SY-06 The pharmacopoeia: the fifty plants and twenty minerals the book should carry, by climate zone, with evidence grades

HEALING after the FALL, research library, SY-06

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

Findings by section

1. What this list is, and how it was built

This is a synthesis. Every dose, grade and harm below comes from the library report named in the row or paragraph, and section 8 collects the disagreements. A few web checks were made: the EMA summary pages for chamomile and willow confirmed the library's age limits and durations (EMA n.d. a) (EMA n.d. b), and catalogue records confirmed the WHO monographs (WHO 1999) and the Commission E translation of about 380 monographs (Blumenthal 1998). I could not extract text from the EMA chamomile monograph itself.

Mortality first. SY-05, the mortality map, is forthcoming, so the weighting rests on IN-01, FO-01 and MA-07. When the system fails, two in five deaths fall on children under five. Diarrhoea, pneumonia and newborn sepsis lead in every climate, malaria joins them in the tropics, and mothers die at 872 per 100,000 births without obstetric care (THRIVING library, IN-01) (THRIVING library, FO-01) (THRIVING library, MA-07). So each zone table opens with diarrhoea, then chest and fever, wounds, pain and women's health. Rare complaints come last or were left out.

A grade belongs to a preparation, not to a plant. Monographs and trials mostly test standardised extracts. A garden St John's wort tea holds about 1/700 of the tested extract's hyperforin (THRIVING library, MI-04), and wild leaf potency varies tenfold (THRIVING library, ME-02). Where an A or B belongs to a factory extract, the row says so.

The plant must beat the alternative. No plant replaces ORS, soap, honey on a burn, a salvaged antibiotic or a midwife, and a plant that delays them does harm (THRIVING library, SY-02).

2. Grades and the codes in the tables

Grades follow the library's scheme, with tradition, record and inference kept apart (THRIVING library, TR-01).

Grade	Meaning here	Prior that the claim is true
A	Consistent randomised trials or a meta-analysis of the preparation named	High
B	One adequate trial, several small consistent trials, or a long written clinical record with a known dose	Moderate

Grade	Meaning here	Prior that the claim is true
C	Monograph-level traditional use with a plausible mechanism, or laboratory evidence with consistent use	About 1 in 3 (TR-01)
D	Tradition or laboratory evidence only	About 1 in 10 (TR-01)
X	Harm outweighs benefit, or the use has been tested and failed. Not carried	

Rung codes. H means a household may grow and give it. V means the village dispensary of 300 holds it. D means the district infirmary of 3,000. R means restricted: one named, trained person prepares and doses it from one batch with a logbook, by ME-02's rule (THRIVING library, ME-02). [OWNER] marks a village rule the owner must decide.

Source column. IDs in the source column are THRIVING library reports. Doses are adult doses of dried material unless stated. "3x" means three times a day.

3. Temperate zone (Europe, temperate North America and Asia, the boreal fringe)

Traditions credited: European folk and monastic medicine as codified by the EMA (THRIVING library, PH-01), the Eclectic physicians and the peoples recorded by Moerman (THRIVING library, PH-03), Finnish resin salve and Sámi and Inuit food medicine (THRIVING library, PH-09), and Withering's Shropshire receipt (THRIVING library, ME-07).

No.	Plant (family), common name	Part: preparation and dose	Use: grade	Harms, lookalike	Rung, source
1	*Potentilla erecta* (Rosaceae), tormentil	Rhizome: infusion 1.4 to 4 g, max 12 g a day, 3 days	Diarrhoea, after ORS: C	Tannin upset. Not under 18	H, PH-01
2	*Vaccinium myrtillus* (Ericaceae), bilberry	Dried fruit: decoction 5 to 15 g/250 ml, 3 to 4x	Diarrhoea, mouth: C	Fresh fruit loosens	H, PH-01
3	*Quercus robur* (Fagaceae), oak	Bark: decoction 3 g/250 ml, 3x, max 3 days	Diarrhoea, weeping skin: C	Binds iron and drugs. Not under 18	H, PH-01
4	*Agrimonia eupatoria* (Rosaceae), agrimony	Herb: 1.5 to 4 g/250 ml, 2 to 3x	Diarrhoea, gargle: C	Low. Not under 12	H, PH-01

No.	Plant (family), common name	Part: preparation and dose	Use: grade	Harms, lookalike	Rung, source
5	*Matricaria chamomilla* (Asteraceae), chamomile	Flower: 1.5 to 4 g/150 ml, 3 to 4x. Wash 3 to 10 g/100 ml	Gut spasm, mouth, washes: C	Daisy-family allergy. No baths on open wounds or in fever. Scentless mayweed	H, PH-01, EMA
6	*Mentha* x *piperita* (Lamiaceae), peppermint	Leaf: 4.5 to 9 g a day in 3 doses	Dyspepsia: B. Oil capsule for IBS: A	Oil kills infants by inhalation. Pennyroyal (X)	H, PH-01
7	*Foeniculum vulgare* (Apiaceae), fennel	Fruit: 1.5 g/250 ml, 3x. Age 4 to 12, 1 g	Colic, wind: C	Estragole. Not under 4. Hemlock in the umbels	H, PH-01
8	*Melissa officinalis* (Lamiaceae), lemon balm	Leaf: 1.5 to 4.5 g/150 ml, 1 to 3x	Restlessness, gut: C	Low. Not under 12	H, PH-01
9	*Achillea millefolium* (Asteraceae), yarrow	Flowering top: 1.5 to 4 g, 3 to 4x	Gut: C. Bleeding: D	Not a uterotonic (MA-02). Hemlock by silhouette	H, PH-01
10	*Linum usitatissimum* (Linaceae), linseed	Seed: 10 to 15 g with 150 ml water, 2 to 3x	Constipation: A/B	Obstruction if taken dry. Not under 12	H, PH-01
11	*Frangula alnus* (Rhamnaceae), alder buckthorn	Bark aged a year	Stubborn constipation: B	Fresh bark violently emetic. Not in pregnancy	V, PH-01
12	*Frangula purshiana* (Rhamnaceae), cascara	Bark aged a year: 10 to 30 mg hydroxyan-thracenes, first dose 0.5 g	Constipation: B	As above	V, PH-03
13	*Thymus vulgaris* (Lamiaceae), thyme	Herb: 1 to 2 g/150 ml, 3 to 4x	Productive cough: B in combination, C alone	Oil caustic. Not under 12	H, PH-01
14	*Hedera helix* (Araliaceae), ivy	Leaf dry extract 15 to 65 mg, 1 to 3x	Productive cough: B (extract only)	Never under 2. Raw leaf not dosed	D, PH-01

No.	Plant (family), common name	Part: preparation and dose	Use: grade	Harms, lookalike	Rung, source
15	*Althaea officinalis* (Malvaceae), marshmallow	Root: cold macerate 0.5 to 3 g/150 ml, max 15 g a day	Dry cough, throat: C	Space other medicines by an hour	H, PH-01
16	*Plantago lanceolata*, *P. major* (Plantaginaceae), plantain	Leaf: 1.4 to 2 g/150 to 250 ml, 2 to 3x	Throat: C. Wounds: D	Young foxglove rosette	H, PH-01
17	*Sambucus nigra* (Adoxaceae), elder	Flower: 2 to 5 g/150 ml, 3x	Early cold: C	Raw fruit, leaf, bark emetic. Cook fruit. Dwarf elder	H, PH-01
18	*Tilia cordata* (Malvaceae), lime	Flower: 1.5 g/150 ml, 2 to 4x	Cold, restlessness: C	Not under 4	H, PH-01
19	*Verbascum thapsus* (Scrophulariaceae), mullein	Flower: tea strained through cloth	Dry cough: D	Hairs irritate	H, PH-01
20	*Salvia officinalis* (Lamiaceae), sage	Leaf: gargle 2.5 g/100 ml. Tea 1 to 2 g, 3x	Throat: C	Thujone. Oral max 2 weeks. Adults only	H, PH-01
21	*Allium sativum* (Amarylli-daceae), garlic	Bulb: powder 900 to 1,380 mg a day	Blood pressure: B. Worms: no trial	Bleeding with anticoagulants. Wild: autumn crocus	H, PH-01, IN-08
22	*Echinacea purpurea* (Asteraceae), purple coneflower	Pressed juice 6 to 9 ml a day, 10 days	Colds: B contested (D in OR-02)	X in children	V, PH-03
23	*Calendula officinalis* (Asteraceae), pot marigold	Flower: 1 to 2 g/150 ml dressing. Salve 2 to 10%	Minor wounds: C	Not under 6. *Tagetes*	H, PH-01
24	*Picea abies* (Pinaceae), Norway spruce	Resin: 10% salve, change every 1 to 3 days	Pressure ulcer, surgical wound: B	Allergy 1 to 3%. Yew	V, PH-09
25	*Symphytum officinale* (Boraginaceae), comfrey	Root: 10% preparation twice daily, 10 days, intact skin	Sprain: A. By mouth: X	Pyrrolizidines. Foxglove rosette kills	V fenced, PH-01

No.	Plant (family), common name	Part: preparation and dose	Use: grade	Harms, lookalike	Rung, source
26	*Sphagnum* spp. (Sphagnaceae), bog moss	Dried, in muslin pad	Absorbent dressing: B	Sporotrichosis in handlers. Wear gloves	H, PH-09
27	*Hamamelis virginiana* (Hamamelidaceae), witch hazel	Bark, leaf: compress 5 to 10 g/250 ml. Gargle 2 to 3 g	Skin, haemorrhoids: C	Low	H, PH-03
28	*Hypericum perforatum* (Hypericaceae), St John's wort	Extract 300 to 600 mg, 1 to 3x. Tea C at best	Depression: A extract only	X with contraceptives, warfarin, antiretrovirals, ciclosporin	D, PH-01, MI-04
29	*Salix* spp. (Salicaceae), willow	Bark: decoction 4 g/200 ml, boil 15, stand 15 min, 3x, max 4 weeks	Back pain: B. Fever: D	Never under 18 or in third trimester. Salicin 1.5 to 15%	H, PH-01, ME-06, EMA
30	*Filipendula ulmaria* (Rosaceae), meadowsweet	Flowering herb: 1.5 to 6 g, max 18 g a day, 4 weeks	Cold, joint pain: C	Salicylate. Not under 18	H, PH-01
31	*Urtica dioica* (Urticaceae), nettle	Leaf 2 to 4 g, max 12 g a day. Root decoction 1.5 g, 3 to 4x	Joints, prostate: C	Root masks prostate cancer	H, PH-01
32	*Aesculus hippocastanum* (Sapindaceae), horse chestnut	Seed extract: 50 mg aescin twice daily	Venous insufficiency: A extract only	Raw seed poisonous	D, PH-01
33	*Rosa canina* (Rosaceae), dog rose	Hip: 5 to 10 g a day. Strain the hairs	Vitamin C: B. Joints: C	Low	H, PH-01, OR-03
34	*Pinus sylvestris* (Pinaceae), Scots pine	Winter needle: infuse, never boil	Scurvy: C	Yew (*Taxus baccata*) kills	H, PH-01, HY-08
35	*Vaccinium macrocarpon* (Ericaceae), cranberry	Fruit or juice, daily	Recurrent cystitis in women: A. In the old and in pregnancy: X	Does not treat infection	H, IN-14

No.	Plant (family), common name	Part: preparation and dose	Use: grade	Harms, lookalike	Rung, source
36	*Rubus chamaemorus* (Rosaceae), cloudberry, with young *Salix* leaf	Raw or frozen, 30 g	Vitamin C: B	None. Never polar bear, bearded seal or fox liver	H, PH-09
37	*Valeriana officinalis* (Caprifoliaceae), valerian	Root: 0.3 to 3 g, up to 4x, for 2 to 4 weeks	Sleep: C	No effect on one bad night. Not under 12	H, PH-01, MI-09
38	*Crataegus* spp. (Rosaceae), hawthorn	Leaf and flower: 1 to 2 g, max 6 g a day	Palpitation with anxiety: C. Heart failure: two null trials	Masks angina	V, PH-01
39	*Humulus lupulus* (Cannabaceae), hops	Strobile: 0.5 to 1 g at night	Sleep: D	Not under 12	H, PH-01
40	*Betula pendula* (Betulaceae), birch	Leaf: 2 to 3 g/150 ml, up to 4x	Urinary flushing: D	Not where fluid is restricted	H, PH-01
41	*Arctostaphylos uva-ursi* (Ericaceae), bearberry	Leaf: 1.5 to 4 g/150 ml, 2 to 4x, max 8 g a day, max 1 week	Cystitis: D	Hydroquinone. Works only in alkaline urine	V, IN-14
42	*Capsella bursa-pastoris* (Brassicaceae), shepherd's purse	Herb: 1 to 5 g, 2 to 4x, before the period	Heavy periods: D	Never for bleeding after birth	H, PH-01, MA-02
43	*Rubus idaeus* (Rosaceae), raspberry	Leaf	Period pain: D. Labour: null trial	Promises nothing at birth	H, PH-01
44	*Cucurbita* spp. (Cucurbitaceae), pumpkin	Seed: non-bitter kernels	Tapeworm: C alone, B with areca	Bitter seed purges violently	H, IN-08
45	*Artemisia absinthium* (Asteraceae), wormwood	Herb: 1 to 1.5 g, max 3 g a day, 2 weeks	Appetite: D. Worms: X	Thujone fits. Not in pregnancy	V fenced, PH-01, IN-08
46	*Taraxacum officinale* (Asteraceae), dandelion	Root decoction 3 to 4 g, up to 3x	Appetite: D	Not in gallstones	H, PH-01

No.	Plant (family), common name	Part: preparation and dose	Use: grade	Harms, lookalike	Rung, source
47	*Rhodiola rosea* (Crassulaceae), roseroot	Extract 144 to 400 mg a day. Root tea untested	Fatigue: C. Depression: X	Not under 18. Overharvest	V, PH-09
48	*Digitalis purpurea* (Plantaginaceae), foxglove	Leaf dried below 60 °C: start 1 grain (65 mg) twice daily, titrate	Dropsy from heart failure: B leaf, A glycoside	Index about 2. Comfrey lookalike	R [OWNER], ME-07, PH-10
49	*Papaver somniferum* (Papaveraceae), opium poppy	No method given. Adult oral morphine starts 5 to 10 mg every 4 h	Severe pain: A for morphine	Dependence, respiratory arrest. Tea cannot be dosed	R [OWNER], ME-05
50	*Cannabis sativa* (Cannabaceae), cannabis	No method given	Chronic pain: NNT 24, NNH 6	Psychosis, odds 3.2 to 4.8 with daily use	R [OWNER], ME-06

Grow and store. OR-02's temperate plan gives chamomile 200 m², thyme 85, sage 50, peppermint 28, lemon balm 15, fennel 20, calendula 60, marshmallow 20 in two halves, a 30 m² nursery and a 20 m² fenced plot. Willow, elder, rose, yarrow and plantain come from the hedge. Peppermint has no true seed, so keep it in two beds in two places and replant every third year (THRIVING library, OR-02). In the boreal fringe the dryer, not the bed, is the limit (THRIVING library, ME-04).

4. Mediterranean and dry zone (Mediterranean, Middle East, Sahel, southern Africa, dry Americas and Australia)

Traditions credited: Dioscorides and the Arab and Greek pharmacies (THRIVING library, PH-02), the Herero and the Khoi and San healers of the Kalahari (THRIVING library, ME-06) (THRIVING library, PH-06), Sahelian kinkeliba use, and Chinese ma huang (THRIVING library, PH-08). Restricted and sacred knowledge is acknowledged and not reproduced (THRIVING library, SY-04).

No.	Plant (family), common name	Part: preparation and dose	Use: grade	Harms, lookalike	Rung, source
1	*Ceratonia siliqua* (Fabaceae), carob	Pod flour or juice with ORS	Child diarrhoea, with ORS: B	None at food doses	H, PH-02
2	*Psidium guajava* (Myrtaceae), guava	As tropical row 2	Adult diarrhoea with ORS: B or C (disputed)	Constipation	H, PH-05, IN-11

No.	Plant (family), common name	Part: preparation and dose	Use: grade	Harms, lookalike	Rung, source
3	*Punica granatum* (Lythraceae), pomegranate	Rind: 2.5 to 4.5 g a day, divided	Diarrhoea: D. Gargle: C	Root bark X	H, PH-02
4	*Vachellia nilotica* (Fabaceae), gum arabic tree	Pod decoction	Diarrhoea, mouth: C	Constipation	H, PH-06
5	*Adansonia digitata* (Malvaceae), baobab	Fruit pulp drink	Food, fluids: C. Not a rehydration fluid: D	None known	H, PH-06
6	*Tamarindus indica* (Fabaceae), tamarind	Pulp soaked	Mild laxative: C	None known	H, PH-06
7	*Senna alexandrina* (Fabaceae), senna	Leaf or pod at night: 10 to 30 mg sennosides, about 0.5 to 1.5 g leaf, max 1 week	Constipation: A	Not under 12 (EMA), pregnancy, obstruction. Nappy blisters	V, PH-02
8	*Aloe ferox* (Asphodelaceae), bitter aloe	Dried exudate: 10 to 30 mg aloin at night, 1 week	Constipation: A (class)	As senna. Gel confused with exudate	V, PH-06
9	*Pistacia lentiscus* var. *chia* (Anacardiaceae), mastic	Resin: 0.5 to 1 g twice daily, 2 weeks	Dyspepsia, duodenal ulcer: B. H. pylori: X	Terebinth sold as mastic	V, PH-02
10	*Pimpinella anisum* (Apiaceae), anise	Crushed fruit: 1 to 3.5 g/150 ml, 3x, 2 weeks	Wind, cough: C	Japanese star anise poisons infants	H, PH-02
11	*Salvia rosmarinus* (Lamiaceae), rosemary	Leaf: 1 to 2 g, 2 to 3x, 2 weeks	Dyspepsia: C	Not in pregnancy or liver disease	H, PH-02
12	*Glycyrrhiza glabra* (Fabaceae), liquorice	Root: 3 to 8 g a day, 4 weeks. Long use under 2.5 g	Dyspepsia, cough: C. Long use: X	Pseudoaldosteronism, *Abrus* root	H, PH-02, PH-08
13	*Olea europaea* (Oleaceae), olive	Oil 15 to 50 ml a day as food. Salve base	Heart within the diet: A. Skin: C	Fresh herb in oil risks botulism	H, PH-02, ME-11

No.	Plant (family), common name	Part: preparation and dose	Use: grade	Harms, lookalike	Rung, source
14	*Nigella sativa* (Ranunculaceae), black seed	Seed 1 to 3 g a day	Fasting glucose: B	Not in pregnancy. Corncockle seed	H, PH-02
15	Fifteen temperate plants grown here: chamomile, peppermint, *Mentha arvensis*, fennel, sage, thyme, lemon balm, calendula (sown in autumn), plantain, rose, linseed (replaces marshmallow), willow by water, garlic, pumpkin, mallow	As temperate rows 5 to 7, 8, 10, 13, 16, 20, 21, 23, 29, 33, 44. Mallow (*Malva sylvestris*, Malvaceae) as marshmallow [VERIFY, my inference]	As there	Mint needs shade and water	H, OR-02
16	*Origanum vulgare*, *O. syriacum* (Lamiaceae), oregano	Herb tea, 3 cups a day	Digestion: C	Oil poisons children	H, PH-02
17	*Pelargonium sidoides* (Geraniaceae), umckaloabo	Root extract 1.4 ml 3x, 7 days. Root decoction about 0.4 to 1.5 g a day	Bronchitis: A extract (low quality). Decoction: D	Rare liver reports. Not under 3	D, PH-06
18	*Ephedra sinica* (Ephedraceae), ma huang	Stem: 3 g a dose, max 9 g a day, 3 days, with a pressure cuff	Adult asthma: C	Stroke above 32 mg ephedrine a day. Adults only	R, PH-08, ME-07, CH-03
19	*Aloe vera* (Asphodelaceae), aloe	Inner gel, thin layer 2 to 3x	Superficial burns: B. Deep wounds: X	Latex under the rind is X	H, PH-02
20	*Commiphora myrrha* (Burseraceae), myrrh	Tincture 1:5: 0.5 to 5 ml in 150 ml water, rinse 3x	Mouth ulcers: C	Not under 12 or in pregnancy. Opopanax	V, PH-02

No.	Plant (family), common name	Part: preparation and dose	Use: grade	Harms, lookalike	Rung, source
21	*Trigonella foenum-graecum* (Fabaceae), fenugreek	Poultice 50 g/250 ml. Seed 10 g a day	Boils: C. Type 2 glucose: weak B	Low glucose. Not in pregnancy	H, PH-02, CH-01
22	*Capsicum annuum* (Solanaceae), chilli	Plaster 11 mg capsaicinoids, 4 to 12 h a day. Cream 0.04 to 0.053%	Back pain: A (plaster). Nerve pain: weak	Burns. Eyes. Not under 18	V, ME-06
23	*Harpagophytum procumbens* (Pedaliaceae), devil's claw	Secondary tuber: tea 4.5 g a day, powder 1.3 to 2.6 g	Back pain: A extract. Osteoarthritis: B powder	Not with ulcer or gallstones. Overharvest	V, PH-06, ME-06
24	*Boswellia serrata* (Burseraceae), frankincense	Raw resin 1 to 3 g a day. Extract 300 to 400 mg 3x	Knee osteoarthritis: A extract. Raw: C	Heartburn	V, PH-02
25	*Combretum micranthum* (Combretaceae), kinkeliba	Leaf: 10 g a day brewed	Raised blood pressure: B	Few reported	H, PH-06
26	*Hibiscus sabdariffa* (Malvaceae), roselle	Calyx: 10 g a day	Raised blood pressure: B	Low	H, CH-02
27	*Moringa oleifera* (Moringaceae), moringa	Leaf powder in food	Food: C. Water disinfection: none	Root abortifacient, looks like horseradish	H, PH-06, HY-02
28	*Carica papaya* (Caricaceae), papaya	As tropical row 19, where water allows	Worms, burns: B	As there	H, PH-06, IN-08
29	*Cryptolepis sanguinolenta* (Apocynaceae), Ghana quinine	Root infusion 2.5 g, 3x, 5 days	Falciparum malaria, no other drug: B uncontrolled	Slow clearance. Last resort only	R, PH-06
30	*Crocus sativus* (Iridaceae), saffron	Stigma: 30 mg a day	Low mood: B	Toxic above 5 g. Autumn crocus	V, PH-02
31	*Lavandula angustifolia* (Lamiaceae), lavender	Flower tea 1 to 2 g, 3x	Anxiety: A for Silexan capsule only. Tea: D	Camphor lavenders	H, PH-02

No.	Plant (family), common name	Part: preparation and dose	Use: grade	Harms, lookalike	Rung, source
32	*Zanthoxylum zanthoxyloides* (Rutaceae), chewing stick	Stem chewed daily	Teeth, gums: C	Numbing	H, PH-06
33	*Cymbopogon citratus* (Poaceae), lemongrass	Leaf tea	Mild: C	Low	H, OR-02
34	*Prunus africana* (Rosaceae), African cherry	Bark extract 100 mg a day	Prostate: A extract. Bark: D	Overharvest kills trees	D, PH-06
35	*Papaver somniferum*	As temperate row 49	As there	As there	R [OWNER], ME-05
36	*Cannabis sativa*	As temperate row 50	As there	As there	R [OWNER], ME-06
W1	*Artemisia annua* (Asteraceae), sweet wormwood	Not carried as a medicine	Malaria tea: X (two in three relapse)	*A. afra* holds no artemisinin	Not used, IN-09
W2	*Drimia maritima* (Asparagaceae), squill	Not carried	Heart failure: X at household	Glycoside death	Pull up, PH-02
W3	*Ruta graveolens* (Rutaceae), rue	Not carried	Every use: X	Organ failure	Pull up, PH-02
W4	*Citrullus colocynthis* (Cucurbitaceae), colocynth	Not carried	Purgative: X. Lethal from 2 g	Wild melons	Pull up, PH-02

Row 15 holds fifteen plants, so the 36 numbered rows carry 50 medicinal species. Rows W1 to W4 are warnings, not medicines: they grow in the zone, tradition offers them, and the book must name them so a reader knows to refuse them.

Grow and store. OR-02's Mediterranean plan gives chamomile 150 m², calendula 60, thyme and sage 150, mint and balm 40 irrigated, fennel 20, aloe 20, senna 20, with olive, carob and pomegranate trees. The dry plan puts most medicine on trees: moringa 20 to 30 as a hedge, guava and papaya where water allows, tamarind, baobab and kinkeliba. Water, not storage, is the limit, and dried material keeps well (THRIVING library, OR-02) (THRIVING library, ME-04).

5. Tropical zone (wet and seasonal tropics, tropical highlands, the Pacific)

Traditions credited: the Andean and Amazonian healers who gave cinchona, ipecac and paico (THRIVING library, PH-04) (THRIVING library, PH-05), Ayurveda, Jamu and Thai medicine (THRIVING library, PH-07), Chinese

medicine for berberine (THRIVING library, PH-08), Cuba's green medicine (THRIVING library, OR-03), the Bundjalung people for tea tree and Pacific kava drinkers (THRIVING library, PH-09).

No.	Plant (family), common name	Part: preparation and dose	Use: grade	Harms, lookalike	Rung, source
1	*Musa* spp. (Musaceae), green banana, plantain	Unripe fruit cooked, 250 g per litre of diet	Child diarrhoea, persistent and acute: A	One trial group only	H, IN-11
2	*Psidium guajava* (Myrtaceae), guava	Leaf decoction 2.5 to 4 g/150 ml, 2 to 4x, 5 days. Or 7.4 g a day	Adult diarrhoea with ORS: B (PH-05) or C/D (IN-11)	Not under 12. Delays ORS if trusted	H, PH-05
3	*Coptis chinensis* (Ranunculaceae), coptis, subtropical uplands	Rhizome 3 to 5 g a day, max 3 days	Adult watery diarrhoea with ORS: B (PH-08). Cure: no (IN-11)	Kernicterus in newborns. Not under 12, pregnant, breastfeeding, G6PD	V, PH-08
4	*Carapichea ipecacuanha* (Rubiaceae), ipecac	Root powder about 2 g, up to twice daily	Microscope-proven amoebic dysentery only: B. Emetic: X	A third of Rogers's patients died	R, PH-05
5	*Aegle marmelos* (Rutaceae), bael	Unripe fruit	Diarrhoea: D	No tested dose	H, PH-07
6	*Zingiber officinale* (Zingiberaceae), ginger	Rhizome about 1 g a day	Nausea of pregnancy: A. Period pain, 750 to 2,000 mg a day: B	Heartburn	H, PH-07, MA-11
7	*Andrographis paniculata* (Acanthaceae), king of bitters	Herb: 6 g a day, 7 days	Sore throat, cold: B	Anaphylaxis	V, PH-07
8	*Plectranthus amboinicus* (Lamiaceae), Cuban oregano	Leaf tea or syrup	Cough: C	Epilepsy: X	H, OR-02
9	*Vitex negundo* (Lamiaceae), lagundi	Leaf tea	Cough: C	Other *Vitex*	H, OR-02
10	*Ocimum tenuiflorum* (Lamiaceae), tulsi	Leaf, under 1 cup a day	Cough, stress: C	Methyleugenol	H, PH-07

No.	Plant (family), common name	Part: preparation and dose	Use: grade	Harms, lookalike	Rung, source
11	*Justicia pectoralis* (Acanthaceae), tilo	Leaf tea	Cough: C [VERIFY]	Unknown	H, OR-02
12	*Cymbopogon citratus*	As dry row 33	Mild: C	Low	H
13	*Mentha arvensis* (Lamiaceae), field mint	Leaf as peppermint	Dyspepsia: C	Pennyroyal	H, OR-02
14	*Eucalyptus globulus* (Myrtaceae), blue gum	Leaf steam. Cineole capsule 200 mg 3x	COPD: B capsule only. Oil by mouth: X	5 ml kills a child	V, PH-09
15	*Melaleuca alternifolia* (Myrtaceae), tea tree	Oil 5% (acne), 25 to 50% (athlete's foot)	Acne: A. Tinea pedis: B	Under 10 ml swallowed: coma in a child	V locked, PH-09
16	*Cinchona* spp. (Rubiaceae), fever bark	Bark of unknown quinine content, plan on 1% (PH-04) not 5% (IN-09)	Malaria: B bark, A quinine	Quinine lethal from 1.5 g adult, 900 mg toddler. Low sugar	R, PH-04, IN-09
17	*Cryptolepis sanguinolenta*	As dry row 29	Last-resort malaria: B uncontrolled	As there	R, PH-06
18	*Azadirachta indica* (Meliaceae), neem	Seed oil 2% in a carrier, on skin	Mosquito repellent: B	Fatal by mouth in infants. Chinaberry	V, PH-07
19	*Carica papaya* (Caricaceae), papaya	Seed 1 or 4 g in honey, once [VERIFY], or 10 g a day in porridge. Pulp on burns daily	Roundworm: B small. Burn debridement: B	Male rat infertility. Not in pregnancy	H, IN-08, PH-06
20	*Dysphania ambrosioides* (Amaranthaceae), paico	Fresh leaf juice 1 ml/kg under 10 kg, 2 ml/kg above, 3 days	Roundworm, dwarf tapeworm: B	The oil kills children: X	V, PH-04
21	*Areca catechu* (Arecaceae), areca, after pumpkin seed	Weighed decoction, district only	Tapeworm with pumpkin seed: B	Carcinogen, cholinergic toxin	D, IN-08
22	*Aloe vera*	As dry row 19	Burns: B	As there	H

No.	Plant (family), common name	Part: preparation and dose	Use: grade	Harms, lookalike	Rung, source
23	*Croton lechleri* (Euphorbiaceae), sangre de drago	Latex on the wound	Wounds: B (one small trial)	Overharvest	V, PH-04
24	*Centella asiatica* (Apiaceae), gotu kola	Leaf poultice	Wounds, burns: C	Dermatitis. *Hydrocotyle*	H, PH-07
25	*Calophyllum inophyllum* (Calophyllaceae), tamanu	Seed oil, thin layer	Skin infection: C (laboratory)	Contact allergy	H, PH-09
26	*Copaifera* spp. (Fabaceae), copaiba	Oleoresin 2 to 10% on skin	Wounds: D. Scars: C	Adulteration	V, PH-05
27	*Piper aduncum* (Piperaceae), matico	Leaf on wounds	Wounds: C	Unknown	H, PH-04
28	*Senna alata* (Fabaceae), candle bush	Leaf lotion 50%	Tinea versicolor: A	Irritation	H, PH-07
29	*Curcuma longa* (Zingiberaceae), turmeric	Rhizome 1.5 to 3 g a day	Dyspepsia: A. Pain: low quality	Extract liver injury. *Gloriosa* tubers	H, PH-07
30	*Zingiber montanum* (Zingiberaceae), plai	14% cream twice daily	Sprain: B	Irritation	V, PH-07
31	*Capsicum* spp.	As dry row 22	Back pain: A plaster	As there	V, ME-06
32	*Syzygium aromaticum* (Myrtaceae), clove	Oil, a drop on cotton on the tooth. With zinc oxide as a temporary filling	Toothache: C	5 to 10 ml kills small children	V locked, PH-07, CH-07
33	*Uncaria tomentosa* (Rubiaceae), cat's claw	Bark decoction, dose not set	Arthritis: B extract, C bark	Kidney injury	V, PH-05
34	*Phyllanthus niruri* (Phyllanthaceae), stonebreaker	3 g/150 ml, 2 to 3x, max 3 weeks	Small stones: C. Hepatitis B: X	Pyrrolizidines	V, PH-05

No.	Plant (family), common name	Part: preparation and dose	Use: grade	Harms, lookalike	Rung, source
35	*Paullinia cupana* (Sapindaceae), guarana	Seed, 50 mg extract twice daily	Fatigue: C	Caffeine	H, PH-05
36	*Hibiscus sabdariffa*	As dry row 26	Blood pressure: B	Low	H, CH-02
37	*Moringa oleifera*	As dry row 27	Food: C	As there	H
38	*Terminalia chebula* (Combretaceae), in triphala	Mouthwash	Gum disease: B	Loose stools	H, PH-07
39	*Withania somnifera* (Solanaceae), ashwagandha	Root extract 300 to 600 mg a day	Anxiety, sleep: B	Liver injury	V, PH-07
40	*Piper methysticum* (Piperaceae), kava	Peeled root, water drink only	Anxiety: B contested (PH-09), trial null (MI-11). Solvent extract: X	Liver injury	V [OWNER], PH-09, MI-11
41	*Rauvolfia serpentina* (Apocynaceae), Indian snakeroot	Reserpine 0.1 to 0.25 mg. Root cannot be dosed	Hypertension: A as reserpine	Depression, suicide	D, PH-07, CH-02
42	*Mucuna pruriens* (Fabaceae), velvet bean	Roasted seed, levodopa 12.5 to 17.5 mg/kg	Parkinson's: B	Dyskinesia, low pressure	D, PH-07
43	*Erythroxylum coca* (Erythroxylaceae), coca, Andes and Amazon only	No method given. Quid 5 to 10 g	Mouth pain: B. Altitude: D	Heart risk. Law	R [OWNER], PH-04, WO-11
44	*Allium sativum*	As temperate row 21	As there	As there	H
45	*Cucurbita* spp.	As temperate row 44	As there	As there	H
46	*Cannabis sativa*	As temperate row 50	As there	As there	R [OWNER]
47	*Papaver somniferum*, highlands	As temperate row 49	As there	As there	R [OWNER]

No.	Plant (family), common name	Part: preparation and dose	Use: grade	Harms, lookalike	Rung, source
48	*Theobroma cacao* (Malvaceae), cacao	Bean, flavanol-rich drink	Blood pressure: A, but 1.76 mmHg, too small to use	Caffeine	H, PH-04
49	*Terminalia ferdinandiana* (Combretaceae), Kakadu plum, northern Australia	Fruit raw or dried, 2 to 3 g fresh a day	Vitamin C: B	High oxalate	H, PH-09
50	*Senna alexandrina*	As dry row 7, in the dry tropics	Constipation: A	As there	V, PH-02
W1	*Datura*, *Brugmansia* (Solanaceae)	Not carried	Every use: X	Delirium	Pull up, PH-04, PH-10
W2	*Gloriosa*, *Abrus*, *Cascabela* (yellow oleander), *Strychnos*	Not carried	Every use: X	Lethal	Pull up, PH-07

Grow and store. In the wet tropics dried leaf spoils, so aromatics are grown as a continuous fresh supply, rhizomes are lifted 8 to 10 months after planting, and the trees (guava, papaya, moringa, bael, tamarind) carry most of the load (THRIVING library, OR-02) (THRIVING library, ME-04). Cinchona is a tree of decades and of the highlands, and its bark keeps: one sample assayed true after 150 years (THRIVING library, ME-04).

6. The twenty minerals and simple chemicals

Weigh one level spoonful of each on the village scale and write the weight on the jar. A level 5 ml teaspoon holds about 5.9 g of salt and 2.5 g of sugar (THRIVING library, ME-08).

No.	Substance	Use and dose	Grade	Harm, never	Rung, source
1	Salt	ORS 3 g per litre with 6 level teaspoons sugar. Saline 9 g per litre	A (ORS)	About 1 g/kg kills. Never as an emetic	H, ME-08, IN-01

No.	Substance	Use and dose	Grade	Harm, never	Rung, source
2	Sugar	ORS. About 0.5 g/kg under the tongue for low sugar. Packed in infected wounds. 24% solution for newborn pain	A (ORS), B (wounds)	Never poured into a fitting child	H, ME-08, WO-02, WO-11
3	Zinc	20 mg a day, 10 to 14 days. 10 mg under 6 months. 5 to 10 mg works as well	A	Vomiting. No home-made zinc salts	V, ME-08, MA-07
4	Iodine	Iodised salt 20 to 40 mg/kg. Povidone-iodine 1.25% for conjunctivitis	A (salt, eye drops)	Newborn thyroid. Lugol's not a daily supplement	V, ME-08, IN-07, WO-16
5	Iron	65 mg elemental daily or alternate days, anaemic only	A	Over 60 mg/kg poisons children. Lock it	V, ME-08
6	Magnesium sulfate	10 g by mouth as laxative. Eclampsia: salvaged ampoules only, 4 g IV or 10 g IM	A (eclampsia)	Breathing stops. Home-made injection: X	V/D, ME-08, MA-04
7	Calcium	Eggshell powder, about 1.3 g gives 500 mg calcium. Calcium gluconate as magnesium antidote	C (eggshell)	Salmonella. Boil shells	V, MA-04
8	Sulfur	5 to 10% in fat, 3 nights	B, scabies	Toxic gas when burnt. Never by mouth	H, ME-08, IN-08
9	Charcoal	1 g/kg, max 50 g, within an hour	B	Aspiration. Not for iron, acids, alkalis, drowsy patients	V, ME-08, PH-10
10	Hypochlorite	0.025% for dirty wounds. 0.05 to 0.5% surfaces	A	Eyes. Never mixed with acid	V, IN-07, HY-05

No.	Substance	Use and dose	Grade	Harm, never	Rung, source
11	Ethanol	60 to 80% for hands and skin. Tincture solvent	A	Not in wounds. Methanol in poor stills	V, IN-07, ME-01
12	Vinegar (acetic acid)	0.25 to 1% soak for green pus	B	Weak elsewhere	H, IN-07
13	Potassium permanganate	1 in 10,000, light pink soak	C	Crystals burn and kill when swallowed	V locked, IN-07, ME-08
14	Lime	Latrine sludge to pH 12 for 2 hours	B	Blinding eye burns	V, ME-08, HY-05
15	Bicarbonate	Half a teaspoon, rarely	C	Stomach rupture, alkalosis. Never daily	H, ME-08
16	Alum	Clearing muddy water by jar test	B	Does not disinfect	H, ME-08
17	Zinc oxide	Paste with clove oil as a temporary filling, up to 6 months	C	Low	V, CH-07
18	Silver	38% diamine fluoride arrested 81% of child caries. Silver for newborn eyes only	B	Colloidal silver useless and permanent	D, CH-07, IN-07
19	Benzoic and salicylic acids	Whitfield's ointment 6% and 3%, twice daily, 3 to 6 weeks	C	Not on weeping skin	V, CH-10
20	Boric acid	600 mg vaginal capsule daily, 3 weeks, recurrent non-albicans thrush	B	Kills if swallowed. Lock it	V locked, MA-11

Not carried: copper sulfate (haemolysis, death), borax (infant seizures), eaten clay (lead), bromide except at the district for fits at about 50 mg/kg (THRIVING library, CH-04), home-made injectables of any kind, and the rasa metal preparations (THRIVING library, ME-08) (THRIVING library, TR-02). Honey is not a mineral but belongs on the same shelf: grade A for partial-thickness burns, B for infected wounds, never by mouth under 12 months (THRIVING library, WO-02) (THRIVING library, IN-07).

7. Plants restricted to one trained person

These plants are dangerous to prepare, dose or identify. The rule is ME-02's: one named preparer, one batch, one written method, one logbook, titration from a quarter dose with a pre-agreed stop sign, and a locked store (THRIVING library, ME-02).

Only the foxglove stop signs come from a source (Withering 1785, via ME-07). The others are my inference from the harms each report lists [VERIFY].

Plant	Why restricted	Stop sign
Foxglove [OWNER]	Index about 2. Digitoxin half-life about a week	Nausea, yellow vision, pulse under 60 or newly irregular
Cinchona bark	Quinine content 0.02 to 2.6% in wild bark, mean 0.66%	Tinnitus (untested as a rule), signs of low sugar
Ipecac	A third of treated patients died in the 1912 series	Persistent vomiting, chest pain, fast or irregular pulse
Ephedra	Stroke risk rises above 32 mg ephedrine a day	Pressure above the agreed ceiling, palpitations
Cryptolepis	No control group in its record	No fall in fever by day 3
Opium poppy, cannabis, coca [OWNER]	Dependence, law, overdose	Slow breathing, pinpoint pupils (opium), psychosis (cannabis)
Essential oils of clove, eucalyptus, tea tree	A teaspoon kills a child	Any swallow by a child is an emergency

8. The library's disagreements, carried forward

Question	One position	The other	My reading
Foxglove	ME-07: the only narrow-margin plant a lay healer may prepare, by Withering's titration	PH-10: never gather for any purpose. OR-03: plant drugs worked only as factory feedstock with an assay	OR-02's reconciliation by rung is sound: no foxglove at household level, at most one locked bed at the village if the owner accepts ME-07 [OWNER]
Garden area for 300	PH-01: about 70 m^2 in four beds	OR-02: about 700 m^2, because chamomile and thyme yield little	OR-02 shows its arithmetic, PH-01 marks its figure as inference. Plan on 700 m^2 or ration chamomile [OWNER]
Overharvest	ME-04, after FAO: take no more than 70% of a population where regeneration is in doubt	OR-02: for bark and root, no more than one plant in five a year, and replant	A threefold gap with no field data on either side. I would use OR-02's stricter figure for anything killed by harvest [OWNER] [VERIFY]

Question	One position	The other	My reading
Oxytocin shelf life	FO-11: oxytocin does not outlast its label, so discard expired ampoules and hold no unrefrigerated stock	OR-06: loss 3 to 7% a year at 21 to 25 °C and 9 to 19% at 30 °C, so expired oxytocin kept cool is usable at falling strength for two to three years. OR-06 also attributes to FO-11 a cellar figure of two to four years that I could not find in FO-11's text	Both rest on Torloni 2016. I side with OR-06 for salvage after the Fall, where weak oxytocin beats none, with misoprostol as second line [VERIFY]
Guava leaf	PH-05 and PH-04: B for adults, with ORS	IN-11: does not cure diarrhoea, C or D	The trials are small and adult. B for symptom relief, never a cure
Berberine	PH-08: B for adult watery diarrhoea with ORS	IN-11: does not cure	As guava
Cinchona content	PH-04: plan on about 1% quinine	IN-09: 5%	Unknown bark cannot be dosed safely at either figure
Kava	PH-09: B for anxiety, contested	MI-11: trial null	C at best for a water drink [VERIFY]
Senna age	EMA: not under 12	Egyptian authority: from age 2 (PH-02)	Use the stricter rule
Myrrh tincture	EMA: 1:5 in 90% ethanol	ME-01's general tincture range of 25 to 60%	Use 90% if the still can make it [VERIFY]

9. Conditions with no plant above grade C

This is the most important finding and must be printed plainly. For the following killers, no plant in the library reaches grade B for the cure, and the plant must never delay the real treatment.

- **Dehydration from diarrhoea and cholera.** ORS is the treatment. Green banana and carob shorten diarrhoea but do not rehydrate.
- **Pneumonia.** Thyme, ivy and *Pelargonium* ease cough in bronchitis. None treats pneumonia. Amoxicillin cut child pneumonia deaths by a third (THRIVING library, MA-07).
- **Newborn sepsis and puerperal sepsis.** No plant.
- **Measles and tuberculosis.** No plant.
- **Bleeding after birth.** Shepherd's purse and yarrow are not uterotonics, raw ergot cannot be dosed, and herbal uterotonics in labour are X (THRIVING library, MA-02) (THRIVING library, TR-14).
- **Eclampsia.** Magnesium sulfate only.
- **Anaphylaxis.** No plant replaces adrenaline (THRIVING library, CH-13).
- **Type 1 diabetes.** No plant. Fenugreek and black seed only nudge type 2 glucose.
- **Dementia.** No memory plant reaches B (THRIVING library, CH-12).
- **Epilepsy, meningitis, appendicitis, obstructed labour.** No plant.

Malaria is the exception the plants nearly win: cinchona bark at B and quinine at A, but only with an assay or titration (THRIVING library, IN-09).

Evidence grades

Claim	Grade	Basis
ORS, green banana, honey on burns, zinc	A	Trials summarised in IN-11, WO-02, MA-07
Willow bark decoction for back pain	B	Chrubasik trial via PH-01, EMA well-established use for the extract
Capsicum plaster for back pain	A	Three trials, 755 people (ME-06)
Tea tree oil 5% for acne	A	Two small trials (PH-09)
Papaya seed, paico juice for worms	B	One small trial each (IN-08, PH-04)
Foxglove by Withering's titration	B	163 cases, 1785 (ME-07)
Chamomile, thyme alone, calendula, marshmallow	C	EMA traditional register only (PH-01)
Artemisia tea for malaria, Echinacea in children, raw ergot	X	IN-09, PH-03, MA-02

About 45 distinct plants across the three zones carry an A or B for a preparation a village or district can make, many on one small trial. The rest are C or D [VERIFY, my count].

Means ledger

Rung	What it can do with this list	What it cannot do
Hands	Recognise the household ten, refuse the never-gather list, mix ORS	Identify a wild umbellifer root
Hearth	Infusions, decoctions, cold macerates, poultices, honey and sugar dressings, sulfur ointment	Measure potency
Garden and still	The village forty, drying at 35 to 45 °C, tinctures at 1:5, salves	Make extracts that match the trials
Village dispensary of 300	Weighed doses on a grain scale, labelled jars, the fenced plot, locked oils, a logbook, the restricted plants under [OWNER] rules	Assay, inject, store oxytocin hot
District infirmary of 3,000	Ivy and *Pelargonium* extracts if salvaged, reserpine, levodopa from *Mucuna*, cinchona with titration, a microscope for ipecac	Factory standardisation
Hospital reference	Standardised extracts, glycoside levels, quinine and artemisinin, digoxin antibody	

Harm test

1. **Wrong plant.** Foxglove gathered as comfrey in Washington State in 1977 (PH-01 and SY-02 say the couple died, ME-07 says the wife), autumn crocus as wild garlic (28 French cases, 2 deaths, 2020 to 2022), hemlock among umbellifers (THRIVING library, PH-10). Mitigation: grow, do not gather, and use the three-confirmation rule.

2. **Right plant, wrong dose.** Narrow-margin plants, wrong spoons and arithmetic errors (THRIVING library, ME-02). Mitigation: weigh, write the dose in grams, one preparer.
3. **Essential oils swallowed by children.** Eucalyptus 5 ml, clove 5 to 10 ml, tea tree under 10 ml, peppermint oil inhaled by infants (THRIVING library, PH-09) (THRIVING library, PH-07). Mitigation: oils locked, never in a cough bottle.
4. **Liver toxins.** Pyrrolizidine alkaloids in comfrey, boneset, *Senecio*. Aristolochic acid. Kava extracts. Ashwagandha, turmeric extract (THRIVING library, TR-15).
5. **Interactions.** St John's wort defeats contraceptives, warfarin and antiretrovirals (THRIVING library, PH-01). Liquorice lowers potassium.
6. **Age.** Willow and aspirin under 18 (Reye's), honey under 12 months, berberine and henna in newborns, Echinacea in children.
7. **Delay.** Guava tea instead of ORS, Artemisia tea instead of quinine, a plant instead of the walk to the infirmary. This harm is the largest because it is the most common (THRIVING library, SY-02). The full register is SY-10, forthcoming.

Red flags

Stop the plant and escalate when any of these appear:

- A child who cannot drink, vomits everything, fits or is lethargic (THRIVING library, MA-07).
- Breathing 50 or more a minute under 12 months, 40 or more from 1 to 5 years.
- Sunken eyes, no urine for 6 hours, skin pinch going back slowly.
- Fever in a baby under 3 months, after childbirth, or with stiff neck or a non-fading rash (THRIVING library, IN-02).
- Blood in stool with fever, in a child under five.
- Any bleeding after birth that soaks a pad in under an hour.
- On any plant: tingling lips, a pulse under 60, yellow vision, fits, confusion, jaundice or dark urine.
- Any child who has swallowed an essential oil, iron tablets or a seed from the pull-up list.
- A remedy not working after its stated course (3 days for diarrhoea adjuncts, 7 days for cough, 4 weeks for willow).

The case against

Against herbalism as a whole. Edzard Ernst's systematic reviews, as summarised in SY-02, find that few single-plant preparations have trial support and that individualised herbal mixtures fail (THRIVING library, SY-02). Trial results for extracts do not transfer to teas that vary tenfold. A book that prints fifty plants per zone invites readers to believe fifty plants work. Most do not, in the sense a mother needs.

Against this list. Readers will skip the grades, and a table makes a D plant look as solid as an A. The order of the tables and the section 9 list are the remedy.

Against the library's grades. Many B grades rest on a single small trial or a 60-year clinical record without control (koromiko, spruce resin, paico, sangre de drago). The A grades for extracts (St John's wort, horse chestnut, devil's claw, *Pelargonium*, boswellia) describe products a village cannot make. TR-01's prior of one in three for grade C is an inference, not a measurement.

Today and after the Fall. Today a reader should use amoxicillin and paracetamol. After the Fall the plant earns its place only where the salvaged drug is gone.

10-line summary

1. Weighted by what kills, the pharmacopoeia opens with diarrhoea, then chest and fever, then wounds, pain and birth.
2. ORS, honey, zinc and sulfur do more for mortality than any plant in the list.
3. A grade belongs to the preparation tested: a garden St John's wort tea holds 1/700 of the trial extract's hyperforin.
4. Of the temperate forty in PH-01, only six have well-established EMA use.
5. Green banana is the best-tested plant for child diarrhoea. Guava and berberine relieve adults but do not cure.
6. Willow bark (B), the capsicum plaster (A) and devil's claw extract (A) are the pain plants. Willow is forbidden under 18.
7. No plant reaches grade B for pneumonia, newborn sepsis, bleeding after birth, eclampsia, measles, TB or anaphylaxis.
8. Foxglove, cinchona, ipecac, ephedra and *Cryptolepis* belong to one trained person. Poppy, cannabis and coca are owner decisions.
9. Essential oils of eucalyptus, clove and tea tree kill children at a teaspoon and belong under lock.
10. The library disagrees on foxglove, garden size (70 against 700 m²), overharvest (70% against one in five) and oxytocin storage. The owner must decide.

Open questions

- SY-05's ranked mortality map, when written, may change the order of the tables.
- No field data supports either overharvest rule.
- The planning yields in OR-02 are half of trial figures by assumption.
- Whether berberine adds anything to ORS in children has not been tested in a way the library could find.
- The tinnitus endpoint for cinchona titration is untested.
- No traditional proportion for spruce resin salve was found.

Sources to read in full

1. EMA HMPC monographs for each plant in rows marked EMA, particularly section 4.2 on dose.
2. WHO Monographs on Selected Medicinal Plants, volumes 1 to 4 (1999 to 2009).
3. Blumenthal 1998, The Complete German Commission E Monographs, as a historical record of doses.
4. Withering 1785, An Account of the Foxglove.
5. Rabbani's green banana trials, Dhaka 2001 to 2010.
6. Okeniyi 2007 on papaya seed.
7. Chrubasik's willow bark trial for back pain, as summarised in PH-01.
8. OR-02's yield table, to be checked against measured village yields in the first two seasons.

At the bedside after the Fall

A child of two has had watery diarrhoea for a day. The healer gives ORS first, 75 ml/kg over 4 hours, and zinc 10 to 20 mg. Cooked green banana goes into the child's food. Guava tea is not for a child under 12. The healer checks hourly for the danger signs and tallies cups in and stools out. If the child stops drinking or grows drowsy, the walk to the infirmary begins at once. The plant helps ORS and never replaces it.

Protocols

Protocol 1. Choosing a remedy

☐ Name the condition and check section 9. If it is listed, give the real treatment first.

- ☐ Choose the highest-graded plant in the zone table for the preparation you can make.
- ☐ Confirm the plant by three independent checks (THRIVING library, PH-10).
- ☐ Weigh the dose in grams. Write it on the label with the date.
- ☐ Set the stop date and stop signs before the first dose.

Protocol 2. Standard preparations

- ☐ Infusion: 2 g per 150 ml, plus or minus 0.5 g, steep 10 minutes plus or minus 3, discard after 12 hours (THRIVING library, PH-01).
- ☐ Decoction: 3 to 4 g per 200 to 250 ml, simmer 15 minutes.
- ☐ Cold macerate (marshmallow): 0.5 to 3 g in 150 ml cold water, 30 minutes, stir often.
- ☐ Tincture: 1:5 in 25 to 60% ethanol for 14 days (THRIVING library, ME-01).
- ☐ Salve: 1 part beeswax to 4 parts oil, herb infused at 60 to 70 °C for 2 to 3 hours. No water in oil.
- ☐ Wash or poultice: at 37 °C plus or minus 5.

Protocol 3. Drying and storage

- ☐ Dry leaves and flowers at 35 to 45 °C, aromatics 30 to 35 °C, foxglove leaf no higher than 60 °C (THRIVING library, ME-04).
- ☐ Dry to the snap, then seal a sample overnight in a jar. No condensation means dry.
- ☐ Store whole, grind on the day of use.
- ☐ Flavonoid leaves and flowers keep 2 years at under 25 °C. Tinctures of narrow-margin plants lose 20 to 30% in 9 to 12 months.
- ☐ Every jar: plant, part, place, date of gather, preparer.

Protocol 4. The restricted plant

- ☐ One named preparer, one batch, one written method, one logbook (THRIVING library, ME-02).
- ☐ Start at a quarter dose (foxglove: 1 grain twice a day).
- ☐ Record pulse and the stop signs before every dose.
- ☐ Stop at the first stop sign and do not restart without the second person's agreement.

Numbers to carry

1. ORS: 1 litre water, 3 g salt, 6 level teaspoons sugar. 75 ml/kg over 4 hours.
2. Zinc: 20 mg a day, 10 under 6 months, 10 to 14 days.
3. Willow: 4 g bark per 200 ml, 3 times a day, never under 18.
4. Infusion: 2 g per 150 ml, 10 minutes.
5. Charcoal: 1 g/kg, max 50 g, within 1 hour.
6. A grain: 64.8 mg. A teaspoon: 2.5 to 7.3 ml.
7. Eucalyptus oil: 5 ml can kill a child.
8. Quinine: 10 mg/kg 3 times a day for 7 days. Lethal from 1.5 g in an adult.
9. Foxglove: index about 2. Stop at a pulse under 60.
10. Garden for 300: about 700 m^2 (OR-02) or 70 m^2 (PH-01).

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1. Blumenthal M (senior editor), Busse WR and others, Klein S (translator) (1998). The Complete German Commission E Monographs: Therapeutic Guide to Herbal Medicines. American Botanical Council, Austin, and Integrative Medicine Communications, Boston. https://shop.elsevier.com/books/the-complete-german-commission-e-monographs/blumenthal/978-0-9655555-0-0 (catalogue record and search summary only).

2. EMA (n.d. a). Matricariae flos, herbal medicinal product. European Medicines Agency summary for the public. https://www.ema.europa.eu/en/medicines/herbal/matricariae-flos (summary page read. The monograph EMA/HMPC/55843/2011, adopted 7 July 2015, was fetched but its text could not be extracted).
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