



Application of Organic Fertilisers in Orange Orchard in Southern Italy

(1) F. Intrigliolo, M. Allegra, B. Torrìsi

(2) S. Canali, E. Di Bartolomeo

(1) Istituto sperimentale per l'agrumicoltura, Acireale (CT), ITALY, (2) Istituto sperimentale per la nutrizione delle piante, Roma, ITALY, (email@intrigliolo.isa@mail.gte.it / Phone: 0957653106/137)

Intensive citrus cultivation in Southern Italy has typically been carried out in very specialised farms, where on-farm organic residues (i.e. animal wastes) have not been available for soil fertilization and amendment. Consequently, crop nutrition has been carried out mainly with mineral/synthetic fertilizers.

On the other hand, it is thought that the use of high quality composts obtained from organic wastes of different origin (i.e. agro-industry, intensive livestock, municipal solid wastes) and organic fertilizers could represent an effective alternative strategy to guarantee an adequate input of nutritive elements for plants and organic matter for the soil.

To verify this hypothesis, a six-year study was carried out to compare the effect of application of composts obtained from organic by-products derived from the industrial processing of citrus fruits (pastazzo), poultry manure and mineral/synthetic fertilizers, on soil fertility, trees nutritional status, yield and fruit quality in a orange [*Citrus sinensis* (L.) Osbeck, cv. 'Valencia late'], grafted on *C. aurantium* (L.) orchard cultivated on sandy loam soil, located in Eastern Sicily.

Results showed that the long term application of organic fertilizers determined: i) high yields, similar to those obtained with the application of mineral/synthetic fertilizers; ii) better fruit quality characteristics; iii) increased soil potential fertility; iv) lower concentration of soil mineral N over the considered period and a lower potential for nitrates losses risks.

In a second trial the compost was used in ornamental citrus plant, for partial substitution of wood soil and peat as growing media. In this study 'Lunario' lemon [*Citrus limon* (L.) Burm f.] seedlings grafted on *Citrus macrophylla* (Wester) cultivated in 6,5 litre pots were utilised and in the two-year period 2002-2003 of the trial, the canopy volume, fruit number per plant, SPAD values, leaf macro and micro-elements content and the diameter of the rootstock were recorded. The results obtained ts highlighted that the compost from pastazzo may potentially substitute a number of components of the traditional growing media, guaranteeing a good morphological development of the plant and a lower weight of the final product for the market.