SUMMARY AND CONCLUSION

5. SUMMARY AND CONCLUSION

This study was conducted during the two successive seasons of 2003 and 2004 at Maryut Research Station, Desert Research Center as a trial to study the effect of different organic manure either sources (cattle, poultry and cammel) or application methods (surface and trench), and nitrogen biofertilization (nitrobein and rhizobacterein bacteria) on vegetative growth, leaf mineral contents, yield and fruit quality of pomegranate trees. Seventy-two healthy pomegranate trees with seven-year-old and nearly similar in growth vigor planted at 5x5 m apart in calcareous soil were devoted for this investigation. These selected pomegranate trees received regularly the same horticultural practices except those under study.

The obtained results could be summarized as follows:-

Effect of organic manure sources, application methods and biofertilization:

1- Control treatment surpassed other treatments of different organic manures under study in increasing shoot growth rate, leaf area, canopy circumference, trunk circumference, tree height, leaf dry weight and number of leaves. Besides the control treatment was more effective in increasing leaf N, P, K, Mg, Na and Zn contents, as well as increasing yield and physical or chemical properties of fruits.

2- Poultry manure surpassed other organic manure treatments in improving all measurements under this study.

3- Cammel manure gave the least values compared with the other organic manures under study.

4- Trench application method improved all vegetative growth parameters, leaf mineral content qand yield and fruit quality.

5- Inoculation with nitrobein (nitrogen biofertilization) improved and increased vegetative growth, i.e. tree height, leaf area, shoot growth rate, canopy circumference, trunck circumference, leaf dry weight, number of leaves and leaf chlorophyll content. It also increased leaf mineral content and yield and physical and chemical properties of fruits.

6- Interactions:

a- Poultry manure surpassed others of organic manures under study in increasing shoot growth rate, leaf area, canopy circumference, tree height and leaf dry weight and improved number of leaves and leaf chlorophyll content and leaf mineral content in addition yield and fruit quality.

b- Trench application method surpassed surface application method in increasing all vegetative growth, leaf mineral content and yield and fruit quality.

c- Nitrobein (nitrogen biofertilization) surpassed control in increasing the values of all vegetative growth parameters, leaf mineral content and yield and fruit quality.

d- Trench application method with control treatment of organic manure sources increased shoot growth rate, leaf area, canopy circumference, trunck circumference, tree height, leaf dry weight and leaf N, P, K, Ca and Mg contents and yield, physical and chemical properties of fruit quality than the other treatment under study.

e- The nitrobein bacteria in combination with organic manure control induced an increase in shoot growth rate, leaf area, canopy circumference, trunk circumference, tree height, leaf dry weight, number of leaves and leaf chlorophyll, yield and fruit quality.

f- Cattle organic manure with nitrobein increased leaf N content than other treatments. Leaf calcium content increased with cattle manure with nitrobein bacteria.

g- The trench application method in combination with nitrobein (biofertilizer) increased shoot growth rate, leaf area, canopy circumference, trunk circumference, tree height, leaf dry weight, number of leaves and leaf chlorophyll, leaf N content and improve fruit quality (physical or chemical properties) than the other treatments under the interaction.