

Morsi, M. E. (2009). Response of date palm "Seewy cv." grown in new reclaimed land to organic and inorganic nitrogen sources. Fayoum J. Agric. Res. & Dev., Vol. 33, No.(1): 160-172.

RESPONSE OF DATE PALM "Seewy cv." GROWN IN NEW RECLAIMED LAND TO ORGANIC AND INORGANIC NITROGEN SOURCES

Morsi, M. E.

Dept. of Horticulture, Fac. of Agric., Fayoum Univ., Egypt.

ABSTRACT :

This investigation was carried out during 2006/2007 and 2007/2008 seasons to study the effects of organic fertilization either alone or combined with inorganic nitrogen fertilizer on growth, fruit set %, fruit characters, yield and leaf mineral content of date palm "Seewy cv." grown in sandy loamy soil. Organic manure was applied at 0.0, 25, 50, 75 and 100% of the recommended dose of nitrogen fertilization (1300g/ palm/year) combined with inorganic nitrogen (ammonium nitrate 33.5% N) at 100, 75, 50, 25 and 0.0%, respectively.

The obtained results showed that application of organic nitrogen alone or combined with inorganic nitrogen significantly increased pinnae area and leaf area but decreased leaf length and new leaf number per palm. Organic nitrogen increased fruit set percentage in the second season. Bunch number, bunch weight and yield per palm increased with increasing organic nitrogen level from 50% to 100% of whole nitrogen dose/palm. Organic manure increased fruit weight, fruit size, dry matter percentage, total sugars, reducing sugars and total soluble solids. Total acidity and tannis were decreased by application of organic nitrogen. Results also revealed that organic manure increased N, P, K, Mg, Ca, Fe, Zn and Mn in pinnae content.

Finally, it is concluded that replacing 75% of nitrogen requirements for Seewy date palms grown in sandy loamy soil by organic manure added once at winter season was very useful in improving growth nutritional status of palms. In addition, this treatments gave high yield with good fruit quality as well as minimize the production cost and environment pollution which occurred by chemical fertilizers.

Key word : organic fertilization - inorganic fertilization – growth - fruit set- yield and fruit quality - date palms - sandy soil