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Sommario/riassunto	<p>The global biodiversity and climate emergencies demand transformative changes to human activities. For example, food production relies on synthetic, industrial and non-sustainable products for managing pests, weeds and diseases of crops. Sustainable farming requires approaches to managing these agricultural constraints that are more environmentally benign and work with rather than against nature. Increasing pressure on synthetic products has reinvigorated efforts to identify alternative pest management options, including plant-based solutions that are environmentally benign and can be tailored to different farmers' needs, from commercial to small holder and subsistence farming. Botanical insecticides and pesticidal plants can offer a novel, effective and more sustainable alternative to synthetic products for controlling pests, diseases and weeds. This Special Issue reviews and reports the latest developments in plant-based pesticides from identification of bioactive plant chemicals, mechanisms of activity and validation of their use in horticulture and disease vector control. Other work reports applications in rice weeds, combination biopesticides and how chemistry varies spatially and influences the effectiveness of botanicals in different locations. Three reviews assess wider questions around the potential of plant-based pest management to address the global challenges of new, invasive and established crop pests and as-yet underexploited pesticidal plants.</p>