Calendula Oil

Traditional Plant Wisdom for Modern Skincare

THE LIPID OILS ACADEMY

HERBAL ACTIVES — LIVE CLASS STUDY GUIDE

Name: **Date:**

PART ONE

Calendula officinalis

Calendula officinalis, with its bright yellow and orange flowers, is a common member of the Asteraceae — the daisy family — and a favourite of herbalists and skincare formulators.

Known as the skin herb, calendula has been used for centuries to calm irritated skin, support wound healing, and nourish dry and damaged tissues.

Infusing the flowers in oil transfers a range of botanical compounds — triterpenes, carotenoids, flavonoids, and volatile oils — into a versatile active ingredient you can use across many formulations.

The Asteraceae Family

Calendula belongs to an extraordinarily diverse plant family — the daisy family. Members include dandelion, chamomile, yarrow, sunflower, echinacea, helichrysum, artichokes, and even the rare silversword that grows only on the volcano Haleakalā on Maui. A remarkable range of plants, all sharing family traits that show up in their chemistry.

The Harvest

When you harvest large amounts of fresh calendula you notice the sticky, resinous feel on your fingers, bits of petals and tiny twigs. This is the triterpenoids: waxy, resinous compounds that are fully lipid-soluble and among the most valuable actives that migrate into your infusing oil.

NOTES — WHAT I NOTICE ABOUT THIS PLANT

PART TWO

The Active Compounds

Lipophilic, Hydrophilic & Amphiphilic

When we infuse plants into oil, not everything in the plant migrates into the oil. Understanding solubility helps us know what we're actually capturing.

Oil-Soluble (Lipophilic / Hydrophobic)	Water-Soluble (Hydrophilic / Lipophobic)
Terpenes, terpenoids, carotenoids, volatile oils — will dissolve into your infusing oil	Many polyphenols, some flavonoids — won't fully dissolve in oil

Amphiphilic compounds (like lecithin) are both — partially oil and water soluble. Phospholipids in your infusing oil can help bridge in some hydrophilic compounds. Longer infusions encourage the most complete extraction.

Calendula's Key Lipophilic Compounds

Compound	Examples	Skin Benefits
Triterpenes	Oleanolic acid, ursolic acid, lupeol	Anti-inflammatory, antimicrobial, antioxidant
Saponins	Calendulosides A & B	Mildly antiseptic, soothing
Carotenoids	Lutein, zeaxanthin, beta-carotene	Antioxidant, UV-protective
Flavonoids	Quercetin, rutin, kaempferol	Potent antioxidants
Volatile oils	Beta-caryophyllene, alpha-pinene	Calming, anti-inflammatory
Polysaccharides	Sugars & mucilages	Soothing, moisturising

Triterpenoids

Oleanolic acid, ursolic acid, and lupeol are the primary triterpenes in calendula — fully lipid-soluble, and responsible for the sticky feel at harvest. On the skin they regenerate tissue, support collagen synthesis, reduce inflammation, regulate sebum, and provide mild antimicrobial protection.

Carotenoids

Carotenoids give calendula its vivid yellow-orange color and act as powerful antioxidants. They fall into two groups: carotenes (beta-carotene) and xanthophylls (lutein, zeaxanthin,

flavoxanthin). Applied topically they protect against UV damage, filter blue light, and support the skin's barrier function.

Note: beta-carotene becomes Vitamin A only when consumed in the diet. Topically it is stored in the skin as an antioxidant reserve.

Fill in the Blank

Use what you have learned to complete each sentence.

1. Compounds that dissolve readily in oil are called _____.
2. The sticky, resinous feel of fresh calendula flowers is due to _____ compounds.
3. The three primary carotenoids in calendula are _____, _____, and _____.
4. Oleanolic acid is one type of _____ found in calendula.
5. Lecithin is an example of an _____ compound — both oil and water soluble.
6. Terpenes and terpenoids are generally _____-soluble, while polyphenols tend to be _____-soluble.

PART THREE

Choosing Your Infusing Oil

The oil you choose isn't just a carrier, it works with the plant material to determine how well compounds infuse, how the finished product feels on the skin, and how long your infusion will keep.

Why Oleic Acid?

Oils dominated by monounsaturated oleic acid are preferred for herbal infusions. They draw lipophilic compounds effectively from the plant material, and their oxidative stability means your infusion can last a year or more when stored cool and dark. Olive oil is the traditional herbal standard.

Sesame oil (untoasted)

A lighter feel than olive with an unusually long shelf life. Contains oil-soluble polyphenol lignans — sesamin and sesamolin — that contribute to its oxidative stability. A personal favourite for calendula infusions.

Grapeseed oil

Light on the skin and budget-friendly, but polyunsaturated — meaning a shorter shelf life that will shorten the life of your infusion. Factor this into how you like to work.

Oil Selection Guide

Oil	Key Feature	Shelf Life	Notes
Olive (unrefined)	Herbal standard; lipophilic lignans	12+ months	Traditional choice
Sesame (untoasted)	Sesamin & sesamolin; lighter feel	12+ months	Instructor's choice
Almond	High oleic, skin-softening	10–12 months	Light texture
Apricot kernel	Close to skin's natural sebum	10–12 months	Great for facial use

Avocado	High oleic, rich	12+ months	Heavier feel
Hazelnut	High oleic, fast-absorbing	10–12 months	All-purpose
Camellia	Very stable, lightweight	12+ months	Elegant skin feel
Grapeseed	Polyunsaturated, light	6–9 months	Shorter shelf life

My oil of choice and why:

QUESTIONS ABOUT OIL SELECTION

PART FOUR

Making Your Infusion

Fresh or Dried?

Both approaches produce excellent infusions. In thirty years of making herbal infused oils, mold in oil has never been an issue — it is possible, and depends on handling, but with care it is rarely a problem. Find the method that works best for how you like to work.

Fresh Flowers	Dried Flowers
• Pick when fully open in dry weather • Wilt 1–3 days on a basket or screen • Flowers must be fully dry before covering with oil • Can use whole flowers or separate petals from calyx	• Good quality = bright yellow/orange colour retained • Fill jar 1/3 to 1/2 full with dried flowers • Top with oil and shake well • Less mold risk; great when fresh unavailable

The Process

1. Prepare your flowers — wilt if fresh, quality-check if dried
2. Choose your oil — high oleic for longest shelf life
3. Fill jar 1/3 to 1/2 full with plant material
4. Cover completely with oil — no plant material above the oil line
5. Shake well; continue shaking daily when possible
6. Infuse for several weeks — longer gives a more complete extraction
7. Strain through a fine sieve; discard plant material
8. Store in a dark jar in a cool, dark place. Label with plant name and date.

Storage: a year or more with a high-oleic base oil, stored cool and dark.

My Infusion Plan

Oil I will use:

Fresh or dried:

Jar size:

Intended use:

Date to pour off:

PART FIVE

Using Your Calendula Infused Oil

Once infused, your oil is a versatile herbal active ready to go into a wide range of formulations. The triterpenes, carotenoids, and volatile oils are dissolved in your carrier, ready to be applied to the skin daily.

What Can You Make?

- Healing salves — for wounds, burns, minor irritations
- Balms — for dry, cracked, or winter skin
- Body oils and facial oils
- Lotion bars and anhydrous body butters
- Creams and lotions (hydrous formulations)
- Cold-process or hot-process soaps
- Baby care products

Skin Conditions That May Benefit

Healing & Repair	Soothing & Protective
Minor cuts and abrasions	Redness and irritation
Burns and sunburn	Eczema and dermatitis
Scarring and wound healing	Oily/acne-prone skin (sebum regulation)
Dry, tight, dehydrated skin	Mature or photo-damaged skin

STARTER RECIPE

Calendula Body Oil

Calendula has long been known as the skin herb for its exceptional anti-inflammatory and healing properties — light enough for warm weather, yet deeply nourishing as we move into the cooler months. This body oil combines calendula-infused sesame oil with a small group of carefully chosen carriers to create a replenishing, absorbent oil that supports skin repair and calms irritation.

Makes: 120 ml / 4 oz

Ingredient	Amount	%	Key Benefit
Calendula-Infused Sesame Oil	50 ml	42%	Anti-inflammatory actives; deep penetration
Meadowfoam Seed Oil	35 ml	29%	Silky feel; exceptional stability
Sunflower Oil (high oleic)	20 ml	17%	Light, stable; Vitamin E rich
Rosehip Seed Oil	10 ml	8%	Regenerative; rich in EFAs
Sea Buckthorn Fruit Oil	4 ml	3%	Carotenoids; omega-7; barrier repair
Vitamin E Oil	1 ml	1%	Antioxidant; extends shelf life

Instructions

1. Sanitize all containers and tools
2. Measure your oils (I like to use a graduated beaker or graduated cylinder)
3. Combine oils in a clean dark glass bottle
4. Mix by gently rolling the bottle between your palms
5. Label with ingredients and date made

Pro tip: warm a few drops in your palms before applying — this helps the oil absorb more quickly.

Storage: cool, dark place. Shelf life 6–12 months. Refrigeration extends life. Use a dark glass bottle.

Customisation

- Very sensitive skin: reduce sea buckthorn to 2 ml, increase meadowfoam
- Mature skin: add 5 ml argan oil (reduce sunflower by 5 ml)
- Very dry skin: add 10 ml avocado oil (reduce sunflower slightly)
- Always patch test before wider use

STARTER RECIPE

Calendula Salve

Making a simple salve is one of the oldest and most satisfying things you can do with an herbal infused oil. The basic process — oil thickened with wax — goes back thousands of years. Adding a plant butter gives a richer, less flinty feel than wax and oil alone.

Basic ratio to remember: 1 oz beeswax to 8 oz oil.

Makes: approx. 11 x 1 oz jars

Ingredient	Amount	Note
Beeswax	1.3 oz	Or plant-based wax for a vegan version
Shea Butter	1 oz	Adds richness and improves skin feel
Calendula Infused Oil	8 oz	Your homemade infusion
Tamanu Oil	0.5 oz	Healing and regenerative
Rosehip Seed Oil	0.5 oz	Regenerative; essential fatty acids
Calendula CO2 Extract	6 drops	Concentrated active boost — optional
Vitamin E Oil	0.5 oz	Antioxidant; extends shelf life

Instructions

1. Melt beeswax gently in a double boiler
2. Add shea butter and melt together
3. Remove from heat; add calendula infused oil and other liquid oils
4. Add Vitamin E and CO2 extract if using
5. Pour immediately into jars — the mixture sets quickly
6. Allow to cool completely before lidding
7. Label with ingredients and date made

Notes & Variations

- Replace beeswax with candelilla or carnauba wax for a vegan version — plant waxes are harder so the texture will differ
- Experiment with different plant butters: mango and cocoa are both excellent

- Add essential oils after removing from heat for scented versions
- Use different infused oils as your base for different therapeutic purposes

REFERENCE

Quick-Reference Glossary

Term	Definition
Lipophilic	Oil-attracting, oil-soluble. Will dissolve readily into your infusing oil.
Hydrophobic	Water-repelling. Another way to describe oil-soluble compounds.
Hydrophilic	Water-attracting, water-soluble. Won't fully dissolve in oil.
Amphiphilic	Both oil and water soluble — e.g. lecithin (a phospholipid).
Triterpenes	Oil-soluble plant compounds: anti-inflammatory, antimicrobial, antioxidant. Key actives in calendula.
Carotenoids	Yellow-orange pigment compounds that act as antioxidants. Include carotenes and xanthophylls.
Xanthophylls	Yellow carotenoids (lutein, zeaxanthin, flavoxanthin). Oil-soluble; photoprotective.
Saponins	Plant compounds with mild antiseptic and soothing properties.
Oleic acid	A monounsaturated fatty acid. High-oleic oils are stable and ideal as infusing bases.
Maceration	The process of infusing plant material in oil over time to extract active compounds.
Anhydrous	Without water. Formulations that contain only oil-phase ingredients (balms, salves).
Hydrous	Contains water. Formulations with a water phase (creams, lotions, emulsions).
CO2 Extract	A concentrated botanical extract. Very potent — use in small amounts.

REFLECTION

My Notes & Key Takeaways

NOTES — PART 1 & 2 (THE PLANT & ACTIVE COMPOUNDS)

NOTES — PART 3 & 4 (OILS & INFUSION PROCESS)

NOTES — PART 5 & RECIPES

BEFORE YOU GO

My Key Takeaways

The most important thing I learned today:

One thing that surprised me:

The first thing I will do after this class:

A question I still have:

Next Steps

Join us for Herbal Actives The Science of Infused Oils

In this course we go deep into the botanical compounds that make herbal infused oils so powerful in skincare.

https://lipidoils.com/herbal-actives/