



German Chamomile

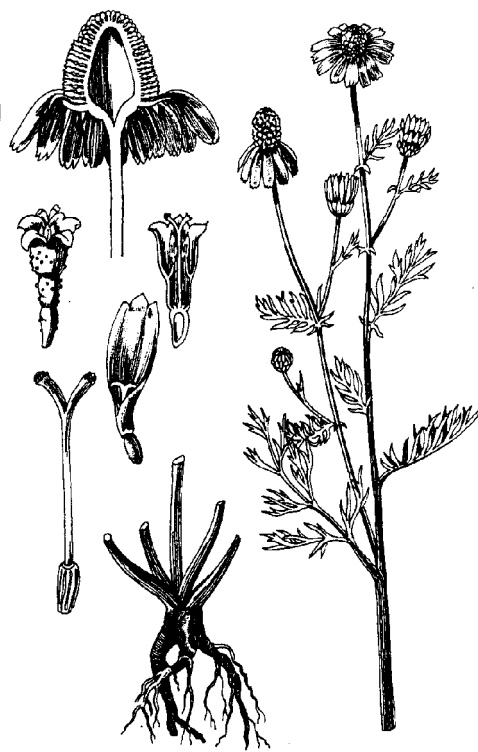
Alban Muller International, le Natural Product Designer®, is specialized in consulting and products for the Health and Beauty industries.

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GERMAN CHAMOMILE



Chamomilla recutita L.

Asteraceae

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GERMAN CHAMOMILE

German chamomile grows all over Europe and in Asia Minor. It is spontaneous in fields and alongside lanes. The plant is cultivated in gardens and intensively grown on Hungarian puszta (salt plains).

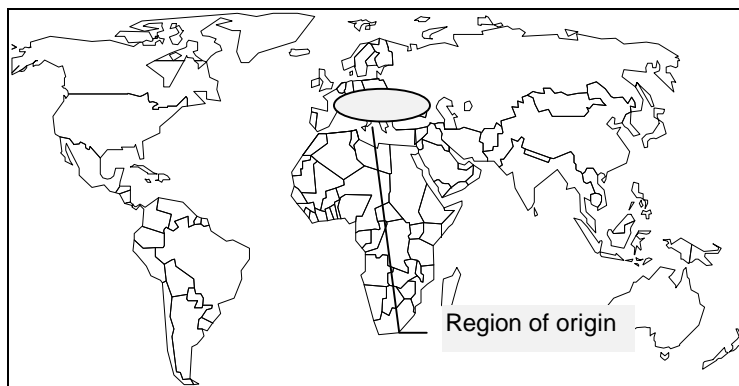
German chamomile is a medium-size composite plant, the yellow and white capitula of which are rather similar to the ones of marguerite, though smaller. It bears white ligules surrounding a yellow «heart» made of small tubular flowers. After the ripe capitulum has been vertically cut halfway, a cone-shaped cavity can be

observed. The leaves are alternate and very thinly divided.

Antispasmodic, German chamomile is specifically allotted to «feminine complaints» : it traditionally relieves painful menstruation.

Used in the last rinse, German chamomile is supposed to prevent hair loss ; it gives gold highlights to blond and chestnut hair.

An essential oil is produced by distilling the flowers. It is a dark blue colour and has a characteristic aroma.



A BIT OF HISTORY



hamomilla derives from the Greek «khamaimelon», earth-apple, from the apple-smell of its flowers ; and «matricaria» comes from the 16 th century, stemming from

the Latin «matrix», in reference to the emmenagogue properties of the plant.

Do not pick German chamomile after Saint John's Day (June 24 th), witches will have spoiled it by then.



CHEMICAL COMPOSITION

The flowers contain :

- **glucids** in particular oses (fructose) and osides (10 % mucilages) ;
- **protids** including amino acids ;
- **lipids** chiefly fatty acids : capric acid, caprylic acid, cerotic acid, linoleic acid, oleic acid, palmitic acid and stearic acid ;
- 8 to 10 % **mineral matters** : calcium and potassium ;
- **organic acids** represented by ascorbic acid (vitamin C), malic acid and quinic acid ;
- **phenolic compounds** including :
 - . phenolic acids : chlorogenic acid and salicylic acid ;
 - . flavonoids composed of flavones (apigenin, apigetrin, apiin, luteolin-7-glucoside, luteolin) and flavonols (hyperoside, quercetin, quercitrin, quercimetrin and rutin) ;
 - . simple coumarins : herniarin and umbelliferone ;
- **terpenoids** : triterpenes : steroids among which phytosterol ;
- **vitamins B** ;
- 0.35 % **choline** and **triacontane** ;
- 0.2 to 2 % **essential oil** consisted in terpenoids : 25 to 50 % sesquiterpenes (proazulenes which give chamazulene when distilled) : matricin, matricarin, deacetylmatricarin, alpha-bisabolol oxide A and B, alpha-bisabolone oxide A, farnesol.

The blue essential oil becomes greenish brown in contact with air and light. The blue colour is due to the presence of 4 to 5 % chamazulene.



BIOLOGICAL AND PHARMACOLOGICAL ACTIVITIES

Used externally with no risk of toxicity, German chamomile essential oil has antibacterial and anti-fungal properties on staphylococcus and candida.

Its content in alpha-bisabolol gives German chamomile analgesic, anti-inflammatory, healing and anti-rheumatic properties. It also has an antispasmodic activity.

The plant is furthermore allotted antipruritic, antipyretic, choleric, aperitive, depurative, sedative, digestive and sudorific activities.

Studies have proved that German chamomile enables to restore the amount of urea in the blood of rabbits suffering from uraemia.

USES

PHARMACEUTICAL

German chamomile extracts are ingredients in pharmaceutical preparations such as : antiseptic balms, protective creams against chapped nipples and cracks, medicines to treat painful gums, inflammations and wounds. It can also be used in cases of sore mouth and throat and eye irritations.

German chamomile eases digestive pains (slow and painful digestion) and stimulates the appetite.

The essential oil is appreciated in tonic and antiseptic preparations.



COSMETIC

German chamomile extracts present soothing, moisturizing, regenerative and anti-blotch properties. The essential oil has lenitive, antiseptic, emollient, purifying, regenerative and tonic virtues.

Given all this, German chamomile extracts are active ingredients in :

- *products for all kinds of hair ;*
- *body care products : shower gels, bath products ;*
- *hand and foot products ;*
- *face products for any kind of skin, particularly for around the eyes and baby skin.*

They are furthermore used in the making of hair colourings (for blond hair), after-sun products and mouthwashes...

The essential oil is used in the making of soaps, lotions and perfumes.

Cosmetic usage level :

Extracts : 2 - 5 %

Essential oil : 0.1 to 1 %

German chamomile essential oil is contained in the relaxing PHYTO-SPA.



AMI EXTRACTS

Our different extracts are obtained by maceration and percolation of plants, generally dried, in a system of selected solvents. Appropriate processes (filtration, concentration, atomisation) are then implemented to obtain the required qualities.

The chart hereunder recapitulates the main kinds of possible extracts. Given that AMI works with a vast variety of plants, each of these references is not necessarily available for each plant.

Our commercial department will be pleased to inform you and help you chose the existing extract most adapted to your needs. Nevertheless, should you need a missing reference, or even a made-to-measure extract, our technical assistance service proposes easy and flexible development contracts in order to obtain the product which best suits your needs.

Extracts for Cosmetics

Solvent	Standard extracts	Titrated extracts
Propylene glycol	HS	PG titrated
Propylene glycol + water	HG	HPG titrated
Butylene glycol	BG	BG titrated
Butylene glycol + water	HBG	HBG titrated
Glycerine	GL	-
Glycerine + water	HGL	-
Vegetable oil	LS	LS titrated



Extracts for Phytotherapy and Nutraceuticals¹

Kind of extract	Extract	Carrier	Plant concentration (on average)
Dried	Spray dried extract	Maltodextrin	5/1
Liquid, concentrated	Concentrated liquid extract	Water	4/1
	Fluid extract	Water + ethanol	1/1
	Concentrated fluid extract	Water + ethanol	4/1
	EFGL	Water + glycerine	1/1
Liquid, standard	Tincture	Water + ethanol	0.2/1
	HAGL	Water + ethanol + glycerine	0.2/1
	HYGL	Water + glycerine	0.2/1

¹ *Warning : Our customers are responsible for the commercialisation of their products and must conform to the regulations of their country concerning the authorisation of plants, ingredients, additives and claims.*