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Biodiversity drivers of arthropod pest regulation services in tropical agroecosystems of La Réunion island, a first systemic insight

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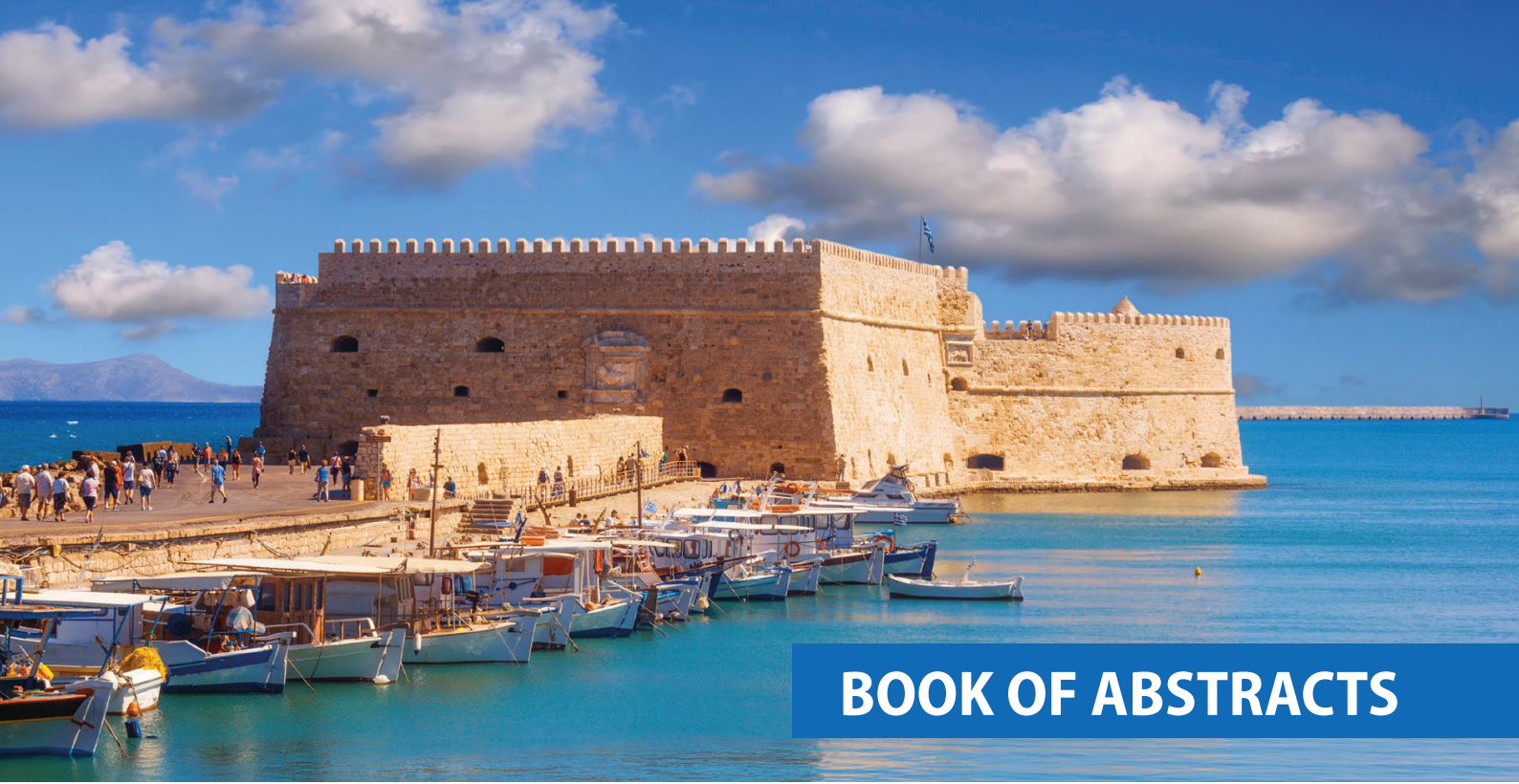
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BOOK OF ABSTRACTS



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OC279. Biodiversity drivers of arthropod pest regulation services in tropical agroecosystems of La Réunion island, a first systemic insight

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Natural pest regulation is a key ecosystem service to achieve agroecological intensification. However, its routine integration to pest management strategies is pending because of its unpredictability, hampering the trust of producers to rely on this service. To reduce this knowledge gap and increase foresight of natural pest regulation in production systems, we studied its drivers in vegetable crop fields in La Réunion, a tropical island in the Indian Ocean. We selected and characterized 20 fields representing the diversity of the grown crops, surrounding habitats, management practices and seasonality of the island. We then assessed the plant and arthropod communities associated with the crop and its margins using quadrats and non-selective interception and pitfall traps. We also observed the presence of pests and their natural enemies on the crop, whilst measuring crop damages and yield. Finally, the surrounding landscape was described at the short scale (within 500m) through GIS. Results demonstrated the strong relation between plant diversity and arthropod diversity, with subsequent consequences on pest abundance and pressure. Effects of the management practices and the landscape on these interactions were highlighted and discussed. Aside increased knowledge concerning systemic pest regulation mechanisms, this study opens the discussion on the utility of the development of bioindicators of these services. Such tools are expected to help stakeholders to further mobilize and integrate these services in their management strategies.

Keywords: biological control, natural enemies, biodiversity, multitrophic interactions, agroecology, vegetable crops

OC280. Conservation of farmland biodiversity in Mediterranean agroecosystems

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The Mediterranean basin has been recognized as a global biodiversity hotspot. Cyprus, the third largest Mediterranean island, is characterized by high rates of endemism. A large percentage of the farmland on the island is a mosaic of small agricultural fields interspersed within a matrix of (semi-) natural areas and they can be characterized as High Nature Value Farmland, important for biodiversity conservation, providing feeding and nesting resources to many different species. To better understand factors affecting biodiversity conservation in agricultural fields, biodiversity was monitored in vineyards and carob groves over consecutive seasons. Our results suggest that landscape features, such as stonewalls,