

The book brings together papers covering the most recent scientific research from the top endophyte researchers in the world. It presents the state of the art in our knowledge and technical capacity and explores future directions of this work. It is highly relevant and timely because of the need to improve global food security and its sustainability, and also to provide novel bioactive molecules for medicine. There is also a need to protect forestry in a changing and growing world. Endophytes offer huge potential to reduce environmentally damaging agricultural inputs such as fertilisers and pesticides. They are also a largely overlooked group of organisms where much basic science remains to be undertaken. For example, new molecular tools of DNA profiling using high-throughput environmental sequencing are allowing the exploration of a previously largely unknown resource. There is a pressing need to convert scientific research on endophytes into practical application. This book describes how that will be achieved.

Trevor R. Hodkinson is Professor in Botany and Head of the Botany Molecular Laboratory, Trinity College Dublin, Ireland. His research is mainly focused in fields known as endophyte biology, molecular systematics and genetic resource characterisation. He has specialist knowledge of the grass family and of forest tree genetics/mycorrhizae.

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Brian R. Murphy is a Research Fellow in the Botany Department at Trinity College Dublin, Ireland. From an Irish perspective, he is largely responsible for the exciting research and associated publications relating to fungal endophyte application in agriculture. He is recognised as a leading expert in endophyte discovery from wild relatives of crops and their application to increasing stress resistance in cereal crops.

Cover image: Terraced rice fields in Mu Cang Chai, Vietnam. Credit sutthinon sanyakup / Getty Images.

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