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Citrus water use in South Africa

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Abstract

Agriculture, as the largest user of fresh water worldwide, is under close scrutiny to justify its use of water due to the increase in competition from a number of end-users. Apart from on-farm measures to increase water use efficiency, government intervenes through policy instruments to influence water use behaviour. Citrus growers need to take heed of these changes in policy as the majority of citrus orchards are irrigated and more detailed information on seasonal water requirements and irrigation scheduling is needed to justify the quantity of water needed for the production of citrus. Models, which are formidable tools to predict water use and crop performance, are therefore vital to provide accurate estimates of citrus water use across different climatic regions. In order to model citrus water use, a thorough understanding of the factors governing citrus water use is required. Results from measurements performed in a number of citrus orchards across climatic zones in South Africa indicated that citrus water use, under conditions of unlimited soil water supply, is not solely governed by atmospheric demand, but also by internal resistances to water movement within the plant, which limits the amount of water that a citrus tree can transpire on hot dry days. The authors will report on the institutional arrangements regarding water use and results from current and previous research on the water use in citrus in South Africa.