Medicinal plants and medicinal plant material containing flavonoids
PLAN

1. Medicinal plants and crude drugs containing vitamin P.
2. Medicinal plants and crude drugs containing anthocyanidins.
3. Medicinal plants and crude drugs containing flavones.
4. Medicinal plants and crude drugs containing flavonols.
5. Medicinal plants and crude drugs containing isoflavonols.
Rutin has been called vitamin P or permeability factor. It has been used in the treatment of various conditions characterized by capillary bleeding and increased capillary fragility. Claims have also been advanced for the value of citrus bioflavonoids in treating symptoms of the common cold.

Evidence for the therapeutic efficacy of rutin, citrus bioflavonoids, and related compounds is not conclusive, and products containing them are no longer marketed for medicinal purposes in the United States. They are included in some preparations as dietary supplements.
Occurrence

Rutin - quercetin-3-rutinoside. Its aglycone quercetin is 3',4',5,7-tetrahydroxyflavonol or 3',4',3,5,7-pentahydroxyflavone.

Rutin occurs in the buckwheat leaves (Fagopyrum sagittatum) – 4%;
Buds of Sophora japonica – 20%
Fresh leaves of tobacco plant;
Dried leaves of Eucalyptus macrorhinch - 8%
Experimental evidence indicates that the glycoside content decreases as plants mature.
Scholar- tree buds, fruits

*Fructus Sophorae japonicae*

*Alabastra Sophorae japonicae*

*Sophora japonica (Fabaceae)*

Japanese pagoda tree,
Chinese scholar tree

**Macroscopical characteristics:**
Leaf alternate, odd pinnately compound with entire margin, ovate with pinnate venation, green less than 2 inches. Flower white or yellow, showy.
Fruit is elongated; pod from 6 to 12 inches long; with dry or hard covering, brown or yellow, persistent on tree, showy.

**Content:**
Genistein, rutin 20%, quercetin, sophoricoside and sophorabioside, kaempferol-3-sophoroside.
Sophora flower buds contain a great deal of rutin, while the immature fruits contain sophoricoside, sophorabioside, genistein, orobol and genistin.
Sugars: rutinose
• **Action:**

The plant is used for the treatment of bleeding due to hemorrhoids and ulcerative colitis. The antihaemorrhagic principle, quercetin, has been isolated from aqueous extract of dried buds.

The flower extract has been reported to exhibit hepatoprotective activity. **Rutin and quercetin** in tablets for prevention of vitamins’ deficiency. **Tincture from fruits** - reparative and antibacterial.
**FRESH CHOKEBERRY FRUITS**
Fructus Aroniae melanocarpaceae recentes
BLACK CHOKEBERRY - *Aronia melanocarpa*
Rosaceae

**Macroscopical description:**
The leaves are alternate, simple, and oblong-elliptic with crenate margins and pinnate venation with terminal glands on leaf teeth and a glabrous underside less then 6 cm wide; in autumn the leaves turn to red color. Dark trichomes are present on the upper midrib surface. The flowers are white, small, with 5 petals and 5 glabrous sepals, and produced in corymbs of 10-25 together. Hypanthium is urn-shaped.

The fruit is a small black pome 6-9 mm wide, with a very astringent, bitter flavor.
Constituents:

- Total anthocyanin content in chokeberries is 1480 mg per 100 g of fresh berries, and proanthocyanidin concentration is 664 mg per 100 g.

  It contains cyanidin-3-galactoside, epicatechlin, caffeic acid, quercetin, delphinidin, petunidin, pelargonidin, peonidin, malvidin, quercetin, rutin, hesperidin, vitamins C, PP, Bc, B2, E, lipids, macro- and microelements Mo, Mn, Cu, B, Co
• **Action:**

Juice from these berries is astringent and not sweet, but high in vitamin C and antioxidants. Anthocyanins give *Aronia melanocarpa* extraordinary antioxidant strength that combats oxidative stress. They showed benefits in the conditions of colorectal cancer, cardiovascular disease, chronic inflammation, gastric mucosal disorders (peptic ulcer), eye inflammation (uveitis) and liver failure. The anti-inflammatory abilities of anthocyanine flavonoids in Aronia were confirmed experimentaly.

“*Aromelin***” reparative.

“*Vitamin P obtained from Aronia fruits***”-hypotensive.
**LEMON PEEL**  *Exocarpium Citri*

**LEMON – *Citrus limon Burm.* Rutaceae**

- **Content:**
  - The citrus flavonoids include hesperidin, quercitrin, rutin, and the flavone tangeritin. The essential oil from the unripe fruits contain limonin, nerolol, nerolyl acetate and geraniol.
  - Also coumarines, steroids, citric acid, vitamins B1, B2, salts of K and Cu.

- **Action:**
  
  P-vitamin, the source of essential oil.

  In addition to possessing antioxidant activity and an ability to increase intracellular levels of vitamin C rutin and hesperidin exert beneficial effects on capillary permeability and blood flow. They also exhibit some of the anti-allergy and anti-inflammatory benefits of quercetin. Quercetin can also inhibit revers transcriptase, part of the replication process of retroviruses. Hydroxyethylrutosides (HER) have been used in the treatment of capillary permeability, easy bruising, hemorrhoids and varicose veins.
BUCKWHEAT HERB
*Herba Fagopyri Sagittati*
*Buckwheat - Fagopyrum sagittatum*
*Polygonaceae*

**Macroscopical description:**

**Flower/fruit:** Branching spray of greenish white or pink flowers.

**Foliage:** Arrowhead-shaped leaves and swollen sheaths; stems are often reddish.

**Constituents:**

- Rutin (1-8%), quercetin-3-rhamnoside, quercetin-3-galactoside and other flavonoids, tannins, phenolic acids, fagopyrin.

**Action:**

P-vitamin, for atherosclerosis prevention, to treat vascular disorders.
Green tea leaf
*Folia Theae*
*Thea sinensis = Camellia sinensis*
*Theaceae*

**Constituents:**
The major flavonoids in green tea are the kaempferol and catechins (catechin, epicatechin, epicatechin gallate, and epigallocatechin gallate, rutin. It also contains alkaloids (caffeine (1,5-3,5%), theobromine, theophylline), essential oil, vitamins C, K, B1, B2, PP, organic acids, saponins, tannins

**Action:**
Green tea flavonoids are potent antioxidant compounds, thought to reduce incidence of cancer and heart disease. Tonic, stimulative, antimicrobial, antidiarrheal. Green tea is produced by steaming the fresh-cut leaf which inactivates enzymes, and oxidation does not significantly occur.
Cornflower  
Flores Centaureae cyani  
Centaurea cyanus (Asteraceae)  
Bachelor’s button, Blue poppy

**Macroscopical description:**
It is an annual plant growing to 16-35 inches tall, with grey-green branched stems. The leaves are lanceolate, 1-4 cm long. The flowers are most commonly an intense blue colour, produced in flowerheads (capitula) 1.5-3 cm diameter, with a ring of a few large, spreading ray florets surrounding a central cluster of disc florets.
• **Constituents:** The blue pigment is protocyanin, cyanidin-3-galactoside, quercetin-glucoside, quercetin-7-rutinoside, rutin, luteolin, derivatives of pelargonidin, apigenin-diglycoside, alkaloids, coumarins, saponins.

![Cyanidin](image1.png)

![Pelargonidin](image2.png)

• **Action:** diuretic species, slightly diuretic, choleretic, antiinflammatory, desinfectant, appetite stimulant.
MOTHERWORTH HERB - Herba Leonuri
Leonurus quinquelobatus
Leonurus cardiaca
Lamiaceae
COMMON MOTHERWORT

Macroscopical description:
It is a perennial herbaceous plant up to 2 m. The herb is represented by the top of stems with flowers and leaves, that are not more than 40 cm long. Stems are 4 - edged, hollow. Leaves are opposite, petiolate. The lower leaves are rounded or ovate in shape, 3 - 5 - lobed, acuminate at the apex and have a dentate margin. The upper leaves are opposite, oblong – elliptical or lanceolate in shape, entire. Flowers are gathered into whorls of 12 - 18 (20) in the axils of leaves. Stems, leaves, calyx of flowers are downy. The colour of stems is pale - green, the colour of sepals is green, the colour of corolla is dirty - pink or pink - violet. The odour is weak, the taste is bitterish.
The herb is collected during flowering period and is dried at the temperature of about 60°C

**Microscopical description:**
The epidermal cells have wavy walls, especially on the lower side of leaf. The leaves of motherwort have numerous stomata on the lower surface, surrounded by 3 – 4 epidermal cells. Many volatile oil glands occur on the epidermis of the leaf, they consist of 2 - 8 cells, arranged radially. It has two types of hairs: simple and glandular. Glandular hairs may be with one - two - celled pedicel and one - two - celled small or large globular head. Simple hairs consist of 3 - 5 cells. The cells of simple hairs are widened in the place of articulation. The surface of simple hairs are warded, sometimes smooth

**Content:** Herb contains flavonoids: rutin, quercetin, hyperoside etc. It also contains tannins, saponins, essential oil, iridoids, alkaloids.

**Action:**
Sedative, decreases blood pressure and as an adjuvant for thyroid hyperfunction. It is used in the form of an infusion.

**Infusion, tincture,** “Biovital,” “Gerovital”, “Doppelherz”, “Cariophyt”
**WATERPEPPER HERB**

*Herba Polygoni hydropiperis – Polygonum hydropiper*  
(*Polygonaceae*)  
**BITING KNOTWEED, WATER PEPPER**

- **Macroscopical description:**
  - Stem smooth, one to two feet high.
  - Leaves alternate, short-petiolate or subsessile, lanceolate to linear-oblong, glabrous, acuminate. Ocrea with ciliate bristles on margin, glabrous to scabrous, with fringed sheaths, two to four inches long, crowded with pellucid dots.
  - Flowers in short, slender spikes, drooping, and somewhat loosely-flowered; calyx sepals five-parted, greenish-white; stamens mostly six; styles two to three-parted. Fruit an obtusely triangular achenium, somewhat flattened, shining brown, minutely striate.
  - Common in moist grounds, blooming from August to October.
Constituents:
bicyclic sesquiterpenoids, polygodial (an unsaturated dialdehyde) which has been found responsible for the pungent taste (hence its edibility); rutin, quercetin, kaempferol, isorhamnetin, rhamnozin, polygonolide vitamins K, C.
The plant contains an essential oil (0.5%) which consists of monoterpenoids and sesquiterpenoids: α-pinene, β-pinene, 1,4-cineol, fenchone, α-humulene, β-caryophyllene, Carboxylic acids (cinnamic, valeric and caproic acid) and their esters were present in traces.

Action:
Fluid extract, infusion- uterotonic, hemostatic, astringent, anti-inflammatory, diuretic, emmenagogue (used as infusion for delayed menses and amenorrhoea), antifungal (root and leaf used externally).

Contraindicated during pregnancy.
COMMON PERSICARIA HERB - *Herba Polygoni persicariae*  
*Polygonum persicaria*  
*(Polygonaceae)*  
SPOTTED KNOTWEED

Stem is up to 1 m high, branching at base, erect, herbaceous, and has narrow, lancet-shaped leaves 8-10 cm long, alternate, short-petiolate to sessile above, 2cm broad, glabrous to sparse appressed pubescent, typically with purple splotch near middle of blade.

The white, pink or red flowers are in dense panicles and flower from early summer to late autumn. It is native to Europe and Asia.

**Content:** This plant contains persicarin, isoquercetine, avicularine, tetramethylquercetine, hyperoside, tannins, vitamine K, essential oil.

**Action:** It is used against diarrhoea and infections. Fresh leaves have been used to staunch bleeding.

Slightly laxative, uterotonic, diuretic, cardiotonic.
Knotweed herb - *Herba Polygoni avicularis*

*Polygonum aviculare* (Polygonaceae)

Silversheath knotweed, Doorweed, Knotgrass, Bird’s knotgrass

Stems slender, pale green, faintly ridged, usually **prostrate**, four inches to nearly two feet in length, branching in all directions from the white, woody root. Smaller branches come out at many of the numberless "knots," or joints, which are pale under the sheathing stipules. Leaves bluish green, nearly elliptical in shape, sessile or with very short petioles, a quarter-inch to an inch long. Flowers very small, the calyx five-parted, greenish white with pink margins, sitting solitary or in groups of two or three in the leaf axils; stamens usually eight, sometimes fewer; style three-parted. Achenes dull brown, with acute apex and rounded base, three-angled, and minutely ridged.
**Constituents:** quercetine, avicularine, hyperoside, tannins, catechins, phenolic acids, aviculine, vitamin C, carotinoids.

**Action:**
Recommended to cure the spitting of blood. Modern herbalists use it to treat dysentery, excessive menstrual flow, bleeding from bowel, stomach, lungs, nose, throat; mucous colitis, children’s summer diarrhoea, lung disorders, bronchitis and jaundice, gall and kidney stones. Not all of these uses are supported by scientific evidence.

The plant has an astringent, coagulant, antimicrobial, diuretic and expectorant activity.

“Mareline”, “Phytolit”
Gnaphalia herb
Herba Gnaphalii uliginosi
Gnaphalium uliginosum
Asteraceae
Mouse ear, Waterwort

It is 5-20 cm tall, covered with tufted white tomentum, especially above, at anthodia. Stalk more or less branchy from the base.
Leaves are linear-oblong or lanceolate, pointed, narrowed at base, petiolate, entire.
Anthodia are 3-4 mm long and 3-3.5 mm wide, gathered at ends of branches in glumes in groups of 2-4, less often single, located in axilla of convergent upper leaves exceeding anthodia; external leaflets of involucre are ovoid, somewhat woolly at base; internal ones are pointed, green, later brownish or brown, shining. Marginal flowers are pistillate, threadlike; median flowers are bisexual, tubular; receptacle bare.
**Constituents:**
- terpenoids, vitamins C, B1, carotenoids, essential oils, quercetine, kaempferol, gnaphalosides A and B, 6-methoxyluteolin and its 7-glucoside, scutelarine-7-O-glycoside.

**Action:**
- The whole plant is anti-inflammatory, astringent, diaphoretic and diuretic.
- Infusion, decoction, dry extract – hypotensive, antibacterial, oily extract – reparative.
- It is used both internally and externally in the treatment of laryngitis, upper respiratory catarrh and tonsillitis, whilst in Russia it is used in the treatment of high blood pressure.
Sandy everlasting flowers - *Flores Helichrysi arenarii*
*Helichrysum arenarium*
*Asteraceae*
Immortelle, Everlasting

- An annual plant, it grows to be an average of 0.3 m tall. The leaves are flat, the lower ones being elliptical in shape, the upper ones are linear. They are wooly on both sides.

- The flower heads are arranged in loosely, a cross between umbel and corymb. They are 3 to 4 mm wide of bright golden yellow florets.

- It is found on sandy grasslands.

**Content:** vitamine K, carotenoids, organic acids, macro- and microelements: K, Ca, Fe, Mn, essential oil, tannins, coumarins, kaempferol derivatives, **apigenin**, helichrysin, salypurposide, naringenin and its glycosides.
• **Action:** An infusion of the bright yellow flowers is used in the treatment of gall bladder disorders and as a diuretic in treating rheumatism and cystitis. It is a component in *zahraa*, an herbal tea used for medicinal purposes in Syria.

• **Infusion, dry extract – choleretic**

• “**Flamin**, “**Arenarine**” – antibacterial, reparative after the burns
**Tansy flowers - Flores Tanaceti**

*Tanacetum vulgare* (Asteraceae)

**Common tansy, Bitter Buttons, Cow Bitter, Mugwort, or Golden Buttons**

It is native to temperate Europe and Asia. It has been introduced to other parts of the world and, in some areas, has become invasive. Tansy is a flowering herbaceous plant with finely divided compound leaves and yellow, button-like flowers. It has a stout, somewhat reddish, erect stem, usually smooth, 50—150 cm tall, and branching near the top. The leaves are alternate, 10—15 cm long and are pinnately lobed, divided almost to the center into about seven pairs of segments, or lobes, which are again divided into smaller lobes having saw-toothed edges, thus giving the leaf a somewhat fernlike appearance. *The roundish, flat-topped, button-like, yellow flower heads are produced in terminal clusters from mid to late summer.* *The scent is similar to that of camphor with hints of rosemary.* The leaves and flowers are said to be poisonous if consumed in large quantities.
**Constituents:** Volatile oils (1,8-cineole, trans-thujone, camphor, and myrtenol), organic acids, alkaloids, tannins, flavonoids (*apigenin derivatives, acacetine and luteolin* derivatives). Aerial parts afforded terpenoids — tanacetin, vulgaronesand B, tamirin, tanacin and tanavulgarol; germacanolides, stearic acid, chrysoeriol, diometin, isorhamnetin, quercetin and axillarin.

The leaves contain parthenolide, caffeic, chlorogenic, iso-chlorogenic acids and vibernitol.

**Action:** For many years, Tansy has been used as a medicinal herb. Bathing in a solution of Tansy and salt is recommended to cure for joint pain. Bitter tea made with the blossoms of *T. vulgare* has been effectively used for centuries as an anthelmintic (vermifuge). The dried flowering herb of *Tanacetum* is used ethnomedicinally to treat migraine, neuralgia, and rheumatism, and as an antihelminthic. Traditionally, Tansy was often used for its emmenagogue effects, to bring on menstruation or end an unwanted pregnancy. Pregnant women should avoid this herb. Infusion, “Tanacechol” – choleretic.
Hawthorn leaf, flower and fruits - *Flores Crataegi*, *Fructus Crataegi*

*Crataegus sanguinea, C. oxyacantha* (Rosaceae)

Whitethorn, Maybush, Hawthorn

It is a species of hawthorn that is native to southern Siberia, Mongolia, and the extreme north of China.

**Fruits:** Ovoid false fruits, 6-13 mm long, 4-10 wide, each consists of much swollen receptacle surmounted by the remains of 5 reflexed calyx lobes surrounding a shallow, circular opening, with a dense covering of hairs on the exposed inner surface and the remains of the style and stigma in the center; outer surface of the receptacle red to dark red or brown, glabrous, wrinkled with yellowish brown 2 hard ovoid fruits.

**Leaves:** broadly ovate or obovate, 1,5-3,5 cm long; 2.5-3 cm wide, tapering at the base, petiolate; lamina deeply divided into 3-5 tapering lobes which are irregularly toothed near their apices

**Flowers:** up to about 1,5 cm in diameter, in corymbs of up to 12 or more, pedicals and receptacles are very hairy, sometimes distinctly wooly; 5 sepals, free, pale green, triangular and reflexed; 5 petals, free white or brownish, broadly ovate, stamens about 20.
**Content:**

**Flowers:** chlorogenic acid, derivatives of quercetin

**Fruits:** chlorogenic acid, anthocyanins, naringenine-2,7-diglycoside, rutin, quercetin, astragalin, hyperoside, vitamin C, K, tannins, coumarines, carotinoids, dimers of epicatechin.

**Action:** Having been used in traditional medicine, hawthorn products, such as an extract, have shown evidence for benefit in treating chronic heart failure.

Hypotensive, sedative, antiarithmetic.

Tincture, fluid extract, “Cardiovalen”.
Tickseed herb - *Herba Bidentis*

*Bidens tripartita* (Asteraceae)

**Beggar ticks, Bur Marigold, Tickseed**

- Stem 2-3 feet high, upright, branched, leafy, unangular, smooth. Leaves opposite, smooth, deeply serrated, smaller at its base. Flowers solitary, terminating each branch, rather drooping, surrounded with several simple, spreading entire, rough-edged leaves. Flowers-yellow, uniform, tubular and regular.

- **Content:** tannins, essential oil (The major constituents of the oil of flower heads were p-cymene (16.6%), β-caryophyllene oxide (6.0%) and humulene epoxide (5.3%). The main constituents of the oil of fresh herb were allo-ocimene (38.3%), (Z)-β-ocimene (30.6%) and α-phellandrene (8.5%), vitamine C, carotenoids, coumarines, glycosides of luteolin, sulfuretin, butein.

- **Action:**
  Infusion – to normalize metabolism, diuretic, choleretic, antiallergic, diaphoretic.
**Elder black flowers, European flower**

*Sambuci flos Sambucus nigra, Caprifoliaceae*

Inflorescence, flat-topped terminal cyme; flowers small, 1-3 mm in diameter, creamy-yellow, each composed of a five toothed calyx, a gamopetalous corolla with 5 lobes, 5 epitalous stamens and trilocular inferior ovary; calyx lobes very small, brownish-green, ovoid, attached to top of ovary; corolla with a short tube and spreading lobes; stamens, with short filaments and lemon-yellow anthers, attached to corolla tube; ovary sub-ovoid with three capitate stigmas.

**Content:** lipophilic triterpenoid (lupeol), β-sitosterol, anthocyanins, ursolic acid; flavonoids (up to 3%) including rutin; phenolic acids; tannins; mucilage; volatile oil (up to 0.2%); leaves gave cyanogenic glycosides; vitamin A and C.
**Action:**
Aqueous extract was proved to have insulin releasing and insulin-like activity. Anti-inflammatory, anticitarrhal, diuretic. Flowers and berries—used for common cold, influenza, nasal catarrh, sinusitis; as a gargle in sore throat. Inner bark—cathartic, hydragogue, emetic, diuretic. Infusion of bark and flowers—given in epilepsy; also used as a gentle circulatory stimulant, diaphoretic, expectant and anticitarrhal; locally in inflammations. Stembark, leaves, flowers, fruits, root extracts are used to treat bronchitis, cough, upper respiratory cold infections, fever.
**Equisetum stem - *Herba Equiseti*
**Equisetum arvense (Equisetaceae)**
**Pine grass, Field horsetail**

Stems green, erect, 20-80 cm long and 3-5 mm in diameter with 6-20 deep longitudinal grooves, rough, hollow; grooved, toothed sheaths 3-8 mm long at the internodes, many subulate, acute teeth, green with blackish tips; numerous lateral solid branches arranged in whorls, 5-20 cm long, 1-2 mm in diameter, 4 grooves and with 4 pale green, triangular-lanceolate teeth with acuminate apices; fracture short, exposing a large central cavity in the main stems. No odour, no taste.

**Content:** minerals incl. silicic acids and silicates; alkaloids, including nicotine, palustrine and palustrinine; **flavonoids, such as iso-quercitrin and quercetrtin**; sterols, including cholesterol, isofucosterol, campesterol; a saponin equisitonin, dimethylsulphone, thiaminase and aconitic acid.

**Action:** Diuretic, astringen, haemostatic, haemopoietic, for genitourinary affections (urethritis, enuresis, cystitis, prostatitis), internally as an antihaemorrhagic and externally as a styptic.

“**Phytolit”, “Phytolisin”**- urolitic, antiseptic “Arphasetin”
Glycyrrhiza root - Radices
Glycyrrhizae
Glycyrrhiza glabra (Fabaceae)
Licorice, Sweet word, Sweet root

- **Macroscopical characteristics:**
The root is perennial, long, round, succulent, tough, running to a considerable extent, externally brown, internally yellow with a sweet taste.

- **Content:**
triterpenes glycyrrhizin (6–13%), uraloside, glyfoside and glycyrrhizic acid, Other active constituents of liquorice include isoflavonoids (glabraisoflavanone A and B), chalcones, coumarins, triterpenoids and sterols, lignans, amino acids, amines, tannines, gums and volatile oils, cetoleic acid, β-sitosterol, stigmasterol, and glucuronic acid.
• **Action:** Anti-inflammatory, expectorant, demulcent, antiallergic, spasmylytic, mild laxative, antistress, antidepressive, antiulcer, liver protective, estrogenic, emmenagogue, antidiabetic. Used in bronchitis, dry cough, respiratory infections, catarrh, tuberculosis; genitourinary diseases, urinary tract infections; abdominal pain, gastric and duodenal ulcers, inflamed stomach, mouth ulcer. Also used for adrenocorticoid insufficiency.

• Oral liquorice preparations, containing glycyrrhetic acid, are used for the treatment of viral infections—viral hepatitis, common cold. Topical preparations, containing glycyrrhetic acid, are used for herpes, eczema, psoriasis. In Japan, a preparation of glycyrrhizin, cysteine and glycine is used for the treatment of acute and chronic hepatitis.

• **Infusion, Dry extract, “Liquiriton”, “Bronchikum”**
Restharrow root – Radices Ononis

**Ononis arvensis**

*Fabaceae*

Restarrow, Cammock ononis

- Spread in Asia and Europe.
- **Content:** tannins, saponines, essential oils, citric acid, ononin, onogenin, onospin

![Chemical structure](attachment:structure.png)

**Action:** Decoction, tincture – diuretic, laxative. It stops bleeding, and cures headache, rheumatism, skin chronic spots, urethra inflammation, etc.

“**Flavanobol**” – anabolic

“**Uroflux**” – diuretic, antiseptic
Herba Lespedezae capitatae
Herba Lespedezae bicoloris
Herba Lespedezae hedysaroides
Lespedeza capitata
Lespedeza bicolor
Lespedeza hedysaroides (Fabaceae)
Roundhead lespedeza, Round-headed bush clover

• It is a perennial species of bush clover that typically grows to 2-4' tall on stiff upright stems. Tiny creamy white, pea-like flowers with a magenta spot at the base of the standard bloom in dense, rounded heads (axillary clusters) in mid to late summer. Trifoliate, alternate, almost stalkless leaves have three narrow-oblong leaflets. Leaflets may be green with little hair to gray-green and hairy depending upon the particular variety or form.

• **Content:**
  phenolic acids, xantons, catechins, quercetin, kaempferol, orientin, homoorientin, vitexin, bioquercetin, saponaretin, lespedin.

• **Action:**
  “Lespenephril” – hypoazotemic, diuretic, antiinflammatory,
  “Helepin” – antiviral

Extract of the plant is of disputed utility in chronic kidney disease. Experimentally, it has demonstrated antitumor activity against Walker-256 carcinosarcoma and is also reportedly effective in lowering blood cholesterol levels. The stems have been used in the treatment of neuralgia and rheumatism.
Herba Erigeronis canadensis - Erigeron canadensis

Asteraceae

Canadian horseweed

- The erect stem, sometimes smooth, but usually bristly hairy, is generally branched near the top. The leaves are usually somewhat hairy, the lower ones 1 to 4 inches long and toothed, those scattered along the stem are rather narrow, smooth, linear and alternate. From June to November the plant produces numerous heads of small, inconspicuous white flowers in an open panicle, with yellow disk florets, flower head measured at 5 mm long and 3 mm wide.

- **Content:** sesquiterpenes, beta-santalen, beta-himachalene, cuparene, alpha-curcumene, gamma-cadinene, tannines, β-sitosterol, coumarines, phenolic acids, apigenin, luteolin, quercetin. Dry extract contains flavones, tannins and sugars.

- **Action:** Astringent, haemostatic, antirheumatic, diuretic. Used for diarrhoea, kidney disorders, bronchitis and for bleeding piles, wounds, bruises. Essential oil — used in bronchial catarrh and cystitis. Ethanolic extracts of aerial parts exhibit significant anti-inflammatory activity.
Herba Solidaginis canadensis
Solidago canadensis
Asteraceae
The Tallgrass Prairie, Canadian Goldenrod

- It is an erect, rhizomatous perennial herb growing to heights of about 1.8 m and forming large colonies. Alternate leaves surround the central stem with the larger leaves occurring on the lower stem. Flowers are borne on numerous small flower heads. The fruit is an achene. It is native to North America and north of Mexico.

**Content:** quercetin, kaempferol, rutin, astragalin, saponins, tannins, essential oils, vitamins C, PP, coumarines, aminoacids

**Action:** Infusion – diuretic, anti-inflammatory, anti-bacterial. “Marelin”, “Phytolit”-spasmolitic, diuretic, anti-inflammatory
**Herba Aervae lanatae**
**Aerva lanata**
**Amarantaceae**
**Aerva, Pol-pala**

Annual herb, 60-75 cm tall, often woody at base; stems – green, erect or prostrate, with numerous, slender, cylindrical, more or less cottony, hairy branches. Leaves simple, alternate, 1.2-2.5 cm long, 0.9-2.5 cm broad, oval or spatulate-oval.

**Content:** The plant contains palmitic acid, beta-sitosterol and alpha–amyrin, alkaloids, organic acids, tannins, saponins, coumarins, glycosids of kaempferol.

**Action:**
Anticalculus (used in lithiasis), diuretic, demulcent, anthelmintic, antidiarrhoeal, leaf used in hepatitis. Its diuretic action is said to be very effective in the treatment of urethral discharges and gonorrhea and is of value in cases of lithiasis. Potential antiglycaemic activity of ethanol extract. A decoction of the plant is used in catarrh of bladder. The flowers and roots are used for headache.

**Key application:** As diuretic and lithontriptic.
GINKGO LEAF
Folium Ginkgo
Ginkgo biloba
Ginkgoaceae

• The leaves are unique among seed plants, being fan-shaped with veins radiating out into the leaf blade, sometimes bifurcating (splitting) but never anastomosing to form a network. Two veins enter the leaf blade at the base and fork repeatedly in two; this is known as dichotomous venation. The leaves are usually 5–10 cm, but sometimes up to 15 cm long. The old popular name "Maidenhair tree" is because the leaves resemble some of the pinnae of the Maidenhair fern Adiantum capillus-veneris.

• Leaves of long shoots are usually notched or lobed, but only from the outer surface, between the veins. They are borne both on the more rapidly-growing branch tips, where they are alternate and spaced out, and also on the short shoots, where they are clustered at the tips.
Content: bioflavonoids (ginkgogetin, bilobetin) and terpenoids (ginkgolides and bilobalide), alkaloids, glycosides of quercetin kaempferol and luteolin.

Action: Antagonizes bronchospasm, use as a circulatory stimulant, peripheral vasodilator. **Standardized dry extract**—for symptomatic treatment of disturbed performance in organic brain syndrome within the regimen of a therapeutic concept in cases of dementia syndromes — memory deficits, disturbance in concentration, depressive emotional conditions, dizziness, tinnitus and headache. As vasoactive and platelet aggregation inhibitor.

The extract increases tolerance to hypoxia and exhibits anti-ischaemic effect. It simultaneously improves the fluidity of blood, decreases platelet adhesion, decreases platelet and erythrocyte aggregation and reduces plasma and blood viscosity. It protects erythrocytes from haemolysis and also decreases the permeability of capillaries and protects the cell membrane by trapping free radicals.

“Tanakan”, “Gincor Procto”, “Gincor Fort”, “Memoplant”
**Herba Datiscae cannabinae - Datisca cannabina**

**Datiscaceae**

**Alkalbir**

Its native to Asia and South-Eastern Europe.

Plants around 2 m tall. Cauline leaves 15-30 cm long; leaflets 5-11, lanceolate, up to 15 cm long, 2.5-4 cm broad, coarsely serrate, long acuminate; ramal ones alternate, linear-lanceolate, 2.5-8 cm long, 0.7-1.2 cm broad, serrate or entire. Flowers yellow, small, subsessile. Calyx of male ones 3-4-lobed, lobes unequal, 2 mm long; stamens 11-13, anthers oblong, 3-3.5 mm long. Female flowers: calyx obscurely 3-4-ribbed, adnate to the ovary, 3-4-lobed, lobes around 1 mm long. Gynoecium 3-4-carpellary, inferior, unilocular, ovules many on 3-4 parietal placentae; styles 3-4, free, each divided nearly to the middle in 2 linear stigmas. Fruit 5-9 mm long, 3-4 mm broad. Seeds numerous, elliptic around 1 mm long.

**Content:**

flavonoids (appr. 8%), datiscin and datiscanin, cannadin, rutin, alkaloids, α - amyrin, organic acids, tannins, β-sitosterol and its glycosides

**Action:**

Diuretic, purgative, expectorant, bitter. Used in fevers, and gastric ailments.

“Datiscan” - choleretic
St. John’s wort
*Herba Hyperici*

*Hypericum perforatum*
*Clusiaceae*

- **Stem:** cylindrical with 2 equidistant longitudinal ridges, base brown with woody hollow center. Uppergreen and branched

- **Leaves:** opposite, sessile pairs; grey-green, linear oblong 8-30 mm. Obtuse apex, base even. Surface glabrous with brown dots.

- **Flowers:** 2 cm in diameter; 5 green, lanceolate sepals, acuminate apex, joined at base with brown dots; 5 yellow linear-ovate petals, longer than sepals. Petals are 8–12 mm long, typically twice as long as the sepals, and bear black glands along the margins. Stamens are numerous and arranged in 3 groups. An egg-shaped, three-valved, capsule-type fruit bursts open at maturity and releases many seeds. Odour is mildly aromatic and somewhat balsamic; taste is bitter and acrid.
**Content:** Naphtodiantrones – 0.1-0,3%,
- Flavonoids – 2-4%;
- Xantone derivatives;
- Oligomeric procianidins;
- Essential oil (traces).

**Action:** Used as an antidepressive treatment for mild to moderate forms of endogenous, neurotic and larvate depression. It is also used for psychovegetative disturbances such as states of anxiety and nervous restlessness. Hypericin and pseudohypericin have been demonstrated to have antiviral and anticancer activity. Hyperforin might have some potential in inflammatory and allergic diseases connected to eicosanoids.

Phytomedicines: **Tincture; DEPRIM®**

External: Oily Hypericum preparations for treatment acute and contused injuries, myalgia and first degree burns.

**Side effect**

Photosensitization is possible, especially in light –skinned individuals.
**Radices Scutellariae**  
**Scutellaria baicalensis**  
**Lamiaceae**  
**Baical scullcap, Chinese scullap**

It is a perennial herb that grows from a rhizome to a height of 1.20 m. It is common on sunny, grassy slopes, waste and cultivated areas, from 100 to 2000 m in China, Japan, Korea, Mongolia, and the steppes of Siberia.

The stems are erect, much branched, quadrangular. The leaves are simple and linear-lanceolate. The inflourescences are terminal racemes of up to 15 cm long. The flowers are tubular, labiate, dark blue, purple-red to blue, and up to 3 cm long.

**Content:** flavones: baicalein, oroxylin A, tannines  
**Action:** The drug consists of the roots, usually cut into slices is used to promote urination, to quiet pregnant uterus, stimulate respiratory organs, reduce fever, diarrhea, cancer of the breast, and heal boils. In Korea, the plant is used to treat bacterial infection of respiratory and gastrointestinal tracts and fever. Oroxylin A has similar anxiolytic activity as diazepam.

“**Aspalinat**” – hypotensive, sedative.
Herba Violae
Viola tricolor
Viola arvensis
Violaceae

Stems pale green, glabrous, cylindrical, up to 5mm wide, branching.

Leaves alternate, stipulate, dark green, lamina 1,5-2,5 cm long and 1-2 cm wide, glabrous; lower - ovate, apex obtuse, upper leaves ovate-lanceolate, apex - subacute; rounded base, crenate or crenate-dentate margin. Petiole up to 3 cm.

Flowers solitary 2-2,5 cm diameter, 5 green, lanceolate sepals, acute apex, bas extended to flat appendage; 5 ovate, blue-violate and/or yellow petals, overlapping at base; stamens 5.

Content: phenolic acids, alkaloids, saponins, delphinidin, peonidin, vitamin C, carotinoids, tannins, rutin, vitexin

Action: It has been recommended, among other uses, as a treatment for epilepsy, asthma, skin diseases and eczema. It has expectorant properties, and so has been used in the treatment of chest complaints such as bronchitis and whooping cough. It is also a diuretic, leading to its use in treating rheumatism and cystitis.