Medicinal plants and vitamin-containing raw materials:

Forest strawberry - Fragaria vesca L.

family - Rosaceae

Other names: common strawberry, pozemka, berry bush

Perennial herbaceous plant up to 20 cm high with creeping shoots. Leaves in a root rosette, on a long petiole, triply compound; leaflets are sessile, rounded-rhombic, with a coarsely serrate margin. Flowers up to 2 cm in diameter, on clasping hairy long pedicels, five-membered, white, collected in shield-shaped inflorescences. The fruit is a strawberry stalk (many-nut), formed by a sprawling fleshy peduncle with nut-like fruits sitting on it. The calyx is detached from the fruit and easily separable (Fig. 4.4). Flowering from late May to July, fruit ripening in June-July.

Possible admixture includes green strawberry (strawberry, halfberry) - Fragaria viridis Duch.

It is distinguished by larger, dark green from above, greyish from below, densely pubescent leaves with finely toothed leaflets and loose shield-shaped small inflorescence with yellowish-white larger (15-25 mm in diameter) flowers. Fruits are rounded, yellowish-white at the base, reddening only at the apex or laterally, with a tightly adherent calyx.

Distribution. In the forest and forest-steppe zones of the European part of the country, in Western Siberia and the Caucasus; occurs in some parts of Central Asia. Strawberry grows in Western Europe, North Africa, North and South America.

Habitat. It grows in lightened forests, in forest glades and edges, meadows, clearings, burned areas, in bushes.

Harvesting. Fruits are harvested ripe, without stalks and calyxes, in the morning, when the dew is gone, or in the evening. Leaves are harvested during flowering, with petioles no more than 1 cm long.

Drying. Fruits are dried in the air, previously wilted for a day, or in dryers at a temperature of 25-30 ºC for 4-5 hours, then dried at a temperature of 45-65 ºC. The most rational is freeze drying. Leaves are dried in attics or under a shed with an iron roof, in dryers at a temperature not exceeding 45 ºC.

Storage. In dry, well-ventilated rooms. Shelf life of fruits 2 years, leaves - 1 year.

External Signs.

Fruits

The fruits are broadly conical in shape, up to 1.5 cm long, and consist of numerous small nuts embedded with their bases in a fleshy peduncle.

The colour of the fruit is dark red, while the nuts are yellowish. The odour is pleasant and aromatic. The flavour is sour-sweet.

Leaves

Leaves are compound with remnants of petioles no more than 1 cm long, of three entire leaflets of ovate or rounded-rhombic shape, 1.5-6 cm long and 1.6-4 cm wide. Leaflet margin with large, triangular or almost rounded teeth. The veining is peristocrural. The main vein and veins of the first order protrude from the lower side of the leaflets, yellowish. The upper side is pubescent with sparse hairs, the lower side is more pubescent. The colour is green or dark green above, greyish-green below. Faint odour. The flavour is sour and astringent.

Numerical indicators. The sum of flavonoids in terms of rutin not less than 1 %;

Chemical composition.

The fruit contains

ascorbic acid (50 mg%),
carotenoids (5 mg%),
B vitamins,
folic acid,
sugars (up to 15 per cent),
apple,
citric,
salicylic and other acids,
a small amount of tannins,
essential oil (which gives strawberries a pleasant flavour),
pectin substances,
anthocyanin compounds (3-galactoside of pelargonidin and 3-glycoside of cyanidin),
salts of iron, phosphorus, cobalt, manganese, and a lot of potassium.

Most cultivated varieties of strawberries are superior to forest strawberries in the content of the sum of phenolic compounds and flavonols in the fruit.

The leaves contain

ascorbic acid (120-200 mg%),
flavonoids (quercetin derivatives),
carotenoids,
coumarins,
essential oil,
tannins (9 %)

Pharmacological properties and applications.

Infusion of strawberry fruit and leaves has a pronounced diuretic and choleretic effect.

Diuretic effect of strawberries due to the high content of potassium and organic acids.

Juice, decoction and infusion of fruits have diaphoretic properties, improve digestion.

Leaves and fruits of strawberries in fresh and dried form are used as a diuretic, choleretic, promoting the removal of salts from the body, used for gout, arthrosis, arthritis, joint diseases, biliary and urolithiasis.

Strawberry leaf tea is recommended for urolithiasis.

Blackcurrant - Ribes nigrum L.

family - Grossulariaceae

Branched shrub 1-1.5 (up to 2) m high with regular triple or palmately lobed fragrant leaves with glands on the veins. Flowers are small, broadly bell-shaped, greenish purple, gathered 5-10 in drooping clusters. The fruit is a spherical multi-seeded berry of violet-black colour. Flowering in May-June, fruit ripening in July-August.

Distribution. Forest zone of the European part of Russia, Siberia, Caucasus. Cultivated everywhere.

Habitat. On moist rich soils, in damp forests and their margins, on river banks, lakes, bog margins, on floodplain meadows, solitary or in groups.

Harvesting. Fruits are harvested in summer in the ripening phase. They are plucked by hand and put into small containers, protecting them from damage.
Drying. On a hot day - in attics under an iron roof, scattering the fruit in a thin layer on bedding or on frames covered with gauze, as well as in dryers, first wilting them for 4-5 hours at a temperature of 35-40 ° C, then dried at a temperature of 55-60 ° C.

The raw material consists of wrinkled rounded berries up to 1 cm in diameter, with a cone-shaped calyx remnant at the apex. The pulp of the fruit contains numerous small angular seeds.
The colour is black or dark purple. The odour is weak, peculiar, fragrant. The taste is sour.

Chemical composition.
Currant fruit are rich in ascorbic acid (up to 570 mg%), contain B vitamins, substances with P-vitamin activity (flavonoids) - up to 1.5 %, carotenoids, sugars (mainly glucose, fructose), organic acids (citric acid, malic acid).

In addition, found tannins (up to 0.5 %), pectins (up to 1 %), anthocyanins (cyanidin, delphinidin) and their glycosides, essential oils.

Pharmacological properties of blackcurrant

The medicinal use of blackcurrant and its preparations is associated with the presence of vitamins, organic acids, pectins and essential oil.

Vitamins C and P are used for the treatment and prevention of scurvy and other hypo- and avitaminosis and in the complex of therapeutic measures for various diseases associated with bleeding. Fruits have diaphoretic, diuretic action, stimulate the gastrointestinal tract.

Application of blackcurrant

Fruits are used as a multivitamin, also in the form of decoction or in fresh form with diseases of the circulatory system, atherosclerosism, colds and other infectious diseases, with exhaustion.

Blackcurrant leaves are used as

diuretic,
disinfectant,
diaphoretic
for urolithiasis,
pyelonephritis,
cystitis.

Fresh blackcurrant berries possess

astringent,
stimulate the appetite,

are used in

rheumatism,
peptic ulcer,
anaemia.

Vitamins are also well preserved in frozen blackcurrants.

Shepherd's purse herb -Capsellae bursae-pastoris herba

Shepherd's purse - Capsella bursa- pastoris (L.) Medik.

family - Brassicaceae (Cruciferae)

Annual herbaceous plant up to 30 (60) cm tall. Stems are solitary, simple or branched. Lower leaves in a root rosette, petiolate, entire to pinnately divided, with toothed lobes. Stem leaves are regular, sessile, more often entire, decreasing towards the top. Flowers are regular, small, white, gathered in apical clusters. Fruit is a strongly flattened, bipinnate, inversely triangular-heart-shaped pod on a long stalk. Seeds are oval, flattened, yellow-brown. Blooms from early spring and almost all summer. Fruits ripen from June to September.

Distribution. Widespread field weed, found almost all over Russia.

Habitat. In damp places, more often among row crops, in parks, along roadsides, in yards and gardens. Often forms continuous thickets.

Harvesting. In summer, during the flowering - early fruiting phase, the herb is mowed, cut or plucked. Remove impurities of roots, yellowed leaves, soil contaminated and parts affected by powdery mildew.

It is not allowed to collect the shepherd's purse-like poisonous plant *Thlaspi arvense* L., which is characterised by round-elliptical pods with broad wings on the sides.

Drying. In the air in the shade with good ventilation or in dryers at temperatures up to 45 ºC. Raw material is spread in a 3-5 cm layer. The end of drying is determined by the brittleness of the stems.

Whole raw material

Foliage stems up to 40 cm long, simple or branched, with ribbed surface, glabrous or slightly pubescent in the lower part, with flowers and immature fruits on elongated cyst-like inflorescences, often with rosettes of root leaves.

Root leaves are oblong-lanceolate, petiolate, pinnate, pinnately divided, with acute triangular string-like-emarginate, entire-edged or toothed lobes; stem leaves - ordinary, sessile, oblong-lanceolate, entire-edged or notched-toothed; upper leaves - almost linear with arrow-shaped base.

Flowers are small, regular, separately lobed. Calyx of 4 oblong-ovate, green sepals. Corolla of 4 obovate petals. Fruits are pods, inversely triangular-heart-shaped, slightly emarginate at the apex, flattened, with two opening flaps. The colour of stems, leaves and fruits is green, flowers are whitish. The odour is weak. The taste is bitter.

Chemical Composition

Herb shepherd's purse contains vitamins: phylloquinone (vitamin K1), ascorbic acid, carotenoids. Their highest content is in the flowering phase.

In addition, the plant contains flavonoids, organic acids, tannins, rhamnoglycoside hyssopine, biogenic amines (choline, acetylcholine), significant amounts of potassium salts (up to 40 % in the ash) and sulphur-containing compounds.

Pharmacotherapeutic group. K-vitamin, haemostatic agent.

Pharmacological properties of shepherd's purse

Preparations of shepherd's purse have styptic properties, haemostatic effect of shepherd's purse is caused by vitamin K.

Shepherd's purse preparations increase the tone and motility of the uterine musculature, as well as intestinal peristalsis, which is associated with acetylcholine.

Galenic forms of shepherd's pouch dilate peripheral vessels, have some hypotensive effect. The leaves have phytoncidal activity. For clinical practice is of interest to the high content of potassium in the plant.

Uses of shepherd's purse

Shepherd's purse as a medicinal plant has long been used in scientific and folk medicine in many countries of the world. It is mainly used for uterine bleeding, as shepherd's purse combines the ability to contract the uterine muscles, activate the blood coagulation system and increase blood clotting.

Shepherd's purse is indicated in gastrointestinal bleeding, especially in bleeding associated with liver dysfunction and insufficient production of prothrombin.

In urological practice, shepherd's purse is included in collections of medicinal plants for the treatment of patients with pyelonephritis, cystitis, urolithiasis, as a styptic agent and to replenish the loss of potassium salts.

Shepherd's purse is contraindicated in pregnancy.