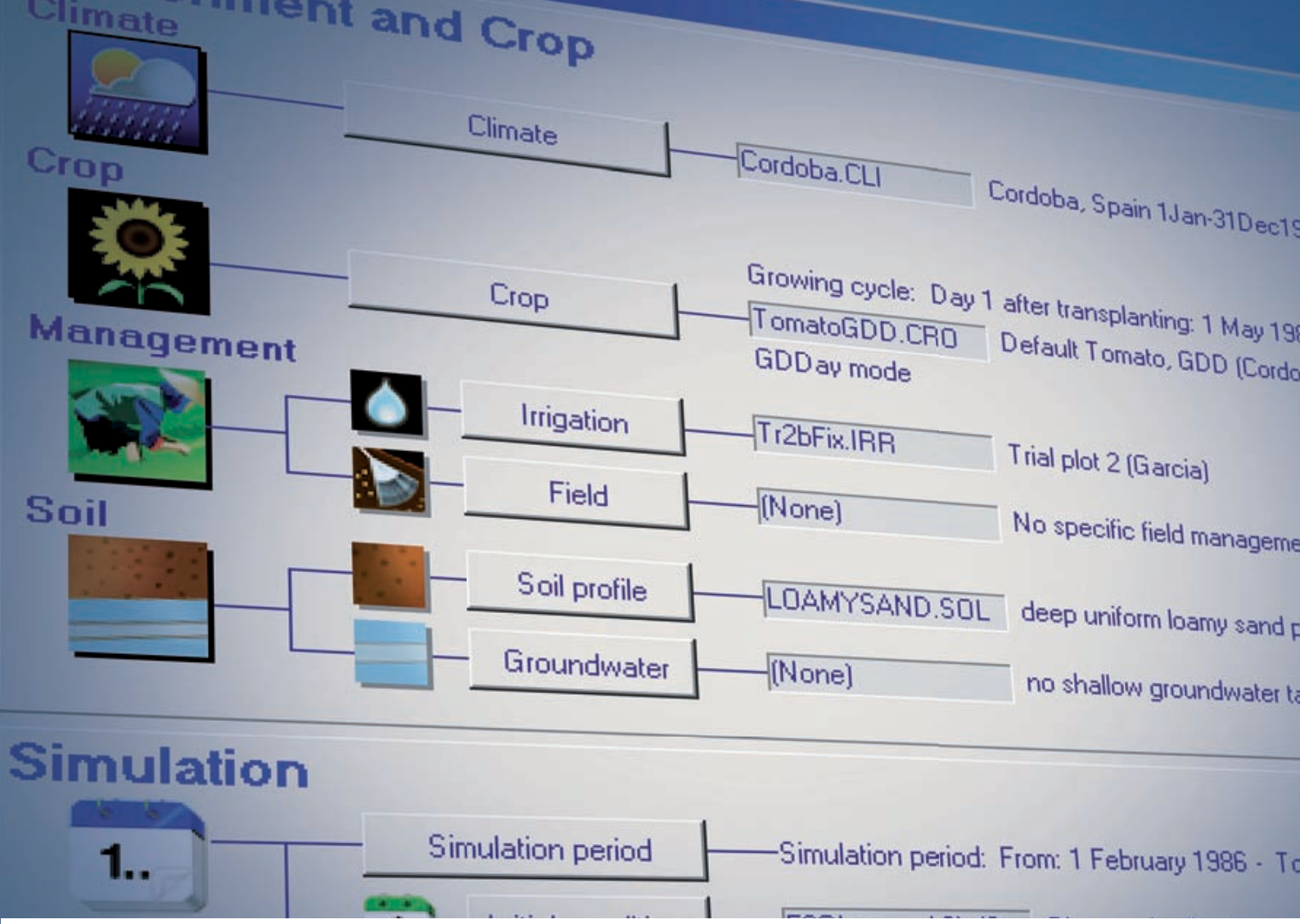

Yield response to water of herbaceous crops: the *AquaCrop* simulation model

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3. Yield response to water of herbaceous crops: the *AquaCrop* simulation model

This Chapter presents the main features of *AquaCrop*, the dynamic crop-growth model developed to predict yield response to water of herbaceous crops. The scientific basis of *AquaCrop* has been previously described (Steduto *et al.*, 2009; Raes *et al.*, 2009; Hsiao *et al.*, 2009) and only the basic concepts and fundamental calculation procedures are briefly explained here, along with additional descriptions related to the input requirements, the user interface and the model outputs. Sample applications are provided to illustrate the usefulness of *AquaCrop* for benchmarking, irrigation scheduling, and for studying the effect of various soils, crop management practices, and the impact of climate change, on crop yield and water productivity. Finally, guidelines for parameterizing, calibrating and validating *AquaCrop* are presented. For further insights on the operation of the model and on the full algorithms details, the reader is referred to the *AquaCrop Reference Manual* (Raes *et al.*, 2011).