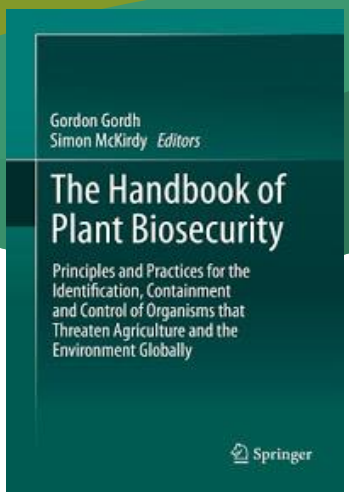
Concept Paper

Plant Biosecurity:

Shaping the Future



Springer Science + Business Media **(www.springer.com)** has expressed strong interest in publishing a second edition of ***The Handbook of Plant Biosecurity, Principles and Practices for the Identification, Containment, and Control of Organisms that Threaten Agriculture and the Environment Globally*.**

The first edition of *The Handbook of Plant Biosecurity*, edited by Gordon Gordh and Simon McKirdy, was published in 2014 and has enjoyed great success as a seminal reference for the broad community of scientists, regulators, students and others with a need to understand phytosanitary concepts and their application. The editors have agreed with Springer to pursue the opportunity to create a second edition and are in the process of exploring potential topics, designs, authors and reviewers.

The proposed subtitle for the new handbook is ***Shaping the Future***. Plans include updating and expanding on many topics covered in the first edition but with a stronger emphasis on the biosecurity continuum, new technology, and future challenges. The goal is to complement the first edition with contemporary concepts, case studies, and more detailed information to inform the future of Plant Biosecurity in parallel with the ***United Nations International Year of Plant Health in 2020*** (IYPH 2020).

A key objective for the second edition is to expand the international perspective by adding topics, authors and case studies representing diverse geographic areas and experiences. The editors are hoping to create as clear a picture as possible of the range of challenges in plant biosecurity and how new tools, methodologies, information and authority are shaping the future.

The relationship of the international framework with national designs for biosecurity, and the changing nature of border operations as a result of the World Trade Organization - Trade Facilitation Agreement, is a good example of the change in focus for discussions on the international regulatory framework. A substantial summary of the jurisprudence associated with legal challenges to plant biosecurity programs will complement this with lessons learned from national and international experiences.

Plant Biosecurity Concept Paper:
Shaping the Future

A closer look at the continuum concept follows with plans for in-depth discussions on elements of the continuum, their role and relationship to biosecurity, and social science aspects of managing risk and communications for non-traditional pathways such as e-commerce.

Ample opportunity exists to expand discussions around quantitative methods, epidemiological modeling, genomics, economic analyses, and new tools for risk analysis. Greater detail on identifying and managing uncertainty, and its relationship to precaution has also been noted as a key area of interest for risk analysis.

The increasingly important role of systems approaches as a risk management measure is a central theme for elaboration. Risk-based sampling for inspection, risk-based treatments, and the integration of precision designs with the continuum concept are important topics for the next generation of pest risk management in plant biosecurity.

The rapidly expanding role of data sciences also deserves special attention, along with discussions on digital systems for everything from pest identification to border clearance and targeting associated with Customs emerging single window systems.

Pest identification and diagnostics are experiencing fundamental changes that are just beginning to bring exciting new opportunities into focus alongside traditional approaches. Plans include extensive coverage of the many exciting new tools in the pest identification toolbox and a look at the future of this critical function. Surveillance and eradication are likewise due for updates, with new technologies and methodologies to add to what has traditionally been a relatively static area of plant biosecurity.

The role and significance of climate change across the entire range of plant biosecurity questions is a huge area of interest deserving of substantial attention for both its current and future relevance.

Finally, plans call for a collection of new case studies, thoughtfully selected and explained to represent the diverse and changing face of plant biosecurity challenges across the globe and emphasize the importance of plant biosecurity as well as the commitment of the plant biosecurity community to meeting future challenges.

CONTACT: Simon McKirdy / Lead editor / S.MCKIRDY@MURDOCH.EDU.AU