# PH-06 Sub-Saharan Africa

HEALING after the FALL, research library, PH-06

Researched 10 October 2026 by Claude Opus agent for THRIVING after the FALL, Book Four. Library document, unverified.

## Scope and method

This report is for someone living between the Sahel and the Cape who has to decide, without a pharmacy, which plants in the local market or bush are worth using. It is built around the home pharmacopoeia (THRIVING library, PH-01). Malaria management, including the case against *Artemisia* teas, is in IN-09. Recognition and first-hour treatment of plant poisoning is in PH-10. The ethics of taking and printing traditional knowledge, and the Hoodia case, are in SY-04. Each thread is summarised here in a sentence or two so that this report stands alone.

The method is PH-01's. A trial grade belongs to the preparation tested, not to the plant (THRIVING library, PH-01, section 7). That rule matters more in Africa than in Europe, because most of the best evidence for African plants was produced in European laboratories on solvent extracts no village can make. For each plant the tradition comes first, in its holders' names and terms, then the record. References note where only an abstract or summary was read.

**Restricted knowledge.** None of the published sources I read marked a plant preparation as restricted. But much of what southern African izinyanga (herbalists) and izangoma (diviners) know is learned through a calling and apprenticeship, and the content of divination, initiation and protective medicines is not public. The Bwiti tradition of Gabon and Cameroon uses iboga (*Tabernanthe iboga*) ceremonially. Both exist and are held by their custodians. This report does not describe them (THRIVING library, SY-04, section 7, categories 4 and 5).

## 1. The ranked table

Ranked by what a village can safely do with the plant, weighed against the strength of the record. Grades follow the brief: A trials or systematic reviews, B consistent clinical series, C convergent use across unrelated cultures with plausible pharmacology, D a single tradition, X ineffective or harmful. "A (extract)" does not transfer to a home decoction.

| # | Latin binomial | Part | Preparation | Use | Grade per use | Dose | Harms | Lookalikes |
|---|---|---|---|---|---|---|---|---|
| 1 | *Harpagophytum procumbens* | Secondary tuber | Cold infusion, powder, extract | Back pain, osteoarthritis | A extract (back). B powder (OA) | Tea 4.5 g/day. Powder 1.3 to 2.6 g/day [VERIFY upper] | Dyspepsia. Not with ulcer, gallstones | *H. zeyheri*, equivalent |

| # | Latin binomial | Part | Preparation | Use | Grade per use | Dose | Harms | Lookalikes |
|---|---|---|---|---|---|---|---|---|
| 2 | *Combretum micranthum* | Leaf | Brew, powder | Raised blood pressure | B | 10 g leaf/day brewed, or 380 to 400 mg powder | Few reported | Other *Combretum* [VERIFY] |
| 3 | *Pelargonium sidoides* | Root | Ethanolic extract, decoction | Acute bronchitis, cold | A extract (low quality). D decoction | Extract 4.2 ml/day, 7 days. Root about 0.4 to 1.5 g/day [VERIFY] | Rare liver reports. Not under 3 | *P. reniforme* |
| 4 | *Carica papaya* | Pulp, seed | Pulp dressing, seed in honey | Burn debridement, worms | B, B | Daily layer. Seed 4 g once [VERIFY] | Latex irritates | None |
| 5 | *Aloe ferox* | Dried exudate | Bitter lump | Occasional constipation | A (anthranoid class) | 10 to 30 mg aloin at night, 1 week | Potassium loss. Not pregnant, under 12, obstructed | Gel mistaken for exudate |
| 6 | *Psidium guajava* | Leaf | Tea, extract | Diarrhoea, with ORS | B extract. C tea | Extract 500 mg 8-hourly, 3 days | Constipation | None |
| 7 | *Moringa oleifera* | Leaf | Dried powder in food | Diet. Blood sugar | C food. B glucose (preliminary) | Spoonfuls in food [VERIFY] | Root and bark abortifacient | Root like horseradish |
| 8 | *Cryptolepis sanguinolenta* | Root | Teabag infusion | Falciparum malaria, no ACT | B (uncontrolled) | 2.5 g three times daily, 5 days | Slow clearance, chloroform in market bottles | Powder unverifiable |
| 9 | *Prunus africana* | Bark | Chloroform extract | Prostate symptoms | A extract (low quality). D bark | Extract 100 mg/day | Overharvest kills trees | Bark powder |

| # | Latin binomial | Part | Preparation | Use | Grade per use | Dose | Harms | Lookalikes |
|---|---|---|---|---|---|---|---|---|
| 10 | *Hypoxis hemerocallidea* | Corm | Sterol extract, decoction | Prostate. HIV | A sterol (prostate). X HIV | None at village level | Marrow suppression signal | Other *Hypoxis* [VERIFY] |
| 11 | *Zanthoxylum zanthoxyloides* | Root, stem | Chewing stick | Oral hygiene, toothache | C | Daily | Numbing | Other sticks |
| 12 | *Vachellia nilotica* | Pod, bark | Decoction | Diarrhoea, mouth | C [VERIFY] | Not set | Constipation | Other thorns |
| 13 | *Adansonia digitata* | Pulp, leaf | Drink, powder | Food, fluids | C food. D rehydration | Food | None known | None |
| 14 | *Tamarindus indica* | Pulp | Soaked drink | Mild laxative | C [VERIFY] | Food | None known | None |
| 15 | *Vernonia amygdalina* | Leaf | Infusion, food | Malaria. Stomach | X malaria. C food | Food | Low | Other *Vernonia* |
| 16 | *Agathosma betulina* | Leaf | Infusion | Urinary | D | Not set | Pulegone, abortifacient | *A. crenulata* |
| 17 | *Warburgia salutaris* | Leaf, not bark | Chewed, infusion | Colds, chest | D | Not set | Endangered | Substituted barks [VERIFY] |
| 18 | *Kigelia africana* | Fruit | External | Skin | D | External only | Raw fruit purgative [VERIFY] | None |
| 19 | *Lessertia frutescens* | Leaf | Tablet, tea | HIV. Tonic | X HIV. D tonic | Not advised | TB on isoniazid, CYP3A4, canavanine | Other *Lessertia* [VERIFY] |
| 20 | *Artemisia afra* | Leaf | Tea, nasal leaf | Malaria. Colds | X malaria. D colds | Not set | Thujone, no artemisinin | *A. annua* (IN-09) |
| 21 | *Hoodia gordonii* | Stem | Chewed, extract | Appetite | X | None | Raised pressure, pulse | Other stapeliads [VERIFY] |
| P | *Callilepis laureola* | Tuberous root | Decoction, enema | Many | X, lethal | Never | Liver, kidney necrosis, low sugar | None needed |

| # | Latin binomial | Part | Preparation | Use | Grade per use | Dose | Harms | Lookalikes |
|---|---|---|---|---|---|---|---|---|
| P | *Senecio*, PA-rich | Herb | Infant purge | Weaning | X, lethal | Never | Hepatic sinusoidal obstruction | *S. coronatus* (no PAs) |

P marks poisons sold as medicine. Datura, Brugmansia and oleander are in PH-10.

## 2. The steer's seven

### 2.1 *Artemisia afra*

**The tradition.** Wilde-als in Afrikaans, umhlonyane in isiXhosa, mhlonyane in isiZulu, lengana in Setswana and zengana in Sesotho. It is the only indigenous *Artemisia* of southern Africa, ranging from the Cederberg to Ethiopia at 20 to 2,440 m, and among the region's most used household medicines. Fresh leaves go into the nostrils for a blocked nose. The infusion, sweetened with sugar or honey, is drunk for coughs, colds, fever, poor appetite, colic, headache and worms. The leaf is also smoked, taken as snuff, used as a poultice and as an enema, and steeped in brandy (PlantZAfrica 2003, Springer review 2024). Since about 2015 it has been promoted abroad as a malaria tea.

**The record.** IN-09 has the detail and I agree with it. The plant holds at most trace artemisinin, tested teas showed no antiplasmodial activity, and the one trial was retracted (THRIVING library, IN-09, section 1.14). WHO does not support *Artemisia* plant material in any form for malaria, citing variable content, doses too low to clear parasites, recrudescence and resistance (WHO 2019). The technical document behind that statement raises heart and nerve toxicity from thujone-rich *A. afra* chemotypes (THRIVING library, IN-09).

**Verdict.** X for malaria. For a cold, D, and the X does not carry over to that use. PH-01's thujone ceiling of 6.0 mg a day for wormwood is the right caution (THRIVING library, PH-01). I found no measured household dose. Short use of a weak infusion only, never in pregnancy, never as an enema, and never for a feverish child in a malaria area before malaria is treated.

### 2.2 *Prunus africana*

**The tradition.** The African cherry grows in the montane forests of Cameroon, Kenya, Madagascar and the Rift and Ethiopian highlands. It is wotangue to the Bakweri of Mount Cameroon and tenduet in Kenya. The bark is decocted for stomach ache, chest pain, malaria, gonorrhoea and older men's urinary trouble (names and uses from a 2022 review read only as a search summary [VERIFY]).

**The record.** European use began in France in the 1960s as pygeum, a chloroform extract rich in sterols. The Cochrane review pooled 18 trials with 1,562 men. Men on pygeum were twice as likely to report overall improvement (RR 2.1, 1.4 to 3.1), with nocturia down 19%, residual urine down 24% and peak flow up 23%. The trials were small and short, and the review was later withdrawn as out of date (Wilt and Ishani 2002). The EMA lists it for traditional use: 100 mg a day of extract at a drug-extract ratio of 114 to 222 to 1, men only, with a doctor seen for fever, blood in urine or retention (EMA 2016 pygeum). Drugs.com gives 25 to 200 mg, usually 100 mg (Drugs.com pygeum). The two agree. At that ratio, 100 mg of extract stands for about 11 to 22 g of bark [VERIFY, own inference], and a water decoction cannot be assumed to carry the sterols.

**The harvest.** CITES listed the tree in Appendix II on 16 February 1995. In July 1996, 100 t of illegally stripped bark was seized on Mount Cameroon (CIFOR WP153). The EU suspended imports from Cameroon from 2007 for three or four years (sources differ), and Cameroon moved from a zero quota to managed allocation units (CITES Livelihoods 2022). A girdled tree dies.

**Verdict.** A for the extract on symptoms, D for any home preparation. After the Fall, bark only from planted or coppiced trees in the highlands [VERIFY technique].

### 2.3 Devil's claw

**The tradition.** *Harpagophytum procumbens* grows on the Kalahari sands of Namibia, Botswana and the Northern Cape. San and Khoekhoe peoples used the secondary tubers for pain, fever, digestion and childbirth, and on sores [VERIFY detail]. Ju/'hoansi and !Kung harvesters dig it in the Nyae Nyae conservancy and elsewhere. Namibia has protected it since 1977 (SANBI). The story of a German farmer learning of it in 1907 is weakly sourced [VERIFY].

**The record.** The key review covered 12 trials (Gagnier, Chrubasik and Manheimer 2004). In low back pain, 197 patients took extract delivering 50 or 100 mg harpagoside or placebo for four weeks, and 10, 6 and 3 became pain-free ($p = 0.027$). A second trial of 118 found 9 against 1. Against rofecoxib 12.5 mg in 88 patients, 60 mg harpagoside was non-inferior (22% against 11% pain-free). In hip and knee osteoarthritis, 122 patients on powder delivering 57 mg harpagoside did no worse than on diacerhein over 16 weeks, with fewer adverse events (10 against 21). The review rated the evidence strong for 50 mg harpagoside in back pain and moderate for 60 mg in osteoarthritis. The Cochrane review of herbal medicine for back pain agreed on short-term benefit (Gagnier 2006).

**Dose.** The EMA monograph (traditional use) gives 4.5 g of cut tuber in 500 ml of boiling water, infused for 8 hours, in three doses a day, or powder 435 mg three times a day. Review after four weeks, or at once if a joint is swollen, red or hot. Not with active peptic ulcer, gallstones only on advice, not under 18 (EMA 2016 devil's claw). Drugs.com allows crude tuber up to 9 g a day and warns against antiarrhythmics (Drugs.com devil's claw). The sources differ twofold at the top. Trial powder doses sat between them [VERIFY].

**The trade.** Namibia exported about 1,018 t in the 2002 peak, up to 50 million plants by one estimate (ISHS 2009, SANBI). German sales were about €30 million in 2001 against Namibian export income of about €2.7 million (ISHS 2009).

**Verdict.** The strongest African plant here for a common problem. Protocol 1.

### 2.4 Sutherlandia

**The tradition.** *Lessertia frutescens* is cancer bush or kankerbos in Afrikaans, insiswa and unwele in isiZulu and isiXhosa, phetola and lerumo-lamadi in Sesotho and Setswana, and mukakana in Tshivenda. Khoekhoe, Nama, Cape Dutch and Bantu-speaking peoples used the leaf for cancer, TB, diabetes, influenza, ulcers, anxiety and depression. It became the best-known "AIDS herb" of the 2000s, recommended at one point by the Ministry of Health and fourteen SADC states (Mills, Cooper, Seely and Kanfer 2005).

**The record.** HIV-positive adults with CD4 counts above 350 at Edendale Hospital, KwaZulu-Natal, were randomised from 2008 to 2011. Of 107 analysed, 54 took 1,200 mg of leaf twice daily and 53 placebo for 24 weeks. Viral load ($p = 0.829$) and CD4 count ($p = 0.632$) did not change. The burden of infection was higher on Sutherlandia, 9.0 against 5.0 days ($p = 0.045$), driven by two TB cases in people on isoniazid preventive therapy. Antinuclear antibodies turned positive in 5 against 1 (Wilson 2015). The authors suggest an antioxidant effect may blunt isoniazid. In vitro the leaf inhibited CYP3A4 by 96% and activated PXR more than twofold, predicting antiretroviral interference (Mills 2005, aidsmap 2005). It contains 30 to 40 mg/g of L-canavanine, linked to a lupus-like syndrome (Mills 2005), which may bear on the antibody signal [VERIFY].

**Dose.** Mills gives a traditional 9 mg/kg a day. The trial's 2,400 mg a day is about 34 mg/kg for 70 kg, four times as much.

**Verdict.** X for HIV: no benefit, a TB harm signal, and an interaction mechanism. Over half of adults starting antiretrovirals in KwaZulu-Natal reported traditional or complementary medicine use (Wilson 2015), so every HIV or TB consultation starts with what else the patient takes.

### 2.5 Kinkeliba

**The tradition.** *Combretum micranthum* is the kinkéliba of Senegal, the Gambia, Mali and Guinea, a shrub of the Sahel and Sudanian savanna. Wolof, Fula and Mandinka households drink the leaf brew at breakfast and against fever, liver and digestive trouble [VERIFY peoples]. It is sold in every Dakar market.

**The record.** Two randomised trials from one Senegalese and Swiss group test a home preparation better than anything else in this report. In 125 patients with uncomplicated hypertension, leaf powder capsules of 190 mg twice daily lowered systolic pressure by 12.2 mmHg in four weeks, against 16.7 on ramipril 5 mg, a significant difference for the drug. 37% against 39% reached normal pressure (Seck 2017). In 219 patients at several centres, tablets of 2 × 200 mg or a brew of 10 g of leaves a day lowered systolic pressure by 19.5 mmHg over six months, against 19.7 on captopril 2 × 50 mg. 51% against 40% reached below 140/90 (Bourqui 2021). A natriuretic effect was noted. Both trials were open and both had bissap (*Hibiscus sabdariffa*) arms whose results I did not read.

**Dose.** The doses differ about 25-fold, from 380 mg of powder to 10 g of brewed leaf, and both worked. The brew may extract only a fraction, or the dose-response may be flat [VERIFY, own inference]. The authors suggest brews could start lower. Claims for diabetes rest on rat studies I did not read [VERIFY].

**Verdict.** B, held below A because the trials were open and from one team. A living West African tradition whose trial record matches it. The first plant in this report I would tell a district to stock, with a blood pressure cuff (Protocol 2).

### 2.6 African potato

**The tradition.** *Hypoxis hemerocallidea* is inkomfe in isiZulu, ilabatheka in isiXhosa, lotsane in Setswana, molikharatsa in Sesotho and sterretjie in Afrikaans. Zulu healers used the corm, black outside and yellow inside, for urinary infections, heart weakness, tumours and nervous disorders (Mills 2005).

**The record.** In the 2000s the health minister Manto Tshabalala-Msimang promoted it for HIV alongside garlic, beetroot and lemon. In 2007 the Academy of Science of South Africa concluded that no food is an alternative to medication for HIV or TB (aidsmap 2007). She left office in 2008 (NBC 2008). A trial in people with HIV was stopped by its safety committee for apparent bone marrow suppression after patients improved and then deteriorated (IOL, undated press report, sponsor and year not established [VERIFY]). The corm's hypoxoside becomes rooperol in the colon. A phase I trial of hypoxoside in 24 cancer patients found no toxicity (Smit 1995, as summarised in Mills 2005).

The interaction fear was not borne out. Extracts inhibited CYP3A4 by up to 86% in vitro (Mills 2005), but ten healthy men taking a traditional decoction for 14 days, at 15 mg/kg/day of hypoxoside, showed no change in efavirenz: Cmax ratio 97.3% (90% CI 78.8 to 120.1), AUC ratio 102.8% (89.0 to 118.8). The decoction was about 250 g of grated corm boiled in 2.5 L of water for 45 minutes. The paper reports 11 t a year sold in the Eastern Cape (Mogatle 2008). Beta-sitosterol extracted from *Hypoxis rooperi* improved prostate symptoms in two trials with 342 men, IPSS down 4.9 points (3.5 to 6.3) and peak flow up 3.9 ml/s. A glucoside-only product failed (Wilt 1999).

**Dose.** Mills gives 2,400 mg of raw plant a day. The efavirenz study delivered about 1 g of hypoxoside a day for 70 kg. I cannot reconcile these [VERIFY].

**Verdict.** X for HIV. A for an extracted sterol no village can make. Keep it away from anyone with HIV.

### 2.7 *Hoodia gordonii*

The San chewed the stem against hunger and thirst on long hunts. The CSIR patented the active compound, licensed through Phytopharm to Pfizer, and the 2003 benefit-sharing agreement had paid the San about R500,000 by 2010 (THRIVING library, SY-04, section 2.1). The purified extract, 1,110 mg twice daily for 15 days in 49 women, did

nothing to food intake or weight and raised blood pressure, pulse, bilirubin and alkaline phosphatase (Blom 2011). X as a slimming product. The San hunting use is theirs and was never tested as such.

## 3. The plants with the strongest record

### 3.1 *Pelargonium sidoides*

**The tradition.** A small grey-leaved geranium with wine-dark flowers from the grasslands of the Eastern Cape, Free State and Lesotho. Zulu, Xhosa and Sotho healers boil the red root for TB, cough, diarrhoea, dysentery and colic (Brendler and van Wyk 2008). The name umckaloabo is said to come from isiZulu words for fever and chest pain [VERIFY].

**The history.** Charles Henry Stevens, an Englishman with TB, was treated by a Sotho healer in Basutoland, and sold "Stevens' Cure" in England. The BMA attacked it in *Secret Remedies* in 1909, Stevens lost a libel suit against the BMA in 1912, and the AMA called it a fraud in 1930. Adrien Sechehaye in Geneva published case series in 1923 and 1934 (Brendler, Stander and van Wyk 2023). No source I found names the healer. The product became Schwabe's EPs 7630, with more than 30 trials in over 10,000 people (Brendler 2023).

**The record.** The Cochrane review included eight trials (Timmer 2013). In adult bronchitis (three trials, 746 people) the liquid extract improved most outcomes and tablets did not. Child bronchitis (three trials, 819) was similar. In one sinusitis trial of 103 people, the risk ratio on complete resolution at day 21 was 0.43 (0.30 to 0.62), in the extract's favour, at very low quality [VERIFY direction of the ratio]. Colds improved at day 10 but not day 5. Adverse events were more common, none serious. All trials were tied to the maker, run in Ukraine and Russia, with publication bias suspected.

**Liver.** A causality review of 13 reported liver cases established causality in none (Teschke 2012). The EMA's revision 2 still says to stop at signs of liver injury and does not recommend use under 3. Italy objected to use from 3 to 5, and there are no reproductive or genotoxicity tests (EMA 2024 comments).

**Dose.** The EMA lists the liquid extract (ratio 1 to 8 to 10, ethanol 11%) for the common cold: 1.4 ml three times daily for adults, 0.9 ml for ages 6 to 12, 0.4 ml for 3 to 5, up to a week (EMA 2024 monograph). The bronchitis trial used 30 drops three times daily for up to seven days (Matthys 2003), which matches. That is about 0.4 to 0.5 g of root a day, and the dry extracts imply 0.24 to 1.5 g [VERIFY, own inference]. The root dose is small, which makes a home decoction plausible, but whether water extracts what 11% ethanol does is untested.

**Verdict.** A on the extract, low quality and one maker. D for the Sotho decoction it came from. Wild harvest has pressed the plant [VERIFY], so a village using it should grow it. Protocol 4.

### 3.2 *Cryptolepis sanguinolenta*

**The tradition.** A climbing shrub of the forest-savanna margin of Ghana and Nigeria, nibima in Twi [VERIFY other names]. Ghanaian herbalists boil the yellow root for fever, malaria and urinary and intestinal infections.

**The record.** In Accra in 2001, 44 adults with uncomplicated falciparum malaria took 2.5 g root teabags three times daily for five days. 31 completed. About half had cleared parasites by 72 hours and all by day 7, with mean clearance at 82 hours and fever gone in about 25. 29 of 31 were cured at day 28, with two recrudescences. White cells fell, alkaline phosphatase stayed raised and uric acid rose. The study was open and uncontrolled. The authors warn that some market decoctions are preserved with chloroform and that cryptolepine is genotoxic in mammalian cells (Bugyei 2010). I found no randomised trial.

**Verdict.** B, on a small uncontrolled series. Clearance is slower than with ACT, which in a child can kill. IN-09 governs: an ACT if there is one, this root only when there is none (THRIVING library, IN-09). Dried, weighed root from a known source, never a market bottle.

### 3.3 *Vernonia amygdalina*

Bitter leaf is a hedge shrub and pot-herb across West and Central Africa, onugbu in Igbo, ewuro in Yoruba, shiwaka in Hausa, and the ndolé of Cameroon [VERIFY names]. The leaves are washed of their bitterness and cooked. The juice is taken for fever, malaria, worms and stomach complaints from Senegal to Uganda. In the only clinical study, patients aged 12 and over drank a fresh-leaf infusion for malaria. 67% had an adequate clinical response at day 14, but parasites cleared in only 32% of responders and 71% of those recrudesced (Challand and Willcox 2009). People feel better while the parasites remain. X as a malaria cure, C as food.

### 3.4 *Moringa oleifera*

Moringa came from the Himalayan foothills and is now grown in yards from Senegal to Malawi, zogale in Hausa and nebeday in Wolof [VERIFY]. The leaves go into sauces and couscous. A 2026 meta-analysis of 20 small studies found fasting glucose lower (SMD −0.70), HbA1c down 0.62 points and systolic pressure down 7.5 mmHg (Mokgalaboni 2026). Its value is as food. Root and bark are used to end pregnancy, and a death after root with black pepper has been reported in a commercial database I saw only in summary [VERIFY]. Leaf yes, root and bark never. Protocol 6.

### 3.5 *Aloe ferox*

The bitter aloe of the Eastern and Western Cape. amaXhosa put the leaf sap on wounds, ringworm and boils, and the dried yellow exudate has long been tapped as a purgative [VERIFY date]. A Khoekhoe origin of tapping is often claimed and I could not confirm it. Tapping is a rural livelihood managed under CITES Appendix II (CITES Livelihoods, Aloe ferox). The exudate is an anthranoid laxative, and the EMA lists it under well-established use for occasional constipation: the smallest dose giving 10 to 30 mg of hydroxyanthracenes (as aloin) at night, at most a week, over 12 only. It is contraindicated in obstruction, appendicitis, inflammatory bowel disease, abdominal pain of unknown cause, dehydration, pregnancy and breastfeeding, and interacts through potassium loss with cardiac glycosides, diuretics and liquorice (EMA 2016 aloe). I found no second dose source [VERIFY]. The gel's wound evidence is laboratory only, from an assay read in summary [VERIFY]. A for the exudate, D for the gel. Protocol 5.

### 3.6 Buchu, Zanthoxylum and pepper-bark

**Buchu.** *Agathosma betulina* grows in the mountain fynbos of the Western Cape. Khoekhoe and San used the leaf as medicine and body powder, and Cape households made buchu brandy for urinary and stomach complaints [VERIFY]. No trial exists. The oil contains pulegone, more in *A. crenulata*, one possible hepatitis case is recorded, and it is regarded as an abortifacient (LiverTox, Drugs.com buchu). D, not recommended.

**The chewing stick.** In Ghana, Nigeria and Senegal a stick of *Zanthoxylum zanthoxyloides* root or stem, orin ata in Yoruba [VERIFY], is chewed into a brush each morning. It numbs and stings, which helps toothache and sore gums, and its decoction is a mouthwash. The root extract's rodent LD50 is above 5,000 mg/kg [VERIFY source]. The practice converges with the miswak of Arabia and South Asia. C. When toothpaste ends, this is the oral hygiene a village already knows.

**Pepper-bark.** *Warburgia salutaris* of Mpumalanga, Limpopo, KwaZulu-Natal, Eswatini, Mozambique and Zimbabwe, isibhaha in isiZulu [VERIFY], is chewed or infused for colds, chest infections, malaria and ulcers. Its pungent drimanes, polygodial and warburganal, are antimicrobial in the laboratory. No trial exists. The tree is endangered, more than half of South Africa's trees are gone, stripped trees die, and leaves have similar chemistry and can replace bark (BGCI). D, leaves only.

### 3.7 Acacia, baobab, tamarind, Kigelia

Strong traditions, thin records, and a village will have them.

**Vachellia nilotica.** From the Sahel to India the tannin-rich pods and bark are decocted for diarrhoea, sore mouth and wounds. A 2024 review found wide use with low toxicity across many countries (Hafez 2024). C for an astringent decoction [VERIFY]. Tannins firm the stool and also constipate.

**Baobab.** The pulp is soaked into bouye in Wolof, and the dried leaf is lalo for couscous. The pulp is rich in vitamin C, about 350 mg per 100 g of dry matter by one composition study [VERIFY], and in soluble fibre. I found no trial of baobab as a rehydration drink. Food, C. As rehydration, D, and never in place of the salt and sugar of ORS.

**Tamarind.** The soaked pulp is a mild laxative and cooling drink from Senegal to Sudan and India. C [VERIFY]. A food first.

**Kigelia.** The sausage tree's great hanging fruit is sliced, dried and powdered for skin complaints and ulcers. About 150 compounds are described and laboratory work is anti-inflammatory, but no human trial exists (Kigelia review 2020). The raw fruit is purgative [VERIFY]. D, external only.

### 3.8 Papaya and guava

**Papaya.** At the Royal Victoria Hospital in Banjul, The Gambia, mashed papaya pulp was applied daily to full-thickness and infected burns in children, and appeared to remove slough and prevent infection. The report gives no counts (Starley 1999). Indian series used autoclaved unripe pulp. Papain and chymopapain explain the debridement. In 60 Nigerian children with intestinal parasites, 4 g of dried ground seed in honey cleared stools in 71 to 77% against 17% on honey (Okeniyi 2007, figures vary between summaries). B for both, on thin data. Protocol 3.

**Guava leaf.** An American tree now in every tropical yard. The leaf tea for diarrhoea is used in Mexico, the Caribbean, West Africa and Asia, a convergence across unrelated cultures. A Mexican trial of a quercetin-standardised extract, 500 mg every 8 hours for three days in 50 adults, shortened abdominal pain (Lozoya 2002). B for the extract, C for tea. An addition to ORS, never a replacement.

## 4. The Decade of African Traditional Medicine, 2001 to 2010

**What it was.** The WHO Regional Committee for Africa adopted a traditional medicine strategy in 2000. The African Union declared 2001 to 2010 the Decade of African Traditional Medicine, with a plan of action in 2003, and African Traditional Medicine Day, 31 August, from 2003. The 2011 progress report is the main record (WHO AFRO 2011).

**What it achieved, by its own count.** Countries with a national policy rose from 8 to 39, with a strategic plan from none to 18, and with a regulatory framework from 1 to 28. Twenty-two countries researched remedies for malaria, HIV, sickle-cell disease, diabetes and hypertension. Countries with traditional medicines on the essential medicines list rose from one (Mali) to five, with examples such as Saye and N'Dribala (*Cochlospermum planchonii*) for malaria in Burkina Faso and Madeglucyl (*Eugenia jambolana*) for diabetes in Madagascar. Twelve countries issued marketing authorisations, from 3 products in Cameroon and Congo to over 1,000 in Ghana and Nigeria. The DRC, Ghana and Nigeria produced herbal pharmacopoeias. The AU renewed the Decade for 2011 to 2020 (WHO AFRO 2011).

**What it validated.** Very little in the sense the brief means. The report counts policies, plans and registrations, not trials showing a remedy works. Its own list of continuing problems includes insufficient data on safety, efficacy and quality, weak regulation that allowed malpractice, and too little money and staff (WHO AFRO 2011). Most registrations in Ghana and Nigeria rest on safety and traditional use, not efficacy trials [VERIFY]. The strongest African clinical work, the kinkeliba trials and the Cryptolepis series, came from academic groups, while Pelargonium, devil's claw and pygeum were tested by European firms. Nigeria's sickle-cell product Niprisan was trialled and registered in the period and its production later collapsed [VERIFY, not read].

**What failed.** In South Africa the health ministry promoted African potato, Sutherlandia, garlic and beetroot while antiretrovirals were delayed, until the Academy of Science said in 2007 that food is not medicine for AIDS (aidsmap

2007). Together with the Sutherlandia trial's TB signal, that is the clearest lesson of what follows when a remedy is promoted on politics.

**The 80 per cent figure.** The Decade report repeats the claim that 80% of Africans rely on traditional medicine (WHO AFRO 2011). I disagree with the report on this point. Africa Check traced the figure to a 1983 WHO book by Robert Bannerman, where it described the disadvantaged people who made up about 80% of the world's population, an estimate resting on no survey. South Africa's 2015 General Household Survey found 0.5% of households would go first to a traditional healer (Africa Check 2016). What is true is narrower and more useful. Many people use both systems: over half of adults starting antiretrovirals in KwaZulu-Natal (Wilson 2015), and a third of people with HIV in an Eastern Cape study (Mogatle 2008). After the Fall the share relying on plants will be near total. The planning rule is not 80%: assume every patient has taken something, and ask what.

## 5. Market plants that kill, and how the poisoning is recognised

The deaths here come less from mistaken identity than from correctly identified toxic remedies, the route of giving them, and what is mixed in. In the Johannesburg forensic database for 1991 to 1995, 206 deaths were attributed to traditional remedies. Herbal material was found in 43%, pharmaceuticals in 20% and agricultural chemicals in 33% (Stewart 1999). Of 78 South African patients with acute kidney failure after folk remedies, 41% died, more often adults, those with combined liver and kidney injury and those with HIV, and vomiting, diarrhoea, acidosis and dehydration were common (Luyckx 2005). "Herbal" market mixtures may contain drugs or chemicals, and a dead child's remedy may never be identified.

### 5.1 Impila, *Callilepis laureola*

A daisy of the KwaZulu-Natal grasslands whose tuberous root is one of the most used Zulu medicines, given as a decoction or enema for many complaints, including to children (PlantZAfrica, Callilepis). Its atractyloside and carboxyatractyloside block the mitochondrial ADP/ATP carrier, causing hypoglycaemia, centrilobular liver necrosis and kidney tubular necrosis. Watson, Coovadia and Bhoola described 50 children in 1979 (Watson 1979). A Durban thesis found 447 acute liver necrosis deaths in 21,687 post-mortems over 20 years at King Edward VIII Hospital, most in the impila pattern (THRIVING library, PH-10, reference 58). PH-10 gives the thesis no author. I believe it is K. Bhoola's 1983 Natal thesis [VERIFY], and I agree with PH-10 otherwise.

**Recognition.** Within hours to two days of a root medicine, drowsiness, vomiting, abdominal pain, convulsions or no urine. Low blood sugar is the early, treatable part. Jaundice comes later. It must be told apart from viral hepatitis and Reye's syndrome (Watson 1979). No antidote exists: sugar or glucose, fluids while urine passes, and the district.

### 5.2 *Senecio* and the infant purge

In parts of South Africa infants are given a purge or enema at weaning, and *Senecio coronatus* is one plant used. *S. coronatus* itself contains no pyrrolizidine alkaloids. The fatal infant cases of hepatic sinusoidal obstruction came from other *Senecio* species rich in retrorsine N-oxide, sold or gathered in its place (van Schalkwyk 2021). The plant the mother names may not be the plant in the bottle. **Recognition:** over days to weeks, a fluid-swollen belly, a large tender liver, poor feeding and later jaundice in a baby given a purge. PH-01 has the pyrrolizidine rule for comfrey.

### 5.3 Enemas in infants

The enema, isiqoni in isiZulu, is given to cleanse, to lower fever or for diarrhoea, and herbs are sometimes pushed into the anus by syringe (Sharkey 2011). One KwaZulu-Natal study found 89% of babies under 3 months had been given one (van Andel 2015, as cited in Mshumpela 2020). At Chris Hani Baragwanath Hospital, a 2-year-old girl given a caustic herbal enema lost her rectum and sigmoid colon and needed a colostomy, and a 21-month-old boy was burned by a hot-water enema. The authors list infection, dehydration and rectal wall injury (Mshumpela 2020). In a

baby already losing fluid, a purgative enema can tip dehydration into shock. I found no population figure for infant deaths [VERIFY, gap]. **Recognition:** a baby with diarrhoea who suddenly worsens, with bloody stool, a swollen or tender belly, no wet nappy for 6 hours or sunken eyes. Ask "has anything been given from behind?" without blame, or parents will hide it.

### 5.4 Datura, oleander, preservatives

PH-10 covers Datura in full: a hot, dry, flushed, confused patient with wide pupils, onset in 1 to 4 hours, lasting 24 to 48. In Uganda in 2019 over 200 people were poisoned by Datura seed in food-aid corn-soy blend (THRIVING library, PH-10), a warning for anyone storing grain grown among the weed. Oleander and yellow oleander slow the heart and block its conduction, and high potassium predicts death. Multiple-dose charcoal cut yellow oleander deaths from 8% to 2.5% in a Sri Lankan trial of 401 (de Silva 2003), but a trial of 4,632 mixed poisonings found no benefit (Eddleston 2008). I found no African oleander series [VERIFY, gap]. Ghanaian Cryptolepis decoctions have been preserved with chloroform (Bugyei 2010), and one South African series reported dichromate in traditional purgatives [VERIFY source]. A village should make its own preparations from plants it can see whole.

## 6. What a village of 300 should grow first

The garden does not replace ORS, soap, clean water, nets, ACTs, antiretrovirals or TB drugs. It supplies what the evidence supports, plus food.

| Order | Savanna (long dry season) | Forest and forest margin | Why |
|---|---|---|---|
| 1 | Moringa, 20 to 30 trees as hedge | Moringa and a bitter-leaf hedge | Year-round leaf protein and vitamin A |
| 2 | Papaya, 10 to 20 trees near water | Papaya, 10 to 20 trees | Burn dressing, worm seed, fruit in a year |
| 3 | Guava, 5 to 10 trees | Guava, 5 to 10 trees | Diarrhoea tea with ORS, vitamin C |
| 4 | Kinkeliba, planted or wild stands protected | Kinkeliba where it grows [VERIFY range] | Blood pressure |
| 5 | *Aloe ferox* in the south, local aloes elsewhere [VERIFY] | Aloes on dry ground | Occasional laxative |
| 6 | Baobab and tamarind, planted for later | *Cryptolepis* (Ghana to Nigeria) | Food, last-resort antimalarial |
| 7 | Vachellia, chewing-stick trees | *Zanthoxylum* chewing sticks | Oral hygiene, astringent |
| 8 | Devil's claw, Kalahari sands only, managed wild | *Prunus africana* in highlands, coppiced | Scarce, for pain and prostate |
| Highveld | *Pelargonium sidoides* beds from root cuttings [VERIFY] | | Bronchitis |

Everything on the list is a food or a short-course remedy with a measured dose. The dispensary should also keep a written refusal list of local market plants it will not sell.

## 7. Evidence grades

| Grade | Uses |
|---|---|
| A | Devil's claw extract in back pain. Pygeum and *Hypoxis* sterols in prostate symptoms. EPs 7630 in bronchitis (low quality). Cape aloes as occasional laxative (class evidence) |
| B | Kinkeliba for blood pressure. Devil's claw powder in osteoarthritis. Papaya on burns and for worms. Guava leaf extract in diarrhoea. Cryptolepis in malaria (uncontrolled). Moringa for glucose (preliminary) |
| C | Chewing stick. Guava tea. Vachellia decoction. Baobab, tamarind, moringa as food |
| D | Pelargonium decoction, *A. afra* for colds, buchu, pepper-bark, Kigelia, Sutherlandia as tonic, bark decoctions of *Prunus* |
| X | *A. afra* for malaria. Sutherlandia and African potato for HIV. Bitter leaf as malaria cure. Hoodia. Impila and PA-rich *Senecio* |

Tradition claims action for every plant here. The record supports about a dozen uses at A or B, and only five of those are for preparations a village can make: kinkeliba brew, devil's claw tea or powder, papaya pulp and seed, Cryptolepis root, and Cape aloes. Inference from extract doses fills the rest and is the weakest link.

## 8. Means ledger

| Rung | What it can do here | What it changes |
|---|---|---|
| Hands and knowledge | Know impila, the PA-rich Senecios, Datura and oleander on sight. Know a seller's name may not match the plant. Chew a stick, dress a burn | Removes most deaths in section 5 |
| Hearth | Kinkeliba brew, devil's claw infusion, guava tea, papaya dressing, Pelargonium decoction, moringa porridge | Delivers the village B-grade remedies, not the A-grade extracts |
| Garden and still | The section 6 garden, dried and weighed stock, ethanol extraction at a stated ratio | Turns a handful into a gram. A still may bring Pelargonium near the trial extract [VERIFY] |
| Village dispensary (300) | Cuff and register for kinkeliba, a scale, a refusal list, a question at every visit about enemas and other medicines | Catches interactions and infant enemas early |
| District infirmary (3,000) | Glucose, potassium, malaria tests, a register of poisonings by plant and market | The only rung that can check whether a plant remedy works |
| Hospital before the Fall | Standardised extracts, antiretrovirals, ACTs, dialysis | Produced every A-grade result, mostly in European factories |

PH-01 says the hearth delivers about 80% of the usable value of the European list (THRIVING library, PH-01, section 10). I disagree for this region. Here the A-grade results are on solvent extracts and the hearth's remedies carry B or below, with kinkeliba and papaya the exceptions.

## 9. Harm test

**How these plants harm.** 1. A correctly identified toxic remedy: impila. Tradition is not a safety test. 2. The wrong plant under the right name: the Senecio deaths (van Schalkwyk 2021). 3. The route: infant enemas, by caustic injury, burns and dehydration (Mshumpela 2020). 4. Interaction: Sutherlandia with isoniazid, and in theory with antiretrovirals (Wilson 2015, Mills 2005). The African potato and efavirenz concern was not borne out (Mogatle 2008). 5. Displacing effective treatment: AIDS remedies promoted by a government, any tea in place of an ACT (THRIVING library, IN-09). 6. Adulteration: drugs, chemicals and preservatives in market products (Stewart 1999, Bugyei 2010). 7. Over-harvest, which harms the next patient: pepper-bark, African cherry, devil's claw.

**Uvulectomy.** Removal of the uvula by traditional practitioners, to prevent or treat throat and chest complaints and poor growth in infants, is widespread in Ethiopia and practised across the Sahel, Nigeria and Tanzania. An Ethiopian meta-analysis of 19 studies and 23,559 people found complications in 29% (14 to 44%), mainly bleeding, infection and sepsis. It often came with milk-tooth extraction (29%), female genital cutting (23%) and bloodletting (11%) (Heliyon 2024). Reports from Jos describe a sickle knife used on more than ten people a session, with haemorrhage, anaemia, septicaemia, tetanus, HIV and death [VERIFY source]. There is no evidence of benefit. X. A child bleeding, feverish or refusing feeds after uvulectomy needs pressure, fluids and antibiotics.

**Balance.** Of the steer's seven, harm or futility outweighs benefit for *A. afra* in malaria, Sutherlandia, African potato and Hoodia. Benefit outweighs harm for devil's claw, kinkeliba and pygeum, where the tree survives.

## 10. Red flags

- Drowsiness, convulsions or vomiting after a root medicine or enema. Give sugar first.
- A baby with diarrhoea after an enema with blood in the stool, a swollen belly or no urine for 6 hours.
- A swelling belly and big liver in an infant days or weeks after a purge.
- Sutherlandia in anyone on TB treatment or preventive therapy.
- Antiretrovirals stopped for a plant.
- A feverish child in a malaria area on any plant tea, not better in 24 hours or worse at any time (THRIVING library, IN-09).
- Jaundice or dark urine on Pelargonium, buchu or any market mixture.
- A slow pulse with vomiting after a leaf or seed: oleander (THRIVING library, PH-10).
- Abdominal pain, vomiting and no stool or wind: no aloe, no purge.
- A bottled remedy with a solvent smell, or one claimed to cure AIDS, cancer or diabetes.
- Bleeding, fever or refusal to feed after uvulectomy.

## 11. The case against

**Against the grades.** Most A-grade African evidence is for European products tested by their sellers. The Pelargonium trials all link to the maker, come from two countries and carry suspected publication bias (Timmer 2013). The pygeum review is old and low quality (Wilt and Ishani 2002). The kinkeliba trials were open and from one group (Seck 2017, Bourqui 2021). A sceptic would lower each by a grade.

**Against the extrapolation.** Every village dose here is inferred from an extract or monograph. No one has shown that a Sotho root decoction does what EPs 7630 does, or that an 8-hour devil's claw infusion matches a harpagoside capsule.

**Against the Decade, and for it.** Africa Check, and Nicoli Nattrass as quoted by it, argue that the 80% figure justified putting traditional medicine where antiretrovirals belonged (Africa Check 2016). Counting policies is not validating medicines. Others reply that the Decade was underfunded and judged on Western terms, and that registration on traditional use is exactly how Europe treats its own herbals.

**Against this report's frame.** A healer could fairly say that a graded plant list misses a tradition in which diagnosis, ancestors and the relationship with the patient are part of the medicine, and that the list repeats the extraction SY-04 describes in the Hoodia and devil's claw trades (THRIVING library, SY-04). Attribution, restriction and giving back answer part of that, not all.

**Against the poison emphasis.** Forensic series come from city hospitals that see the worst cases. Pharmaceuticals were in a fifth of the Johannesburg deaths (Stewart 1999). A report listing only plant deaths can stigmatise healers whose cooperation a village needs.

## 12. 10-line summary

1. Devil's claw for back and joint pain is the best-supported African plant: A for extract, B for powder.
2. Kinkeliba brew matched captopril on blood pressure in 219 Senegalese patients, the best home preparation in the region.
3. Pelargonium extract has low-quality A evidence for bronchitis. The Sotho decoction it came from is untested.
4. Pygeum and Hypoxis sterols ease prostate symptoms as extracts, and bark stripping kills the African cherry.
5. *A. afra* fails for malaria, Sutherlandia and African potato fail for HIV, and Sutherlandia showed a TB harm signal.
6. Cryptolepis root is the last-resort antimalarial when no ACT exists, never the first.
7. Papaya pulp debrides burns, guava leaf helps diarrhoea beside ORS, moringa leaf is food.
8. The 2001 to 2010 Decade built policies and registers, not proof. The 80% figure is an unsourced 1983 global estimate.
9. Impila, PA-rich Senecio and infant enemas kill. Low sugar, swollen livers and dehydration are the signs.
10. A village of 300 should grow moringa, papaya and guava first, protect kinkeliba, and keep a refusal list.

## 13. Open questions

- Does a water decoction of Pelargonium root carry the extract's activity, and at what weight?
- What does a 10 g kinkeliba brew deliver, and would less do?
- Who ran the stopped African potato trial in HIV, and when?
- Will Cryptolepis ever be randomised against ACT?
- How many infants die after traditional enemas each year, and where?
- What thujone do household *A. afra* teas contain?
- Which Senecio species are sold as *S. coronatus*, in which markets?
- What did the bissap arms of the kinkeliba trials show?

## 14. Sources to read in full

- The Ghana Herbal Pharmacopoeia, the Nigerian and DRC pharmacopoeias and the WHO AFRO plant monographs, for doses written by African regulators. I read none of them.
- PROTA and Neuwinger's dictionary of African plant use, for the West and Central African record.
- Hutchings' *Zulu Medicinal Plants* and van Wyk, van Oudtshoorn and Gericke's *Medicinal Plants of South Africa*, for names and preparations attributed to their holders.
- Full texts of Bourqui 2021 and Seck 2017 (brew method, bissap results), Wilson 2015 (TB cases), Timmer 2013, Bhoola's impila thesis and van Andel's work on enemas.

## 15. At the bedside after the Fall

**At home.** A cough without fast breathing: warm fluids, and Pelargonium decoction for at most a week where it grows. Back or joint pain: devil's claw infusion for up to four weeks. A burn: cool water, then papaya pulp. Diarrhoea: ORS first, guava tea beside it, never an enema. Adult constipation: one small dose of Cape aloes, none for a child or a pregnant woman. A feverish child in a malaria area goes to whoever holds an ACT.

**In the dispensary.** Ask everyone what else they took, including anything "from behind". Measure blood pressure before kinkeliba and again at 4 weeks. Keep the refusal list: impila, Senecio purges, Datura, oleander, Sutherlandia for anyone on TB or HIV drugs, any bottle smelling of solvent. Give Cryptolepis only when no ACT exists, by weight, and send the patient on if not better in 48 hours.

**A poisoned child.** Well, then drowsy, vomiting or convulsing after a root medicine or enema: check or give sugar, lay the child on its side, nothing by mouth unless alert, and carry the child and the remedy to the district (THRIVING library, PH-10, Protocol 4). A baby with a swollen belly and big liver: ask about purges. A slow pulse after a seed or leaf: oleander.

**At the district.** Glucose, potassium, urine output and malaria tests. Kidney support where it can be given [VERIFY]. A register of poisonings by plant and market, so the region learns which species and sellers kill.

## 16. Protocols

### Protocol 1. Devil's claw cold infusion, for back and joint pain

- **Who:** adults over 18 with back or joint pain, no fever, swelling, redness or injury.
- **Not for:** active peptic ulcer, gallstones, pregnancy or breastfeeding [VERIFY], heart rhythm drugs.
- **Material:** dried sliced secondary tubers, never the main root, which keeps the plant alive.
- **Quantity:** 4.5 g, about a level tablespoon [VERIFY volume].
- **Method:** 500 ml of boiling water over the tuber, covered, 8 hours, strained.
- **Dose:** a third (about 165 ml) three times a day.
- **Tolerances:** 4 to 5 g per 500 ml, 6 to 10 hours.
- **Duration:** up to 4 weeks, then stop and be seen if no better.
- **Stop if:** diarrhoea, stomach pain, black stool.
- Sources: EMA 2016 devil's claw, Gagnier 2004.

### Protocol 2. Kinkeliba brew, for raised blood pressure

- **Who:** adults at 140/90 or above on two readings, without chest pain, limb weakness, severe headache or breathlessness (those go to the district).
- **Quantity:** 10 g of dried leaf a day, as in the Bourqui trial, or less to start.
- **Method:** boil 1 L of water with the leaves, simmer 10 minutes, cool, strain, drink through the day [VERIFY, trial method not read].
- **Measure:** at the start, 4 weeks and 6 months. Target below 140/90.
- **Refer:** if still at 160/100 or above at 4 weeks [VERIFY threshold].
- **Pause:** during vomiting, diarrhoea or heat with poor drinking, because of the diuretic effect [VERIFY, own inference].
- **Pregnancy:** no data, do not use.
- Sources: Seck 2017, Bourqui 2021.

**Protocol 3. Papaya pulp dressing, for burns and sloughy wounds**

- **First:** cool the burn with clean water for 20 minutes, within 3 hours [VERIFY, standard first aid not sourced here].
- **Refer:** more than a tenth of a child's body (about ten of the child's palms) or a fifth of an adult's [VERIFY], face, hands, feet, genitals, joints, smoke inhalation, or a burn round a limb.
- **Pulp:** Banjul used fruit pulp. Indian series used autoclaved unripe pulp. At the hearth, boil peeled green fruit 10 minutes, mash, cool [VERIFY, own inference].
- **Method:** wash with boiled cooled water, spread pulp about 5 mm thick over the slough, cover with clean cloth.
- **Change:** daily, washing off old pulp.
- **Stop when:** the base is clean and red, then plain or honey dressings (PH-01).
- **Refer at once:** spreading redness, fever, foul smell, an unwell child.
- **Avoid:** eyes, and anyone whose skin reacts to the latex.
- Source: Starley 1999.

**Protocol 4. Pelargonium root decoction, for acute cough**

- **Who:** adults and children over 6, cough under a week, no fast breathing or chest indrawing, no fever beyond 3 days, no TB contact.
- **Breath count first:** a full minute. In a child of 1 to 5 years 40 or more, or 5 to 12 years 30 or more [VERIFY thresholds], means pneumonia and an antibiotic, not a root.
- **Quantity:** 1 g of dried root a day for an adult, 0.5 g for a child of 6 to 12 [VERIFY, own inference from the extract dose].
- **Method:** simmer in 250 ml of water for 15 minutes, strain, three doses.
- **Duration:** at most 7 days.
- **Stop if:** jaundice, dark urine or rash.
- Sources: EMA 2024 monograph, Matthys 2003, Brendler and van Wyk 2008.

**Protocol 5. Cape aloes, for occasional constipation**

- **Who:** adults and children over 12 with hard stools and a soft, painless belly.
- **Never:** pregnancy, breastfeeding, under 12, abdominal pain of unknown cause, vomiting, no wind, inflammatory bowel disease, dehydration, digoxin or diuretics.
- **First:** 3 days of water, fruit such as tamarind or papaya, and movement.
- **Material:** the dried yellow-brown bitter exudate, not the clear gel.
- **Quantity:** aim at 10 to 30 mg aloin. If the exudate is about a fifth aloin [VERIFY], that is 50 to 150 mg. Weigh 100 mg where a scale exists, otherwise a crumb the size of a rice grain [VERIFY].
- **Timing:** once at night.
- **Duration:** at most a week, usually 2 or 3 doses.
- **Stop if:** cramps, watery stool, weakness.
- Source: EMA 2016 aloe.

**Protocol 6. Moringa leaf powder, for the diet of children, the sick and the old**

- **Harvest:** young leaves and stalks, never root or bark.
- **Dry:** in shade on a clean rack, 2 to 4 days until crisp [VERIFY].
- **Powder:** pound, sieve, store closed and dark, use within 6 months [VERIFY].
- **Use:** 1 to 2 level teaspoons in a child's cooked porridge, 1 to 2 tablespoons a day in adult food [VERIFY].

- **Not a treatment** for severe malnutrition. A child with swollen feet or an arm circumference below 115 mm needs therapeutic feeding [VERIFY].
- **Pregnancy:** leaf as food only.
- Source: Mokgalaboni 2026 for the trial context.

## 17. Numbers to carry

- Devil's claw: 4.5 g in 500 ml, 8 hours, three doses, up to 4 weeks. Trials at 50 to 100 mg harpagoside.
- Kinkeliba: 10 g leaf a day, systolic down about 19.5 mmHg, as on captopril 100 mg.
- Pelargonium extract: 4.2 ml a day, 7 days at most, not under 3. Root about 0.4 to 1.5 g a day [VERIFY].
- Cape aloes: 10 to 30 mg aloin at night, 1 week at most, not under 12 or in pregnancy.
- Cryptolepis: 2.5 g root three times daily, 5 days. Clearance about 82 hours. Cure 29 of 31.
- Pygeum: 100 mg extract stands for about 11 to 22 g bark [VERIFY].
- Sutherlandia: 2,400 mg a day, no viral load effect, 9 against 5 days of infection.
- African potato with efavirenz: AUC ratio 103%, no change.
- Impila: 447 liver necrosis deaths in 21,687 Durban post-mortems.
- Johannesburg remedy deaths 1991 to 1995: 206, herbal in 43%, drugs in 20%.
- Kidney failure after folk remedies: 41% died.
- Enemas: 89% of babies under 3 months in one KwaZulu-Natal study.
- Uvulectomy complications: 29%.
- The 80% figure: one 1983 estimate. South Africa 2015: 0.5% of households go first to a healer.
- The Decade: national policies 8 to 39, essential-list countries 1 to 5.

## References

1. Africa Check. No data shows 80% of Africans use traditional medicine for basic health needs. 2016. Africa Check. https://africacheck.org/fact-checks/spotchecks/no-data-shows-80-africans-use-traditional-medicine-basic-health-needs
2. aidsmap. Two African herbal medicines significantly inhibit metabolism of anti-HIV drugs. 2005. aidsmap news. https://www.aidsmap.com/news/jan-2005/two-african-herbal-medicines-significantly-inhibit-metabolism-anti-hiv-drugs (secondary summary of Mills and others, AIDS 2005)
3. aidsmap. Food cannot replace medicine for HIV/AIDS and TB, South African experts say. 2007. aidsmap news. https://www.aidsmap.com/news/aug-2007/food-cannot-replace-medicine-hivaids-and-tb-south-african-experts-say
4. BGCI. Pepper-bark tree, Warburgia salutaris. Botanic Gardens Conservation International. https://bgci.org/resource/pepper-bark-tree-warburgia-salutaris (year not stated)
5. Blom WAM and others. Effects of 15-d repeated consumption of Hoodia gordonii purified extract on safety, ad libitum energy intake, and body weight in healthy, overweight women: a randomized controlled trial. 2011. American Journal of Clinical Nutrition 94:1171-1181. https://doi.org/10.3945/ajcn.111.020321 (abstract read)
6. Bourqui A and others. Randomised trial of Combretum micranthum and Hibiscus sabdariffa against captopril in hypertension, Senegal. 2021. Journal of Human Hypertension 35:800-808. https://pubmed.ncbi.nlm.nih.gov/32948827/ (abstract read, exact title not recorded [VERIFY])
7. Brendler T, van Wyk BE. A historical, scientific and commercial perspective on the medicinal use of Pelargonium sidoides (Geraniaceae). 2008. Journal of Ethnopharmacology 119:420-433. https://pubmed.ncbi.nlm.nih.gov/18725280/ (abstract read)
8. Brendler T, Stander MA, van Wyk BE. Stevens' Cure (Umckaloabo), the vindication of a patent medicine. 2023. Frontiers in Pharmacology. https://pmc.ncbi.nlm.nih.gov/articles/PMC10791834/
9. Bugyei KA, Boye GL, Addy ME. Clinical efficacy of a tea-bag formulation of Cryptolepis sanguinolenta

root in the treatment of acute uncomplicated falciparum malaria. 2010. Ghana Medical Journal 44:3-9. https://pmc.ncbi.nlm.nih.gov/articles/PMC2956309

10. Challand S, Willcox M. A clinical trial of the traditional medicine Vernonia amygdalina in the treatment of uncomplicated malaria. 2009. Journal of Alternative and Complementary Medicine 15:1231-1237. https://pubmed.ncbi.nlm.nih.gov/19922255/ (abstract read via Europe PMC)
11. CIFOR. Sunderland T and others, working paper 153 on Prunus africana. CIFOR. https://ciforicraf.org/publications/pdf_files/WPapers/WP153Sunderland.pdf (secondary summary, year and full title not recorded [VERIFY])
12. CITES. CITES and livelihoods fact sheet, Prunus africana, Cameroon. 2022. CITES Secretariat. https://cites.org/sites/default/files/eng/prog/Livelihoods/case_studies/2022/CITES_%26_livelihoods_fact_sheet_Prunus%2
13. CITES. CITES and livelihoods case study, South Africa, Aloe ferox. CITES Secretariat. https://cites.org/sites/default/files/eng/prog/Livelihoods/case_studies/8.%20SouthAfrica_Aloeferox_long_Aug2.pdf (year not recorded)
14. de Silva HA, Fonseka MM, Pathmeswaran A and others. Multiple-dose activated charcoal for treatment of yellow oleander poisoning: a single-blind, randomised, placebo-controlled trial. 2003. Lancet 361:1935-1938. https://europepmc.org/search?query=multiple-dose%20activated%20charcoal%20yellow%20oleander%20de%20Silva (abstract read)
15. Drugs.com. Devil's claw. Drugs.com natural products. https://www.drugs.com/npp/devil-s-claw.html
16. Drugs.com. Pygeum. Drugs.com natural products. https://www.drugs.com/npp/pygeum.html
17. Drugs.com. Buchu. Drugs.com natural products. https://www.drugs.com/npp/buchu.html (search summary)
18. Eddleston M, Juszczak E, Buckley NA and others. Multiple-dose activated charcoal in acute self-poisoning: a randomised controlled trial. 2008. Lancet 371:579-587. https://europepmc.org/search?query=Eddleston%20multiple-dose%20activated%20charcoal%20self-poisoning%202008 (abstract read)
19. EMA. European Union herbal monograph on Aloe barbadensis Mill. and on Aloe (various species, mainly Aloe ferox Mill. and its hybrids), folii succus siccatus. EMA/HMPC/625788/2015. 2016. European Medicines Agency. https://www.ema.europa.eu/en/documents/herbal-monograph/final-european-union-herbal-monograph-aloe-barbadensis-mill-and-aloe-various-species-mainly-aloe-ferox-mill-and-its-hybrids-folii-succus-siccatus_en.pdf
20. EMA. European Union herbal monograph on Harpagophytum procumbens DC. and/or Harpagophytum zeyheri Decne., radix. EMA/HMPC/627057/2015. 2016. European Medicines Agency. https://ema.europa.eu/en/documents/herbal-monograph/final-european-union-herbal-monograph-harpagophytum-procumbens-dc/harpagophytum-zeyheri-decne-radix_en.pdf
21. EMA. European Union herbal monograph on Prunus africana (Hook f.) Kalkm., cortex. EMA/HMPC/680626/2013. 2016. European Medicines Agency, copy hosted by e-lactancia. https://www.e-lactancia.org/media/papers/EMA-PrunusAfricana-2016-2.pdf
22. EMA. European Union herbal monograph on Pelargonium sidoides DC. and/or Pelargonium reniforme Curt., radix, revision 2. EMA/HMPC/648100/2022. 2024. European Medicines Agency. https://www.ema.europa.eu/documents/herbal-monograph/draft-european-union-herbal-monograph-pelargonium-sidoides-dc-pelargonium-reniforme-curt-radix_en.pdf (draft version of the revision read)
23. EMA. Overview of comments received on the European Union herbal monograph on Pelargonium sidoides, revision 2. 2024. European Medicines Agency. https://ema.europa.eu/en/documents/herbal-comments/overview-comments-received-european-union-herbal-monograph-pelargonium-sidoides-dc-pelargonium-reniforme-curt-radix-revision-2_en.pdf
24. Gagnier JJ, Chrubasik S, Manheimer E. Harpagophytum procumbens for osteoarthritis and low back pain: a systematic review. 2004. BMC Complementary and Alternative Medicine 4:13. https://pmc.ncbi.nlm.nih.gov/articles/PMC520753

25. Gagnier JJ and others. Herbal medicine for low back pain: a Cochrane review. 2006. Cochrane Database of Systematic Reviews, as listed on PubMed. https://pubmed.ncbi.nlm.nih.gov/17202897/ (abstract read)
26. Hafez and others. The Acacia (Vachellia nilotica (L.) P.J.H. Hurter and Mabb.): traditional uses and recent advances on its pharmacological attributes and potential activities. 2024. Nutrients. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC11678605/ (abstract read, author list not recorded [VERIFY])
27. Heliyon. The complications of traditional uvulectomy and concurrent occurrences of cultural malpractices in Ethiopia: a systematic review and meta-analysis. 2024. Heliyon. https://pmc.ncbi.nlm.nih.gov/articles/PMC11492597 (authors not recorded [VERIFY])
28. IOL. HIV warning on African potato. IOL News. https://www.iol.co.za/news/south-africa/hiv-warning-on-african-potato-109328 (press report, year not recorded [VERIFY])
29. ISHS. Acta Horticulturae article 806_75 on the devil's claw trade. 2009. International Society for Horticultural Science. https://ishs.org/ishs-article/806_75/ (abstract read, authors and title not recorded [VERIFY])
30. Kigelia review. Ethnobotany, phytochemistry and pharmacological activity of Kigelia africana (Lam.) Benth. (Bignoniaceae). 2020. PMC. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7356732/ (search summary only, authors and journal not recorded [VERIFY])
31. LiverTox. Buchu. National Institute of Diabetes and Digestive and Kidney Diseases. https://www.ncbi.nlm.nih.gov/books/NBK589899/ (search summary)
32. Lozoya X and others. Intestinal anti-spasmodic effect of a phytodrug of Psidium guajava folia in the treatment of acute diarrheic disease. 2002. Journal of Ethnopharmacology. https://pubmed.ncbi.nlm.nih.gov/12413703/ (abstract read)
33. Luyckx VA, Steenkamp V, Stewart MJ. Acute renal failure associated with the use of traditional folk remedies in South Africa. 2005. Renal Failure 27:35-43. https://europepmc.org/search?query=%22Acute%20renal%20failure%20associated%20with%20the%20use%20of%20traditio (abstract read)
34. Matthys H and others. Trial of EPs 7630 in acute bronchitis, ISRCTN60790910. 2003. ISRCTN registry. https://www.isrctn.com/ISRCTN60790910 (registry record read)
35. Mills E, Cooper C, Seely D, Kanfer I. African herbal medicines in the treatment of HIV: Hypoxis and Sutherlandia. An overview of evidence and pharmacology. 2005. Nutrition Journal 4:19. https://pmc.ncbi.nlm.nih.gov/articles/PMC1156943/
36. Mogatle S, Skinner M, Mills E, Kanfer I. Effect of African potato (Hypoxis hemerocallidea) on the pharmacokinetics of efavirenz. 2008. South African Medical Journal 98:945-949. https://scielo.org.za/pdf/samj/v98n12/17.pdf
37. Mokgalaboni K and others. Meta-analysis of Moringa oleifera on glycaemic and blood pressure outcomes. 2026. Metabolism Open. https://europepmc.org/search?query=Mokgalaboni%20moringa%20meta-analysis (abstract read, exact title not recorded [VERIFY])
38. Mshumpela A, Brisighelli G, Westgarth-Taylor C. Devastating outcomes of traditional enemas: unusual indications for well-known operations. 2020. European Journal of Pediatric Surgery Reports 8:e3-e6. https://pmc.ncbi.nlm.nih.gov/articles/PMC7007812/
39. NBC News. Foods debunked as alternatives to AIDS meds. 2008. NBC News. https://www.nbcnews.com/health/health-news/foods-debunked-alternatives-aids-meds-flna1c9468728
40. Okeniyi JA and others. Effectiveness of dried Carica papaya seeds against human intestinal parasitosis: a pilot study. 2007. Journal of Medicinal Food 10:194-196. https://europepmc.org/search?query=Okeniyi%20Carica%20papaya%20seeds%20intestinal%20parasitosis (abstract read)
41. PlantZAfrica. Artemisia afra. 2003. South African National Biodiversity Institute. https://plantzafrica.com/plantab/artemisafra.html
42. PlantZAfrica. Callilepis laureola. South African National Biodiversity Institute.

https://plantzafrica.com/plantcd/callilepislaur.html (year not recorded)
43. SANBI. Harpagophytum procumbens. PlantZAfrica, South African National Biodiversity Institute. https://pza.sanbi.org/node/11630
44. Seck SM and others. Randomised trial of Combretum micranthum and Hibiscus sabdariffa against ramipril in hypertension. 2017. Journal of Human Hypertension 32:75-81. https://pubmed.ncbi.nlm.nih.gov/29311704/ (abstract read, exact title not recorded [VERIFY])
45. Sharkey A and others. Traditional enema use in infants in KwaZulu-Natal. 2011. Transactions of the Royal Society of Tropical Medicine and Hygiene. https://europepmc.org/search?query=Sharkey%20enema%20KwaZulu-Natal%20infants (abstract read, exact title not recorded [VERIFY])
46. Springer review 2024. Review of Artemisia afra ethnobotany and pharmacology, citing Watt and Breyer-Brandwijk. 2024. Revista Brasileira de Farmacognosia. https://link.springer.com/article/10.1007/s43450-024-00598-5 (abstract only, authors and title not recorded [VERIFY])
47. Starley IF, Mohammed P, Schneider G, Bickler SW. The treatment of paediatric burns using topical papaya. 1999. Burns 25:636-639. https://europepmc.org/search?query=%22treatment%20of%20paediatric%20burns%20using%20topical%20papaya%22 (abstract read)
48. Stewart MJ, Moar JJ, Steenkamp P, Kokot M. Findings in fatal cases of poisoning attributed to traditional remedies in South Africa. 1999. Forensic Science International 101:177-183. https://europepmc.org/search?query=%22fatal%20cases%20of%20poisoning%20attributed%20to%20traditional%20remedie (abstract read)
49. Teschke R and others. Initially purported hepatotoxicity by Pelargonium sidoides: the dilemma of pharmacovigilance and proposals for improvement. 2012. Annals of Hepatology. https://www.elsevier.es/en-revista-annals-hepatology-16-articulo-initially-purported-hepatotoxicity-by-pelargonium-S1665268119314644
50. Timmer A, Günther J, Motschall E, Rücker G, Antes G, Kern WV. Pelargonium sidoides extract for treating acute respiratory tract infections. 2013. Cochrane Database of Systematic Reviews CD006323.pub3. https://www.cochrane.org/CD006323 (summary and abstract read)
51. van Schalkwyk FJ, Stander MA, Nsizwane M, Mathee A, van Wyk BE. Fatal pyrrolizidine alkaloid poisoning of infants caused by adulterated Senecio coronatus. 2021. Forensic Science International 320:110680. https://doi.org/10.1016/j.forsciint.2020.110680 (abstract read)
52. Watson AR, Coovadia HM, Bhoola KD. The clinical syndrome of impila (Callilepis laureola) poisoning in children. 1979. South African Medical Journal. https://europepmc.org/search?query=Callilepis%20laureola%20poisoning (abstract read)
53. WHO. The use of non-pharmaceutical forms of Artemisia. WHO/CDS/GMP/2019.14. 2019. World Health Organization. https://www.who.int/news/item/10-10-2019-the-use-of-non-pharmaceutical-forms-of-artemisia
54. WHO AFRO. Progress report on the Decade of Traditional Medicine in the African Region. AFR/RC61/PR/2. 2011. WHO Regional Office for Africa. https://www.afro.who.int/sites/default/files/sessions/working_documents/AFR-RC61-PR-2-Progress-report-on-decade-of-traditional-medicine-in-the-African-Region.pdf
55. Wilson D and others. A controlled study of the safety and efficacy of Lessertia frutescens in HIV-infected South African adults. 2015. PLoS One. https://pmc.ncbi.nlm.nih.gov/articles/PMC4506018
56. Wilt T, Ishani A. Pygeum africanum for benign prostatic hyperplasia. 2002. Cochrane Database of Systematic Reviews CD001044. https://cochranelibrary.com/cdsr/doi/10.1002/14651858.CD001044/information (abstract read, review withdrawn as out of date)
57. Wilt T and others. Beta-sitosterols for benign prostatic hyperplasia. 1999. Cochrane Database of Systematic Reviews CD001043. https://pubmed.ncbi.nlm.nih.gov/10796740/ (abstract read)