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Extended Abstract

Effect of Arka Mango Special on inflorescence, fruit setting and fruit quality of mango

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Abstract:

India is the largest producer of mango in the world. But it was observed that mango farmers facing several problems on mango production due to low inflorescence development, fruit setting and fruit quality of mango. An experimental trial was conducted on "Effect of Arka Mango Special application on inflorescence development, fruit setting and fruit quality of mango". It was observed from the experiment that Arka Mango Special gives more yields, high benefit cost ratio and better fruit quality in terms of fruit appearance, fruit keeping quality and taste.

Introduction:

India is the largest producer of mango in the world, contributing to nearly 46% of the total world production, but West Bengal accounts for 4.1% of the total production of Mango in the country. The production of mangoes in the State is expected to be high because of mango has an great export market and poses bright opportunities for export in the national and international market whether in fresh or processed forms (Mitra, 2016). Malda is famous for mango and its production is one of the major economic activities in the district. Mango orchards in the district cover about 30,000 ha land. It provides employment to a large numbers of people and helps rejuvenate the district economy through generation of crores of rupees in main and subsidiary activities.

The varieties like Fazli, Langra, Himsagar, Laxmanbhog, Gopalbhog, Bambai, Krishanbhog, Zardalu, Ashwina, Amrapali, Malika etc. are commercially cultivated. About 250 varieties of mango are found in the district. Though Malda was the highest producer of Mango with largest area but the percent exported is the lowest. The reasons are many like low flowering and fruit setting, residual pesticide effect, low post harvest life, alternate bearing, some physiological disorders like spongy tissue, soft nose also becoming problems which affect the production and export. The deficiency of micronutrients has also become a major problem in the Malda district. However, very few farmers use micronutrient and fertilizers. Balanced nutrition is very important for high yield, quality and resistance to diseases. Since, the last few year production of mangoes have been significantly increased even in the "Off Year" due to heavy application of growth retardant hormone like placlobutrazol, without apply of proper nutrients both major and minor to the plants. But this chemical is hampering the growth and development of the plants. Unavailability of nutrients causes low inflorescence development leading to less fruit setting and declining quality fruit in Malda District. The proper nutrition management can solve many of the problems to increase production and export (Syamal and Mishra, 1989). Hence foliar spray comprising secondary and micronutrients viz., Magnesium, Sulphur, Zinc, Boron, Iron, Copper, Manganese and Molybdenum is important (Singh and Maurya 2003; Singh and Maurya 2004; Bariya et al. 2014). ICAR-Indian Institute of Horticultural Research has developed and released a crop specific foliar nutrition formulation known as 'Arka Mango Special' to correct micronutrient deficiency in mango. It contains various micro and secondary nutrients, viz., Zn, B, Fe, Cu, Mo, Mg and S. For the above problems, Malda KVK was conducted an On Farm Trial on "Effect of Arka Mango Special application on inflorescence development , fruit setting and fruit quality of mango" for more flower bud breaking, inflorescence development, fruit setting and fruit quality in terms of fruit appearance, fruit keeping quality and taste.

Methodology:

The trial was conducted from 2016 to 2019. There were two technology option i.e. Technology observation 1: Micro nutrient Grade V:@2g/lit (Twice Before flowering & twice after flowering) Technology observation 2: Arka Mango Special - 4 times application (twice before flowering & twice after flowering) @ 5g/L, and another farmers practice (No Foliar nutrient application).

Results and Discussion:

Treatment	Yield (t/ha)	Fruit weight	Fruit length(cm)	Fruit diameter(cm)	Self life(days)	Pulp stone ratio	Benefit :cost
Micro nutrient Grade V	6.05	230.6	10.8	25.6	11	4.23	1.98
Arka Mango Special	7.68	278.2	12.9	28.2	14	4.47	3.84
Control	3.25	195.2	9.5	22.1	9	3.52	1.45

It was shown that application of Arka Mango Special (4 times as foliar nutrient application-Twice Before Flowering & Twice After Flowering) gave best result with highest yield (7.68 t/ha), highest BC ratio (3.84). Arka Mango Special contains most of the micronutrients such as Zn, B, Fe, Cu, Mn, Mo and secondary nutrients such as Ca, Mg, S and K. It enhances fruit quality in terms of fruit appearance, fruit keeping quality and taste. The experimental trial was is in line with the experiment reported by Deepa et al. (2018).

Figure1

Figure2

Conclusion:

It may conclude from the study that Arka Mango Special gives more yield and better fruit quality in terms of fruit appearance, fruit keeping quality and taste. But there is need to large scale demonstration for to know its effectiveness in different agro climatic and soil conditions.

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