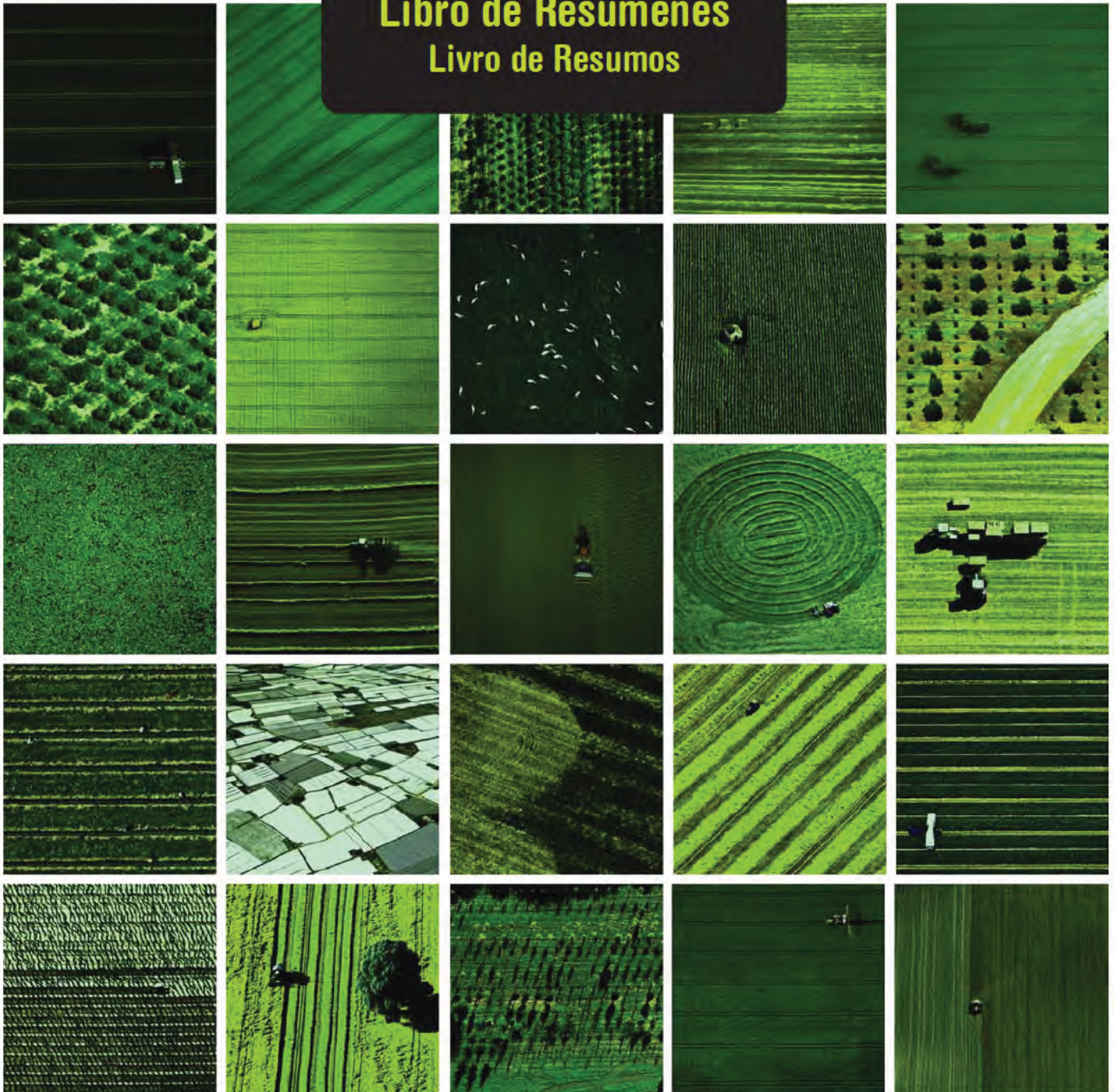


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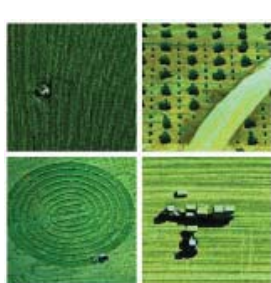
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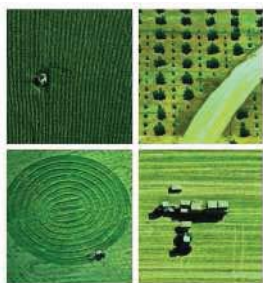
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Urban landscape irrigation requirements: The case study of Mirandela, Portugal

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The technological development is leading to the emergence of modern equipment for the automation of irrigation systems, with especial relevance for landscape irrigation systems. Thus, the development of methodologies for irrigation requirements of landscape, that allowed an improvement of the utilization of those technologies and equipment, and consequently to an improvement in irrigation management, is very timely and opportune.

In this study, water requirements for landscape irrigation in Mirandela city landscape were estimated. In order to evaluate the sprinkler irrigation systems performance, with the purpose applying an efficient irrigation management program, uniformity experiments were also conducted. The landscape water requirements were estimated with the combination of reference evapotranspiration (ET_o) with the landscape coefficient (KL), parameterized from landscape characteristics. The landscape irrigation requirements were calculated based in soil water balance simulations.

The results from uniformity experiments show a poor performance of irrigation systems in the majority of landscape hydrozones. The average value of low quarter uniformity distribution was just 25.9 % and uniformity coefficient 43.9 %. The poor performance is analyzed and measures to improve the irrigation performance are suggested such as equipment replacement and an efficient control of variables which influence the sprinkler flow. The total irrigation requirements variability of landscape hydrozones reflects the different type existing vegetation and the characteristics of the places and its environment.