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Research Paper

Effect of growth retardants on flowering and yield of African marigold (*Tagetes erecta* L.) cv. 'DOUBLE ORANGE' under South Gujarat conditions

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ABSTRACT

The vigorous growth of African marigold cv. 'DOUBLE ORANGE' plant in terms of plant height was recorded maximum when plant sprayed at 35 days after transplanting in treatment (S_3) while, number of branches and plant spread were noted maximum under treatment S_1 *i.e.* spraying at 15 days after transplanting. Same treatment (S_1) induced early flowering and took minimum days for 50 per cent flowering. The plants gave the highest flower diameter, flower weight, more longevity and vase life of flower in treatment (S_1). The yield of flowers was also noted maximum in treatment (S_1). The plant height was noticed highest in the plants treated with PBZ 50 mg l^{-1} treatment (C_5) while, the number of branches per plant and plant spread were recorded maximum under plants receiving CCC 750 mg l^{-1} treatment (C_2). Consequently these plants produced early flowers and took minimum days for 50 per cent flowering with maximum flower diameter, flower weight, flower longevity as well as vase life of flower. The yield of flowers was also produced maximum in these plants.

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Key words : African marigold cv. 'DOUBLE ORANGE', Flower quality, PBZ, CCC, Yield

Marigold is one of the most popular commercial flowering plant belongs to family Compositae and it is one of the most popular amongst gardeners and flower dealers on account on it's easy cultivation, wide adaptability, free flowering habit, short duration required for producing marketable flower, wide spectrum of attractive colour, size, shape and good keeping quality. The exogenous applications of growth retardants play an important role in growth, flowering and yield. Hence, the present investigation was undertaken to exploit the potential benefits of plant growth retardants (Cycocel, Maleic hydrazide and Paclobutrazole) over flowering and yield traits of African marigold.

MATERIALS AND METHODS

The present investigation was carried out at the Floriculture Research Scheme, Regional Horticultural Research Station, ASPEE College of Horticulture and Forestry, Navsari Agricultural University, Navsari during the year 2007-2008 in winter season. The growth retardants like cycocel (500 and 750 mg l^{-1}), maleic hydrazide (100 and 250 mg l^{-1}) and paclobutrazole (50 and 100 mg l^{-1}) were used in the investigation. This experiment was laid out in Randomized Block Design with Factorial concept having three replications.

RESULTS AND DISCUSSION

The results obtained from the present investigation as well as relevant discussion have been summarised under following heads:

Growth attributes:

The results of the present investigation presented in Table 1 revealed that growth attributes *viz.*, number of branches and plant spread were maximum in African marigold cv. 'DOUBLE ORANGE' when sprayed at 15 days after transplanting (S_1) except plant height which was maximum when sprayed at 35 days after transplanting (S_3). Increase in number of branches in S_1 treatment might be due to stimulation of branching and production of number of nodes possibly attributed to the breakage of apical dominance and their by setting up of balance as well as enhanced differentiation of internodes. Similar results were reported earlier by Joshi and Reddy (2006) in China aster.

It is clear from results that when plant sprayed at 15