PREFACE

The parasitic witchweeds (*Striga* species) are the scourge of agriculture in much of Africa and parts of Asia and with even one small part of the USA. *Striga* attacks the major cereal grains and legumes in sub-Saharan Africa, on average halving the already very low yields of subsistence farmers. The *Striga* problem has been a major reason for keeping crop productivity at or below subsistence, leaving poor farmers with no way out of a situation that is only getting worse. For many decades, research approaches on *Striga* targeted eradication, suppression, or breeding for host crops that support fewer emerged *Striga* plants. Decades of such effort have led to few successes.

More recently, basic research efforts that focused on the more fundamental biology of the parasite and its association with its hosts have led to a far better understanding of the enemy. That in turn led to series of successes in the field that are being expanded slowly throughout Africa. Highly successful weeds such as *Striga* have a tendency to evolve resistance to all types of control. Ways to circumvent these evolutionary pitfalls need to be crafted so these technologies remain sustainable and not fail. As no single method is likely to offer a lasting solution, it was clear that proven methods must be integrated with each other. However, integration is often an anathema to basic scientists who are taught to alter single variables in their experiments.

We thus brought together key leaders for a symposium in Addis Ababa, Ethiopia in early November, 2006 to deal with the development of the new, integrated, knowledge–based control strategies, including those new successes deployed in the field, as well as those with promising strategies currently under development. These experts discussed how these strategies can be integrated with each other to develop more durable and sustainable methods that will be useful for decades to come. They were met by an audience of practitioners with expertise in the field, who will assist in integrating these solutions.

The chapter authors, leaders in the field, who have been supplying the basic biology, genetics, biochemistry, and the molecular information

offer insights on the technologies they generated in how to deal with *Striga*. These chapters were the basis for lectures that formed the core of the symposium. The chapters were all peer-reviewed prior to publication of this book. Other scientists (molecular biologists, breeders, agronomists, and social scientists) who are key in the fight against *Striga* participated in structured panel discussions that were useful to provide continuity and integration between the ideas of the various chapters. The messages from these discussions addressing important issues of technology development and transfer, roles of biotechnology and conventional science as well as technology and national policy have been summarized in the epilogue.

The editors sincerely thank the authors of the chapters for timely submission of their manuscripts and for their excellent cooperation in going through the accelerated pace of the review procedure with diligence and patience. Special thanks go to those who anonymously and selflessly served as peer reviewers.

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The editors dedicate this book to their late colleague, Dr Larry Butler, a pioneer in promoting basic sciences for the fight against Striga. Larry was motivated to advance science for the sake of the rural poor.

Gebisa Ejeta and Jonathan Gressel, editors
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