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EFFECT OF GRADED DOSES OF SULPHATE OF POTASH ON GROWTH AND FLOWERING OF AFRICAN MARIGOLD (*Tagetes erecta* L.) VARIETIES

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ABSTRACT

A field experiment entitled “Effect of graded doses of sulphate of potash on growth and flowering of African marigold (*Tagetes erecta* L.) varieties” was conducted during the *Rabi* season of 2025-2026 at the Post Graduate Institute for Horticultural Sciences, Sri Konda Laxman Telangana Horticultural University, Mulugu, Siddipet, Telangana. The study was laid out in a Factorial Randomized Block Design (FRBD) with five varieties (V_1 : Arka Abhi, V_2 : Arka Bhanu, V_3 : Pusa Narangi Gaiinda, V_4 : Pusa Bahar, V_5 : Tall Yellow) and five potassium treatments (D_0 : 30 kg K_2O /acre RDF via MOP, D_1 : 20, D_2 : 25, D_3 : 30, D_4 : 35 kg K_2O /acre via SOP) replicated twice. Growth observations were recorded at 30, 45 and 60 DAT, while flowering parameters were recorded as per respective stages. Arka Abhi (V_1) recorded maximum plant height (62.07 cm), plant spread (60.32 cm E-W, 52.86 cm N-S), primary branches (14.22), flowering duration (53.09 days) and number of flowers (75.80) at 60 DAT. Arka Bhanu (V_2) produced the thickest stem (24.40 mm). Tall Yellow (V_5) initiated earliest buds (33.87 days), 50 per cent flowering at (45.72 days) and bud to bloom period (9.63 days) with highest flower weight (15.02 g). The D_4 treatment recorded significantly higher values for most vegetative growth parameters and earlier flowering than other treatments. The interaction V_1D_4 (Arka Abhi + 35 kg K_2O /acre via SOP) achieved maximum plant height (77.90 cm), Plant spread (76.00 cm E-W, 62.22 cm N-S), primary branches (19.50), flowering duration (57.01 days) and number of flowers (81.50), V_2D_4 (Arka Bhanu + 35 kg K_2O /acre via SOP) showed maximum stem girth (29.39 mm). V_5D_4 (Tall Yellow + 35 kg K_2O /acre via SOP) initiated earliest buds and 50 per cent flowering, however, the interaction effect was nonsignificant, whereas minimum days for bud to bloom (8.20 days) and highest flower weight (16.75 g) were recorded. This study concludes that Arka Abhi + 35 kg K_2O /acre via SOP is best performing treatment combination under the Central Telangana conditions, resulting in superior growth and flowering.

Key words : Marigold, Sulphate of Potash, Varieties, Growth, Flowering parameters.

Introduction

African marigold (*Tagetes erecta* L.), belonging to the family Asteraceae, is native to Mexico and Central America and possesses a diploid chromosome number of $2n = 2x = 20$. It has emerged as one of the most

popular and commercially significant loose flower crops, due to its ease of cultivation, adaptability to diverse agro-climatic conditions of India and its wide range of applications (Panwar *et al.*, 2020).

In India, marigold flowers are marketed both as loose

flowers and in the form of garlands. Flowers are traditionally used for offering in temples, churches as well as in ceremonies, festivals, beautification and landscaping (Kumar *et al.*, 2024). In addition to its ornamental value, African marigold is cultivated as a source of natural carotenoid pigments, particularly lutein, which has applications in poultry, feed supplements, pharmaceuticals, cosmetics and the textile industry. In recent years, the availability of newly developed F_1 hybrids and the rising demand for lutein have boosted marigold cultivation (Shyala *et al.*, 2019).

In most cases the source of potassium used is muriate of potash, but it contains chloride ions. But in the recent times, it has been reported to have a bleaching effect on the pigments. As carotenoids determine flower color and market appeal, the use of an ideal potassium fertilizer becomes critical in improving the visual and commercial attributes of the crop. One key advantage of SOP over MOP is its significantly lower salt index, making it more suitable for use under saline conditions or in situations where salt accumulation may occur around the root zone—such as in intensive fertilization, limited soil moisture or poor drainage. Additionally, potassium sulphate is virtually free of chloride, making it the preferred choice for high-value, chloride-sensitive crops. For most crops, the use of potassium sulphate improves flower color intensity, quality and overall crop performance compared to potassium chloride (Tandon and Kemmler, 1986).

Despite the importance of potassium nutrition, studies evaluating the performance of marigold varieties under graded doses of SOP in Central Telangana are limited. Therefore, the present investigation was undertaken to evaluate the effect of graded doses of sulphate of potash on the growth and flowering performance of African marigold varieties.

Materials and Methods

The field experiment was conducted during the *Rabi* season of 2025-2026 at the Post Graduate Institute for Horticultural Sciences, Sri Konda Laxman Telangana Horticultural University, Mulugu, Siddipet District, Telangana. The soil was sandy loam in texture.

The study was laid out in a Factorial Randomized Block Design (FRBD) with two factors: Factor 1- Varieties (5 levels- V_1 : Arka Abhi, V_2 : Arka Bhanu, V_3 : Pusa Narangi Gaiinda, V_4 : Pusa Bahar, V_5 : Tall Yellow) and Factor 2-Potassium dosages (5 levels- D_0 : RDF at 30 kg K_2O /acre via MOP (Control), D_1 : 20 kg K_2O /acre via SOP, D_2 : 25 kg K_2O /acre via SOP, D_3 : 30 kg K_2O /acre via SOP, D_4 : 35 kg K_2O /acre via SOP).

Healthy one-month-old seedlings raised in cocopeat-

filled protrays were transplanted on November 28, 2025, into experimental plots measuring 3×1 m at a spacing of $60 \text{ cm} \times 45 \text{ cm}$ with 10 plants per plot. Standard cultural practices, including drip irrigation, manual weeding at 25 and 50 DAT and terminal pinching at 21 DAT, were uniformly maintained.

Growth parameters (plant height, plant spread in E-W and N-S directions, number of primary branches per plant and stem girth) were recorded at 15-day intervals (30, 45 and 60 DAT) on five randomly selected tagged plants per treatment. Flowering attributes (days to flower bud initiation, days to 50% flowering, days from bud initiation to full bloom, duration of flowering and fresh weight of single flower) were systematically monitored. Data were subjected to Analysis of Variance (ANOVA) as described by Panse and Sukhatme (1985).

Results and Discussion

Growth parameters

Plant height (cm)

Among varieties, V_1 (Arka Abhi) consistently recorded the maximum plant height (30.32 cm, 48.76 cm and 62.07 cm at 30, 45 and 60 DAT), while V_3 (Pusa Narangi Gaiinda) recorded the lowest height (19.34, 36.39 and 45.08 cm at 30, 45 and 60 DAT). Regarding potassium levels, D_4 (35 kg K_2O /acre via SOP) registered the tallest plants across all sampling stages (30.78 cm, 50.78 cm and 65.11 cm at 30, 45 and 60 DAT), whereas D_1 (20 kg K_2O /acre via SOP) recorded the lowest values (20.49 cm, 36.41 cm and 45.82 cm at 30, 45 and 60 DAT). For interaction effects, V_1D_4 (Arka Abhi +35 kg K_2O /acre via SOP) produced the tallest plants across all stages (39.75 cm, 57.55 cm and 77.90 cm at 30, 45 and 60 DAT), while V_3D_1 (Pusa Narangi Gaiinda +20 kg K_2O /acre via SOP) recorded the lowest height (13.95 cm, 28.45 cm and 39.80 cm at 30, 45 and 60 DAT). Similar variations have been reported previously by Ibrahim *et al.* (2023) and Thirumalmurugan *et al.* (2020) in marigold genotypes.

Plant spread E-W (cm)

Among varieties, maximum East-West plant spread was recorded in V_1 (Arka Abhi) across all observational intervals (31.42 cm, 45.99 cm and 60.32 cm at 30, 45 and 60 DAT), while V_3 (Pusa Narangi Gaiinda) recorded the minimum spread (19.23 cm, 31.99 cm and 39.79 cm at 30, 45 and 60 DAT). Application of D_4 (35 kg K_2O /acre via SOP) yielded the maximum E-W spread (29.95 cm, 45.52 cm and 60.35 cm at 30, 45 and 60 DAT), whereas D_1 (20 kg K_2O /acre via SOP) recorded the lowest plant width (21.00 cm, 32.91 cm and 42.01 cm at 30, 45 and 60 DAT). The treatment combination V_1D_4 (Arka Abhi +35

Table 1 : Effect of graded doses of sulphate of potash on growth and flowering of African marigold (*Tagetes erecta* L.) varieties.

Treatments	Plant height (cm)	Plant spread(cm)		Number of primary branches	Stem girth (mm)	Days taken for			Duration of flowering (days)	Weight of flower (g)	Number of flowers per plant
		(E-W)	(N-S)			flower bud initiation	50 per cent flowering	bud to bloom			
V ₁	62.07	60.32	52.86	14.22	23.06	42.09	53.44	15.26	53.09	12.28	75.80
V ₂	58.76	55.41	47.34	12.87	24.40	46.92	53.54	17.16	47.53	11.49	73.30
V ₃	45.08	39.79	36.33	9.81	16.94	35.26	47.13	12.27	32.23	9.93	63.94
V ₄	59.93	49.65	42.50	11.59	19.67	39.65	49.20	14.05	41.27	10.95	70.54
V ₅	53.46	48.04	41.07	10.74	20.05	33.87	45.72	9.63	34.02	15.02	57.59
S.Em±	0.97	0.93	0.86	0.20	0.34	0.73	0.55	0.23	0.60	0.16	0.44
CD @ 5%	2.84	2.73	2.51	0.57	0.99	2.12	1.61	0.66	1.75	0.46	1.30
D ₀	51.95	48.31	43.00	10.95	18.05	41.39	51.90	14.62	40.74	10.84	64.60
D ₁	45.82	42.01	36.17	9.38	16.82	42.71	53.71	16.11	39.15	10.25	59.44
D ₂	56.23	49.47	42.12	11.03	20.62	39.58	49.90	13.91	41.59	12.05	68.35
D ₃	60.19	53.08	47.64	12.91	23.06	37.68	47.76	12.50	43.13	12.72	72.68
D ₄	65.11	60.35	51.16	14.96	25.57	36.44	45.75	11.24	43.54	13.81	76.10
S.Em±	0.97	0.93	0.86	0.20	0.34	0.73	0.55	0.23	0.60	0.16	0.44
CD @ 5%	2.84	2.73	2.51	0.57	0.99	2.12	1.61	0.66	1.75	0.46	1.30
T ₁ -V ₁ D ₀	56.08	54.50	47.02	12.70	20.99	44.00	56.85	15.25	52.20	11.00	73.00
T ₂ -V ₁ D ₁	47.18	47.24	46.50	10.20	20.94	44.00	58.00	17.92	46.00	10.50	69.50
T ₃ -V ₁ D ₂	61.50	58.56	50.69	12.80	23.42	42.32	54.03	16.06	53.95	12.25	76.50
T ₄ -V ₁ D ₃	67.68	65.30	57.86	15.90	24.38	40.50	50.24	14.84	56.31	13.00	78.50
T ₅ -V ₁ D ₄	77.90	76.00	62.22	19.50	25.57	39.65	48.07	12.24	57.01	14.65	81.50
T ₆ -V ₂ D ₀	54.86	54.59	44.21	11.70	23.13	49.24	54.50	19.21	47.00	9.80	72.50
T ₇ -V ₂ D ₁	47.73	46.57	39.42	10.30	19.72	48.99	57.20	20.37	44.93	9.50	62.50
T ₈ -V ₂ D ₂	59.51	53.35	43.61	11.75	24.35	46.65	53.00	17.58	47.33	11.70	74.50
T ₉ -V ₂ D ₃	62.10	57.74	52.48	14.10	25.41	45.75	52.50	14.85	48.40	12.55	77.50
T ₁₀ -V ₂ D ₄	69.59	64.80	56.98	16.50	29.39	43.99	50.50	13.80	50.02	13.90	79.50
T ₁₁ -V ₃ D ₀	42.73	39.69	38.50	9.50	13.92	36.65	49.00	13.08	31.40	9.55	59.00
T ₁₂ -V ₃ D ₁	39.80	35.78	26.92	8.30	13.18	39.00	50.55	14.29	30.89	9.00	53.50
T ₁₃ -V ₃ D ₂	43.97	39.38	35.97	9.60	16.97	35.00	47.82	12.37	31.70	10.00	62.20
T ₁₄ -V ₃ D ₃	48.50	38.62	39.43	10.45	19.74	33.00	45.16	11.10	33.00	10.30	70.00
T ₁₅ -V ₃ D ₄	50.43	45.49	40.83	11.20	20.92	32.66	43.12	10.50	34.15	10.80	75.00
T ₁₆ -V ₄ D ₀	57.24	46.99	40.09	10.90	16.00	42.06	51.50	15.20	40.82	10.15	65.40
T ₁₇ -V ₄ D ₁	48.54	39.80	36.07	9.60	15.47	44.05	52.00	16.51	39.57	9.35	62.20
T ₁₈ -V ₄ D ₂	63.66	48.80	39.92	10.95	17.41	40.00	49.16	14.05	39.78	10.80	70.20
T ₁₉ -V ₄ D ₃	64.93	52.25	45.20	12.40	23.81	37.16	47.85	13.05	41.89	11.50	75.90
T ₂₀ -V ₄ D ₄	65.29	60.44	51.23	14.10	25.66	35.00	45.50	11.45	44.28	12.95	79.00
T ₂₁ -V ₅ D ₀	48.83	45.80	45.18	9.95	16.22	35.01	47.66	10.35	32.27	13.70	53.10
T ₂₂ -V ₅ D ₁	45.88	40.65	31.95	8.50	14.79	37.50	50.82	11.45	34.36	12.90	49.50
T ₂₃ -V ₅ D ₂	52.52	47.26	40.41	10.05	20.93	33.95	45.50	9.50	35.18	15.50	58.35
T ₂₄ -V ₅ D ₃	57.72	51.50	43.23	11.70	21.96	32.00	43.06	8.65	36.04	16.25	61.50
T ₂₅ -V ₅ D ₄	62.34	55.00	44.57	13.50	26.32	30.90	41.55	8.20	32.25	16.75	65.50
S.Em±	2.17	2.09	1.92	0.44	0.76	1.62	1.23	0.51	1.34	0.35	0.99
CD @ 5%	6.34	6.10	5.61	1.28	2.21	NS	NS	1.48	3.92	1.03	2.90

kg K₂O/acre via SOP) produced the highest E-W spread (38.72 cm, 55.01 cm and 76.00 cm at 30, 45 and 60 DAT), while V₃D₁ (Pusa Narangi Gaiinda +20 kg K₂O/acre via SOP) recorded the minimum spread (16.00 cm, 26.95 cm and 35.78 cm at 30, 45 and 60 DAT). This inherent structural superiority aligns with Thirumalmurugan *et al.* (2020) in African marigold.

Plant spread N-S (cm)

In the North-South direction, V₁ (Arka Abhi) maintained the maximum spread (25.95 cm, 42.48 cm and 52.86 cm at 30, 45 and 60 DAT), whereas V₃ (Pusa Narangi Gaiinda) recorded the lowest values (17.09 cm, 27.85 cm and 36.33 cm at 30, 45 and 60 DAT). Among SOP dosages, D₄ (35 kg K₂O/acre via SOP) achieved

peak N-S plant spread (25.28 cm, 41.79 cm and 51.16 cm at 30, 45 and 60 DAT), with D_1 (20 kg K_2O /acre via SOP) recording the lowest spread (17.70 cm, 31.78 cm and 36.17 cm at 30, 45 and 60 DAT). The maximum N-S spread was recorded under the interaction V_1D_4 (Arka Abhi +35 kg K_2O /acre via SOP) across all observational stages (32.85 cm, 51.78 cm and 62.22 cm at 30, 45 and 60 DAT), whereas the minimum N-S spread was in V_3D_1 (Pusa Narangi Gaiinda +20 kg K_2O /acre via SOP) recorded as 13.45 cm, 26.25 cm and 26.92 cm at 30, 45 and 60 DAT. Similar results have been reported in marigold by Suganya *et al.* (2009) and Pal and Ghosh (2010).

Number of primary branches per plant

Among varieties, V_1 (Arka Abhi) recorded the highest primary branch count at all stages (6.81, 9.88 and 14.22 at 30, 45 and 60 DAT), while V_3 (Pusa Narangi Gaiinda) recorded the lowest count (4.79, 7.69 and 9.81 at 30, 45 and 60 DAT). Among potassium treatments, D_4 (35 kg K_2O /acre via SOP) registered maximum primary branches (7.38, 10.82 and 14.96 at 30, 45 and 60 DAT), whereas D_1 (20 kg K_2O /acre via SOP) recorded the lowest branching (4.66, 7.07 and 9.38 at 30, 45 and 60 DAT). The interaction V_1D_4 (Arka Abhi +35 kg K_2O /acre via SOP) achieved the highest number of primary branches (9.20, 13.10 and 19.50 at 30, 45 and 60 DAT), whereas V_3D_1 (Pusa Narangi Gaiinda +20 kg K_2O /acre via SOP) recorded the lowest branching (3.80, 6.40 and 8.30 at 30, 45 and 60 DAT). This study aligns with Poornima *et al.* (2024) in African marigold.

Arka Abhi recorded maximum plant height, spread and primary branches, which may be attributed to its genetic constitution and hybrid vigour. Similar results were reported by Ibrahim *et al.* (2023) and Thirumalmurugan *et al.* (2020). D_4 (35 kg K_2O /acre through SOP) recorded the highest values, possibly due to improved potassium-mediated cell expansion, carbohydrate translocation and branching, along with the supportive role of sulphur in plant growth, as reported by Suganya *et al.* (2009) and Pal and Ghosh (2010).

Stem girth (mm)

Among varieties, V_2 (Arka Bhanu) recorded the maximum stem girth across all intervals (9.48 mm, 15.90 mm and 24.40 mm at 30, 45 and 60 DAT), whereas V_3 (Pusa Narangi Gaiinda) recorded the thinnest stems (6.79 mm, 10.72 mm and 16.94 mm at 30, 45 and 60 DAT). Application of D_4 (35 kg K_2O /acre via SOP) produced the thickest stems (9.38 mm, 15.97 mm and 25.57 mm at 30, 45 and 60 DAT), while D_1 (20 kg K_2O /acre via SOP) recorded the lowest girth (6.80 mm, 11.32 mm and 16.82

mm at 30, 45 and 60 DAT). The interaction V_2D_4 (Arka Bhanu +35 kg K_2O /acre via SOP) recorded the thickest stem girth across all sampling stages (12.06 mm, 18.95 mm and 29.39 mm at 30, 45 and 60 DAT), while V_3D_1 (Pusa Narangi Gaiinda +20 kg K_2O /acre via SOP) recorded the thinnest stems (5.90 mm, 9.75 mm and 13.18 mm at 30, 45 and 60 DAT). Arka Bhanu recorded the maximum stem girth at 30, 45 and 60 DAT, possibly due to its genetic vigour and robust plant architecture. Similar findings were reported by Smita *et al.* (2012) and Sahu (2021) in marigold. D_4 (35 kg K, O acre⁻¹ through SOP) recorded the highest stem girth, as potassium promotes cell expansion and efficient nutrient translocation, while sulphur from SOP supports protein synthesis and structural development, resulting in increased stem girth, supported by Vural *et al.* (2022) in African marigold.

Flowering parameters

Number of days taken for flower bud initiation

Among varieties, V_5 (Tall Yellow) initiated flower buds earliest (33.87 days), which was on par with V_3 (35.26 days), whereas V_2 (Arka Bhanu) required the longest duration (46.92 days). Among potassium levels, D_4 (35 kg K_2O /acre via SOP) recorded significantly fewer days to flower bud initiation (36.44 days) compared to D_1 (20 kg K_2O /acre via SOP) taken 42.71 days. The interaction effect between varieties and SOP levels showed no statistically significant impact on flower bud initiation.

Number of days taken to 50 per cent flowering

Among varieties, V_5 (Tall Yellow) reached 50% flowering earliest (45.72 days), while V_2 (Arka Bhanu) required the longest duration (53.54 days). Among SOP dosages, application of D_4 (35 kg K_2O /acre via SOP) minimized the days to 50% flowering (45.75 days), whereas D_1 (20 kg K_2O /acre via SOP) required 53.71 days. The interaction effect between varieties and SOP levels was not statistically significant.

Days taken from bud initiation to full blooming

Among varieties, V_5 (Tall Yellow) recorded the fastest transition from bud emergence to full bloom (9.63 days), whereas V_2 (Arka Bhanu) required the longest duration (17.16 days). Among potassium levels, D_4 (35 kg K_2O /acre via SOP) significantly reduced the blooming phase (11.24 days) compared to D_1 (20 kg K_2O /acre via SOP) observed as 16.11 days. The interaction V_5D_4 (Tall Yellow+35 kg K_2O /acre via SOP) recorded the fastest bud opening (8.20 days), on par with V_5D_3 (Tall Yellow+30 kg K_2O /acre via SOP) (8.65 days), whereas V_2D_1 (Arka Bhanu+20 kg K_2O /acre via SOP) took the maximum time (20.37 days). A similar trend was reported

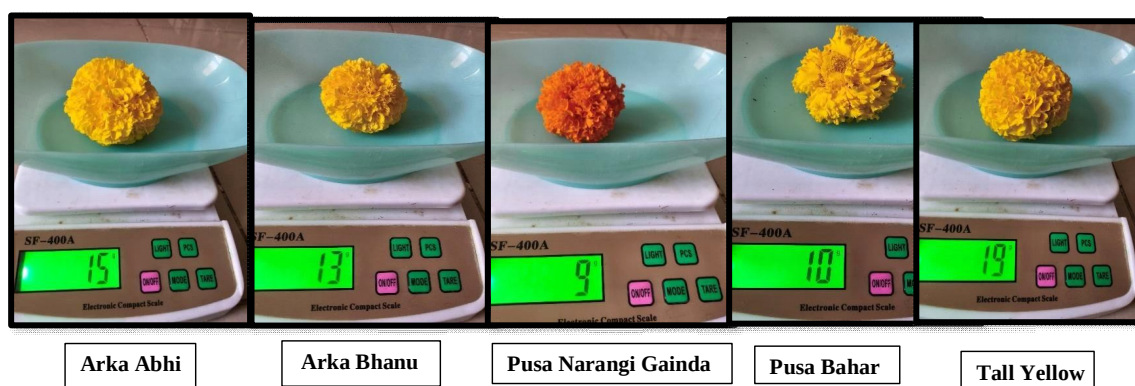


Fig. 1 : Flower weight of different varieties of African marigold (*Tagetes erecta* L.).

by Sarkar and Ghosh (2010), who observed reduced days from bud to flowering with increasing potassium sulphate application in *Tagetes erecta* L.

Fresh weight of flower (g)

Among varieties, V_5 (Tall Yellow) produced the maximum weight of flower (15.02 g), while V_3 (Pusa Narangi Gaiinda) produced the lowest flower mass (9.93 g). Among potassium treatments, D_4 (35 kg K_2O /acre via SOP) increased individual flower weight to 13.81 g, compared to 10.25 g under D_1 (20 kg K_2O /acre via SOP). The interaction V_5D_4 (Tall Yellow + 35 kg K_2O /acre via SOP) achieved the maximum single flower weight (16.75 g), while V_3D_1 (Pusa Narangi Gaiinda + 20 kg K_2O /acre via SOP) showed minimum flower weight (9.00 g). The present findings are consistent with those reported by Kaur and Singh (2022) in marigold.

Tall Yellow recorded the earliest flower bud initiation, 50 per cent flowering, bud-to-bloom period and the highest individual flower fresh weight, which may be attributed to its inherent genetic earliness and efficient floral development. Similar findings were reported by Kaur and Singh (2022) and Priyakumari *et al.* (2018) and D_4 (35 kg K, O/acre through SOP) promoted earlier flowering and higher flower fresh weight, possibly due to improved carbohydrate translocation, water retention and floral development, as reported by Sarkar and Ghosh (2010), Suganya *et al.* (2009) and Vural *et al.* (2022).

Duration of flowering (days)

Among varieties, V_1 (Arka Abhi) exhibited the longest duration of flowering (53.09 days), while V_3 (Pusa Narangi Gaiinda) recorded the shortest span (32.23 days). Among SOP levels, D_4 (35 kg K_2O /acre via SOP) extended the flowering period to 43.54 days on par with D_3 (30 kg K_2O /acre via SOP) at 43.13 days and minimum was in D_1 (20 kg K_2O /acre via SOP) recorded as 39.15 days. The interaction V_1D_4 (Arka Abhi + 35 kg K_2O /acre via SOP) registered the maximum flowering duration

(57.01 days), whereas V_3D_1 (Pusa Narangi Gaiinda + 20 kg K_2O /acre via SOP) recorded the shortest duration (30.89 days), a trend corroborated by Bhat *et al.* (2021) and Sarkar and Ghosh (2010), where optimal potassium sulfate application maximized the total flowering duration in *Tagetes erecta* L.

Number of flowers per plant

Among varieties, V_1 (Arka Abhi) recorded the maximum flowers (75.80), while V_5 (Tall Yellow) recorded the minimum (57.59). Among SOP dosages, D_4 (35 kg K, O/acre) produced the highest flower number (76.10), whereas D_1 (20 kg K_2O /acre) recorded the lowest (59.44). The interaction V_1D_4 recorded the maximum number of flowers (81.50), which was on par with V_2D_4 (79.50) and V_4D_4 (79.00), while V_5D_1 recorded the minimum (49.50). Similar findings reported by Vural *et al.* (2022) in African marigold and El-Gamal (2015) in Calendula and Abd El Gayed and Knany (2020) in Snapdragon.

Arka Abhi recorded the maximum flowering duration and number of flowers per plant, possibly due to its vigorous growth, greater branching and higher photosynthetic capacity. Similar findings were reported by Poornima *et al.* (2024). D_4 (35 kg K_2O /acre through SOP) recorded the highest values, possibly as potassium maintains petal turgidity and enhances assimilate translocation, while sulphur supports protein and antioxidant enzyme synthesis, thereby prolonging flower duration and freshness, as reported by Bhat *et al.* (2021), Sarkar and Ghosh (2010), Suganya *et al.* (2009) and Sanghamitra *et al.* (2015).

Conclusion

The present study indicates that both genotype and potassium fertilizer source play crucial roles in growth and flowering of African marigold under Central Telangana conditions. V_1 (Arka Abhi) recorded superior vegetative growth, flowering duration and number of

flowers per plant, while V₅ (Tall Yellow) recorded earliness in flower bud initiation and maximum flower weight. Application of D₄ (35 kg K₂O/acre via SOP) resulted in maximum vegetative growth and flowering. Overall, V₁D₄ (Arka Abhi + 35 kg K₂O/acre via SOP) was the most promising treatment combination for vegetative growth, flowering duration and number of flowers per plant, whereas V₅D₄ (Tall Yellow +35 kg K₂O/acre via SOP) was superior for earliness and single-flower weight.

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