



Pharmacopeia Module 9

[Birch \(*Betula lenta*\)](#)

[Helichrysum \(*Helichrysum italicum*\)](#)

[Common Juniper \(*Juniperus scopulorum*\)](#)

[Marjoram \(*Origanum marjorana*\)](#)

[Wintergreen \(*Gaultheria fragrantissima*\)](#)

Birch (Betula lenta)

Overview:

Birch is a deciduous, mid-sized hardwood tree belonging to the Betulaceae family and native to various parts of the world with temperate climate. Birch wood was used for ages in construction and for firewood. Birch was and is still used as a flavoring agent in the food and beverage industries. Medicinal use of birch, especially its bark, has been reported since antiquity where it was considered a potent treatment against ailments with febrile manifestations, pain, inflammation and numerous skin conditions. Later on, scientific research showed that birch bark and wood are high in methyl salicylates, betulin and betulinic acid, powerful active ingredients that have anti-inflammatory and analgesic effects.

Birch essential oil is produced through steam distillation from the bark and wood. It has a clear color and light consistency, with top to middle notes and a bright, sharp fragrance. Due to its high content in active ingredients birch essential oil should be always used diluted. People with known reactions to aspirin or undergoing anticoagulant treatments should not use birch oil without the consent of a specialist. True birch essential oil is rare on the market, increasingly replaced with synthetic methyl salicylate oil. Wintergreen oil distilled in Nepal is interchangeable, with almost identical chemistry and therapeutic applications.

Therapeutic Actions and Benefits:

Due to its analgesic and anti-inflammatory effects, birch essential oil has great potency in the musculoskeletal system where it soothes pain, relieves inflammation and stimulates the peripheral circulation. When it comes to essential oils that have therapeutic properties in the musculoskeletal system, birch is one of the leading stars. It helps in arthritis, bursitis, joint inflammation, muscular pains and cramps. Birch essential oil is high in salicylic compounds, which can be referred to as naturally occurring aspirin, thus has properties similar to it. It also fights edema and balances water levels in the peripheral tissues, due to its diuretic and diaphoretic properties. Topically applied it has a stimulating effect on the capillaries, boosting circulation and enhancing blood flow to the targeted area. In aromatherapy, birch enhances mental alertness, strengthens the spirit and fights stress and anxiety. The salicylic compounds also work on the airways when the oil is diffused, reducing inflammation and supporting the respiratory function.

List Of Specific Therapeutic Actions

Respiratory: clears airways and sinuses, decongestant, boosts oxygen intake

Circulatory: stimulates peripheral circulation, protects blood vessels

Immune: tonic, anti-inflammatory

Musculoskeletal: relieves joints and muscular pain, soothes sore muscles, helps in osteoarthritis and rheumatic arthritis, reduces muscle and joint inflammation, treats stiffness, enables mobility

Nervous: alleviates anxiety, calms nervousness, strengthens nerves, enhances mental alertness, boosts alertness and mental clarity

Energetic: energizing, refreshing, fights fatigue and strain, clears the mind, enhances the mental focus, encourages thinking, fights mental sluggishness, sharpens perception and attention

Safety: birch and wintergreen are toxic oils

Avoid use throughout pregnancy and breast-feeding.

Do not use birch or wintergreen on infants, on damaged skin, or with individuals on other salicylate-based medication.

Do not use with individuals who are taking warfarin.

Aromatic profile:

Scent: wintergreen like, minty, fresh, sharp

Note: top to middle

Blends well with: citrus oils, mint family oils, woody and balsamic oils such as sandalwood, rosemary, palo santo, jasmine

Important Scientific Data

Birch essential oil is very rich in salicylates which are responsible for its therapeutic actions. Besides salicylic compounds, birch essential oil also contains betulin and betulinic acid which are specific to birch and have potent anti-mutagen properties.

Methyl salicylates, naturally occurring aspirin, has similar effects against inflammation and pain, as well as the prophylactic action on the circulatory system. Salicin also has similar side effects with aspirin though milder and less occurring. Even though salicin content may vary and naturally occurs in lower percentages than oral aspirin, several studies showed that birch essential oil is effective in lowering pain and reducing inflammation.

Besides being efficient in acute pain, salicin also reduces chronic pain in musculoskeletal conditions such as rheumatoid arthritis, osteoarthritis and spinal postural pains as it was showed in placebo controlled clinical trials.

Birch essential oil is also an effective antibacterial agent with results against numerous harmful bacteria. It also manifests antifungal properties and early research also shows antiviral potential.

Salicylates are a topical ingredient with trending popularity. Numerous studies, including clinical, proved its efficiency in acne, wrinkles, hyperpigmentation and as a general antioxidant that prevents early and excessive oxidation.

How To Use Birch Essential Oil:

Add 1 drop of birch essential oil in a carrier oil to create a massage oil ideal for soothing musculoskeletal aches and to address chronic rheumatic pains. Gently massage in the troubled area to soothe pain, relax muscles and encourage peripheral circulation.

Birch Essential Oil Recipes:**Muscle Soothing Blend:**

- 2 drops birch
- 3 drops helichrysum
- 2 drops ginger
- 4 drops marjoram

Dilute the blend in ½ oz. carrier oil and massage it into areas that are aching, cramping or in need of relaxation.

Helichrysum (Helichrysum italicum)

Overview:

Helichrysum is a genus comprising over 600 species belonging to the Asteraceae (daisy) family. The plants are shrubby, herbaceous with usually yellow flowers, indigenous to the Mediterranean and other areas around the world with similar climate. It is a very resilient plant that thrives under harsh conditions. It is also referred to as Immortelle because the gold color of the flowers remains unchanged even when the plant is completely dried. The name helichrysum originates from Greek *helios*, meaning sun, and *chrysum*, meaning gold. Helichrysum has been used since antiquity as a therapeutic herb, especially in the Mediterranean region. It was highly revered as a healing herb especially effective in topical application, to promote wound healing, prevent scarring and treat bruises. Recent research validates the healing powers of helichrysum. It is considered a superior anti-inflammatory and tissue regenerator with potent cicatrizing properties.

There are several species of helichrysum that have therapeutic properties. Helichrysum italicum is by far the most popular from the genus when it comes to herbal and cosmetic applications. H. italicum essential oil is the go-to oil for skin cosmetics with potent antioxidant, anti-aging and restoring properties.

Therapeutic Actions and Benefits:

Helichrysum is highly rich in active constituents such as nerol, neryl acetate, geraniol, pinene, linalool, isovaleric aldehyde, sesquiterpenes, furfural, eugenol and others. Scientific research shows that the essential oil has analgesic, anti-inflammatory, antiseptic, antispasmodic, antidepressant and antifungal properties. Helichrysum is highly revered for its excellent wound healing properties. It is efficient in reparatory infections, and for headaches and migraines. One of helichrysum's properties is its potent effect in skin conditions and promoting wound healing and skin health. It is also efficient in soothing muscle and joint pain and relieving local pain and spasm. In the nervous system, helichrysum has relaxant properties, which is helpful in relieving stress and anxiety.

List Of Specific Therapeutic Actions

Respiratory / ENT: helps in respiratory and ENT infections, soothes sore throat, aids in airway decongestion, relieves toothaches and earaches

Circulatory: enhances peripheral circulation, soothes varicose veins, treats broken capillaries

Skin: promotes wound healing, especially in slow healing ulcerations, treats bruises, helps in skin infection and inflammations, alleviates eczema, rashes and dermatitis, mild on the skin, highly compatible with all skin types, helps in the treatment of broken capillaries and varicose veins

Musculoskeletal: relieves muscular and joint pains, aids in rheumatism, relieves neuralgias, soothes sore muscles, aids in carpal tunnel and restless leg syndrome

Nervous: fights stress and anxiety, reduces nervousness, has soothing and calming properties, relieves shingles pain

Energetic: has relaxing properties, soothes emotions and calms nerves, induces euphoria, supports clarity, gives peace of mind, promotes emotional balance, helps in children's hyperactivity and lack of concentration

Ayurveda:

In Ayurveda, helichrysum is considered cooling. It is used in addressing conditions associated with high pitta. It soothes and reduces excess pitta and relieves vata.

Traditional Chinese Medicine:

In TCM, helichrysum is considered cooling and used to regulate and encourage the flow of Qi energy. It normalizes the liver and cleanses the blood. It is used to cool heat, reduce inflammation and relieve pain. It is considered calming for the shen (mind).

Aromatic profile:

Scent: Spicy, warm, herbaceous, sweet, honey-like

Note: middle

Blends well with: Roman chamomile, geranium, ginger, lavender, lemongrass, mandarin, lemon, grapefruit, orange, vetiver

Safety: Non-toxic, non-irritating

How To Use Helichrysum Essential Oil:

Helichrysum oil can be applied topically (pure or diluted), as a compress, in the bath, through direct inhalation, or diffuser.

Its primary use is by topical application to support skin healing. Helichrysum is compatible with the skin and can be applied undiluted, but it is also very effective in dilution. Incorporate helichrysum essential oil in skin creams, lotions and ointments.

To support the healing of skin wounds, burns and reduce scarring use undiluted helichrysum essential oil, as many times as necessary.

Use a couple drops and massage on sore muscles, bruises and joints to reduce inflammation, alleviate pain and support the healing process

Diffuse helichrysum or use for direct inhalation to soothe nerves, relax and fight stress and anxiety.

Helichrysum Oil Recipes:Skin Regenerative blend:

- 12 drops helichrysum italicum
- 6 drops carrot seed

Dilute the blend in ½ oz. carrier oil such as rosehip seed

Healthy Inflammatory Response Blend:

- 8 drops helichrysum
- 8 drops German chamomile

Use neat or diluted in calendula-infused olive oil.

Common Juniper (*Juniperus scopulorum*)

Dwarf Juniper (*Juniperus communis* var. *nana*)

Overview:

Juniper is a shrubby, small coniferous tree belonging to the *Juniperus* genus and member of the Cupressaceae (Cypress) family. There are over 50 species of juniper spread around the world. Juniper has been extensively used as a scenting and therapeutic herb in various cultures all over the world, since ancient times. In Ancient Greece and Egypt it was used as a food preservative, a medicinal herb and it was considered to be purifying and protective. Tibetans also use juniper as incense in religious ceremonies. Native Americans have used juniper for several purposes: as an ingredient in food and beverages, as scenting agent and as a potent herb for digestive ailments.

Two species of juniper are commonly found as the source of essential oils: Rocky Mountain Juniper (*Juniper scopulorum*), native to the Rocky Mountains and New Mexico, and Dwarf Juniper (*Juniperus communis* var. *nana*) a juniper variety that is native mostly to Europe, in the Corsican region. While they share common therapeutic properties, the Corsican juniper essential oil is sweeter, milder and softer than the Rocky Mountain version.

Therapeutic Actions and Benefits:

Juniper essential oil contains numerous active ingredients such as pinene, cadinene, camphene, terpineol, borneol, camphor and other monoterpenes and sesquiterpenes. Juniper essential oil has anti-inflammatory, antibacterial, antifungal, antiviral, anti-rheumatic, antiseptic, decongestant, expectorant, febrifuge, and stimulant properties.

Juniper essential oil is considered purifying, cleansing, and detoxifying, with affinity to the skin, muscle and joints; it is also effective in the lymphatic and circulatory systems. Juniper is highly esteemed for its influence on regulating the body's water balance, and is helpful in treating edema. Juniper fights respiratory infections such as colds and flus, and supports the respiratory system. It promotes gum health and helps in the treatment of oral and throat sores. Juniper has a calming, relaxing effect that supports the normal functioning of the nervous system.

List of specific therapeutic actions

Respiratory: helps in colds and flus, decongests airways, opens sinuses, helps in the treatment of respiratory infections

Circulatory: has stimulating properties, stimulates peripheral circulation, promotes cerebral circulation, fights edema

Musculoskeletal: alleviates muscular aches and pains, relieves stiff joints, aids in arthritis and rheumatism, helps in carpal tunnel syndrome and plantar fasciitis

Nervous: helps in exhaustion, calms nerves, has relaxant properties, relieves stress, helps balance and alleviates vertigo

Energetic: has cleansing and energizing properties, detoxifies the mind from negative and unproductive thoughts, induces a calm mood, clears confusion, encourages focus, boosts mental energy

Ayurveda:

In Ayurveda, juniper is considered warming, and used a remedy for conditions associated with kapha excess. It is beneficial for all the tissues, especially muscle, bone, lymph and blood and balances fluid excess.

Traditional Chinese Medicine:

In TCM, juniper is considered tonic and warm, with use in congestions associated with muscle and joints, lymph system and nervous system. It is considered a kidney yang tonic and a beneficial support for the spleen and pancreas.

Aromatic profile:

Scent: Fresh, fruity, balsamic, warming, terpenic, bittersweet, woody, conifer

Note: base to middle

Blends well with: bergamot, lemon, orange, mandarin, bergamot, lime, cypress, cedar, pine, cleary sage, vetiver, rosemary, lavender

Safety: Non-toxic, non-irritating

How To Use Juniper Essential Oil:

Juniper oil can be applied topically (maximum 2% dilution), in massage oil, as a compress, in the bath water, through direct inhalation, or diffuser.

For massage of the muscle and joints and lymphatic drainage juniper essential oil must be diluted in a base oil. A1 - 2% dilution of juniper oil in a carrier oil can be used for local massage to enhance peripheral circulation and to relieve muscular and joint pain. Juniper oil can be also used (2-3 drops in ½ oz. carrier) directly on the lymph nodes, to support lymphatic function. A more potent dilution (up to 5%) can be used for lymphatic drainage.

Juniper can also be used for inhalations either in a diffuser or few drops on the palms to clear the sinuses, support the breathing function and induce relaxation.

Juniper Oil Recipes:

Circulation Blend:

- 8 drops juniper berry
- 4 drops cypress
- 4 drops geranium
- 2 drops rosemary
- 2 drops lavender

Dilute the blend in ½ oz. carrier oil and massage locally for cellulite and improved circulation

Comfortable Joint Blend:

- 8 drops dwarf juniper
- 4 drops eucalyptus
- 4 drops rosemary
- 4 drops marjoram
- 2 drops ginger

Dilute the blend in ½ oz. carrier oil and use it on stiff, aching joints to soothe pain and enhance mobility

Marjoram (Origanum marjorana)

Short description/Overview:

Marjoram is a perennial florescent plant, a member of the Lamiaceae (mint) family. Marjoram is used as a condiment in the diet in several cultures, especially in the Mediterranean countries both in its fresh or dry form. Therapeutic uses of marjoram are reported from antiquity, especially in the Greek and Roman cultures.

Marjoram essential oil is produced through steam distillation of leaves, both fresh and dried. It has a spicy, herbaceous and fresh odor, with base to middle notes. It blends well with bergamot, cedar wood, chamomile, eucalyptus, cypress and tea tree. In aromatherapy, marjoram essential oil is considered warming, toning, uplifting, and aphrodisiac. Due to its therapeutic properties, scientifically validated, the essential oil also has multiple medical uses.

Brief description of the therapeutic functions

Marjoram essential oil is rich in monoterpenes, sesquiterpenes and esters, all active ingredients that contribute to the oil's properties as an analgesic, antispasmodic, antiseptic, antiviral, bactericidal, carminative, cordial, diaphoretic, digestive, diuretic, emmenagogue, expectorant, fungicidal, hypotensive, laxative, nervine, sedative, stomachic, vasodilator and vulnerary. Marjoram essential oil has an affinity for the musculoskeletal and circulatory systems, where it soothes, relieves pain, enhances peripheral circulation and promotes muscles and joint health. In the nervous system, marjoram essential oil is known to relieve stress, enhance relaxation, fight sleeping disorders and mood swings. Used in aromatherapy it exerts calming and soothing effects on anxiousness and nervousness.

List of specific therapeutic actions

Circulatory: stimulates peripheral circulation, protects blood vessels

Musculoskeletal: relieves joints and muscular pain, soothes sore muscles, helps in stiff and painful joints, helps in arthritis, promotes musculoskeletal health

Immune: tonic, adjuvant in viral and bacterial infections, boosts metabolism

Respiratory: clears airways, aids expectoration, adjuvant in colds and flu, decongestant

Topical: antibacterial, antifungal, has antiseptic properties, promotes wound healing, has antioxidant properties

Nervous: alleviates anxiety, calms nervousness, uplifts mood, enhances romantic mood, aphrodisiac, fights stress, soothes nerves, fights sleep disorders and anxiety, helps with mood swings

Energetic: fights mental or emotional fatigue, combats lethargy, has uplifting properties, induces a feel-good mood, enhances romantic mood, encourages creativity, cleanses energies, promotes positive and logical thinking, increases relaxation, fights obsessive thinking, helps with grief and sufferance.

Ayurvedic medicine:

Taste: bitter, pungent

Post digestive: pungent

Potency: warming

Quality: dry, sharp, penetrating

Tissues: blood, nerve, reproductive

Channels: digestive, respiratory, reproductive, immune

Marjoram is considered warming and used in conditions associated with kapha dosha: diseases associated with cold sensation and slow metabolism. It enhances the flow of pitta energy, by warming tissues and supporting Agni (digestive fire).

Traditional Chinese Medicine:

In TCM marjoram is considered warming and believed to strengthen the Yang and invigorate blood. It is also believed to warm and invigorate the Qi and the energy channels, promoting circulatory health and aiding in muscle and joint pain.

Important scientific data:

Marjoram essential oil is rich in active ingredients with scientifically proven therapeutic properties. The most important active constituents of marjoram oil are sabinene, alpha terpinene, gamma terpinene, cymene, terpinolene, linalool, sabinene hydrate, linalyl acetate, terpineol and gamma terpineol.

Numerous scientific studies validated marjoram essential oil as a valuable antibacterial, antiviral and antifungal agent, with great effect in topical applications.

The monoterpenes such as sabinene, alpha and gamma terpinene have very potent antioxidant and antimutagen properties with great potential in anti-cancer therapy.

Studies on the quality of life of patients suffering from chronic arthritis showed marjoram as one of the most potent aromatherapy essential oil. The group that used marjoram essential oil both in aromatherapy and massage oil considerably lowered the pain associated with the disease and significantly lifted the quality of life.

How To Use

Aromatherapy: a few drops of volatile oil on palms for direct inhalation, use in steam and diffusers.

Massage Oil: marjoram promotes comfort and relief to overworked muscles. Add two drops marjoram oil to a teaspoon of carrier oil and massage into joints as needed.

Direct Palm Inhalation: place a drop of oil in the palm of your hand, gently rub the palms together, bring them towards your face and take a deep inhalation.

Two drops in an aromatic bath soothes a sore body and is generally detoxifying.

For clear breathing, add several drops marjoram in steam therapy.

Diffuse marjoram oil at night to support deep breathing.

Popular therapeutic recipes:

Gentle Lung Support Formula:

- 4 drops marjoram oil
- 4 drops pinon pine oil
- 4 drops eucalyptus or silver fir oil

Use 1 - 2 drops for direct palm inhalation, in a diffuser or on a cloth near the pillow, for a deepening and relaxing the breathing.

Cautions, Warnings and Contraindications:

Caution:

Topical overdose of essential oil can lead to contact dermatitis.

Always use diluted in carrier oil. Before using it for the first time, a patch test is highly recommended.

Warnings:

Do not take marjoram essential oil internally.

Contraindications:

Pregnant women and infants should avoid use of the essential oil

Possible herb / drug interactions:

Marjoram is considered generally safe when following normal dosages.

Wintergreen (*Gaultheria fragrantissima*)

Overview:

Wintergreen is the name of a genus of evergreen shrubs belonging to the Ericaceae family and native to various parts of North and South America as well as Eurasia. Wintergreen is frequently used as a flavoring agent in the food and beverage industry and in dental care products. It has been used for centuries by native tribes to help cure fatigue, lung, sinus and respiratory illnesses. Wintergreen oil is naturally an antioxidant, energizing and immune-enhancing since it lowers inflammation and reduces pain. Current scientific research showed that wintergreen is very high in methyl salicylates (aspirin) – over 80%, alpha and beta pinene, all powerful active ingredients that have anti-inflammatory and analgesic effects.

Wintergreen essential oil is produced through steam distillation of fresh leaves. It has a clear to pale yellow color and light consistency, with top to middle notes and a bright, sharp fragrance. Due to its high content in active ingredients wintergreen essential oil should be always used diluted. Also, people with known reaction to aspirin or that undergo anticoagulant treatments should not use wintergreen oil without the consent of a specialist. Wintergreen oil is a primary oil when it comes to the musculoskeletal system, due to its warming and pain relieving properties.

Therapeutic Actions and Benefits:

Due to its analgesic and anti-inflammatory effects, wintergreen essential oil has great potency in the musculoskeletal system where it soothes pain, relieves inflammation and stimulates the peripheral circulation. When it comes to essential oils that have therapeutic properties in soothing muscles and joints wintergreen is very efficient. It helps in arthritis, bursitis, joint inflammations, muscular pains and cramps. Wintergreen essential oil is high in salicylic compounds, which can be referred to as naturally occurring aspirin, thus has properties similar to it. It also fights edema and balances water levels in the peripheral tissues, due to its diuretic and diaphoretic properties. Topically applied it has a warming, stimulating effect on the capillaries, boosting circulation and enhancing blood flow to the targeted area. Wintergreen essential oil is also effective on the skin, where it helps addressing acne and sebum excess due to its antibacterial effects. In aromatherapy, wintergreen enhances mental alertness, strengthens the spirit, boosts self-confidence, fights stress and anxiety. The salicylic compounds is also effective in the respiratory system by reducing inflammation and decongesting airways.

List of specific therapeutic actions

Respiratory: clears airways and sinuses, decongestant, boosts oxygen intake

Circulatory: stimulates peripheral circulation, protects blood vessels

Musculoskeletal: anti-inflammatory, analgesic, relieves joints and muscular pain, soothes sore muscles, helps in osteoarthritis and rheumatic arthritis, reduces muscle and joint inflammation, reduces stiffness, enables mobility

Nervous: alleviates anxiety, calms nervousness, strengthens nerves, enhances mental alertness, boosts alertness and mental clarity

Energetic: energizing, refreshing, fights fatigue and strain, clears the mind, enhances the mental focus, fights mental sluggishness, sharpens perception and attention

Aromatic profile:

Scent: crispy, warm, minty, fresh, sharp

Note: top to middle

Blends well with: citrus oils, mint family oils, woody and balsamic oils such as sandalwood, cedarwood, rosemary, palo santo, jasmine

Safety: birch and wintergreen are toxic oils

Avoid use throughout pregnancy and breast-feeding.

Do not use birch or wintergreen on infants, on damaged skin, or with individuals on other salicylate-based medication.

Do not use with individuals who are taking warfarin.

Important Scientific Data

Wintergreen essential oil is very rich (over 80%) in salicylates which are the main responsible for its therapeutic actions. Besides salicylic compounds, wintergreen essential oil also contains alpha and beta pinene, both active ingredients with anti-inflammatory properties that add to the overall aspirin-like effect.

Methyl salicylates, which is naturally occurring aspirin, have similar effects against inflammation and pain, as well as the prophylactic action on the circulatory system. Salicin also has similar side effects with aspirin though milder and less occurring. Even though salicin content may vary and naturally occurs in lower percentages than oral aspirin several studies showed that wintergreen essential oil is effective in lowering pain and reducing inflammation.

Besides being efficient in acute pain, salicin also reduces chronic pain in musculoskeletal conditions such as rheumatoid arthritis, osteoarthritis and spinal postural pains as it was showed in placebo controlled clinical trials.

Wintergreen essential oil is also an effective antibacterial agent with results against numerous pathogen bacteria. It also manifests antifungal properties and early research also shows antiviral potential.

How To Use Wintergreen Essential Oil:

Add 1 drop of wintergreen essential oil in a carrier oil to create massage oil ideal for soothing musculoskeletal aches and to address chronic rheumatic pains. It warms and encourages movement and flexibility. Gently massage in the troubled area to soothe pain, relax muscles and encourage peripheral circulation.

Wintergreen Essential Oil Recipes:**Post-workout blend:**

- 2 drops wintergreen
- 2 drops peppermint
- 2 drops white fir

Dilute the blend in 1 oz. carrier oil and massage after workout to soothe and relax muscles and joints and to enhance mobility.