



A Comprehensive Study of Pot Marigold Plant and It's Homoeopathic Medicinal Uses

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ABSTRACT

This article is an attempt of explaining the details of one of the very commonly seen house hold plant Pot marigold. In this article the authors have tried to explain about the basic things about pot marigold plant such as its family, taxonomy, growth and cultivation, biochemical properties, active components, traditional uses, medicinal uses, methods of preparation of medicine from pot marigold based on the principal of homoeopathy etc. this article is especially written for the medical as well as non-medical graduates keeping in mind about their shared interests about this plant.

Keywords: *Calendula officinalis*, Ø form, Mother tincture, Potentization, trituration, etc.

Abbreviations: Ø form - Mother tincture, CM potency - Centesimal scale potency, X potency - Decimal scale potency

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INTRODUCTION

Marigold plant belongs to the Compositae family. The Compositae family is also known as Asteraceae family. This family consists of flowering plants. Some of these plants can be annual, biennial or perennial. Compositae family includes shrubs as well as trees and the different plants belonging to this family are distributed across the world [1-8]. Some of the other important plants in compositae family are *Arnica Montana*, *Poison oak*, *Hypericum*, *Staphysagria* [3] etc.

POT MARIGOLD:

The scientific name of pot marigold plant is *Calendula officinalis*. This plant is an annual herb which means that this plant completes its life cycle within one year only. The life cycle of plants begins from germination and ends with production of seeds.

It is a more or less hairy plant, this plant carries beautiful single round shaped, robust flowers on a stalk. The flowers have different sizes and they emit pungent odor, the flowers can be yellowish in color, orange in color, maroon in color or they can be yellowish orange in color as well. The honeybees get attracted towards these flowers and thus this plant helps in pollination as well. The plant has thick, ovate leaves which are 5 - 15 cm in length. The plant can grow up to the height of 12 to 18 inches or 30 to 60 cm [14]. Cold atmosphere favors the growth of this plant. Basically this plant is indigenous to Europe but can also be cultivated in North America, India, and Bangladesh etc.

CULTIVATION:

The plant is very easy for cultivation and don't require any special attention hence it is easily available in the households. The seeds of the plant are readily available in the market or they can be obtained from the dried marigold flowers. The seeds take around 8 - 10 days for germination.

ACTION:

- 1) As the flowers emit pungent odor they are good in repelling mosquitoes and insects. Thus can be used as natural mosquito repellents if cultivated in large amounts near the house.
- 2) As the flowers are beautiful and very often large in shape they attract honeybees and favors pollination.
- 3) These flowers are found to be effective against termites as well.

TRADITIONAL USES:

The extract of the plant can be used internally as well as externally.

1) In India the flowers of *Calendula* have culinary uses. The can be used as an additive for coloring the food or flavoring the food. The dried flowers are used as insect repellents. The oils obtained from the flowers have veterinary uses, it can be used for treatment of shallow wounds, diarrhea and sore stomach in cattle's.

2) In Bangladesh it is used for treatment of ear ache, skin infection, insect bite etc. In Italy it is used treatment of eye infection, pharyngitis, gingivostomatitis, thus is used in mouth washes and mouth rinse etc. In USA it is used for treatment of ulcers, liver problems, and menstrual flow suppression. In UK it is used for treatment of psoriasis, Leprosy, Measles, and Jaundice etc. Application of *Calendula officinalis* cream prior to radiotherapy in the patients suffering from cancer it is noticed that radiation dermatitis is less severe and patient complains of less burning, less pain, less redness after a dose of radiotherapy.

BIOCHEMISTRY AND PHARMACOLOGY:

The plants gives us different types of biologically active compounds such as Terpenoids, Flavonoids, Carotenoids, Luteins, Coumarins, Quinones, Volatile oils, Amino acids, Carbohydrates, Lipids etc. The terpenoids have Anti-inflammatory and anti adenosis action, the flavonoids have anti-viral and enzyme inhibition properties, the carotenoids have coloring properties and anti-inflammatory, anti-oxidant and anti-proliferation actions [13].

BIOLOGICAL ACTIVITY:

1) The biologically active compounds have spasmolytic and spasmogenic action on duodenum, jejunum, ileum etc. thus can be used in treatment of constipation [17].

2) They have hepato protective actions thus can be used for liver troubles for stimulating the production and discharge of bile.

3) The animal studies of the flower extract shown its effectiveness as a potent anti-inflammatory and wound healing agent [15].

4) The extracts of the flowers have extensively studied in vitro as well in vivo. It is noticed that the extract can increase collagen synthesis [18].

5) It is noticed that the rats induced with diabetes mellitus 100 mg/kg of 8.7% extract has restored blood and urine glucose levels and decreased lipid levels in serum.

6) In one more animal study performed on the rats it has come to notice that, Lutein which is one of the most potent antioxidant carotenoid constituent has tumor suppressor activity [18].

7) In vitro findings supported the effect of extract of marigold on immune system and healing. These extracts can be obtained with methanol or ethanol. Methanol extract have antimicrobial action and are effective against both Gram positive and Gram negative bacteria's. Ethanol extract are more effective against *Staphylococcus aureus* and *Enterococcus faecalis*. Both methanol and ethanol extracts have anti-fungal as well as anti-viral activity. They can inhibit reverse transcriptase enzyme. These extracts can slow down proteolytic enzymes [16].

8) Thus to summarize it, the extract of the plant have antimicrobial, anti-inflammatory, anti-edematous, anti-viral, anti fungal, Immuno modulatory, spasmolytic, spasmogenic, anti-diabetic, anti-tumor, anti-oxidant, anti hyperlipidemic and hepatoprotective actions.

CONTRAINDICATIONS OF USAGE:

1) It consist of some allergens hence should not be used in persons who are sensitive to it.

2) High doses of calendula extract have sedative and hypotensive action hence should be used with caution in patients who are on anti-hypertensive.

3) The effects are not studied in pregnant and lactating mothers, hence must be used with caution in them as well as in those ladies who are trying to get pregnant.

METHODOLOGY:**PREPARATION OF CALENDULA OFF. MEDICINE ACCORDING TO HOMOEOPATHIC SYSTEM OF MEDICINE:**

Fresh flowering tops and leaves are used for the preparation of mother tincture. The tops and flowers are collected early in the morning partly in flower and partly in bud stage. The process of preparation of mother tincture and potencies is well described in the Homoeopathic Pharmacopoeia of India (Volume 1, Edition 1). According to it as the leaves and flowers of marigold are highly juicy, this plant comes under the class 1 and thus the medicine is prepared according to the rules and regulations applied for class 1 plants.

PREPARATION OF MOTHER TINCTURE:**A) BY OLD METHOD:**

1) The freshly gathered plant or part thereof is chopped and pounded to a pulp and is enclosed in a piece of new linen and subjected to pressure.

2) The expressed juice is then by brisk agitation is mingled with equal parts by weight of alcohol. This mixture is allowed to stand for 8 days in a well stopper bottle, in a dark cool place and is then filtered.

3) Thus the amount of drug power of mother tincture is $1/2$ [13].

PREPARATION OF POTENCIES AS PER OLD METHOD:

A) Potentization according to decimal scale:

1) 2 minims of tincture and 8 minim of dil. alcohol give 1X potency.

2) 1 minim of 1X potency and 9 minim of dil. alcohol give 2X potency. All further potencies are prepared by taking 1 minim of previous potency and mixing it with 9 minims of dil. alcohol

B) Potentization according to centesimal scale:

1) 2 minims of tincture and 98 minims of dil. alcohol gives 1C potency

2) 1 minim of 1C potency and 99 minims of dil. alcohol gives 2C potency. All further potencies are prepared by taking 1 minim of previous potency and mixing it with 99 minim of dil. alcohol [13].

PREPARATION OF MOTHER TINCTURE:

B) BY NEW METHOD:

1) This method was introduced by American and British Homoeopathic Pharmacopoeia. In this method air dried drug substance is used for preparing mother tincture instead of fresh vegetable and animal drug substance. The mother tinctures can be prepared by maceration or percolation process.

2) In this method the drug substances are not divided into different classes. In this method the mother tinctures have uniform drug power of $1/10$ [14].

PERCOLATION:

1) The required quantity of pulp or powdered drug substance is taken and moistened sufficiently by small portion of strong alcohol.

2) It is spread uniformly over the layers of sand gradually passing it down by broad flat cork fixed on end of glass rod, to get uniform and compact mass free from fissure and empty space.

3) Now required quantity of strong alcohol is poured upon it through the glass rod. The care should be taken not to displace the pulp or sand.

4) Then the rod is removed and lid of percolator is closed tightly so as to prevent any contamination. Then the cork is loosened slightly and as soon as the fluid begins to drop from the percolator, the cork is fastened. This assembly is allowed to stand for next 24 hours or more, then by opening the valve the liquid is allowed to percolate drop by drop not exceeding 10 - 30 drops/min. Constant watch is kept over the level of menstrum. It should always be above the level of drug substance. Fresh quantity of menstrum is added from time to time without disturbing the arrangement of percolator. It is continued till requisite amount of the menstrum has been passed out of percolator and last drop from it has been received in receiver [14].

PREPARATION OF POTENCIES AS PER NEW METHOD:

1) According to new method, the drug power of mother tincture is $1/10$, which is equal to 1X potency of decimal scale. The 2X potency is prepared with 1 part of 1X potency, 9 parts of vehicle and 10 downward strokes of equal length [14].

CLINICAL FINDINGS OF SOME OF THE STALWARTS IN HOMOEOPATHY WITH CALENDULA OFF.:

1) Crosby C. R. Has used the hot compress of calendula for pneumonia as well as other internal inflammations [2].

2) Dr. Kent J.T. says that, the symptoms that arise from internal cause, treat it with internal remedy, symptoms that arise from external cause, treat it locally. Thus for local cause use local means and for dynamic cause internal means [6].

3) A Correspondent of homoeopathic world in 1891, C. W. mentions that a friend of his who chewed for a few minute the leaf of calendula had noticed that it entirely removed for some days the difficulty of passing water such as commonly met with old men [12].

4) Dr. Ludlam has recommended it in treatment of chronic endocervicitis and scrofulous ulcerations with much purulent leucorrhoea [12].

5) C. W. himself a pharmacist, noticed the following effects on himself while making the fresh plant tincture, "There was such a feeling as if some overwhelming calamity was hovering over me as to be almost unbearable. Three years ago just after making the tincture my old enemy, the gout, nipped me in the middle of spine and in 3 days spoiled all my powers walking and then the dreadful feeling became very much exaggerated. This effect led him to conclude that calendula has action on spinal cord [12].

6) Jahr (1849), had treated number of cases of gunshot wound with comminuted bones [2].

INDICATIONS OF CALENDULA OFF. MENTIONED IN HOMOEOPATHIC SYSTEM OF MEDICINE:

1) It has a soothing and antiseptic effect, it restores vitality of injured parts and acts as a barrier to infection and germs, thus is suitable in all cases of injury where skin is broken and soft parts are

lacerated. It prevents suppuration and brings on healing as well as promotes granulation, thus it can be prescribed post operatively for achieving the healing by 1st intention[1].

02) Calendula has hemostatic activity as well thus it can be prescribed after tooth extraction for arresting the hemorrhage. In cases of carbuncles it reduces pain and fever [8].

03) It can be used in obstetric practice as well. Application of sponge saturated with hot solution of calendula after delivery gives a great relief to patient.

04) Hot calendula lotions are preferable to cold as they conserve vitality of injured parts. They can be applied to forming abscess, they will either abort or favor maturation and ultimate healing [2].

05) Fever and cases of Jaundice are also treated with it successfully.

06) Mentally the patient is irritable and frightened easily. He has a great tendency to startle. There is great nervousness and the hearing is very acute he can hear best in train.

07) The symptoms are aggravated in damp and cloudy weather. Drinking causes shaking chill or crawls even in heat stage of fever. The symptoms are ameliorated by walking or lying perfectly still. In Germany it is called as cancer cure and is prescribed as an intercurrent remedy treatment of Carcinoma of breast [3].

08) It is indicated in enlargement of submaxillary glands where movement of neck brings about pain. The patient complains of reduced appetite at dinner although he relishes his food. It is indicated in cases of cough with greenish expectoration and hoarseness of voice [4].

09) Indicated in treatment of uterine hypertrophy and genital warts, lacerations and perineal tears during labor. It is indicated in treatment of superficial burns and scalds. The patient is exhausted from loss of blood and excessive pain [3].

10) In cases of open injuries, cuts, lacerations etc. dilute calendula used locally will keep the wound odorless, reduce amount of pus and favor granulation in very best possible manner and thus assist the surgeon in healing of surface wound [10].

11) Calendula mother tincture can be used for dressing. One part mother tincture to 4 -6 parts of water. It is used in treatment of old, neglected, offensive, threatening gangrene. Indicated in treatment of carbuncles [6].

12) Indicated in scratched cornea, eye pain after surgery, lacerated and incised wounds of eyes, foreign bodies in eye. It can be used as eye wash for blood shot eyes from dust or irrigation.

REMEDY RELATIONSHIPS OF CALENDULA OFF:

1) Complementary to Hypericum

2) Similar to Arnica Montana, Calcarea Phosphorica, Rhus toxicodendron, Ruta graveolens, Sulfuricum Acidum.

3) Inimical to Camphora

4) Antidote to Arnica

5) Remedies that follow well Nitricum acidum, Arsenicum album, Bryonia [10]

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