



## GERMAN CHAMOMILE

### Also Known As:

Blue Chamomile, Camomilla, Camomille Allemande, Chamomilla, Echte Kamille, Feldkamille, Fleur de Camomile, Hungarian Chamomile, Kamillen, Kleine Kamille, Manzanilla, Matricaire, Matricariae Flos, Pin Heads, Sweet False Chamomile, True Chamomile, Wild Chamomile.

CAUTION: See separate listing for Roman Chamomile.

### Scientific Name:

*Matricaria recutita*, synonyms *Chamomilla recutita*, *Matricaria chamomilla*.

Family: Asteraceae/Compositae.

### People Use This For:

Orally, German chamomile is used for flatulence, travel sickness, nasal mucous membrane inflammation, allergic rhinitis, nervous diarrhea, attention deficit-hyperactivity disorder (ADHD), fibromyalgia, restlessness, and insomnia. It is also used for gastrointestinal (GI) spasms, colic, inflammatory diseases of the GI tract, GI ulcers associated with nonsteroidal anti-inflammatory drugs (NSAIDs) and alcohol consumption, and as an antispasmodic for menstrual cramps.

Topically, German chamomile is used for hemorrhoids; mastitis; leg ulcers; skin, anogenital, and mucous membrane inflammation; and bacterial skin diseases, including those of the mouth and gums. It is also used topically for treating or preventing chemotherapy- or radiation-induced oral mucositis.

As an inhalant, German chamomile is used to treat inflammation and irritation of the respiratory tract.

In foods and beverages, German chamomile is used as flavor components. In manufacturing, German chamomile is used in cosmetics, soaps, and mouthwashes.

### Safety:

**LIKELY SAFE** ...when used orally in amounts commonly found in foods. German chamomile has Generally Recognized as Safe (GRAS) status in the US (4912).

**POSSIBLY SAFE** ...when used orally, short-term. There is some evidence that German chamomile can be used safely for up to 8 weeks (6655, 12724, 12729). The long-term safety of German chamomile in medicinal doses is unknown. ...when used topically; avoid applying it near the eyes (10377).

**CHILDREN:** POSSIBLY SAFE ...when used orally and appropriately, short-term. Preliminary clinical research also suggests that a specific multi-ingredient product containing fennel 164 mg, lemon balm 97 mg, and German chamomile 178 mg (Colimil) is safe in infants when used for up to a week (16735).

**PREGNANCY AND LACTATION:** Insufficient reliable information available; avoid using.

## Effectiveness:

### **POSSIBLY EFFECTIVE**

**Colic.** A clinical trial shows that breastfed infants with colic who are given a specific multi-ingredient product containing fennel 164 mg, lemon balm 97 mg, and German chamomile 178 mg (Colimil) twice daily for a week have reduced crying times compared to placebo (16735).

**Dyspepsia.** A specific combination product containing German chamomile (Iberogast, Medical Futures, Inc) seems to improve symptoms of dyspepsia. The combination includes German chamomile plus peppermint leaf, clown's mustard plant, caraway, licorice, milk thistle, celandine, angelica, and lemon balm (7049, 12724). A meta-analysis of studies using this combination product suggests that taking 1 mL orally three times daily over a period of 4 weeks significantly reduces severity of acid reflux, epigastric pain, cramping, nausea, and vomiting compared to placebo (13089).

**Oral mucositis.** Using a German chamomile oral rinse (Kamillosan Liquidum) might help prevent or treat mucositis induced by radiation therapy and some types of chemotherapy (6655). German chamomile oral rinse seems to prevent or treat mucositis secondary to radiation therapy and some types of chemotherapy including asparaginase (Elspar), cisplatin (CDDP, Platinol-AQ), cyclophosphamide (Cytosan, Neosar), daunorubicin (DaunoXome), doxorubicin (Adriamycin, Rubex), etoposide (VP-16, Etopophos, VePesid, Toposar), hydroxyurea (Hydrea), mercaptopurine (6-MP, Purinethol), methotrexate (MTX, Rheumatrex), procarbazine (MIH, Mutlane), and vincristine (VCR, Oncovin, Vincasar) (6655). However, the rinse doesn't seem to be better than placebo for preventing fluorouracil (5-FU)-induced oral mucositis (6656).

### **POSSIBLY INEFFECTIVE**

**Dermatitis.** Applying German chamomile cream topically does not seem to prevent dermatitis induced by cancer radiation therapy (9767).

Some clinical studies have used German chamomile extracts and flowers standardized to 1.2% apigenin.

There is insufficient reliable information available about the effectiveness of German chamomile for its other uses.

## Mechanism of Action:

The applicable part of German chamomile is the flowerhead. Active constituents of German chamomile include quercetin, apigenin, and coumarins, and the essential oils matricin, chamazulene, alpha bisaboloid, and bisaboloid oxides (10377).

German chamomile might have anti-inflammatory effects. Preliminary research suggests it can inhibit the enzymes cyclooxygenase and lipoxygenase, which reduces the production of prostaglandins and leukotrienes. Quercetin and apigenin can inhibit histamine release from mast cells that are antigen stimulated (10377, 12729).

The constituent(s) responsible for the sedative activity of German chamomile are unclear. Some preliminary research suggests that apigenin can bind to gamma-aminobutyric acid (GABA) receptors. GABA receptors are the primary receptor sites of benzodiazepines in the central nervous system. However, other research suggests that apigenin doesn't affect GABA receptors, and other constituents of German chamomile are responsible for the sedative activity (9765, 12725).

Preliminary research suggests that extracts of German chamomile might inhibit morphine dependence and withdrawal possibly by increasing cyclic adenosine monophosphate (c-AMP) levels (12726). Other preliminary research suggests that German chamomile flower extract taken orally might have an antipruritic effect (12727). Preliminary research suggests that German chamomile blocks slow wave activity in the small intestine, which could slow peristaltic movement (13398).

Extracts of German chamomile might have antiestrogen effects, according to preliminary research. It also seems to stimulate osteoblast activity (12728).

## Adverse Reactions:

Orally, German chamomile tea can cause allergic reactions including severe hypersensitivity reactions and anaphylaxis in some patients (567).

Animal studies suggest no toxicity or teratogenicity of bisabolol, the main active constituent of German chamomile (8178). German chamomile can cause an allergic reaction in individuals sensitive to the Asteraceae/Compositae family. Members of this family include ragweed, chrysanthemums, marigolds, daisies, and many other herbs.

Topically, German chamomile may cause allergic dermatitis and eczema (9766, 9768, 10377). If used near the eyes, it can be irritating (10377).

## Interactions with Herbs & Supplements:

### HERBS AND SUPPLEMENTS WITH SEDATIVE PROPERTIES:

Theoretically, concomitant use with herbs that have sedative properties might enhance therapeutic and adverse effects (9765, 12725). Some of these supplements include 5-HTP, calamus, California poppy, catnip, hops, Jamaican dogwood, kava, St. John's wort, scullcap, valerian, yerba mansa, and others.

## Interactions with Drugs:

### BENZODIAZEPINES

Interaction Rating = **Moderate** Be cautious with this combination  
Severity = Moderate • Occurrence = Possible • Level of Evidence = D

Theoretically, concomitant use with benzodiazepines might cause additive effects and side effects (9765, 12725). Some benzodiazepines are alprazolam (Xanax), clonazepam (Klonopin), diazepam (Valium), lorazepam (Ativan), midazolam (Versed), temazepam (Restoril), triazolam (Halcion), and others.

### CNS DEPRESSANTS

Interaction Rating = **Moderate** Be cautious with this combination  
Severity = High • Occurrence = Possible • Level of Evidence = D

Theoretically, concomitant use with drugs with sedative properties can cause additive effects and side effects (9765, 12725). Some CNS depressants are benzodiazepines, pentobarbital (Nembutal), phenobarbital (Luminal), secobarbital (Seconal), fentanyl (Duragesic, Sublimaze), morphine, zolpidem (Ambien), and others.

### CONTRACEPTIVE DRUGS

Interaction Rating = **Moderate** Be cautious with this combination  
Severity = High • Occurrence = Possible • Level of Evidence = D

Theoretically, concomitant use of large amounts of German chamomile might interfere with contraceptive drugs through competition for estrogen receptors (12728).

### CYTOCHROME P450 1A2 (CYP1A2) SUBSTRATES

Interaction Rating = **Moderate** Be cautious with this combination  
Severity = Moderate • Occurrence = Possible • Level of Evidence = D

There's preliminary evidence that German chamomile might inhibit cytochrome P450 1A2 (CYP1A2) (12734). So far, this interaction has not been reported in humans. However, watch for an increase in the levels of drugs metabolized by CYP1A2 in patients taking German chamomile. Some drugs metabolized by CYP1A2 include amitriptyline (Elavil), haloperidol (Haldol), ondansetron (Zofran), propranolol (Inderal), theophylline (Theo-Dur, others), verapamil (Calan, Isoptin, others), and others. Use German chamomile cautiously or avoid in patients taking these drugs.

### CYTOCHROME P450 3A4 (CYP3A4) SUBSTRATES

Interaction Rating = **Moderate** Be cautious with this combination  
Severity = Moderate • Occurrence = Possible • Level of Evidence = D

There's preliminary evidence that suggests that German chamomile might inhibit the cytochrome P450 3A4 (CYP3A4) isoenzymes (6450). Theoretically, German chamomile might increase levels of drugs metabolized by CYP3A4. However, so far, this interaction has not been reported in humans. Some drugs metabolized by CYP3A4 include lovastatin (Mevacor), ketoconazole (Nizoral), itraconazole (Sporanox), fexofenadine (Allegra), triazolam (Halcion), and numerous others. Use German chamomile cautiously or avoid in

patients taking these drugs.

#### **ESTROGENS**

Interaction Rating = **Moderate** Be cautious with this combination  
Severity = Moderate • Occurrence = Possible • Level of Evidence = D

Theoretically, concomitant use of large amounts of German chamomile might interfere with hormone replacement therapy through competition for estrogen receptors (12728).

#### **TAMOXIFEN (Nolvadex)**

Interaction Rating = **Moderate** Be cautious with this combination  
Severity = High • Occurrence = Possible • Level of Evidence = D

Theoretically, large doses of German chamomile might interfere with tamoxifen because of its potential estrogenic effects (12728).

#### **WARFARIN (Coumadin)**

Interaction Rating = **Moderate** Be cautious with this combination  
Severity = High • Occurrence = Possible • Level of Evidence = D

Taking German chamomile and warfarin together might increase the effects of warfarin and increase the risk of bleeding. In one case, a 70-year-old woman taking warfarin developed retroperitoneal hematoma and bilateral recti muscle bleeding along with an INR of 7.9 following ingestion of German chamomile tea 4-5 cups/day and use of a topical chamomile-based lotion applied 4-5 times daily (14309).

#### **Interactions with Foods:**

None known.

#### **Interactions with Lab Tests:**

**CREATININE:** Chronic ingestion of German chamomile for two 2 weeks can reduce urinary creatinine output. This effect may be prolonged for up to two weeks after discontinuing German chamomile. The mechanism for this effect is unclear (12729).

#### **Interactions with Diseases or Conditions:**

**CROSS-ALLERGENICITY:** German chamomile may cause an allergic reaction in individuals sensitive to the Asteraceae/Compositae family (567). Members of this family include ragweed, chrysanthemums, marigolds, daisies, and many other herbs.

**HORMONE SENSITIVE CANCERS/CONDITIONS:** German chamomile might have estrogenic effects (12728). Theoretically, German chamomile might exacerbate hormone sensitive conditions. Until more is known, women with hormone sensitive conditions should avoid using German chamomile. Some of these conditions include breast cancer, uterine cancer, ovarian cancer, endometriosis, and uterine fibroids.

**SURGERY:** German chamomile has CNS depressant effects. Theoretically, German chamomile might cause additive CNS depression when combined with anesthesia and other medications during and after surgical procedures. Tell patients to discontinue German chamomile at least 2 weeks before elective surgical procedures.

#### **Dosage/Administration:**

**ORAL:** For dyspepsia, a specific combination product containing German chamomile (Iberogast, Medical Futures, Inc) and several other herbs has been used in a dose of 1 mL three times daily (7049, 12724, 13089).

For colic in infants, a specific multi-ingredient product containing fennel 164 mg, lemon balm 97 mg, and German chamomile 178 mg (Colimil) twice daily for a week has been used (16735).

**TOPICAL:** For chemotherapy- or radiation-induced oral mucositis, an oral rinse made with 10-15 drops of German chamomile liquid extract in 100 mL warm water has been used three times daily (6655).

#### **Editor's Comments:**

German chamomile is an annual herb found throughout Europe and in portions of Asia. German chamomile has an mild apple-like scent. The name "chamomile" is Greek for "Earth apple."

**Avoid confusion with Roman chamomile.**

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