

Research Article

MICRONUTRIENT PRODUCTS USEFUL FOR SERICULTURISTS

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ABSTRACT

It is well established that synthetic chemicals, Pesticides, fertilizer, herbicides and Growth Promoters and other inputs enhance productivity, but adversely affect the ecosystem and increase prices of agriculture productivity. For all plants Zinc, iron, Manganese, Molybdenum, Boron, Magnesium and Sulphur are as important as the major Nutrients as nitrogen, phosphorus and potassium (NPK). These elements are required in traces amount. Plants can efficiently absorb trace elements through foliar application, which is more economical than soil application. Earlier work on micronutrients support this point of view. However, most of the work which is earlier done has been with single micronutrients applied in different dosages. But combination of different micronutrients in balanced proportion becomes a problem. Recent chemical advances have provided micronutrients products which contain all essential micronutrients in balanced proportion and which can be economical and convenient in application for private rears and Sericulturists. This paper to increase foliar production of plants and increase the growth rate of plant.

Keywords: *Tracel-4 Micronutrient Products, Foliar Spray, Convenient and Sericulturists*

INTRODUCTION

It is a well acknowledged fact that foliar nutrients provide instant nourishment to the plants which not only enhance the growth rate of plants but also boost their productivity as synthetic chemicals, Pesticides, fertilizer, herbicides, Growth Promoters and other inputs which enhance the plant productivity, but adversely affect the ecosystem and increase prices of agriculture productivity. Zinc, Iron, Manganese, Molybdenum, Boron, Magnesium and Sulphur are as important nutrients as the major nutrient Nitrogen, phosphorus and potassium (NPK).

These elements are required in traces amount (Chikkaswamy *et al.*, 2006). Plants can efficiently absorb trace elements through foliar application which is more economical than soil application (Dutta *et al.*, 2006). However, most of the earlier work has been done with single micronutrients applied in different dosages (Singh, 1997), but combination of different micronutrients in balanced proportion becomes a problem. It is a well acknowledged fact that foliar nutrients provide instant nourishment to the plants which not only enhance the growth rate of plants but also boost their productivity.

Recent chemical has provided micronutrient products which contain all essential micronutrients in balanced proportion and which can be economical and convenient in application for private rearers and sericulturists (Chikkaswami *et al.*, 2006).

Tracel – 2 is a judicious blend of these trace elements suitable for foliage (Spray) application in a soluble crystalline form. Report on mulberry leaf yield and quality also indicates adequate application of micronutrients products rather than individual application of each micronutrients of their combination (Chikkaswami *et al.*, 2006) thus present study was undertaken in order to find out suitable dosages of these micronutrients products which ultimately affect the silkworm development, cocoon yield and also cocoon characters of silk worm.

MATERIALS AND METHODS

Field experiments were conducted at Regional Sericultural Research Station, Sujapur Distt. Pathankot. The experiments consisted of four treatments including control (water Sprayed) (Syed, 2015). Tracel -2 was sprayed thoroughly in different concentrations of 1000 ppm, 1500ppm, and 2000ppm while as a control squares of plots were sprayed with plains water for comparison (Rajat *et al.*, 2006). The experiment was conducted in simple randomized block design at Sujapur Distt. Pathankot. The spray was done after the establishment year of plantation of each purring i.e. three times. The leaves were

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picked and fed as per the age of silkworm. Rearing was done with a bivoltine race (NB4 D2) (Rajat *et al.*, 2006). The rearing was conducted in five replications for each treatment.

RESULTS AND DISCUSSION

In below given table, data clearly indicate that different dosages of micronutrient show superiority over controls experiment. It is shown by the data that larval development in mature larval weight was maximum in 1500 ppm of tracel-2 followed by 1000 ppm then by 2000 ppm (Sinha *et al.*, 1992).

Table 1: Rearing Performance and Cocoon Assessment of Nb4 D2 (Bomby x Mori L.) Under Different Concentration of Micronutrient Tracel -2, Sprayed on Foliage

Treatments (%)	weight of filament length Larve n=5	ERR	Weight of cocoon mature (g)		wt. of shell (g)		silk ratio (gm) Male
			(mtr) N=5		N=5		
			Male	Female	Male	Female	
CONTROL 16.18	10.10 763.87	70	4.50	5.50	0.98	0.89	21.11
PLAIN WATER SPRAY							
1000ppm TRACEL-2 17.84	10.74 791.32	80	4.90	5.10	0.94	0.91	19.18
1500ppm TRACEL-2 17.80	11.42 899.95	90	5.02	5.56	0.95	0.99	18.92
2000ppm TRACEL-2 17.09	10.47 704.25	80	4.95	5.50	0.85	0.94	17.17

It is clear that all the treatments of Tracel-2 gave better results in comparison to standard one. However, the cocoon weight did not show much variation in comparison to standard but 1500 and 2000 ppm gave slightly higher weights (Singhvi *et al.*, 1997).

The cocoon yield was found to be more in all treatments with maximum ERR of 90% in 1500 ppm. The percent silk as well as filament length reeled out from cocoons of different treatment showed marked differences (Teotia *et al.*, 1992). The length in mtrs was also higher in all the treatments with maximum 899.95 mtrs in 1500 ppm. The denier and reliability (%) were also much better in treated series. It can be concluded from the above study that the application of such micronutrient products will be improve the cocoon yield and quality (Chikkaswamy *et al.*, 1998). Thus such micronutrient products available in the market may be recommended for commercial use of rearers as these chemicals are cheaper, convenient in use and contain the micronutrients in right proportions (Patil *et al.*, 2009).

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