreventive on skin tumor. Male flowers aqueous-ethnolic extract lowers blood glucose. Other anti-inflammatory effects, including interfering with tumor cell proliferation.
21. *Quercus ilex*-bark has antibacterial activity. Aqueous extract made from root bark reduces gastric lesions.
22. *Solanum erianthum*-anti-malarial.
23. *Tabebuia chrysotricha*-analgesic properties.
24. *Taxodium mucronatum*-prevents Cathepsin B production which has been implicated in arthritis and certain cancers.