

Importance and Prospects of Marigold

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Flowers play an important role in people's lives. Every flower in nature is a soul blossoming. People become happier and more helpful as a result of this. For the souls, these are like sunshine, nourishment, and medicine. Flowers are an important part of floriculture, which is a highly concentrated area of the ministry of commerce, for the development of the country (Patel *et al.* 2016).

One of the most regularly planted flowering plants is the marigold, which belongs to the Asteraceae family. The marigold (*Tagetes spp.*) is the most popular loose flower in India. It is planted as an ornamental crop, a pot plant, and as part of landscaping. Marigold is a flower that is native to Central and South America, particularly Mexico. There are 33 species in the genus *Tagetes*, with the two most common being *Tagetes erecta* L., also known as African marigold, and *Tagetes patula* L., also known as French marigold (Kumar *et al.* 2015). *T. patula* (French marigold) followed a similar path from Mexico to Africa, and *T. erecta* (African marigold) was planted in Europe in 1596 and *T. patula* in 1573 (Datta and Singh, 2008). *Tagetes* was named after the demigod 'Tages,' who was noted for his beauty. Both kinds are utilized as cut or loose flowers, as well as pot plants. Marigold is appropriate for herbaceous borders as well as pots and shrubberies to add colour and fill space. Edging, hanging baskets, and rockeries are all good places to use French marigold (Deepa and Patil, 2016). The flowers of the French marigold are tiny, have lengthy peduncles, and come in a variety of colours i.e., orange, yellow, mahogany and rusty red, deep scarlet etc.

T. patula is an allotetraploid species of the French marigold, which is an important flower. When *T. patula*, an allotetraploid (2n= 48) of *T. erecta* and *T. tenuifolia*, produced seeds from an interspecific cross, the majority of the hybrid seedlings died before reaching reproductive age, and the seedlings that survived were feeble (Datta and Singh,

2008). Marigold can also be used to combat *Parthenium hysterophorus*, a plant that grows wild in landfills. It is mostly grown for the production of loose flowers. The marigold's leaves are covered in oily glands that emit a strong odour (Kumar *et al.* 2015). The French marigold is widely utilized in landscape design and is well-known among gardeners. Marigold grows best in a variety of agroclimatic settings. The therapeutic efficacy of the marigold flower stems from both its leaves and petals.

As per the reference of National Horticulture Board, All India, area under floriculture Crops: In 2017-18 for loose flowers was about 3, 24,000 ha with production of about 19,62, 000 MT. In 2018-19, area under floriculture decreased to 3, 13,000 ha with estimated production of about 20, 59,000 MT. The production of cut flowers was 8, 17,000 MT during 2017-18 and estimated production was 8, 07,000 MT in 2018-19. The area under flower cultivation in India is about 1, 10,000 hectares. The total area and production of flowers during the 2018-19 was about 3, 39,386 ha with production of 19, 91,381 MT. The total export of floriculture produce in India was Rs. 571.38 crores/81.94 USD million in 2018-2019. Marigold occupies two third of the total area under cultivation. The major flower growing states are Karnataka, Tamilnadu and Andhra Pradesh in the South, West Bengal in East, Maharashtra in West and Rajasthan, Delhi and Haryana in North. East Midnapore, Howrah, Hooghly, 24-Paraganas, Burdwan and Nadia are the main districts growing important commercial flowers on large scale both as cut and loose flowers.(Lohare *et al.*2018). In India, the total area under marigold cultivation is 255 thousand hectares with production of 1754 thousand MT loose flowers.

The floral extract, which is made from flowers blended with other components, has some medical properties. The substance generated from the extraction is utilized to treat an eye ulcer (Choudhary *et al.* 2014). It is a good source of pigment for poultry feed, namely the pigment (Xanthophyll) that gives egg yolk its yellow colour and helps to enhance the colour of chicken skin (Kumar *et al.*, 2019). Although the petroleum ether extract of *Tagetes patula* roots was found to be poisonous to *Culex fatigans* third stage mosquito larvae, the aqueous and methanolic extracts from the leaves, stems, and buds of *Tagetes patula* were also investigated for insecticidal activity against *Tylenchulus semipenetrans* and *Anguina triticitritici* larvae in the second stage. The aqueous extracts of 30 and 60 day old marigold plants (*Tagetes patula*) were found to prevent *Meloidogone javanica* juveniles from hatching



(Gupta and Vasudeva, 2012). Aside from that, another pigment carotenoid is employed in human food for medicinal purposes, such as healing cancer in humans or skin tumors. Carotenoids play an important role in photosynthesis and pollination. These two processes are required for the plant's normal growth and development. These are also crucial for attracting pollinators by generating a stunning visual range of colours in blooms ranging from yellow to crimson (Beniwal *et al.* 2017). It's also being used to dye garments, with its ethanol-based flower extracts producing a variety of colours on the fabric. The marigold vinegar can be used to garnish the salad and give it a particular flavour.

Furthermore, Marigold is the greatest cosmetic treatment for minor skin damage such as subdermal broken capillaries or sunburn (Rahman *et al.* 2016). Marigold flowers are widely used as a loose flower in India and their flower petals are also employed for xanthophyll synthesis, which is a prominent carotenoid fraction that accounts for 80-90 percent lutein of total xanthophylls content (Singh *et al.* 2019). The bicolor pattern found in French marigolds, called the French kind, is also good for mass planting. Window boxes and pots can also be used to cultivate these. Marigold's anti-nematode properties have been known for over 50 years. *Tagetes* has been shown to have fungicidal efficacy against *Helminthosporium oryzae* in addition to being insecticidal. Gram-positive bacteria and fungi are said to be inhibited by *Tagetes* oil (Nahak *et al.* 2016).

In today's world, with the evolution of the floriculture industry, evaluating French marigold varieties is critical in order to identify genotypes with desirable quality parameters that can be suggested to farmers (Srinivas and Rajasekharam, 2020). The French kinds are petite and lovely. It is critical to develop a strategy for producing high-quality seeds and ensuring their timely availability at an affordable cost to the farming community.

Because it is generally understood that growing substrates have a substantial impact on development, flowering, and presentability, a suitable media for the production of flower crops is chosen. Marigold's shoot growth is severely hampered by a variety of pot sizes and root restrictions. Shoot height and biomass loss have been documented in tiny pots, but when grown in larger pots, the value increased. Due to its value addition as a natural colouring component in poultry feed, its growth is now spreading across a vast area (Deepa *et al.* 2016). Marigold's economic potential is growing because to its ease of cultivation and

minimal nutrient requirements and easy availability of Planting material (Kanwar *et al.* 2015).

In recent years, Marigold became popular as loose flower. The cultivation of the Marigold for aesthetic value as well as seed purpose is gaining importance among the individual growers of the Punjab state. Some of the growers sell the flowers of Marigold either French type or African type as a pot plants. The highly developed, attractive inflorescence and foliage make it an ideal potted floricultural crop. Potted Marigold is a quick crop to produce and offer an opportunity for growers to take advantage of on present-day demand for the plant.

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