

Commercial cultivation of Marigold in Jammu



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Marigold belongs to family Asteraceae and is a native of Mexico. There are two basic types of Marigold; the large-flowered African Marigold (*Tagetes erecta*) and the smaller-flowered French Marigold (*Tagetes patula*). It is a very popular annual flower crop which can be grown on a commercial scale for loose flowers. Besides, it can also be used as potted plant, in garlands/bouquets and for worship. Its habit of free flowering, short duration to produce marketable flowers and good keeping quality has attracted the attention of flower growers. To get maximum returns, its cultivation requires selection of suitable varieties, quality seeds, healthy nursery raising, adequate plant population, plant protection against diseases /pests and other cultural practices.

Climate:

Marigold requires mild cool climate for luxuriant growth & flowering. It cannot withstand sun-scorching heat and frost. For the seed germination optimum temperature range is 18-30°C.

Soil and its preparation

Marigold can be grown successfully on a wide range of soil. However, a deep fertile and friable soil having good water holding capacity, neutral in reaction (7-7.5) is desirable. Field should be well prepared by 2-3 thorough ploughings. 5 quintals/kanal of well rotten FYM should be mixed during last ploughing .

Varieties

The varieties suitable for growing under Jammu conditions are Pusa Narangi Gainda, Pusa Basanti Gainda, Desi Gutta, Jaffri and hybrid varieties like; F₁ Garland Orange and F₁ Garland Yellow.



Pusa Narangi Gainda



Pusa Basanti Gainda



Desi Gutti

Manures & fertilizers

1.5 tons of well rotten FYM along with 9.0 Kg Urea, 10.00 Kg DAP and 8.00 Kg MOP per Kanal are recommended for high flower yield. Half dose of Urea along with full dose of DAP and MOP should be applied as basal dose. Rest half dose of Urea is given as top dressing, after 25 days of planting.

Propagation and planting time

Plants are raised from seeds. Planting of marigold can be done in three seasons i.e. winter, summer and rainy. Hence, flowers of marigold can be obtained throughout the year.

Sowing and transplanting time

Season	Sowing time	Transplanting time
Winter	September	October
Summer	January-February	February-March
Rainy	Mid-June	Mid-July

Nursery management:

Seeds are sown in raised nursery beds. Well rotten FYM should be mixed in the nursery bed @ 5 kg/sqm. A bed size of 1 m x 3 m dimension and 15 cm height is prepared for proper hoeing and weeding. Soil should be drenched with Bavistin (0.1%) a week before sowing. Seeds are sown thinly (6-8 cm row to row), 2cm deep and covered with sieved leaf mould.

Seed should be treated with Bavistin (2g/kg) of seed especially for raising nursery in rainy and summer season. The nursery beds should remain moist till seedlings attain transplanting stage. Generally 60-70 g seed is required for one kanal area depending upon the level of its purity

and germination rate. Seeds germinate in 4-5 days after sowing and seedlings become ready for transplanting after 3-4 weeks. 4 leaf stage seedlings about 10 to 12 cm is optimum for transplanting.



Spacing:

40 cm x 40 cm (3125 plants /kanal) is ideal spacing for marigold cultivation

Irrigation

Irrigate the crop in 7-8 days interval. Frequency and quantity of water depend upon soil and season as more frequent irrigation is required in lighter soils than in heavy soil.

Weeding and hoeing

Weeds are a major problem in marigold especially in rainy season crop. Normally 3-4 manual weedings and hoeings are required to check weed growth and to keep the field clean.

Pinching:

Pinching is the removal of the terminal portion of the stem to promote laterals and thus increasing the number of flowers. Pinching is recommended after 30-35 days of transplanting.



Harvesting:

Marigold flowers should be plucked when they attain full size. Picking should be done in plastic crates/tubs to avoid mutilation of flowers during evening hours. For seed purpose, marigold should be plucked when the petals starts shriveling. Plucked flower should be dried as such in shade for 10-15 days followed by 1-2 days on sunlight.



Diseases and Pests:

Damping off (*Rhizoctonia solani*): Brown necrotic spots and girdling on the radicle, later on extends to plumule and causes pre-emergence mortality.

Infected seedlings should be removed; soil should be drenched with Formalin@ 2% and Bavistin 1 g/ litre of water.

Leaf spot (*Alternaria spp* and *Cercospora spp*):

Minute brown circular and brownish-grey spots appear on the leaves. Spray with Diathane M-45 (2g/l of water) at 15 days interval.



Aphids (*Aphis gossypii*): Aphids mainly infest lower surface of flowers and base of petals. Nymphs and adults suck the sap from the flowers causing discolouration and withering. Spray Metasystox @1ml/litre at fortnightly intervals.

Bud borer (*Helicoverpa armigera*)

Caterpillars feed on the flower buds and flowers, release lots of fecal material, thereby rendering them unsuitable for marketing. Chloropyriphos 20EC (1.5 ml in 1litre of water) and Cypermethrin (1ml in 1litre of water) spray alternatively at fortnight intervals



Economics

Its scientific cultivation fetches a handsome return of Rs. 8,000-9000 per kanal in case of open pollinated variety and Rs.15, 000/kanal in hybrid

PROJECT: Production and demonstration of quality planting material of commercially important cut and loose flowers in Jammu region under FTTF-NABARD