LITERATURE REVIEW OF TAGETUS PATULA

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ABSTRACT

Tagetes patula L., Asteraceae, popularly known as French marigold, originated in Mexico. It is widely used as an ornamental plant and is sold freely in open markets and garden shop. In folk medicine the flowers and leaves are used for his or her antiseptic, diuretic, depurative and bug repellent activities. Chemical studies with flowers and leaves of T. patula identified terpenes, alkaloids, carotenoids, thiophenes, fatty acids, and flavonoids, as constituents, some of which may elicit the biological activities; these include insecticidal, nematicidal, larvicidal, antifungal, anti-inflammatory activities. As Piccaglia and collaborators (1998) found, the flowers of T. patula are a rich source of lutein and its esters. For this reason the genus is widely cultivated in Central America as food coloring, which is approved by the European Union. However, after carotenoids are extracted, the residue is discarded or only used as animal feed or fertilizer.

INTRODUCTION

Morphology
The flower head had tubular disk flowers in the centre and ray flowers, these often strap-shaped, around the periphery. Flowers are found in shades or yellow, orange, red and everything in between. The French marigold has smaller flowers than African kind. The numbers of flowers in the French type are more. The width of the flower head is 3.5-6mm
Stems are initially upright, but thanks to their repeated branching will spread and mound, becoming procumbent by season's end and quite spreading.
Leaves are feathery toothed, divided fragment. Leaves are actually simple, but deeply sinuate to the midrib to the point of appearing pinnately compound, with each lobe having coarse serrations that are tipped aromatic glands. The length of the leaf blade is 30-250mm
Seeds heads are abundant and quite noticeable, detracting somewhat from the continuous showy flowering, and are ideally sheared off (dead-headed) to market enhancing flowering (but this is often rarely done). Seeds will slightly self-sow from one season to the next.

**Vernacular names**
Marathi: Zendu  
Hindi: Genda  
Bengali: Genda  
Gujarati: Gulihar  
Kannada: Seemeshamantige  
Malayalam: Chendumalli  
Sanskrit: Sandu  
Telugu: Krishna banti

**Taxonomic classification**
Kingdom: Plantae  
Sub-kingdom: Tracheobionta  
Superdivision: Spermatophyta  
Division: Magnoliophyta  
Class: Magnoliopsida  
Subclass: Asteridae  
Order: Asterales  
Family: Asteraceae  
Genus: Tagetes L  
Species: Tagetes patula

**Distribution**
The genus Tagetes (Asteraceae) is native to Americas and Mexico but some of its members (in particular T. erecta and T. patula) commonly referred to as marigolds were naturalized within the Old World (India, North Africa, and Europe).  
Moreover, some researchers suggest that both species reached India anciently through pre-Columbian transoceanic voyages. Marigold was introduced to Georgia from India, and its ground dried petals became one of the most popular local spices. Both T. erecta and T. patula are grown in Georgia as spice and dye plants recognized for their health-beneficial properties.

**Chemical constituents**
Phytochemical studies administered to different species of Tagetes have revealed the presence of flavonoids and terpenes displaying pharmacological and insecticidal properties.  
Flavones of T. patula varieties were analysed by TLC and paper chromatography to establish the optimal conditions for identification and separation of flavones. Patuletin, quercetagetin and their glucosides patuletrin and
quercetagetrin were isolated. The flavonoids and fatty acids of Tagetes and their taxonomic significance have been reviewed. Patuletin and patuletrin were isolated from the seeds of T. patula and quercetagetin and quercetagetrin from seeds of T. erecta during the fruit-bearing stage (the flavonoid fraction rich in quercetagetin and quercetin, as well as crude marigold extracts, were used for further trials with Jurkat cells. A Tagetes extract contained ~ 27% carotenoids with β carotene 0.4%, cryptoxanthin esters 1.5% and xanthophyl esters 86.1%. The major constituents of oil are were piperitone (33.77 %), trans-β-ocymene (14.83 %), terpinolene (13.87 %) and β-caryophyllene (9.56 %).

REFERENCES