

Achillea arabica Kotschy, *Achillea filipendulina* Lam., *Achillea millefolium* L. - ASTERACEAE



Olim K. Khojimatov and Rainer W. Bussmann

***Achillea arabica* Kotschy**

Synonyms: *Achillea biebersteinii* Afanasiev

***Achillea filipendulina* Lam.**

Synonyms: *Achillea eupatorium* M.Bieb.; *Achillea filicifolia* M.Bieb.; *Tanacetum angulatum* Willd.

***Achillea millefolium* L.**

Synonyms: *Achillea albicaulis* C.A. Mey.; *Achillea albida* Willd.; *Achillea alpicola* (Rydb.) Rydb; *Achillea ambigua* Pollini; *Achillea ambigua* Boiss.; *Achillea anethifolia* Fisch. ex Herder; *Achillea angustissima* Rydb.; *Achillea arenaria* A. Heller; *Achillea arenicola* A. Heller; *Achillea bicolor* Wender.; *Achillea borealis* Bong.; *Achillea borealis* var. *arenicola* (A. Heller) J.T. Howell; *Achillea borealis* subsp. *Arenicola* (A. Heller) D.D. Keck; *Achillea borealis* subsp. *californica* (Pollard) D.D. Keck; *Achillea borealis* var. *californica* (Pollard) J.T. Howell; *Achillea borealis* f. *fusca* (Rydb.) Hultén; *Achillea borealis* var. *fusca* (Rydb.) G.N. Jones; *Achillea borealis* subsp. *typica* D.D. Keck; *Achillea californica* Pollard; *Achillea compacta* Lam.; *Achillea coronopifolia* Willd.; *Achillea crassifolia* Steud.; *Achillea crassifolia* Dietr. ex Colla; *Achillea cristata* DC.; *Achillea cuspidata* Wall.; *Achillea dentifera* DC.; *Achillea dentifera* Rchb.; *Achillea eradiata* Piper; *Achillea fusca* Rydb.;

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Achillea gigantea Pollard; *Achillea gracilis* Raf.; *Achillea haenkeana* Tausch; *Achillea intermedia* Schleich.; *Achillea lanata* Spreng.; *Achillea lanata* Lam.; *Achillea lanulosa* Nutt.; *Achillea lanulosa* subsp. *alpicola* (Rydb.) D.D. Keck; *Achillea lanulosa* var. *alpicola* Rydb.; *Achillea lanulosa* var. *arachnoidea* Lunell; *Achillea lanulosa* var. *eradiata* (Piper) M. Peck; *Achillea lanulosa* subsp. *megacephala* (Raup) Argus; *Achillea lanulosa* f. *peroutkyi* F.Seym.; *Achillea lanulosa* f. *rubicunda* Farw. *Achillea lanulosa* subsp. *typica* D.D. Keck; *Achillea laxiflora* Pollard & Cockerell; *Achillea magna* Haenke; *Achillea magna* L.; *Achillea magna*; *Achillea marginata* Turcz. ex Ledeb.; *Achillea megacephala* Raup; *Achillea millefolium* f. *albiflora* Dabrowska; *Achillea millefolium* var. *alpicola* (Rydb.) Garrett; *Achillea millefolium* var. *arenicola* (A. Heller) Ferris; *Achillea millefolium* subsp. *atrotegula* B. Boivin; *Achillea millefolium* subsp. *balearica* Sennen; *Achillea millefolium* var. *asplenifolia* (Vent.) Farw.; *Achillea millefolium* var. *borealis* (Bong.) Farw.; *Achillea millefolium* subsp. *borealis* (Bong.) Breitung; *Achillea millefolium* f. *californica* (Pollard) H.M. Hall; *Achillea millefolium* var. *californica* (Pollard) Jeps.; *Achillea millefolium* var. *colliniformis* Dabrowska; *Achillea millefolium* var. *densiloba* P.D. Sell; *Achillea millefolium* var. *dipetala* Dabrowska; *Achillea millefolium* f. *discolor* B. Boivin; *Achillea millefolium* var. *dissecta* Dabrowska; *Achillea millefolium* var. *fulva* B. Boivin; *Achillea millefolium* var. *fusca* (Rydb.) G.N. Jones; *Achillea millefolium* var. *gigantea* (Pollard) Ferris; *Achillea millefolium* var. *gracilis* Raf. ex DC.; *Achillea millefolium* var. *iserana* Podp.; *Achillea millefolium* f. *iserana* Hayek; *Achillea millefolium* var. *lanata* W.D.J. Koch; *Achillea millefolium* subsp. *lanulosa* (Nutt.) Piper; *Achillea millefolium* var. *lanulosa* (Nutt.) Piper; *Achillea millefolium* var. *litoralis* Ehrend. ex Ferris; *Achillea millefolium* var. *lobata* Dabrowska; *Achillea millefolium* var. *maritima* Dabrowska; *Achillea millefolium* var. *maritima* Jeps.; *Achillea millefolium* var. *megacephala* (Raup) B. Boivin; *Achillea millefolium* var. *nigrescens* E. Mey.; *Achillea millefolium* var. *occidentalis* DC.; *Achillea millefolium* subsp. *occidentalis* (DC.) Hyl.; *Achillea millefolium* var. *pacifica* (Rydb.) G.N. Jones; *Achillea millefolium* subsp. *pallidotegula* B. Boivin; *Achillea millefolium* var. *parviligula* B. Boivin; *Achillea millefolium* subvar. *parviligulata* Farw.; *Achillea millefolium* var. *parvula* B. Boivin; *Achillea millefolium* f. *pseudopannonica* Pamp.; *Achillea millefolium* var. *puberula* (Rydb.) Ferris; *Achillea millefolium* var. *purpurea* Wirtg.; *Achillea millefolium* f. *rhodantha* Lepage; *Achillea millefolium* var. *rosea* Gray; *Achillea millefolium* f. *roseiflora* B. Boivin; *Achillea millefolium* f. *roseoides* Breitung; *Achillea millefolium* f. *rubicunda* (Farw.) Farw.; *Achillea millefolium* var. *russeolata* B. Boivin; *Achillea millefolium* var. *sordida* W.D.J. Koch; *Achillea millefolium* var. *spathulata* Dabrowska; *Achillea millefolium* var. *sylvatica* Wirtg.; *Achillea nabelekii* Heimerl; *Achillea nigrescens* (E. Mey.) Rydb.; *Achillea occidentalis* (DC.) Raf. ex Rydb.; *Achillea ochroleuca* Eichw.; *Achillea ossica* K.Koch; *Achillea pacifica* Rydb.; *Achillea palmeri* Rydb.; *Achillea pecten-veneris* Pollard; *Achillea pratensis* Saukel & R. Länger; *Achillea pseudotanacetifolia* Wierzb. ex Rechb.; *Achillea puberula* Rydb.; *Achillea rosea* Desf.; *Achillea scabra* Host; *Achillea setacea* Schwein.; *Achillea sordida* (W.D.J. Koch) Dalla Torre & Sarnth.; *Achillea subalpina* Greene; *Achillea subhirsuta* Gilib.; *Achillea submillefolium* Klokov & Krytzka; *Achillea sudetica* Opitz;

Achillea sylvatica Becker; *Achillea tanacetifolia* Mill.; *Achillea tanacetifolia* var. *dentifera* W.D.J. Koch; *Achillea tenuifolia* Salisb.; *Achillea tenuis* Schur; *Achillea tomentosa* Pursh; *Achillea virgata* DC.; *Achillios millefoliatus* St.-Lag.; *Alitubus millefolium* (L.) Dulac; *Chamaemelum millefolium* (L.) E.H.L. Krause; *Chamaemelum tanacetifolium* E.H.L. Krause; *Millefolium officinale* Gueldenst. ex Ledeb.; *Millefolium vulgare* Gueldenst. ex Ledeb.; *Ptarmica borealis* (Bong.) DC.; *Santolina millefolium* Baill.

Local Names

***Achillea arabica*:** **Language:** **Uzbek:** Buimadaron; **Tadjik:** Push; Tkhach.

***Achillea filipendulina*:** **Russian:** Тысячелистник таволголистный (Tysyachelistnik tavolgolistnyy); **Uzbek:** Dastarbosh; **Kyrgyz:** Табылгы жалбырактуу каз тандай (Tabylgy zhalbyraktuu kaz tanday); **Tajik:** Buymodaron (Буймодарон), Hazorbarg (Ҳазорбарг); **Pamiri:** Zirdos (Зирдос), Zirdados (Зирдадос), Zirdathaws (Зирдасаўс), Zirdadosk (Зирдадоск), Zardsarak (Зардсарак); **English:** Fern-leaf yarrow (Sokolov 1993).

***Achillea millefolium*:** **Uzbek:** Buimadaron; **Tadjik:** Ummalaf; Hazorbarg; **English:** Yarrow.

Botany and Ecology

***Achillea arabica*:** Perennial. Rhizome slender, branched, woody in upper part; plants grayish-green, more or less densely covered with long, weakly appressed, hairs; stems few, less often solitary, straight or weakly flexuous, (12)20–35(60) cm high, finely sulcate, cylindrical below, weakly angular above, often with short leafy branches in axils of cauline leaves, simple, sometimes branched above. Cauline leaves pinnatisect, sessile, linear-lanceolate to oblong-linear, mostly upward directed, straight or more or less falcately bent upward; segments numerous, somewhat distant, especially in lower half of leaves, leaves longer at base, semiamplexicaul (auricles), pinnately cut or parted in 3(5) narrow, somewhat obtuse, linear, oblong-linear, less often lanceolate lobes, terminating in short, usually cartilaginous cusp; midrib usually narrow, not toothed; middle cauline leaves (2)3–4(10) cm long, with segments (2)3–5(8) mm long and lobes (1)2–3(4) mm long; uppermost leaves mostly with entire, narrow segments; leaves on nonflowering branches twice pinnately cut, petiolate, (5)8–12(25) cm long, with distant smaller segments in lower part. Capitula usually on short peduncles, in more or less dense, convex, compound, usually unequal corymbs. Receptacle convex or conical. Involucre oblong to ovate, 3–4 mm long, (2.0)2.5–3.0 mm in dia; involucre bracts thin-membranous, light colored, yellowish, usually glaucous, weakly carinate, with midrib prominent

Fig. 1 *Achillea arabica*
(Asteraceae), Jizzakh
region, Uzbekistan. (Photo
N.Yu. Beshko)



dorsally, white-membranous along margin, obtuse; outer bracts ovate or oblong, others oblong, bracts wide, oblong, less often broadly lanceolate, short, almost a half as long as tubular florets, thin-membranous, transparent. Ligules of outer florets golden or bright yellow, $1/2-1/3(2/7)$ as long as involucre, rotund-reniform or semi-circular, 1.0–1.5 (1.8) mm long, 1.5–2.0(3.0) mm wide, truncate above with 3-obtuse, unequal teeth. Achenes 1.0–1.25 mm long, cuneate-oblong, roundish at apex. Flowering May to August. On clayey, stony, sometimes sandy soils, less often on stony out-crops and gravel beds along riverbanks in foothill plains, foothills, and along mountain slopes up to 2500(3000) m, in desert, semi desert, steppe and less shrubby, forest and meadow vegetation. Also found in irrigated and unirrigated fields, and on old fields, wastelands, along roads, irrigation channels, etc. Central Asia: mountainous Turkmenia, Kara-Kum, Amu-Darya, Kyzyl-Kum (south), Pamiro-Alai Region Syr-Darya, Tien Shan, Lake Balkhash Region, Dzhungaria-Tarbagatai (Fig. 1).

***Achillea filipendulina*:** Perennial. Rhizome woody; whole plant more or less densely pubescent from slightly appressed hairs; stems less numerous, less often solitary, (25)40–70(120) cm high, erect, ribbed-sulcate, straight or weakly flexuous, simple, less often sparingly branched, densely leafy, very rarely with short branches in axils of cauline leaves. Leaves pubescent, with frequent punctate-alveolate glandular hairs on both sides, wide, oblong-lanceolate, pinnately parted, with decurrent oblong-lanceolate, or oblong, crenulate and obtusely toothed large segments; midrib of leaves serrate-dentate; leaves on nonflowering branches long-petiolate, up to 40 cm long; lower cauline leaves petiolate, middle 8–18 cm long, with (0.5)1.5–2.0(3.0) cm-long middle segments, lower 91 segments smaller, more remote; upper leaves sessile, smaller, uppermost about 1 cm long, filiform-linear, serrate-dentate or entire. Capitula with few or many flowers, in dense, large (to 10 cm in dia), compound, convex, unequal corymbs. Receptacle convex to

Fig. 2 *Achillea filipendulina* (Asteraceae), Tashkent region, Uzbekistan. (Photo N.Yu. Beshko)



oblong-cylindrical. Involucre oblong-obconical, often with elongate base, or oblong-cylindrical, 3–4 to 9–10 mm long and about 2 mm in dia; involucre bracts deltoid-oblong, pubescent, pale; bracts oblong-lanceolate, much shorter than florets. All flowers tubular, or outer flowers short-ligulate, often irregular, with small (up to 1 mm long) three-lobed reniform-rotund, bright yellow ligules. Achenes oblong, 1.5–1.75 mm long. Flowering June to July (September). On gravel beds in river valleys, on stony, clayey, clayey-sandy soils along irrigation channels, springs and streams, as well as in old fields and open dry mountain slopes, in glades and along edges of mountain forests and shrub thickets. From foothill plains to upper part of the tree belts (Caucasus) and tree-shrub (Central Asia) vegetation. European part: Crimea (?); Caucasus: Ciscaucasia, Eastern and Southern Transcaucasia; Central Asia: Tien Shan, Syr-Darya, Pamiro-Alai (Fig. 2).

***Achillea millefolium*:** Perennial. Rhizome slender, creeping, branched; whole plant more or less covered with fine white hairs; stems few or solitary, usually weakly pubescent (finely floccose), (5)20–60(120) cm high, erect or ascending from base, erect, less often flexuous, simple or branched above, cylindrical, finely sulcate, with short leafy branches in axils of upper and middle cauline leaves. Leaves lanceolate, oblong-lanceolate, or almost linear, punctate-alveolate, twice or thrice pinnately cut, with numerous more or less remote segments (1.5–10 mm apart); lower cauline leaves and leaves of nonflowering branches 10–40 cm long, 0.8–5 cm wide, rachis 1–2 mm wide, leaves usually in upper part with solitary teeth between basal segments; lobes and teeth lanceolate, less often linear, 0.5–1.5 mm long, 0.3–0.4(0.5) mm wide, terminating in short cartilagenous cusp. Capitula in numerous, unequal, compound corymbs, 2–15 cm in dia. Involucre oblong to almost ovoid, 3–4(6) mm long, (2)3–4(5) mm in dia; involucre bracts green, carinate, with prominent midrib, membranous along margin, often brownish; bracts ovate to oblong-elliptical, membranous, floccose above, with scattered hairs on dorsal surface. Ligules of outer florets white, pink, or red. (1)2–4 mm long, 1.5–3.0(4.5) mm wide, more or less

Fig. 3 *Achillea millefolium* (Asteraceae), Tashkent region, Uzbekistan. (Photo O.K. Khojimatov)



Fig. 4 *Achillea millefolium* (Asteraceae), Tashkent region, Uzbekistan. (Photo O.K. Khojimatov)



rotund, 2–3-toothed at apex, limb a half as long as involucre; tubular florets up to 20, glandular-hairy on outside. Flowering July–October. Ural, Caucasus, Altai, Middle Asia, on dry forest edges, clearings, in open forests, on dry meadows, slopes, railroad embankments, along roads, on the outskirts of fields. (Macbride and Weberbauer 1936–1995) (Figs. 3 and 4).

Phytochemistry

Carbohydrates (glucose, galactose, arabinose, inositol), organic acids (aconite, amber), essential oils (azulene, caryophyllene, eucalyptol, borneol, bornylacetate, pinene, limonene, α -thujone, terpineol, aljojoen, cadinene, camphene, camphor,

copaene, cumIn aldehyde, cymol, eugenol, farnesene, furfural, gumulene, isoartemisiacetone, isobutyl acetate, limonene, menthol, myrcene, sabinene, a-terpinene, y-terpinene, terpinol-4, terpinolene), sesquiterpenoids (acetoxyartabsin, acetylbalcanolide, achillicine, achilline, austricine, balkhanide, dihydroacetoxytamaticine, hydroxyachilline, leucodine, millefine, millepholide), alkaloids (betaine, choline, trigonelline, achilleine), cyanogenic compounds, steroids (sitosterol, sitosterol acetate), phenolic compounds, tannins, phenolcarbonic acids (salicylic, coffee), coumarins, flavonoids (apigenine, luteoline, cosmosyne, luteoline, artemethine, kasticine, isoramnetine, vitexine, sertizine, orientine, quercetine, isovitoxine, apigenine, isoeryentin, vicenin), fatty acids (myristic, palmitic, stearic, oleic, linoleic), coumarins, terpenoids (azulene, geraniol, citral, menton, carvone, a-thuyone, achilline). (Sokolov 1993).

Local Medicinal Uses

Achillea arabica: is used against headaches, colds, stomach-ache, ulcers (Tetik et al. 2013). In folk medicine of Uzbekistan, decoction of aboveground mass and flowers is used in gastralgia, pulmonary tuberculosis, hemorrhoids, malaria, flatulency. Externally for stomatitis, gingivitis, laryngitis (Khalmatov 1964; Khojimatov 2021). Used against headaches, colds, stomach-ache, ulcers (Tetik et al. 2013).

Achillea filipendulina: In folk medicine, decoction of flowers is used for headaches, colds, dysentery, asthma; It is considered a diuretic and hemostatic agent; dry flowers with honey are used as clay; grass is used when menstruation is delayed, for which the patient is smoked with smoke; external – parkas in the event of a cut (Sakhobiddinov 1948). A decoction of the aerial part, an infusion of flowers for pulmonary tuberculosis, heart disease, externally for gingivitis, laryngitis, stomatitis (Khalmatov 1964; Khojimatov 2021). An infusion and a decoction of the aerial parts and flowers of ***Achillea filipendulina*** are used as a treatment for diarrhea, dysentery, gastrointestinal diseases, gynecological diseases and as an appetizer. To prepare an infusion, one teaspoon of the flowers or aerial parts is infused in 200 ml of boiled water for 15 minutes. For a decoction, two teaspoons of flowers or aerial parts are added to half a liter of water and boiled for 5 minutes. Sugar and honey are added to change the taste. To treat diarrhea and dysentery, half a glass of the infusion is taken before each meal for 7 days. A decoction of flowers is added to soups and taken in case of diarrhea or dysentery. A bath with a decoction is taken against gynecological diseases, such as colpitis, inflammation of the female genital organs, itching skin or allergy in or around the vagina. To treat gynecological diseases (colpitis), it is used together with *Capparis spinosa* var. *herbacea* L. and *Amaranthus retroflexus* L. It is also used to treat cardiovascular diseases. A decoction of dried flowers is used as a children's digestive aid, and also to treat stomach-ache and cough (Liu et al. 2020; Jan et al. 2021).

Achillea millefolium: In folk medicine, decoction of flowers is used for headaches, colds, dysentery, asthma; It is considered a diuretic and hemostatic agent; dry flowers with honey are used as vermifuge; Aerial part (grass) is used when menstruation is delayed, for which the patient is smoked with smoke; external – poultice in case of cut (Sakhobiddinov 1948). Water decoction of the aerial parts of plant, infusion of flowers used for pulmonary tuberculosis, heart diseases, externally pringivitis, laryngitis, stomatitis (Khalmatov 1964; Khojimatov 2021). Used for fever and cold (Gilani et al. 2006), toothache, as tonic, dysentery (Akhtar et al. 2018; Shah and Khan 2006); cough, profuse mucous discharges (Kayani et al. 2014); piles and leucorrhoea (Amjad et al. 2017), toothache, earache, tuberculosis, stomach disorders, fever (Ahmad and Habib 2014), as diaphoretic, stimulant, tonic, to treat fever, cold, hemorrhoids, headaches, diuretic, urinary disorders and menstrual problems (Shaheen et al. 2012), for wound healing, digestion, earache, toothache, tuberculosis (Ahmad et al. 2017); as tonic, astringent, stomachic, fever, cough, diarrhea flu, chest pain, black fever and cough (Ch et al. 2013), also to treat stomachache (Mahmood et al. 2012). The species has decongestant, astringent, healing, diaphoretic, antipyretic and anti-inflammatory properties. The whole plant (including flowers) is prepared in infusion and is taken to promote menstruation, as a stimulant and against hemorrhoids. It is also used to relieve the symptoms of indigestion, flatulence and colitis. The whole plant is used to treat acne, boils, bot fly infestations, bruises, gallbladder, gastritis, strengthens digestive system, healing wounds, hemorrhage, hemorrhoids, lack of appetite, menstrual colic, nosebleed, skin ulcers, sores, and as analgesic and tonic; the Whole plant, leaves and flowers are used to treat indigestion, inflammation, spasms and as emmenagogue; leaves and flowers are used for blood cleansing. The infusion of flowers and roots is used to treat diarrhea and empacho. Fresh flowers and leaves are used to treat gastritis, diabetes, blood and cholesterol. The plant is also widely used for psychosomatic and nervous system disorders, gastro-intestinal problems, liver and gallbladder ailments and spiritual cleansing, as well as inflammations, and shows antibacterial and antifungal properties. It is also used as remedy for diabetes and cancer. The preparations exhibit low toxicity (Paniagua Zambrana et al. 2020). Species of *Artemisia* are also widely used in the Caucasus (Bussmann et al. 2017; Bussmann 2017). Widely used as wound healing agent and included in a variety of official pharmacopoeiae. In the Altai the leaves are chewed for toothache, and the plants are used as diuretic, antitumor, and wound-healing agent. In the Ural the decoction is used as hemostatic for internal bleeding and nosebleeds, as laxatives, for gastric problems, hemorrhoids, gastritis, stomach ulcers, kidney and urinary diseases, skin diseases and burns. In Middle Asia the leaves are used for rheumatism, bronchial asthma, heart disease, kidney disease, as diuretic, hemostatic and antipyretic as well as anthelmintic, for anemia, diarrhea and amenorrhea (Liu et al. 2020). Used for digestive problems (Ari et al. 2015). Smoke is applied to treat fever and respiratory tract problems (Mohagheghzadeh and Faridi 2006). An infusion and a decoction of the aerial parts and flowers of *Achillea filipendulina* are used as a treatment for diarrhea, dysentery, gastrointestinal diseases, gynecological diseases and as an appetizer. To prepare an infusion, one teaspoon of the flowers or aerial parts is infused in 200 ml of boiled water for 15 minutes. For a decoction, two teaspoons of flowers or aerial parts are added to half a liter of water

and boiled for 5 minutes. Sugar and honey are added to change the taste. To treat diarrhea and dysentery, half a glass of the infusion is taken before each meal for 7 days. A decoction of flowers is added to soups and taken in case of diarrhea or dysentery. A bath with a decoction is taken against gynecological diseases, such as colpitis, inflammation of the female genital organs, itching skin or allergy in or around the vagina. To treat gynecological diseases (colpitis), it is used together with *Capparis spinosa* var. *herbacea* L. and *Amaranthus retroflexus* L. It is also used to treat cardiovascular diseases. A decoction of dried flowers is used as a children's digestive aid, and also to treat stomach-ache and cough (Liu et al. 2020).

Medicinal Uses of Other Species

***Achillea grandiflora*:** The leaves and the whole plant are used for wound care (Bussmann et al. 2020).

***Achillea micrantha*:** The leaves and the whole plant are used for wound care (Bussmann et al. 2020).

***Achillea nobilis*:** The leaves and whole plant are being used for wounds. The root extract is used to treat rheumatism Bussmann et al. 2020).

***Achillea tenuifolia* Lam.** is under research for its health effects and has supposed uses in traditional medicine for minor ailments. In Iraq and Jordan, an infusion of the leaves of *Achillea tenuifolia* is used for intestinal complications such as intestinal colics, dysentery, and often used as a flatulence reliever. In Turkey, the plant is traditionally used to treat abdominal pain, stomach-aches, and for the treatment of superficial wounds (Bader et al. 2003).

Pharmacological studies of *Achillea tenuifolia* presented its antimicrobial, anti-oxidant, spasmolytic, antiulcer, antitumor, choleric, antidiuretic, antidiabetic, and anti-inflammatory capabilities. Externally, the plant has been used to treat skin inflammation and skin irritation associated with various conditions in forms of a sitz bath and a compress (Nemeth and Bernath 2008). Additionally, the dried aerial parts of the plant are traditionally used to treat symptoms of the common cold (Al-Snafi 2013).

Local Food Uses

Achillea extracts are used to produce bitter liqueurs. (Liu et al. 2020; Jan et al. 2021).

***Achillea millefolium*:** The whole plant is used as filling for Khachapuri. The flowers are used as tea. (Bussmann et al. 2017, 2020; Bussmann 2017).

***Achillea filipendulina* Lam.:** Boiled flowers are added to flour soup and are given to women after delivery (Liu et al. 2020; Jan et al. 2021).

Local Handicraft and Other Uses

Achillea millefolium: Used as insect repellent. Serves as fodder for cattle, sheep, horses and camels. Planted as ornamenta. (Bussmann et al. 2020; Liu et al. 2020). An aerial part of the *Achillea millefolium* is used against parasites and in gastrointestinal diseases in calves. The mixture of the plant with hay contributes to its digestibility in livestock (Ges and Gorbach 1977).

The insecticidal and repellent activities of aerial parts of *Achillea tenuifolia* are attributed to the oil content of the plant. Domestic flies and honeybees displayed a significant response to the plant's insecticidal and repellent activities. However, there has not been much study on its insecticidal and repellent effects on other organisms. Additionally, there has not been further research on determining the active constituents responsible for the plant's insecticidal and repellent properties. Widely used in pest management. For this purpose, 800 g of the aerial parts including the flowers are infused in ten liters of boiled water for 40 minutes. Before application, 40 g of soap is added to the infusion. The infusion is sprayed on vegetables and/or trees in the evening, before sunset. The aerial parts of the plant, including the flowers, are also put within the furrows of vegetables to deter pests (Liu et al. 2020; Jan et al. 2021).

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