

Precision Production Technology of Marigold

Introduction:

African marigold (*Tagetes erecta* L.) is an important traditional flower crop under cultivation throughout India. It is extensively used in religious and social functions in different forms. Marigold is widely grown in gardens and pots for display purpose. It has great economic potential in loose flower which find industrial application in preparation of natural dyes and essential oils. It is used as mosquito and nematode repellents. Nowadays Xanthophyll pigments gained economic interest as a feed additive for poultry industry to improve the pigmentation of broiler skin and the egg yolk. Besides, lutein is also used in preparation of eye ailments.

Precision production technology for cultivation of African Marigold for the L3 hybrid was standardized at Tamil Nadu Agricultural University through the ICAR-NAIP project.

Propagation

Marigold is mainly propagated by seeds.

Soil and climate

Marigold can be successfully cultivated on a wide variety of soils. Soil that is deep, fertile, friable having good water holding capacity, well drained and with soil pH of 7.5 is ideal for Marigold cultivation. Saline and alkaline soils are not suitable for Marigold cultivation.

It requires continuous warm climate, and extreme hot and cool condition are not good for its growth. It grows well in all seasons. The optimum temperature required for its growth is 15 to 21°C.

Comparison of precision production system and conventional production system in Marigold.

Precision production system	Conventional production system
Field preparation: <ul style="list-style-type: none">❖ Main field is ploughed using four different implements viz., chisel, disc, cultivator and rotovator.	Field preparation: <ul style="list-style-type: none">❖ Main field is ploughed using three different implements viz., disc, cultivator and rotovator.
<ul style="list-style-type: none">❖ Azospirillum and phospobacteria each @ 2 kg/ha is applied before the last ploughing.	-Nil- Ridges and furrows are formed

❖ Raised beds (4 feet width x 94 feet) length are formed	
Nursery preparation: ❖ The seedlings are raised in protrays ❖ Protrays (54 x 27cm) with 98 cells of 3.5cm diameter and 8mm thickness is ideal	Nursery preparation: ❖ Seeds are sown in raised beds
Seed rate: 200g/ha	Seed rate: 275g/ha
Seedling treatment: Seedlings are dipped in <i>Pseudomonas fluorescens</i> @ 0.5 %	Seedling treatment: -nil-
Transplanting: Seedlings are transplanted within 18 – 20 days	Transplanting: Seedlings are transplanted after 20 days
Spacing: 90 x 22.5cm	Spacing: 60 x 45cm
Irrigation: Drip Irrigation (once in 2 days)	Irrigation: Flood irrigation (once in a week)
Nipping: Carried out 20 days after transplanting	Nipping: Carried out 20 days after transplanting
Fertilizer application: ❖ 75% of the total recommended Dose of NPK (67.5:67.5:56.25 kg/ha) is applied through drip irrigation	Fertilizer application: ❖ 100% of the total recommended dose of NPK (90:90:75kg/ha) is applied
❖ Water soluble fertilizers viz., Urea Polyfeed(19:19:19) and Potassium nitrate are used	❖ Di Ammonium Phosphate, Murate of Potash are applied through Surface placement method
Micronutrient application: ❖ Foliar application of FeSo ₄ @ 0.5% and Znso ₄ @ 0.5% at 30 and 45 days after transplanting	Micronutrient application: -Nil-
Biostimulant application: Foliar application of humic acid @ 0.2% and sea weed extract 0.25%at 30 and 45 days after transplanting	Biostimulant application: -nil-
Integrated pest and disease management: ❖ Application of Spinosad @ 0.75ml/litre for managing the flower borer(<i>Helicoverpa armigera</i>)	Integrated pest and disease management: Indiscriminate use of pesticides

❖ Soil application of <i>Pseudomonas flourescens</i> @ 2.5kg/ha followed by foliar application of <i>Pseudomonas flourescens</i> @ 0.5 % for leaf spot	
Yield: 32.5 tonnes/ha	Yield: 25 tonnes/ha
Xanthophyll content: 1.99g/kg of flowers	Xanthophyll content: 1.42 g/kg of flowers