

MAHATMA PHULE KRISHI VIDYAPEETH
RAHURI 413 722 (MAHARASHTRA)



REPORT
ON

Testing of Movi' K

Sponsored by

Zytex Biotech Pvt. Ltd.
702/B, Polaris. off Marol Maroshi Road,
Behind Sangeet Plaza, Marol
Andheri (East), Mumbai-400059

Reported by

Horticulturist,
AICRP on Arid Zone Fruits,
Department of Horticulture,
MPKV, Rahuri 413722

2016-17

Testing of " Movi' K " on Pomegranate

Title : Testing of " Movi' K " on pomegranate

Objective : Evaluation of Bio-efficacy studies of " Movi K " product on Pomegranate potash (K) uptake, plant growth, fruit quality and yield parameters.

Name of Company : Zytex Biotech Pvt. Ltd.
702/B, Polaris. off Marol Maroshi Road,
Behind Sangeet Plaza, Marol
Andheri (East), Mumbai-400059.

Name of Scientist : Shri A. V. Attar, Sr. Res. Asst.
Dr. V. S. Supe, Horticulturist
Dr. V.R. Joshi, Asst. Horticulturist
Smt. D. D. Patil, Sr. Res. Asst.

Amount received : 90,000/- (Ninety Thousands only)

Details of experiment :

Location : AICRP on Arid Zone Fruits, Department of Horticulture,
Mahatma Phule Krishi Vidyapeeth , Rahuri-413722
Dist. Ahmednagar (M.S.)

Crop : Pomegranate

Variety : Phule Bhagwa Super

Season and year : 2016 (*Ambia bahar*)

Spacing : 4.5 x 3.0 m

Plant unit : 3

Design : Randomized Block Design (RBD)


Number of treatments : Ten (10)

Replications : Three (03)

Start of *bahar* : 20/02/2016 (*Ambe bahar*)

Date of harvesting : 25/08/2016 to 5/10/2016

Application method : Drenching


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Observations recorded:

A) Plant characters

- 1 Plant height (m)
- 2 No. of flowers (Male and Female)

B) Fruit Characters

- 1 Av. weight of fruit (g)
- 2 Fruit length (cm)
- 3 Fruit diameter (cm)
- 4 Fruit set %
- 5 Fruit drop %

C) Yield Characters

- 1 Average number of fruits/plant
- 2 Yield (kg/plant)
- 3 Yield (t/ha)

D) Biochemical analysis

- 1 TSS (%)
- 2 Acidity (%)
- 3 Fruit colour
- 4 Shelf life of fruit

Observations Method

The product "Movi K" in the powder form was applied through drenching in the morning as per protocol given by the company. The recommended dose of GRDF (625:250:250 NPK + 40 kg. FYM) was given commonly to all the treatments. Just after application of RDF, the plants were irrigated through the drip system with four drippers. The periodical observations were taken according to the growth of the plant. The fruit characters were studied at harvest. The biochemical analysis was done after harvest of the crop.



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Results :

The trial was conducted in the year 2016 during the *Ambe bahar* as per protocol supplied by the company. The periodical observations were taken according to the growth of the plant and details are given in the respective tables.

A) Growth parameters

The growth of plants was satisfactory throughout the season. Though the results were non-significant with respect to height of plant, the maximum plant height (2.10 m) was noticed in treatment T-9 [(T₄ + T₅ + T₆) Movi' K + RDF @ 2 kg per acre, drenching to root zone, during bahar, flowering, fruit setting and beginning of ripening time respectively]] followed by T-7 (2.04 m) [(T₁ + T₂ + T₃) Movi' K + RDF @ 1 kg per acre, drenching to root zone, during bahar, flowering, fruit setting and beginning of ripening time, respectively]]. Similarly the maximum number of female flowers were observed in treatment T-9 (161.64 flowers/plant) followed by treatment T-7 (156.10 flowers/plant). Significantly the fruit percentage setting was maximum in T-9 (61.47 %) followed by treatment T-7. As regards to fruit size, the significantly maximum fruit length was observed in treatment T-9 (6.77 cm) followed by treatment T-7 (6.68 cm), however, the results were non significant but the same trend was observed for fruit diameter.

B) Yield parameters

Almost all the parameters studied indicated significant differences among the treatments except plant height and number of male and female flowers per plant. The highest number of fruits per plant were registered by treatment T-9 (92.07) followed by treatment T-7 (88.69), while it was recorded lowest by treatment T-10 (70.39) i.e. control. The average weight of fruit was significantly noticed maximum by treatment T-9 (311.24 g) followed by treatment T-7 (303.86 g) while it was lowest in treatment T-10 (242.88 g). The highest fruit yield was recorded by the treatment T-9 (23.54 kg/plant and 17.51 t/ha) followed by treatment T-7 i.e. (22.33 kg/plant and 16.39 t/ha) while lowest in treatment T-10 (17.36 kg/plant and 12.84 t/ha).



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C) Quality parameters

No any significant differences were observed within the treatment in respect of quality parameters. The maximum total soluble solids was recorded by the treatment T-8 (13.79 %) followed by treatment T-6 (13.76 %) while lower acidity was noticed in treatment T-1 (0.31 %). The excellent saffron colour was seen on fruits of all the treatments.

Conclusion

Application of GRDF (625 : 250 : 250 g NPK +40 kg FYM/plant) along with Movi' K @ 2 kg per acre, 3 times drenching to root zone, during start of bahar, flowering and fruit setting and beginning of fruit ripening time (treatment T-9) recorded maximum % fruit setting (61.47 %), average weight of fruit (311.24 g), highest no. of female flowers (161.64 per plant), maximum no. of fruits per plant (92.07) and yield (23.54) kg/plant and (17.51) t/ha followed by treatment T-7.

Table -1: Fruit, Plant and Yield characters of Pomegranate

Sr. No	Treats	Plant Height (m)	No. of flowers / plant		No. of fruits / plant	fruit set (%)	Av. weight of fruit (g)	Fruit Length (cm)	Fruit diameter (cm)
			Male	Female					
1	T1	1.93	85.77	148.49	83.32	53.11	272.80	6.16	7.24
2	T2	1.84	81.61	148.14	80.32	52.24	263.62	6.17	7.19
3	T3	1.88	84.12	147.99	79.55	49.21	260.78	6.22	7.12
4	T4	1.96	85.80	149.77	79.17	55.02	283.32	6.27	7.30
5	T5	1.94	78.30	152.69	81.52	55.38	284.22	6.43	7.23
6	T6	1.86	75.81	149.06	84.57	53.19	284.71	6.46	7.15
7	T7	2.04	75.95	156.10	88.69	59.73	303.86	6.68	7.31
8	T8	1.97	86.74	153.72	86.65	58.57	294.90	6.48	7.23
9	T9	2.10	80.92	161.64	92.07	61.47	311.24	6.77	7.61
10	T10 (Control)	1.90	77.73	145.43	70.39	48.40	242.88	5.91	7.02
	S.E ±	0.09	6.20	4.47	3.677	1.29	6.42	0.12	0.12
	CD @ 5%	NS	NS	NS	11.07	3.90	19.33	0.360	NS

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Treatment details :

SN	Treats	Treatment Details	Application methods	Application stages	Dose
1	T ₁	Movi' K + RDF	Drenching to root zone	At Bahar treatment	1 kg/Acre
2	T ₂	Movi' K + RDF	Drenching to root zone	At flowering & fruit setting	1 kg/Acre
3	T ₃	Movi' K + RDF	Drenching to root zone	At the beginning of ripening	1 kg/Acre
4	T ₄	Movi' K + RDF	Drenching to root zone	At Bahar treatment	2 kg/Acre
5	T ₅	Movi' K + RDF	Drenching to root zone	At flowering & fruit setting	2 kg/Acre
6	T ₆	Movi' K + RDF	Drenching to root zone	At the beginning of ripening	2 kg/Acre
7	T ₇	T ₁ +T ₂ +T ₃	Drenching to root zone	During bahar, flowering, fruiting and beginning of ripening time.	1 kg/Acre
8	T ₈	T ₁ + T ₂ + T ₃ + (75 % K + 100 % N & P of RDF)	Drenching to root zone	During bahar, flowering, fruiting and beginning of ripening time.	1 kg/Acre
9	T ₉	T ₄ + T ₅ + T ₆	Drenching to root zone	During bahar, flowering, fruiting and beginning of ripening time.	2 kg/Acre
10	T ₁₀	Standard check (with RDF) i.e control	No Drenching	-	-

Application Schedule: Date of drenching & treatments

N	Drenching	Stage of Drenching	Date of Drenching	Treatments included
	I st drenching	During bahar treatment	22/02/2016	T ₁ , T ₄ , T ₇ , T ₈ and T ₉
	II nd drenching	At the time of flowering and fruit setting	31/05/2016	T ₂ , T ₅ , T ₇ , T ₈ and T ₉
	III rd drenching	At the beginning of ripening	15/07/2016	T ₃ , T ₆ , T ₇ , T ₈ and T ₉



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Table -1: Continue.....

Sr. No	Treats	Yield / Plant (kg.)	Yield (t/ha)	TSS (%)	Acidity (%)	Fruit drop (%)	Shelf life (Days)	Drought	color
1	T1	20.51	15.33	13.68	0.31	8.55	4.53	Not observed	Saffron
2	T2	19.33	14.18	13.65	0.32	7.15	3.81	Not observed	Saffron
3	T3	18.65	13.86	13.67	0.33	6.32	4.37	Not observed	Saffron
4	T4	20.48	15.11	13.69	0.33	7.36	4.73	Not observed	Saffron
5	T5	21.37	15.66	13.74	0.32	7.80	4.86	Not observed	Saffron
6	T6	20.10	14.85	13.76	0.32	6.63	4.59	Not observed	Saffron
7	T7	22.33	16.39	13.63	0.34	9.25	4.75	Not observed	Saffron
8	T8	21.48	15.77	13.79	0.32	6.33	4.81	Not observed	Saffron
9	T9	23.54	17.51	13.67	0.33	6.32	5.05	Not observed	Saffron
10	T10 (Control)	17.36	12.84	13.74	0.32	7.16	4.10	Not observed	Saffron
	S.E ±	0.61	0.43	0.03	0.005	1.13	0.25	-	-
	CD@5%	1.85	1.28	0.09	NS	NS	NS	-	-

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