Pomegranate production under bioand organic fertilization system

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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.Summary and Conclusion 1454-Trench application method improved all vege ative growth parameters, leaf mineral content qand yield and f it quality.5-Inoculation with nitrobein (nitrogen biofertilization) improved and increased vegetative growth, i.e. tree height, 1 of area, shoot growth rate, canopy circumference, trunck circu ference, 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 study in increasing shoot growth rate, leaf circumference, tree height and leaf dry weight number of leaves and leaf chlorophyll con mineral content in addition yield and fruit qualib-Trench application method surpassed surfac method in increasing all vegetative growth, content and yield and fruit quality.c-Nitrobein (nitrogen biofertilization) surpasse increasing the values of all vegetative growt leaf mineral content and yield and fruit quality.d-Trench application method with control treat= manure sources increased shoot growth rat canopy circumference, trunck circumference, leaf dry weight and leaf N, P, K, Ca and Mg yield, physical and chemical properties of fruit the other treatment under study.anures under area, canopy nd improved nt and leafapplication leaf mineralcontrol in parameters,t of organic leaf area, tree height, ontents and quality thane-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.