

# The Effect of EM1 on Banana, Mango and Grapes

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**Abstract :** In Egypt, excellent results were obtained using EM with banana c.v. Grand Nain from in-vitro, mango and grapes during the nursery period. The experiment was conducted to investigate the EM effect, rate, and method of application. Statistically significant differences were found between the mean increase in different banana plant parameters at 5%. Using EM as weekly plant and soil application (EMPS), EM compost as monthly soil application (EMC), plus reducing the tested rate of chemical fertilizers (TRCF) to 50%, generally gave the most vigorous plants. In general, treating the plants with (EMPS) plus 60gr/plant (EMC) surpassed all the treatments. While using (EMPS) plus 80gr/plant (EMC) have significantly shown less influence on increasing the plant vigor. A similar trend was observed concerning plant leaf number and leaf area. EM has a pronounced effect on the root function. EM improved roots CEC significantly. The influence of EM was significantly pronounced on shoot and root dry weight. The largest dry weights for shoots and roots were obtained when EM was used in combination with 50% of (TRCF). On the other hand, using EM plus (TRCF) gave less dry weights. Moreover, EM improved soil chemical properties (EC, OC, OM, TN, TP and CEC) and differences among the treatments were clearly observed. EM suppressed percentages of *Fusarium oxysporum*. Therefore, EM improved banana growth, shortened the nursery period and maintained healthy plants.

Mango grafted variety (Indian) which was planted in plastic bags (25 x 25 cms) in culture composed of sand, peatmoss and fermented organic fertilizer at the rate of 1:1:1, was subjected to the following treatments: 1-With EM1 0.1% as a soil application once a week (EMS); 2-With EM1 0.1% as weekly foliar application (EMP); 3-With EM-Bokashi as a soil application at the rate of 1gm/bag monthly (EMB); 4-This includes the above mentioned three applications together; namely, (EMS), (EMP) and (EMB); 5-Control treatment without EM.

It is to be noted that the ordinary inorganic fertilizer was added to all these treatments. The results showed that treating mango seedlings with EM as (EMS) and (EMP), in addition to (EMB), surpassed the rest of the treatments with respect to the strength of seedling growth. The average increase in seedling heights and the number of leaves was observed in treatment No.4. Also, a clear vigor was noticed on the length, number and the branching of the roots as compared with other treatments and the control. This vigor in the growth of the seedlings treated with EM1 might be attributed to the increased sources of nutrients available of EM1 Bokashi, plus the increased up-take capability of the root system on absorbing the available elements.

EM1 was also experimented in the nursery on grape - cuttings planted in plastic bags in a culture made of sand, peat-moss and organic fertilizers at the rate of 1:1:1. The results assure that EM1 plus Bokashi organic fertilizer have a significant effective impact on the success of grape-cuttings, concerning the growth, speed and strength of the seedling.

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