



Grasses as suitable targets for classical weed biological control

G. F. Sutton · K. Canavan · M. D. Day · A. den Breeyen · J. A. Goolsby · M. Cristofaro · A. McConnachie · I. D. Paterson

Received: 2 April 2019 / Accepted: 29 August 2019 / Published online: 4 September 2019
© International Organization for Biological Control (IOBC) 2019

Abstract Grasses are amongst the most abundant and environmentally damaging invasive weeds worldwide. Biological control is frequently employed as a sustainable and cost-effective management strategy for many weeds. However, grasses have not been actively pursued as targets for classical weed biological control due to a perceived lack of sufficiently specialised and damaging natural enemies to use as biological control agents. There are also concerns that the risk posed to economically important crop/pasture species and closely-related native species is too great to consider implementing biological control for inva-

sive grasses. In this paper, we review the literature and demonstrate that grasses can possess suitably host-specific and damaging natural enemies to warrant consideration as potential biological control agents. The risk of grass biological control is no greater than for other weedy taxa if practitioners follow appropriately rigorous risk assessments protocols.

Keywords Invasive grass · *Arundo donax* · *Phragmites australis* · *Tetramesa* · *Andropogon gayanus* · Host specificity

Handling Editor: S. Raghu

G. F. Sutton (✉) · K. Canavan · I. D. Paterson
Department of Zoology and Entomology, Centre for Biological Control, Rhodes University,
P.O. Box 94, Grahamstown 6140, South Africa
e-mail: guysutton41@gmail.com

M. D. Day
Department of Agriculture and Fisheries,
GPO Box 267, Brisbane, Australia

A. den Breeyen
ARC-Plant Health and Protection, Weed Pathology Unit,
P. Bag x5017, Stellenbosch 7599, South Africa

J. A. Goolsby
United States Department of Agriculture, Agricultural Research Service, Plains Area, Knifling-Bushland U.S. Livestock Insects Research Laboratory, Cattle Fever Tick Research Laboratory, Edinburg, TX, USA

M. Cristofaro
Biotechnology and Biocontrol Agency, 00123 Rome, Italy

M. Cristofaro
ENEA, C. R. Casaccia, 00123 Rome, Italy

A. McConnachie
Weed Research Unit, New South Wales Department of Primary Industries, Biosecurity and Food Safety, Locked Bag 6006, Orange 2800, Australia