

EFFECT OF DIFFERENT ORGANIC FERTILIZERS ON GROWTH AND FRUITING OF PLUM TREES "JAPANESE AND DORADO CVS."

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ABSTRACT

This study was performed under El-Kanater, Qalyoubia Governorate conditions during the two successive seasons of 2005 and 2006 to compare the effect of four types of organic fertilizers (cattle, sheep, rabbit and horses manures) on the vegetative growth, yield and fruit quality of plum trees (Japanese and Dorado cvs.).

The four studied manures increased shoot diameter and leaf area as compared to the control (traditional fertilization). All types of manures increased fruit weight and size as compared with the control fertilizers. Rabbit manure gave the highest fruit number, yield/tree and yield/Feddan as compared with the control or the other manure fertilizers. All used manures increased leaf nitrogen, phosphorus and potassium contents as compared to the control.

INTRODUCTION

The plum (*Prunus salicina*) tree related to Japanese group and Rosaceae family. The plum trees area in Egypt decreased from 8155 faddens in 1993 to 3118 feddans in 2006 as a result of tree decline and unfruitfulness. This misuse of chemical fertilizers resulted in the disturbance of natural biological balance in the soil. It is well known that organic manure fertilizers are the best alternatives for chemical fertilizers. Organic manures are composed mainly of wastes and residues from plant and animal life. They contain much carbon and relatively small percentages of plant foods usually that come from plants that fix the carbon (Marangoni *et al.*, 2004). Organic manures have many advantages as: (a) they supply some nutrients for plants and the carbon containing compounds are food for small animals and microorganisms, (b) they often improve the structure of soil; they may do this directly through their action as bulky diluvium in compacted soils or indirectly when the waste products of animals or microorganisms cement soil particles together, (c) these structural improvements due to organic manure increase the amount of available water

to crops that soil can hold, (d) they also improve aeration and drainage and encourage good root growth by providing enough pores of the right sizes and preventing the soil from becoming too rigid when dry or completely over logged and devoid of air when wet, (e) reduce the quantity of recommended inorganic fertilizers and (f) they are cheaper than chemical fertilization (Rathi and Bist, 2004 and Shaddad *et al.*, 2005). There are several sources of organic manure, but the most used everywhere are cattle, poultry, rabbit and sheep manures for that several investigations has been done. Many researchers studied the effect of some organic manure fertilizers treatments on increasing productivity and improving fruit quality Sekiya *et al.*, 1983 on Satsuma mandarin, Gasanov, 1984 on persimmon, Kalu-Singh *et al.*, 1984 on mango; Darfeld and Lenz 1985, on pear); Villasurda and Baluyut 1990, on guava; Rabeh *et al.*, 1993, on Balady mandarin; Li *et al.*, 1998 on pot cultured apple; El-Kobbia 1999 on Washington navel orange; Marangoni *et al.*, 2004 on stone fruits and Rathi and Bist, 2004 on pear).