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BEHAVIOUR OF RED ROOMY GRAPEVINES TO APPLICATION OF SOME ORGANIC AND BIOSTIMULANTS AS A PARTIAL ALTERNATIVE TO MINERAL N FERTILIZER

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ABSTRACT

During 2014 and 2015 seasons, five organic and biofertilizer alternatives namely compost tea, humic acid, algae extract, Minia Azotene and effective microorganisms (EM) were applied as partial replacement of inorganic N fertilizer in Red Roomy vineyard under Minia region conditions. The merit was examining the effect of these organic and biofertilizer means as partial substitutes of inorganic N on vine nutritional, yield and berries quality.

Reducing percentages of inorganic N from 100 to 60% and at the same time increasing levels of plant compost, humic acid and EM from 0.0 to 50 ml/vine; Minia Azotene from 0.0 to 32 ml/vine and Algae extract from 0.0 to 4% caused a gradual promotion on main shoot length, leaf area, chlorophylls a & b, berry setting%, yield and cluster weight. There was a gradual stimulation on N, P, K, Mg and both physical and chemical characteristics with reducing percentages of inorganic N from 100 to 40% and increasing levels of plant compost tea, humic acid and EM from 0.0 to 75 ml/vine, Minia Azotene from 0.0 to 48 ml/vine and Algae extract from 0.0 to 0.6%. The best replacement for mineral N fertilizer were compost tea, humic acid, algae extract, Minia Azotene and EM, in ascending order.

For promoting yield of Red Roomy grapevines grown under Minia region conditions, it is suggested to use N as 60% inorganic N + 50 ml EM/vine. Fertilizing the vines with N as 40% inorganic N + 75 ml EM gave favourable effects on fruit quality.

Key words: Algae extract, Compost tea, EM, Humic acid, Minia Azotene,Organic and biofertilization,Red Roomy grapes.