

CONTENTS

Introduction/Introduction

Special Issue: Clubroot (*Plasmodiophora brassicae*) on canola and other Brassica species – disease development, epidemiology and management

S. E. Strelkov and G. R. Dixon 1

Clubroot (*Plasmodiophora brassicae* Woronin) – an agricultural and biological challenge worldwide

G. R. Dixon 5

Clubroot and the importance of canola in Canada

C. B. Rempel, S. N. Hutton and C. J. Jurke 19

Clubroot in the Canadian canola crop: 10 years into the outbreak

S. E. Strelkov and S.-F. Hwang 27

Effect of environmental parameters on clubroot development and the risk of pathogen spread

B. D. Gossen, A. Deora, G. Peng, S.-F. Hwang and M. R. McDonald 37

Management of clubroot (*Plasmodiophora brassicae*) on canola (*Brassica napus*) in western Canada

S.-F. Hwang, R. J. Howard, S. E. Strelkov, B. D. Gossen and G. Peng 49

Clubroot in Australia: the history and impact of *Plasmodiophora brassicae* in Brassica crops and research efforts directed towards its control

E. C. Donald and I. J. Porter 66

Clubroot disease management challenges from a German perspective

E. Diederichsen, M. Frauen and J. Ludwig-Müller 85

Crop rotation, cultivar resistance, and fungicides/biofungicides for managing clubroot (*Plasmodiophora brassicae*) on canola

G. Peng, R. Lahlali, S.-F. Hwang, D. Pageau, R. K. Hynes, M. R. McDonald, B. D. Gossen and S. E. Strelkov 99

Host–parasite interactions in clubroot of crucifers

J. Feng, T. Cao, D. C. Rennie, S. E. Strelkov and S.-F. Hwang 113

Genetics and breeding for clubroot resistance in Canadian spring canola (*Brassica napus* L.)

H. Rahman, G. Peng, F. Yu, K. C. Falk, M. Kulkarni and G. Selvaraj 122

Clubroot, a persistent threat to Swedish oilseed rape production	
<i>A.-C. Wallenhammar, C. Almquist, A. Schwelm, J. Roos, K. Marzec-Schmidt, A. Jonsson and C. Dixelius</i>	135
Research status of clubroot (<i>Plasmodiophora brassicae</i>) on cruciferous crops in China	
<i>A. L. Chai, X. W. Xie, Y. X. Shi and B. J. Li</i>	142
Clubroot disease on Brassica crops in India	
<i>I. Bhattacharya, S. Dutta, S. Mondal and B. Mondal</i>	154