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Effect of the time of application of phosphorus fertilizer on yield and quality parameters of melon crop amended with winery waste compost.

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In Spain, drip irrigation systems are widely used for horticultural crop production. In drip irrigation systems, emitter clogging has been identified as one of the most important concerns. Clogging is closely related to the quality of the irrigation water and the structure of the emitter flow path, and occurs as a result of multiple physical, biological and chemical factors. So, the use of acid fertilizers (e.g. phosphoric acid) in these systems is common to avoid the emitter clogging. Moreover, in this country the use of exhausted grape marc compost as source of nutrients and organic matter has been identified as a good management option of soil fertility, especially in grape-growing areas with a large generation of wastes from the wine and distillery industries.
The purpose of this work was to study the effect of the time of application of phosphorus fertilizer with fertirrigation in a melon crop amended with winery waste compost on yield and quality parameters. During two years, the melon crop was grown under field conditions and beside the control treatment, three doses of compost were applied: 6.7, 13.3 and 20.0 t ha-1. All the compost treatments received 120 kg ha-1 of phosphorus fertilizer (phosphoric acid) for the season varying the time of application: The first year phosphorus application started after male and female flowering, and the second year the application started before flowering. Yield and quality parameters were evaluated to assess the suitability of these practices.

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Keywords: Phosphorus fertilizer, exhausted grape marc compost, melon crop, yield and quality parameters.