



## ಕರ್ನಾಟಕ ರಾಜ್ಯ ರೇಷ್ಮೆ ಸಂಶೋಧನೆ ಮತ್ತು ಅಭಿವೃದ್ಧಿ ಸಂಸ್ಥೆ

ತಲಘಟ್ಟಪುರ, ಕನಕಪುರ ರಸ್ತೆ  
ಬೆಂಗಳೂರು - 560 062.

ಸಂ:ಕರಾರೇಸಂಅಸಂ/ವಿತ/ಎನ್‌ಪಿಟಿ/2011-12

ದಿನಾಂಕ: 20.03.2012

ಗೆ:

ಮೆ: ನ್ಯೂಆಲ್ಫಿ ನ್ಯಾನೋಬಯೋಟೆಕ್,  
# 651, 11ನೇ ಮುಖ್ಯ ರಸ್ತೆ,  
5ನೇ ಬ್ಲಾಕ್, ಜಯನಗರ,  
ಬೆಂಗಳೂರು-560 041.

ಮಾನ್ಯರೆ,


ವಿಷಯ: "ನ್ಯೂಆಲ್ಫಿ" ಎಲೆ ಸಿಂಪರಕದ ಮೌಲ್ಯ ಮಾಪನ -ಕುರಿತು.

ಉಲ್ಲೇಖ: ನಿಮ್ಮ ಪತ್ರದ ದಿನಾಂಕ: 17.06.2010.

★★★★★

ಮೇಲಿನ ವಿಷಯ ಹಾಗೂ ಉಲ್ಲೇಖಿತ ಪತ್ರದ ಕೋರಿಕೆ ಮೇರೆಗೆ, "ನ್ಯೂಆಲ್ಫಿ" ಎಂಬ ಎಲೆ ಸಿಂಪರಕದ ಮೌಲ್ಯಮಾಪನವನ್ನು ಸಂಸ್ಥೆಯಲ್ಲಿ ಕೈಗೊಂಡಿದ್ದು, ಈ ಕಾರ್ಯವು ಪೂರ್ಣಗೊಂಡಿರುತ್ತದೆ. ತತ್ಸಂಬಂಧಿತ ವರದಿ ಹಾಗೂ ದೃಢೀಕರಣವನ್ನು ಈ ಪತ್ರಕ್ಕೆ ಅಡಕಗೊಳಿಸಿ, ಕಟುಹಿಸಿಕೊಡಲಾಗಿದೆ.

ವಿಶ್ವಾಸಗತಿಯೊಡನೆ,


  
ಕುಲಸಚಿವರು.  
20/3/12

# Effect of NUALGI- a foliar nutrient on yield and quality of V1 mulberry variety.

---

## INTRODUCTION:

Foliar Fertilizers are fertilizers that are applied to foliage to boost nutrient density in crops and to correct nutrient deficiencies. The main benefits of foliar spraying are that it can enhance the nutrient up take up to 90% as compared to soil applications/soil amendments (10% nutrient uptake efficiency). Soil amendments may take several days to take affect and the nutrients may be tied up with other elements under adverse soil conditions. During the active growth stages, (20-25 days growth stage after pruning/leaf harvest), leaves show a particularly high efficacy for absorbing nutrients. Keeping in view, this project was undertaken to study the efficiency/ effect of NUALGI foliar spray formulations on mulberry leaf quality and productivity. **NUALGI** is a multinutrient foliar formulation and it is a plant growth *nutrient* in the nano form. All micronutrients required for plant growth are available in NUALGI and they are chemically and biologically stable in water. The Nualgi dispersed in water with very fine particles of the size estimated to be 2 to 50 nanometers and it contains P, Ca, Mg, Fe, Mn, Zn, Cu, B, S, Co, Mo, Si etc in a balanced form. When Nualgi is sprayed on mulberry leaves, the micronutrients in the nano form are easily absorbed by the mulberry leaves and it help for enhance the leaf quality and productivity. Even for general crops where deficiency are not detected it also helps to increase the leaf yield and quality. The main aim of applying foliar nutrients to mulberry plants is to enhance essential nutrients and biochemical content in a readily available form.


  
7/3/2012  
Dr. CHALUVACHARI, M.Sc., Ph.D.  
Head, Mulberry Physiology Section  
KARNATAKA STATE SERICULTURE RESEARCH AND  
DEVELOPMENT INSTITUTE  
Thalaghattapura, Bangalore-560 062.

## METHODOLOGY:

- ✓ Well established two year old V1 mulberry plantations (20 guntas) with 4'x4' spacing were taken for conducting this experiment.
- ✓ The gardens were maintained uniformly in a single batch at the institute campus (Bangalore -12 degree 10'N latitude and 77 degree 31' E longitude at an altitude of 839 meter above MSL) with irrigated mulberry package of practices.
- ✓ Two treatment (Control- only water spray and Nualgi foliar spray) with nine replications).
- ✓ 500 ml of nualgi dissolved in 250 liters of water and sprayed for 1 acre mulberry gardens (2ml/liter )
- ✓ Two sprays were given (1<sup>st</sup> spray given 20-25 days after pruning and 2<sup>nd</sup> spray were given 8-10 days after 1<sup>st</sup> spray).
- ✓ Growth and leaf yield data were recorded for three harvests.
- ✓ Leaf samples collected from control and NUALGI sprayed batches and analyzed for important leaf quality parameters for three crops.
- ✓ Toxicity test for silkworm were also conducted by feeding Nualgi sprayed mulberry leaves and fed to 3<sup>rd</sup> instar silkworm larvae up to spinning.
- ✓ Field trails also conducted at Shidlaghatta and Kengeri TSC area.

## RESULTS:

The pooled data of three crops revealed that, Nualgi sprayed plants recorded significantly higher values of plant height (160.6 cm), leaf yield (984.2 g/plant), Sugar (13.04%), Protein(25.43%) and Nitrogen (4.07%) content compared to

  
Dr. CHALDVACHARI, M.Sc., Ph.D.  
Head, Mulberry Physiology Section  
KARNATAKA STATE SERICULTURE RESEARCH AND  
DEVELOPMENT INSTITUTE  
Thalaghattapura, Bangalore-560 062.

control plants, which recorded significantly lower values of plant height of (151.82 cm), leaf yield (811.0 g/plant), Sugar (11.90%), Protein(23.99%) and Nitrogen (3.84%) contents. Rearing trails revealed no toxic effect on silkworms. Field trails conducted at Shidlaghatta and Kengeri TSC area revealed visual improvement with respect to growth and leaf yield with Nualgi treatment.


**Table-1: Effect of NUALGI- a foliar nutrient on yield and quality of V1 mulberry variety.**

Treatment	Height of plant (cm)	Leaf yield/plant (g)	Moisture (%)	Total chlorophyll (mg/g)	Sugar (%)	Protein (%)	Nitrogen (%)
Control	152.00	811.30	71.54	3.19	11.49	24.09	3.81
Nualgi	160.63	1018.78	71.40	3.41	13.21	25.45	4.07
F-test	HS	HS	NS	NS	S	S	HS
CD@ 5%	4.29	51.36	----	-----	0.98	0.81	0.12
CD@1%	6.25	106.65	-----	-----	---	----	0.21

**Note:** HS= Highly Significant; S= Significant; NS= Non Significant.

### CONCLUSION:

The nualgi sprayed plants recorded significant improvement over control with respect to plant height (5.4%), leaf yield/plant (17.59%), Chlorophyll (11.79%), Sugar (8.74%), Protein (5.66%) and Nitrogen (5.65%) content and also had no toxic effect on silkworms.

  
 7/3/2012  
**Dr. CHALUVACHARI, M.Sc., Ph.D.**  
 Head, Mulberry Physiology Section  
 KARNATAKA STATE SERICULTURE RESEARCH AND  
 DEVELOPMENT INSTITUTE  
 Thalaghattapura, Bangalore-560 062.

## **COST BENEFIT RATIO:**

Nualgi foliar nutrient solution required for one acre mulberry garden/year (two sprays/crop): 5 liter for five crops.

Cost of five liter Nualgi (Rs. 250/500 ml) Rs. 2500-00

Labour cost for Spraying (for 10 man days at Rs.200/MD): Rs. 2000-00

---

**Total cost: Rs. 4500-00**

---

Additional leaf yield after Nualgi spray /acre/year @ 10%improvement: 1500 kg

Additional brushing for 1500 kg leaf: 150 dfls


Addotional cocoon yield (@ 60kg/100 dfls): 90 kg

Total cocoon cost for 90 kg.  
(average cocoon rate/kg @ Rs 150/kg): Rs. 13,500-00

---

**Cost benefit ratio: 1:3**

---

  
7/2/2012

**Dr. CHALUVACHARI**, M.Sc., Ph.D.  
Head, Mulberry Physiology Section  
KARNATAKA STATE SERICULTURE RESEARCH AND  
DEVELOPMENT INSTITUTE  
Thalaghattapura, Bangalore-560 062.