

Marigold Cultivation: Income Generation, Health and Livelihood Security for Small and Marginal farmers of Guna District

Mishra Sunita¹, Shukla Anita² and Tripathi Priya³

1. Sr. Scientist and Head, Krishi Vigyan Kendra, Aron, Guna M.P.

2. Scientist, Krishi Vigyan Kendra, Khargone, M.P.

3. M.Sc. Food and Nutrition

Abstract

Marigolds were well known and valued by ancient people in India. The bright orange and red colours of marigolds are seen everywhere in daily life of the Indian sub-continent. They are mainly decorative plants and the flowers are used in all kinds of ceremonies including weddings. Marigold has been occasionally used in South Asian medicine. Marigold leaves and flowers in particular have been used for various disorders. Marigold species are being investigated for their potential benefits to health. Now a days, they are being used for treatment of various diseases.

Key words : Marigold, Income, Health

Introduction

The golden colour of marigolds was considered to resemble the colour of the Arya, or honourable people. They are made into garlands and are offered to the gods and honoured guests, or used to decorate the biers of the dead. They stud cowdung balls which are used to decorate rice-powder drawings. In folk-art of eastern India they are dried and powdered to produce a yellow colour used to decorate village homes. Essential oils are also extracted from marigolds for perfumery. Two separate species of plant

Calendula

The most commonly cultivated and used member of the genus is *Calendula officinalis*. *Calendula marigolds* look more like a daisy with an obvious open center. They lack the closely clustered petals of the decorative marigold and are sometimes referred to as pot marigolds. *Calendula* should not be confused with other plants that are also known as marigolds, such as corn marigold, desert marigold, marsh marigold, or plants of the genus *Tagetes*. The name *Calendula* stems from the Latin *kalendae*, meaning first day of the month, presumably because pot marigolds are in

are known as marigolds, both edible, but we will get different results with the two. One is medicinal and not very palatable, the other makes a nice salad ingredient, but it won't cure what ails us. The National Institutes of Health explains that the marigold found in most home gardens is of the targets variety, which is purely ornamental. The marigold variety that delivers health benefits is *calendula*. The flowers of the *calendula marigold* have been used for centuries for their health benefits.

bloom at the start of most months of the year. The common name marigold probably refers to the 'Virgin Mary' or its Old Saxon name 'ymbglidegold', which means 'it turns with the sun'. Medicinal use of *calendula* dates back at least to the 12th century, according to the University of Maryland Medical Center^[1].

Botanical name -*Calendula officinalis* reflects the fact that the plant seems to be in bloom the first day of each calendar month.

Family - *Calenduleae*

Tagetes

The Tagetes marigolds, or the common decorative type, are indeed edible, although they do not possess medicinal properties. The fresh flowers may be added to salads or used as an edible garnish; they provide a bitter taste, which can be helpful to balance out an overly sweet dish. The Tangerine Gem and the Lemon Gem varieties are the best-tasting of the Tagetes. Botanical names Tagetes erecta (African marigold) and Tagetes patula (French marigold) and Tagetes minuta. Family Compositae, the daisy family (also sometimes known as Asteraceae)

OTHER NAMES - Marigold, French marigold, African marigold (English) Sthulapushpa, sandu, ganduga (Sanskrit)

CHEMICAL CONSTITUENTS - Flavanoids Have strong anti-inflammatory properties, the University of Michigan Health System reports.

Triterpenoids - May suppress cell fusion and inhibit viral replication, says the Memorial SloanKettering Cancer Center.

Carotenoids - Which prevent the body from free radicals. These are lutein and

zeaxanthin, often paired together, and lycopene & Betacarotene. The Linus Pauling Institute reports that lutein and zeaxanthin are the only antioxidants that are found in the retina of the eye, where they protect the eye from the development of cataracts and macular degeneration. Lycopene is reported to reduce the risk of prostate cancer and heart disease. High iodine, carotene and manganese, which promotes skin cell regeneration, has also been found in the plant.

KVK Intervention – Main role of KVK is technology dissemination through OFTs, FLDs, Literature distribution and training organized for farming community to gain higher income with low cost investment. This approach is applied for marigold flower cultivation with method of decoration item making through demonstration and trainings programme organized at On / Off campus. KVK provide seed kit and seedling for Marigold cultivation under the monitoring of scientific approach of cultivation.



Farmer - Smt. Lalita Gehlot W/o Harinarayan Gehlot, Village – Nanni Badwani District-Badwani (M.P.) having 01 sons and 02 daughter and has taken guidance from KVK, Badwani for Flower cultivation and Mala Making for Income and Employment generation individually. She has growing Flowers, vegetables and seasonal fruits round the year during

Kharif, Rabi and Zaid. Consequently she has receiving fresh flowers owing to supply of garlands and buques on demand from Badwani market. She saving money by garlands and flower sale in local market. Award - Women empowerment award on republic day. Social recognition- 20 farm families are also involved in flower cultivation and garland making

Assessment of African Marigold Indica Yellow (T-1: Local Ganda/T-23: Indica Yellow)

Yield(/ha)		Cost of input		Incremental income		Net Return		Saving in Rs
T1	T2	T1	T2	T1	T2	T1	T2	
11524 Kg/ha	14263 Kg/ha	33450	42500	182160	280880	148710	238380	89670

Material and Methods

Cultivation of Marigold

African Marigold (Tagetes erecta): Pusa Narangi Gainda, Pusa Basanti Gainda, Giant Double African Orange, Cracker Jack, Crown of Gold, Guinea Gold, Double Eagle, Dubloon, Climax, Hawaii, New Alaska and Spun Gold.

French Marigold (Tagetes patula): Pusa Arpita, Butter Ball, Flash, Colour Magic, Janie Gold, Janie Yellow, Star of India, Red Brocade, Rusty Red, Susana and Valencia

Interspecies Hybrids: Pusa Shankar Pusa Shankar-1, Nugget, Red and Gold, Red 1, Nugget, Red and Gold, Red Seven Star and Show Boat.

Soil and Climate

- Marigold can be grown in a wide range of soil. African marigold prefers well maured moist soil, while French marigold prefers well drained light soil. The ideal pH for growing marigold is around neutral.
- Marigold can be grown in a wide range of climatic conditions throughout year except old winters when temperature is less than 10oC. Ideal growing temperature ranges from 15 to 35oC. Very high temperature also affects adversely growth and flowering. Avoid frost/ chilling injury

Spacing

- African Marigold: African Marigold: 40 x 30 cm 40 x 30 cm
- French Marigold: French Marigold: 30 x 30 cm

Nutrition

- African Marigold: 5 Kg FYM, N 30g, P 10g, K 10g/m².
- French Marigold: 3 Kg FYM, N 20g, P 10g, K 10g/m².

Irrigation

- Irrigation at 7-10 days interval during 10 days interval during September September-November and twice a week November and twice a week during March-June is ideal. June is ideal.

Harvesting of Marigold : Crop duration is about 4 to 5 month. Normally marigold flower can be picked up once in 3 days after 60 days planting.

Yield of Marigold : Yield depend upon the type of soil, farm management practices and variety of seed cultivated . The average yield is about 90 to 140q/ha

MARIGOLD-TRADITIONAL MEDICINE

- Blood purification and to reduce blood flow.
- Abdominal cramps and constipation.
- Spasmolytic and spasmogenic effects
- Culinary and medicinal herb.
- Petals are used fresh in salads
- Used to color cheese or as a replacement for saffron.
- Menstrual discomfort
- Ulcers
- Varicose veins
- Cancer

MARIGOLD - MEDICINE –

Skin care Controlling bleeding, and soothing irritated tissue, Bedsores, Skin inflammation, sprains and wounds, acne, burns, radiationinduced dermatitis,

eczema, sunburn, varicose veins, rashes and scars.

Calendula Products -Topically as an ointment, lotion, cream, oil, cooled calendula tea applied as a poultice, or orally as a tincture, extract or infusion.

Herpes treatment -Calendula Oil and calendula tea is used for herpes infections.

Cancer treatment - Calendula shows some potential for fighting cancer. A study published in the 2006 issue of BMC Cancer found that an extract of calendula killed cancerous melanoma cells and stimulated lymphocytes, the white blood cells of the immune system. Another 2006 study, published in the Journal of Natural Products, found that two triterpene glycosides in calendula flowers had a toxic effect against colon cancer, leukemia and melanoma.

Ear infections -Calendula has been used for generations to treat ear infections in children. The herb relieves the pain an ear infection.

Calendula Products - Tincture, Ear drops.

Insect sting It has been asserted that a marigold flower, rubbed on the affected part, is an admirable remedy for the pain and swelling caused by the sting of a wasp or bee²⁰

Joint pains (arthrosis) - Joint pains (arthrosis) are alleviated if the place is greased with Marigold ointment¹⁷.

Psoriasis- A tea from marigold flowers associated with a mixture of oak, willow, meadowsweet, celandine, walnutt rind, white deadnettle, common speedwell and yarrow is effective in many cases of psoriasis as well as in case of doubtful origin eczema.

Antiviral Activity- According to a 1997 article in Biomedicine and Pharmacotherapy, calendula extracts exhibit antiviral activity against the human immunodeficiency virus, or HIV, and a 2006 study published in BMC Cancer

attributes calendula with immune-stimulating properties.

Calendula Products - Calendula extracts.

Menstrual pain- Marigold tea relieves menstrual pain, especially in anaemic individuals²⁶.

Trichomonas vaginalis- Vaginal douche helps to destroy Trichomonas vaginalis protozoan.

Antibacterial- Calendula is effective against bacteria and is useful as an antiseptic lotion for minor cuts. Calendula is also active against bacteria that cause gastrointestinal infections. A study reported in the 2009 issue of Phytotherapy Research found that calendula was one of the most effective herbs for inhibiting the growth of *Campylobacter jejuni*, a common bacterial cause of severe diarrhoea in children.

Digestion - Calendula can relieve some gallbladder problems, since it stimulates the release of bile from the gallbladder, thus relieving congestion. This action also aids digestion and elimination, since bile is a natural laxative.

Food colouring and decoration - Marigold flowers contain the yellow carotenoid pigments and are used to produce a yellow dye, which is sometimes used in place of saffron to color rice. Calendula petals are also added to salads and soups to give color and flavor. They have been used to colour pet and livestock foods.

Crafts - Marigold flowers are used at many religious ceremonies and festivals. Strung together they make colourful garlands and are used as offerings and to decorate religious buildings and statues. Plant dyes have always been important during the Hindu festival Holi, although now synthetic dyes are generally used instead. But Dyes prepared from plants like marigold are safer.

Cosmetics- Toners and astringents, lip balms, shampoos and baby oil.

Insect repellent- Calendula also acts as an insect repellent. Skin creams with calendula can deter mosquitoes and pests

Homeopathic Products-

Topical calendula products include herbal and homeopathic ointments, gels, lotions and creams. Homeopathic calendula remedies also include sprays, oils and sugarbased pellets. Calendula is

Adverse Effects

Herb should be avoided by those who are pregnant or trying to become pregnant, or who are breastfeeding; calendula can cause changes in the menstrual cycle. People who have an

during and after surgery. Stop taking calendula at least 2 weeks before a scheduled surgery.

Conclusion

Conclusion of this research is Marigold cultivation as well as making useful items for sale not only a income generating activity and its medicinal uses can be use prevention and healing of disease to remain good health. No scientific study or research has yet proven calendula as an effective remedy for

References

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from the skin. HOMEOPATHIC USES Homeopathic form of calendula is primarily used internally for infections resulting from bacterial skin conditions and blood poisoning and fever.

not typically ingested, with the exception of homeopathic pellets and calendula tea. Cosmetic products such as soaps, moisturizers and lip balms may also contain calendula.

allergy to other members of the daisy family should also avoid treatment with calendula remedies. Calendula might cause too much drowsiness if combined with medications used

various disorders. But the use of marigold has shown success in curing different diseases. So Marigold can be the most effective remedy of choice for various diseases and this new research will definitely help mankind to lead a disease free and healthy life.

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