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## Calendula

### *Calendula officinalis*

#### Family: Asteraceae

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By [Gayle Engels \(/resources/herbalgram/authors/engels-gayle/\)](/resources/herbalgram/authors/engels-gayle/)

#### Introduction

A native of the Mediterranean countries, calendula is a small, bushy, cool-weather annual plant with light green, lance-shaped leaves and yellow-orange flowers that can grow up to 3 inches in diameter.<sup>1,2</sup> The genus *Calendula* contains about 20 named species, but only *C. officinalis* is utilized for its medicinal or culinary benefits.<sup>2</sup> The plant material used medicinally is the dried, whole or cut fully opened flowers, with the petals having been detached from the receptacle.<sup>3,4</sup> There are a great number of cultivars (cultivated varieties) of *C. officinalis* including one, Prolifera, that dates back to at least 1885.<sup>5</sup> The popularity and easy cultivation of calendula accounts for the development of cultivars that range from compact and dahlia-flowered varieties to ones with lime-green centers, and even a few that vary from the normal orange and yellow to pink and apricot colored.<sup>5</sup>

The genus name *Calendula* comes from the Latin *kalendae* (Middle English *calends*) for “first day of the month” and is thought to refer to the fact that the plant can be found blooming at the beginning of most months of the year.<sup>6,7</sup> Calendula has many common names including the following: poet’s marigold for the many poems written about it; pot marigold, which may be a derivation of poet’s marigold or a reference to its ease of cultivation in pots; Mary’s gold for its resemblance to the rays of light that radiate from the Virgin Mother’s head; and just plain marigold.<sup>1,2,6,8</sup> Despite these common names, calendula should not be confused with the true marigolds (*Tagetes* spp., Asteraceae), which it does resemble somewhat.

Calendula is the International Herb of the Year for 2008. Since 1995, the International Herb Association ([www.iherb.org](http://www.iherb.org)) has chosen an herb each year to highlight, based on its performance in at least two of three categories: medicinal, culinary, and decorative. Throughout the year, herb groups and organizations work to educate the public about the chosen herb.

#### History and Cultural Significance

Historically, calendula was known as “poor man’s saffron” as it was used to color and flavor foods, specifically butter, cheese, custard, bread, cookies, soups, and rice dishes.<sup>2,7,9</sup> Calendula petals are also added to salads and used as a dye for fabric and hair.<sup>2</sup> Currently, the pigment of the bright orange calendula is used in the pharmaceutical industry to give a pleasant color to some medicinal preparations.<sup>7</sup>

British herbalists John Gerard (1545-1612) and Nicholas Culpepper (1616-1654) both mention “marigold,” and 20<sup>th</sup> century British author Maud Grieve states that it is primarily a local (topical) remedy and that applying the petals to insect stings will reduce pain and swelling.<sup>10</sup> She also recommends a lotion made of the flowers for sprains and wounds and a water distillation of the flowers for sore and inflamed eyes. While the flowers are the part most often used medicinally,

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Mrs. Grieve also mentions that the juice from the leaves would remove warts and that eating the raw leaves in salad was useful in the treatment of childhood scrofula, a tubercular degeneration of the lymph glands.<sup>10</sup>

Folk medicine healers in Europe prepared infusions, extracts, and ointments with the petals to induce menstrual flow, to produce sweat during fevers, and to cure jaundice. In 19<sup>th</sup> century America, the Eclectic physicians used calendula internally to treat liver problems, stomach ulcers, conjunctivitis (inflammation of the mucous membrane that lines the eyelids, commonly called pink eye), and externally for superficial burns, bruises, and wounds.<sup>9</sup> Traditionally, the flower was also used externally as an antiseptic and to help stop bleeding.<sup>11</sup>

Calendula flowers demonstrate both astringent and anti-inflammatory activity and calendula infusions, ointments, and tinctures have been employed to heal bruises, burns, cuts, and the minor infections that they cause.<sup>12,13</sup> Calendula preparations are used for skin and mucous membrane inflammations, such as pharyngitis (inflammation of the throat), leg ulcers, boils, bed sores, gum inflammation, and rashes.<sup>4,7</sup> Lotions, poultices, and compresses made with calendula flowers may also be used, based on which preparation is most suitable.<sup>14</sup> Some herbalists recommend the plant's essential oil for treating vaginal yeast infections.<sup>7</sup>

The German Commission E has approved the use of calendula flower internally and topically for treating inflammation of the mucous membranes of the mouth and throat, and externally for poorly healing wounds and foot ulcers.<sup>9</sup> In the United Kingdom, calendula is approved as an herbal medicine for external use only in the General Sale List.<sup>4</sup> In Canada, since the Natural Health Product (NHP) regulations went into effect in 2004, calendula is an active ingredient in NHPs requiring pre-marketing authorization and product licensing.<sup>15</sup> Calendula flower ingredients are available in the United States for use in cosmetics, dietary supplements, and homeopathic remedies, and they are generally recognized as safe for food use (GRAS § 182.10) at 11 to 44 ppm (parts per million).<sup>2,4</sup>

### Modern Research

Calendula's healing properties, while established over centuries of use, are not well understood. Various activities have been shown for the essential oil and extracts of the flowers including the following: antimicrobial, anti-inflammatory, antibacterial, antifungal, antitumor, cytotoxic, anti-HIV, and wound healing.<sup>4,9</sup> Recent studies investigating the calendic acid content of the calendula seed have found it to have antioxidant properties.<sup>16</sup>

While there are not many clinical studies to support the various uses of calendula, a few stand out. Loggia et al (1994) found that an ointment made with calendula flowers is effective in relieving the pain associated with cracked or tender nipples.<sup>17</sup> In 2005, Duran et al obtained positive preliminary results for the use of calendula ointment in the treatment of venous leg ulcers.<sup>18</sup> Another 2005 study (Fuchs et al) showed the protective effect of a calendula/rosemary cream preparation against irritant contact dermatitis caused by exposure to sodium laurel sulfate.<sup>19</sup> A 1999 study suggested that a Romanian product containing calendula, burdock (*Arctium lappa*, Asteraceae), and herb-Robert (*Geranium robertianum*, Geraniaceae) was more successful than acyclovir (a common antiviral pharmaceutical medication) at resolving complaints and healing ulceration caused by herpetic keratitis (inflammation of the cornea and conjunctiva caused by herpes virus type 1).<sup>20</sup> (Note: The article cited is in Romanian and the plant parts were not specified in the English abstract.)

There are very few safety concerns regarding calendula. However, internal use of calendula preparations should be avoided during early pregnancy due to its ability to stimulate menstrual activity.<sup>21</sup> Also, allergic hypersensitivity may be an issue for persons sensitive to other members of the plant family Asteraceae.<sup>21</sup>

### Future Outlook

Most of the field trials and cultivation studies on calendula are evaluating its potential as a seed oil crop. According to a Kansas State University Research and Extension article from 2004, market potential for calendula is moderate to high, and the dried flowers can be sold for \$4.80 to \$39.00 per pound (dry weight).<sup>22</sup> Estimated marketable yield of flowers, based on 43,560 plants per acre, is 1483 dry pounds/acre.<sup>22</sup> Another report, from the British Columbia Ministry of Agriculture, Food

and Fisheries in 2002, estimates that a grower could produce 175 pounds per quarter acre of organically-grown calendula flowers, which could be sold at an average price of \$13.00 per pound.<sup>23</sup>

–Gayle Engels

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