



Role of Fertigation in Improving Water and Nutrient Use Efficiency in Date Palm Cultivation and Production

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Abstract

Fertigation, the application of fertilizers with water through an irrigation system, has emerged as an effective approach to enhance nutrient and water-use efficiency in date palm. This review highlights current progress in applying the fertigation technique to improve date palm growth, yield, fruit quality, and sustainability in arid and semi-arid environments. The review covers various water-soluble fertilizers, their impact on nutrient availability in the soil around the roots, and different fertigation techniques. Beyond this, the review also highlights the roles of water conservation and environmental protection by minimizing nutrient loss and enhancing fertilizer management through fertigation. The technology-related constraints, such as water quality, emitter clogging, and management, are also reviewed. In general, the results of this study indicate that fertigation can be a potential technique for sustainable date palm production when combined with good irrigation and nutrient management practices.

Keywords: Fertigation, date palm nutrition, drip irrigation, water-soluble fertilizers, nutrient use efficiency.