Gardening with traditionally useful plants

This is the second in a series of articles on indigenous plants that traditionally have been used by humans in southern Africa for food, medicine, crafts and charms. Some of these plants are now threatened while others that once formed an important part of our diet have been forgotten. It is hoped that these articles will help revive an interest in growing, using and conserving a valuable indigenous resource.

Learning to grow and use these plants will help:

- Promote sustainable use of these plants
- Provide practical growing information especially for threatened species
- Reduce pressure of harvesting from natural populations in the wild
- Inform the general public about indigenous useful plants
- Preserve indigenous knowledge

‘It estimated that there are 6 million indigenous medicine consumers in KwaZulu-Natal, and 27 million consumers in South Africa. ‘…at a national level, 20 000 tones may be traded in a year, with a value of approximately US$ 60 million (R 270 million)...The demand for medicinal plants is likely to remain buoyant in future. Consumers indicated that indigenous medicine was not inferior and demand is unlikely to decline should income levels and welfare increase.’

M. Mander, Marketing of Indigenous Medical Plants in South Africa.

The cancer bush, a timeless remedy

by Phakamani Xaba, Horticulturist, Kirstenbosch National Botanical Garden

The cancer bush, or kankerbossie, has been used by the Khoi Khoi, San and other indigenous people of southern African for centuries. It soon became one of the favourite indigenous medicinal plants of the early Dutch farmers too. The leaves, branches and root of this versatile plant are all used, and its quick growth, water hardiness, easy propagation and striking leaves, flowers and fruit have made it a desirable garden subject as well.

Lessertia is a perennial shrublet that grows from 0.3 m up to about 3 m tall. The red to orange flowers are borne in spring and summer. The leaflets of the compound, pinnate leaves are 10 mm long and silvery green-grey in colour. The swollen bladder-like pod fruit is about 5 cm long and papery when dry. Like many members in this family the roots have nitrogen-fixing nodules. Coastal plants tend to be shorter and have light grey leaves compared with the darker grey of the taller inland form. There are six closely related species, of which Lessertia frutescens (formerly called, and indeed still recognized by some as Sutherlandia frutescens) is the most variable and widespread. The others are L. montana (formerly called Sutherlandia montana) (the mountain cancer bush), L. microphylla (formerly called Sutherlandia microphylla) (bitterblaar), L. canescens (formerly called Sutherlandia tomentosa) (eendjies), L. humils (formerly called Sutherlandia humilis) and L. speciosa (formerly called Sutherlandia speciosa).

What’s in a name?

Botanical name Lessertia frutescens (L.) R.Br. (formerly Sutherlandia frutescens)
The generic name commemorates Jules de Lessert, 1773-1847, a French industrialist and banker whose important private herbarium was used by the leading botanists of the time. It was previously known, and indeed still recognized by some botanists, as Sutherlandia in honour of the first Superintendent of the Edinburgh Botanic Garden, James Sutherland, 1639-1719. The species name frutescens refers to it being shrub-like (from the Latin frutex meaning a shrub or bush).

Family name Fabaceae, the bean and pea family, formerly known as Leguminosae.

Common names Cancer bush or kankerbossie (because of its traditional use in combating cancer), balloon pea or blaas-ertjie (after its balloon-like, inflated pods), uNwele (Nguni for a hair from one’s head, possibly referring its traditional medicinal use as a calmative when emotionally-distressed people might pull out their hair).

Where do we find it?
Throughout the drier parts of the Western Cape, Eastern Cape, KwaZulu-Natal, Namibia and Botswana.

Traditional use
Decoctions made from the ground and boiled, or steeped leaves have been used by the Khoi San and Nama people for washing wounds and as a febrifuge; by early Dutch settlers for treating cancer and chicken pox; and by Zulu and Xhosa-speaking people for aches and pains, diseases of the eye, chest
complaints, digestive problems, urinary tract infections and as a restorative and calming measure. Lately it has been used as an immune-system booster and appetite stimulant to combat wasting in HIV/AIDS sufferers.

Clinical trials and analysis

Few traditionally used medicinal plants from South Africa have received as much attention from researchers as the cancer bush. Potentially it has an array of medically useful compounds. Prof Ben-Erik van Wyk and Dr Carl Albrecht identified chemicals in *L. frutescens* samples which may have beneficial medical effects, including a non-protein amino acid, L-canavanine (a compound that has anti-viral, antibacterial, antifungal and anti-cancer properties), pinitol (an anti-diabetic), and GABA (which acts as a calmsative by inhibiting neurotransmission).

A number of trials are being conducted by different research bodies. Whether the nature, quantity and quality of these compounds in *L. frutescens* will turn out to be effective in fighting disease, especially in HIV/AIDS victims, has still to be proven, but a recent South African Medical Research Council-funded study suggests that already there is sufficient evidence to show that an extract of cancer bush could be useful in providing a ‘quality-of-life tonic in cancer and AIDS patients’, boosting appetite, well-being and effectively countering AIDS-linked loss of body mass.

A preliminary bonus is that laboratory tests have so far not revealed any toxic side effects from using the very bitter-tasting plant.

Commercial aspects

Cancer bush is commercially available in tablet form.

Conservation status and threats

Although this plant is not threatened, its commercial exploitation in the wild should be monitored. This also applies to other commercially useful indigenous plants such as *Aloe ferox* (bitter aloe), *Warburgia salutaris* (pepper bark tree), *Siphonochilus aethiopius* (wild ginger), *Hoodia gordoni* (ghaap) and *Aspalathus linearis* (rooibos).

In the previous issue of *Veld & Flora*, we showed you how to grow and use Africa’s miracle bean, the cowpea, *Vigna unguiculata* on pages 169-171.

NB: Before using any plant as medicine, please consult your health practitioner for advice.

Acknowledgements

Thank you to Toni Xaba for advice and input on original layout, to Yhehelar Peter Croeser for editorial assistance and ‘Wgwonya’ Ernst van Jaarsveld for his continual support.

Further reading


Websites


What does that mean?

**compound leaf** A leaf that looks like it is made of several smaller leaves (or leaflets) connected to a stem.

**febrifuges** Medicine used to reduce a fever (from the Latin *febris* for fever, and *fugere*, to expel).

**nitrogen fixing** A natural process that causes free nitrogen, which is a relatively inert gas plentiful in air, to combine chemically with other elements to form more reactive nitrogen compounds such as ammonia, nitrates or nitrites.

**perennial** A plant that lives for several years, not perishing after flowering and fruiting once (as does an annual plant).

**pinnate** Like a feather in appearance.
## An easy guide to growing **cancer bush**

<table>
<thead>
<tr>
<th>Activity</th>
<th>Environment</th>
<th>Treatment</th>
<th>Time</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Sowing</strong></td>
<td>Seed can be sown in a well-drained medium. Potting medium should comprise a mixture of two parts of compost, one part loam and one part sand. Optimum day temperature should be about 25 °C.</td>
<td>A fungicide can be applied after sowing to prevent damping-off especially if growing in large quantities. Soaking seeds overnight in initially warm water accelerates the germination rate.</td>
<td>Seed can be sown in spring or autumn. Germination of seed is within 10 to 15 days.</td>
<td>Seed germination rate is excellent (over 90%), Transplant to potting bag when about 5 cm.</td>
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<tr>
<td><strong>Vegetative propagation</strong></td>
<td>Grow tip cuttings in an intermittent mist unit, cold frame or shaded area.</td>
<td>Dip cutting wound in rooting hormone and set it in river sand or a mixture of polystyrene and coarse bark, to stimulate root growth.</td>
<td>Rooting a member of the Fabaceae family is normally difficult and unpredictable. However, some will root, some will form callus tissue and most may rot. In 10 days one should see rooting, but expect erratic results.</td>
<td>This method has a low rooting percentage rate. The only reason one would use this method is to get a low growing bush that is floriferous and therefore will also give you more seeds.</td>
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<tr>
<td><strong>Cultivation</strong></td>
<td>After weaning the seedlings in dappled shade for one week, expose to full sun and then plant them out. For display purposes plant 1 m apart in groups of three to five.</td>
<td>Water every second day for a week then reduce the watering gradually until plant is established.</td>
<td>Remember it's always better to do your planting at the beginning of, or during, the rainy season. <em>Lessertia</em> is short lived (two to three seasons before it starts looking old and battered).</td>
<td>Mulching or compost around the plants will suppress weeds competing with the young plants.</td>
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<tr>
<td><strong>Harvesting of leaves</strong></td>
<td>One can harvest leaves and branchlets sustainably for two seasons. Harvest in the growing season, which is spring to early summer, preferably in morning.</td>
<td>Wash the branchlets and leaves before drying them.</td>
<td>Leaves can be harvested three months after planting.</td>
<td>Leaves, branchlets or the whole plant except for seeds, are dried and ground to a powder state.</td>
</tr>
<tr>
<td><strong>Harvesting seeds</strong></td>
<td>Seeds can be harvested as soon as the balloon-like pods begin to dry to a papery state.</td>
<td>Remove the papery skin by tearing, to expose the small black seeds.</td>
<td>Spring and in summer.</td>
<td>Seed can be stored for a long time in an aerated insect-free environment.</td>
</tr>
</tbody>
</table>

**Sources of supply**

Seeds are available from the Kirstenbosch Seed Room. Please contact them at tel +27 021 799 8899, fax +27 21 762 8239, email seedroom@sanbi.org or The Seed Room, Private Bag X7, Claremont, 7735.

**Information**

Please email Phakamani Xaba at xaba@sanbi. org for further suggestions or questions.

**RIGHT:** Flowers of the cancer bush, *Lessertia frutescens* (formerly called *Sutherlandia*). Photo: Ernst van Jaarsveld.

**FAR RIGHT:** The swollen bladder-like pod fruit is about 5 cm long and papery when dry. Photo: Phakamani Xaba.