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Sommario/riassunto	This book focuses on the fundamental and applied research of the non-destructive estimation and diagnosis of crop leaf and plant nitrogen status and in-season nitrogen management strategies based on leaf sensors, proximal canopy sensors, unmanned aerial vehicle remote sensing, manned aerial remote sensing and satellite remote sensing technologies. Statistical and machine learning methods are used to predict plant-nitrogen-related parameters with sensor data or sensor data together with soil, landscape, weather and/or management information. Different sensing technologies or different modelling approaches are compared and evaluated. Strategies are developed to use crop sensing data for in-season nitrogen recommendations to improve nitrogen use efficiency and protect the environment.