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Peltophorum africanum Sond.

Protologue
Linnaea 23: 35 (1850).
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Family
Caesalpiniaceae (Leguminosae - Caesalpinioideae)
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Chromosome number
$2n = 26$
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Synonyms
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Vernacular names
African wattle, African false wattle, Rhodesian black wattle, African blackwood, weeping wattle (En).
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Origin and geographic distribution
Peltophorum africanum is native from southern DR Congo to South Africa and Swaziland. It is cultivated in Kenya, Tanzania, Madagascar, Australia and the Unit
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Uses
Both the bark and roots of *Peltophorum africanum* are used medicinally in traditional African medicine.
Throughout southern Africa, bark and root decoctions are applied for the treatment of wounds, venereal diseases, toothache and taken internally as an anthelmintic also gargled to treat a sore throat. In Zimbabwe they are taken internally as general tonics.
A decoction of the bark provides a cure for colic and other stomach disorders, for fever and a sore liver; it induces vomiting and is said to clean the liver and reliev fresh bark is also chewed to relieve abdominal pain. The steam from a hot decoction is applied against painful eyes.
In Namibia an infusion of the roots is an effective remedy for heavy, painful kicking of the foetus in pregnant women, but it is only applied if the problem lasts for days. The infusion furthermore stops heavy bleeding on giving birth and is used for treating cough with blood and tuberculosis. The crushed bark in water is rubbe coats of pets to keep away fleas and maggots. In Zimbabwe, root decoctions and infusions are taken to treat nausea and chest pain and for blood purification. The boil the roots with those of *Bridelia cathartica* G.Bertol. and *Ochna* sp. and drink the mixture to cure infertility. The boiled roots are applied as an enema to treat b
The wood is used for carving, turning, making furniture, grinding blocks, wooden buckets, tool handles and wagons. It is not suitable for fence poles or buildings borer-proof. The wood is widely used as fuel. *Peltophorum africanum* is a good source of bee forage. It is a very good garden, avenue and shade tree and is particu when in flower. It is also popular as a bonsai tree. The pods are favoured by cattle and the pods and young leaves are browsed by goats; it is an important fodder p dry season.
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Production and international trade
The trade in *Peltophorum africanum* bark is poorly documented and only locally important. In north-eastern South Africa the bark is in high demand and is traded 9/kg.
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Properties
The bark of *Peltophorum africanum* contains bergenin, an isocoumarin which inhibits DNA topoisomerase II, has hepatoprotective activity, anti-arrhythmic effect coronary artery and an inhibitory effect on the growth of the bloodstream form of *Trypanosoma brucei*. The bergenin derivatives coumaroylbergenin and norberge isolated as well. The seed contains a potent proteinase inhibitor (trypsin and α -chymotrypsin), which has not yet been characterized.
An aqueous extract of *Peltophorum africanum* roots reduced the magnitude of rabbit jejunum contractions. The effect was blocked by propanolol, suggesting an a adrenergic receptors. Both ethanolic and aqueous extracts of roots and bark showed inhibition in vitro of the gram-negative bacteria *Salmonella typhi*, *Shigella son Escherichia coli*, *Campylobacter jejuni* and *Aeromonas hydrophila*. The ethanol extract of the bark showed strong molluscicidal activity against the snail *Biompha alexandrina*, a host of schistosomiases (causing bilharzia). An oxidized gallotannin isolated from the stem bark of *Peltophorum africanum* was shown to have stro against HIV-1 reverse transcriptase and integrase in an enzyme cell-free system.
Browse (leaves and twigs) contains 7% crude protein and its digestibility coefficient is low (0.37). The tannin content in the leaves increases in response to grazing heartwood is reddish to dark brown and distinctly demarcated from the dirty white to pale brown sapwood. It is heavy, with a density of about 900 kg/m^3 at 12% r content. The grain is commonly interlocked, texture fine. The wood works fairly easily, takes a good polish and produces a smooth finish.
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Description
Small tree, up to 9(–15) m tall, often branching from near the base; bark rough, longitudinally fissured; young twigs rusty hairy. Leaves alternate, bipinnate with 4 pinnae, hairy, deciduous; stipules up to 1.5 cm long, linear-subulate with up to 7 alternate appendages; petiole 0.5–2(–3) cm long, rachis up to 16 cm long; leaflets per pinna, oblong or linear-oblong, up to 12 mm × 4.5 mm, base asymmetric, apex rounded, mucronate. Inflorescence an erect, terminal or axillary raceme up to 2 peduncle velvety hairy, reddish. Flowers bisexual, zygomorphic, 5-merous, showy; pedicel reddish hairy, 3–10 mm long; calyx with tube c. 2 mm long, lobes refle × 2.5–4 mm; petals obtriangular-spatulate with short claw, 10–14(–17) mm long, yellow; stamens 10, free, 8–13 mm long; ovary superior, rusty pubescent, 1-celle broadly peltate. Fruit a flat, elliptical, indehiscent pod, 4–10 cm × 1.5–2 cm, base and tip acuminate, winged along both margins, thinly woody, pendulous, 1–2-se at the position of the seeds. Seeds ovoid, compressed, c. 1 cm × 5 mm × 1.5 mm.
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Other botanical information
Peltophorum comprises about 15 species, all native to tropical regions with *Peltophorum africanum* the only species indigenous to Africa. It is most closely relate which differs in its thickly woody, dehiscent fruits.
The 'weeping' in the vernacular names of *Peltophorum africanum* refers to a phenomenon that occurs in spring just before the first rains: moisture drips from the some of these trees. It is caused by nymphs of small frog-hoppers or spittle-bugs, *Ptyelus grossa*, which suck up the sap of the trees and excrete almost pure water, to the ground.
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Anatomy

Wood-anatomical description (IAWA hardwood codes):
Growth rings: (1: growth ring boundaries distinct); (2: growth ring boundaries indistinct or absent). Vessels: 5: wood diffuse-porous; 13: simple perforation plates; intervessel pits alternate; 23: shape of alternate pits polygonal; 25: intervessel pits small (4–7 µm); 29: vestured pits; 30: vessel-ray pits with distinct borders; simi intervessel pits in size and shape throughout the ray cell; (41: mean tangential diameter of vessel lumina 50–100 µm); 42: mean tangential diameter of vessel lumi µm; 47: 5–20 vessels per square millimetre; 58: gums and other deposits in heartwood vessels. Tracheids and fibres: 61: fibres with simple to minutely bordered p fibres present; 66: non-septate fibres present; 69: fibres thin- to thick-walled. Axial parenchyma: 80: axial parenchyma aliform; 81: axial parenchyma lozenge-alif parenchyma winged-aliform); 83: axial parenchyma confluent; 89: axial parenchyma in marginal or in seemingly marginal bands; 91: two cells per parenchyma st (3–4) cells per parenchyma strand. Rays: 97: ray width 1–3 cells; 104: all ray cells procumbent; 115: 4–12 rays per mm. Mineral inclusions: 136: prismatic crystal prismatic crystals in chambered axial parenchyma cells.
(D. Louppe, P. Détienne & E.A. Wheeler)

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Growth and development

The initial growth rate of *Peltophorum africanum* is 1–1.5 m per year. Flowering is from September–April and fruits develop from February–June in southern Afr persist for a long time. The flowers are visited by bees. *Peltophorum africanum* does not fix nitrogen.

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Ecology

Peltophorum africanum has a wide distribution in the warmer, lower and drier regions of southern Africa with an annual rainfall of 300–900 mm, at 300–2050 m a most common in open savanna woodland, with temperatures varying from –6°C to 44°C, with an average of 23°C. Night temperatures of –9°C will cause branche plants to freeze back, but plants will regrow. *Peltophorum africanum* shows a definite preference for deep sandy or sandy-loam soils, and is encountered on very p sandy, loamy to gravelly soil derived from sandstone, quartzite or shale and is also found on shallow soils on norite, granite and laterite. In Zimbabwe it is often fo dumps and its dominance in the vegetation is taken as an indication of a high level of arsenic in the soil; indirectly this may indicate the presence of gold.

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Propagation and planting

The storage behaviour of the seed is orthodox. Viability is maintained after 3 years of hermetic storage at room temperature. The 1000-seed weight is 300–800 g. I should be soaked overnight in hot water, after which it is sown in a mixture of river sand and compost (5:1) and kept moist. The seeds take 3–10 days to germinate germination percentage is usually high. Young plants transplant readily, are fairly fast growing, but need protection from frost for 2–3 years although they withstar

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Management

Peltophorum africanum is easy to grow. The root system is not aggressive. After cutting the tree coppices readily. Increased cutting height has a strong positive ef number of new shoots.

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Diseases and pests

The larvae of the moths *Aurivillius arata* and *Alpenus investigatorum* (synonym: *Diacrisia investigatorum*) feed on the leaves of *Peltophorum africanum*. The larv *Charaxes* butterflies also feed on the leaves.

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Genetic resources and breeding

Peltophorum africanum does not appear to be endangered in its native range. Several genebanks hold seed, but the variation in the species has not been studied.

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Prospects

Interest of phytochemists in *Peltophorum africanum* will probably persist, because the bark and root extracts show interesting pharmacological activities, but only compounds have as yet been isolated. The tree also has a future as an ornamental, but as a browse species it is of very limited value because the quality and digest Its tolerance to adverse soil conditions makes it a candidate for reclaiming denuded sites such as abandoned mines and mine dumps.

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Major references

• Bessong, P.O., Obi, C.L., Andréola, M.L., Rojas, L.B., Pouységu, L., Igumbor, E., Marion Meyer, J.J., Quideau, S. & Litvak, S., 2005. Evaluation of selected So medicinal plants for inhibitory properties against human immunodeficiency virus type 1 reverse transcriptase and integrase. Journal of Ethnopharmacology 99: 83
• Coates Palgrave, K., 1983. Trees of southern Africa. 2nd Edition. Struik Publishers, Cape Town, South Africa. 959 pp.
• Ellis, R., 2003. Peltophorum africanum Sond. [Internet] Ecoport, FAO, Rome, Italy. http://ecoport.org/ perl/ecoport15.pl?SearchType=entityDisplay&entityId=15820&entityType=&entityDisplayCategory=&menuStyle=icon. Accessed September 2004.
• Leng, R.A., 1997. Tree foliage in ruminant nutrition. FAO Animal Production and Health Paper 139. FAO, Rome, Italy. 100 pp.
• Obi, C.L., Potgieter, N., Bessong, P.O., Masebe, T., Mathebula, H. & Molobela, P., 2003. In vitro antibacterial activity of Venda medicinal plants. South African Botany 69(2): 199–203.
• Palmer, E. & Pitman, N., 1972–1974. Trees of southern Africa, covering all known indigenous species in the Republic of South Africa, South-West Africa, Botsv and Swaziland. 3 volumes. Balkema, Cape Town, South Africa. 2235 pp.
• Ross, J.H., 1977. Fabaceae, subfamily Caesalpinioideae. In: Ross, J.H. (Editor). Flora of southern Africa. Volume 16, part 2. Botanical Research Institute, Depar Agricultural Technical Services, Pretoria, South Africa. 142 pp.
• van Wyk, P., 1972–1974. Trees of the Kruger National Park. 2 volumes. Purnell, Cape Town, South Africa. 597 pp.

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Other references

• Aganga, A.A., Kiazolu, J.S. & Tsopito, C.M., 1994. Browse plants as feed resource for ruminants in Botswana. 2. Browse in loamy soils and sandveld vegetatio Botswana. Bulletin of Animal Health and Production in Africa 42(3): 235–247.
• Amusan, O.O.G., Dlamini, P.S., Msonthi, J.D. & Makhubu, L.P., 2002. Some herbal remedies from Manzini region of Swaziland. Journal of Ethnopharmacology
• Evans, S.V., Shing, T.K.M., Aplin, R.T., Fellows L.E. & Fleet, G.W.J., 1985. Sulphate ester of trans-hydroxypipecolic acid in seeds of Peltophorum. Phytochemi 2593–2596.
• Gelfand, M., Mavi, S., Drummond, R.B. & Ndemera, B., 1985. The traditional medical practitioner in Zimbabwe: his principles of practice and pharmacopoeia. Gweru, Zimbabwe. 411 pp.
• Grace, O.M., Prendergast, H.D.V., Jäger, A.K. & van Staden, J., 2002. Bark medicines in traditional healthcare in KwaZulu-Natal, South Africa: an inventory. So Journal of Botany 69(3): 301–363.
• InsideWood, undated. [Internet] http://insidewood.lib.ncsu.edu/search/. Accessed May 2007.
• Joubert, F.J., 1981. Purification and some properties of a proteinase-inhibitor (DE-1) from Peltophorum africanum (Weeping wattle) seed. Hoppe-Seyler's Zeitsc Physiologische Chemie 362: 1515–1521.
• LCSV, 2004. Reactivity, synthesis and biological activity of plant phenols and polyphenols. [Internet] Laboratory of Plant Products Chemistry (LCSV), Bordeau France. http://www.u-bordeaux1.fr/ lcsv/SASN/ polyphenols.html. Accessed September 2004.
• Leger, S., 1997. The hidden gifts of nature: A description of today's use of plants in West Bushmanland (Namibia). [Internet] DED, German Development Servic Namibia & Berlin, Germany. http://www.sigridleger.de/book/. Accessed April 2003.
• Mebe, P.P. & Makuhunga, P., 1992. 11-(E)-p-Coumaric acid ester of bergenin from Peltophorum africanum. Phytochemistry 31(9): 3286–3287.

• Mlambo, V. & Munjeri, O., 1998. Characterisation of plant extracts using the innervated rabbit jejunum. Thesis. University of Zimbabwe Department of Pharma Zimbabwe.
• Mølgaard, P., Nielsen, S.B., Rasmussen, D.E., Drummond, R.B., Makaza, N. & Andreassen, J., 2001. Anthelmintic screening of Zimbabwean plants traditionally schistosomiasis. Journal of Ethnopharmacology 74: 257–264.
• Setshogo, M.P. & Venter, F., 2003. Trees of Botswana: names and distribution. Southern African Botanical Diversity Network Report 18. Pretoria, South Africa.
• Shackleton, C.M., 2000. Stump size and the number of coppice shoots for selected savanna tree species. South African Journal of Botany 66(2): 124–127.
• Steenkamp, V., 2003. Traditional herbal remedies used by South African women for gynaecological complaints. Journal of Ethnopharmacology 86: 97–108.
• van Wyk, B.E. & Gericke, N., 2000. People's plants: a guide to useful plants of southern Africa. Briza Publications, Pretoria, South Africa. 351 pp.
• Wild, H., 1974. Geobotanical anomalies in Rhodesia 4. The vegetation of arsenical soils. Kirkia 9(2): 243–264.
• World Agroforestry Centre, undated. Agroforestree Database. [Internet] World Agroforestry Centre (ICRAF), Nairobi, Kenya. http://www.worldagroforestry.org Sites/TreeDBS/ aft.asp. Accessed March 2005.
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• Ross, J.H., 1977. Fabaceae, subfamily Caesalpinioideae. In: Ross, J.H. (Editor). Flora of southern Africa. Volume 16, part 2. Botanical Research Institute, Depar Agricultural Technical Services, Pretoria, South Africa. 142 pp.
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