## LIST OF CONTENTS

Preface.................................................................v
List of contents..................................................vii
List of authors....................................................xiii
List of participants..............................................xv

### Genetics and breeding

isks and use of genetic tools in *Rubus* and *Ribes* breeding at James Hutton Institute/Limited

*D. Jarret, N. Jennings, D. Williams and J. Graham*

Next steps in breeding for yield in raspberries

*A. Dale*

Introgression of spine-free and primocane fruiting from red raspberry (*Rubus idaeus* L.) to black raspberry (*R. occidentalis* L.)

*C.A. Weber*

Identifying variation in red raspberry *MLO* genes thought to provide resistance to powdery mildew

*J.D. Zurn, R. Meiers, J. Ward, C.E. Finn, M. Dossett and N.V. Bassil*

Recent acquisitions of *Rubus* L. at the USDA National Clonal Germplasm Repository, Corvallis, Oregon: profiles of four species

*K.E. Hummer and J.M. Bushakra*

Development of new genomic resources and tools for molecular breeding in blackberry


Merging blackberry germplasm pools and moving previously unutilized species into commercially viable selections

*C.E. Finn, M.E. Peterson, J.R. Clark, G.E. Fernandez, H.K. Hall and M.L. Worthington*

Recent progress in Polish black raspberry breeding at the Niwa Berry Breeding Ltd.

*A. Orzel, K. Król-Dyrek, J. Jagła, W. Lech, M. Bieniasz and M. Krośniak*

Genetic analysis of drupelet count in black raspberry (*Rubus occidentalis*)


‘Ningzhi 3’, an early and sweet blackberry

*W.L. Wu, H.X. Liu, L.F. Lyu and W.L. Li*

Phenotypical variability and diversity within *Ribes* genetic resources collection of Latvia

*S. Strautina, G. Lācis and K. Kampuss*

Conservation of *Ribes* and *Rubus* cultivars in the Swedish National Gene Bank

*I. Hjalmarsson*
Raspberries in north of Iran: from local wild types cultivation to newly established orchards with recently introduced cultivars
*R. Gharesheikhbayat and M.N. Padasht*

Comparison of fruit quality parameters of different raspberry (*Rubus idaeus* L.) genotypes cultivated in Estonia
*R. Rätsep, M. Vinogradov, L. Arus, H. Kaldmäe, A. Aluvee and A. Kikas*

New primocane-fruiting raspberry cultivars released from Shenyang Agricultural University

Development of a robust RNA extraction protocol for black raspberry
*C. Mulch, N.V. Bassil, C.E. Finn, M. Dossett and K.J. Vining*

Status of *Rubus* germplasm at the US National Clonal Germplasm Repository in Corvallis, Oregon

Evaluation of six raspberry cultivars in a temperate climate zone of central Chile
*E. Contreras, J. Grez, S. Sánchez and M. Gambardella*

New release: early season red raspberry cultivar of Polish ‘Delniwa’ brings high quality fruit to the market
*A. Orzet, A. Kostecka-Gugaia and B. Danek*

Evaluation of blackcurrant (*Ribes nigrum* L.) cultivars in Estonia
*A. Kikas and A.-V. Libek*

Comparison of selection for root rot tolerance and machine harvestability
*P.P. Moore and W.K Hoashi-Erhardt*

The productivity of new Russian blackcurrant cultivars
*F.F. Sazonov, S.N. Evdokimenko, V.N. Sorokopudov, N.V. Andronova and D.N. Skvorodnikov*

Development of blackberry cultivars with novel plant architecture
*M.L. Worthington and J.R. Clark*

**Cultivation**

Substrate cultivation of raspberry in Germany
*L. Linnemannstöns*

Year round production of primocane ‘Kwanza’ raspberry as an ultimate goal
*P. Putzeys, M. Boonen and D. Bylemans*

Growth habit of primocane raspberry cultivars grown as long canes for summer cropping
*P. Palonen and T. Laine*
<table>
<thead>
<tr>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Optimization of long-cane red raspberry production by the control of fruiting lateral number</td>
<td>191</td>
</tr>
<tr>
<td>A. Ançay, C. Carlen and B. Christ</td>
<td></td>
</tr>
<tr>
<td>Influence of cold storage on growth, productivity and root reserves of 'Kwanza' raspberry</td>
<td>195</td>
</tr>
<tr>
<td>P.B. Oliveira, B.R. Moreira and C.M. Oliveira</td>
<td></td>
</tr>
<tr>
<td>Year round blackberry harvesting in the Netherlands</td>
<td>201</td>
</tr>
<tr>
<td>G. Heijerman, L. Helmus-Schuddebeurs and C.W. van Eldik</td>
<td></td>
</tr>
<tr>
<td>Achieving top production with the best long canes of blackberry and raspberry</td>
<td>207</td>
</tr>
<tr>
<td>C.W. van Eldik</td>
<td></td>
</tr>
<tr>
<td>Effects of rotating cross arm trellis on first year blackberry yield, fruit quality and pest pressure</td>
<td>215</td>
</tr>
<tr>
<td>A. McWhirt, J. Lee, R.T. Threlfall and T. Ernst</td>
<td></td>
</tr>
<tr>
<td>Improving the performance of red and white currants in high latitude conditions by training methods</td>
<td>225</td>
</tr>
<tr>
<td>S. Karhu, C. Bles, K. Laine and P. Palonen</td>
<td></td>
</tr>
<tr>
<td>A well-balanced nutrient solution for raspberries</td>
<td>233</td>
</tr>
<tr>
<td>M. Boonen, P. Putzeys and D. Bylemans</td>
<td></td>
</tr>
<tr>
<td>Higher profits with planting hole treatment in red currant</td>
<td>239</td>
</tr>
<tr>
<td>G. Heijerman and G. van Gessel</td>
<td></td>
</tr>
<tr>
<td>Raspberry cultivation under rain shelters in northeast China</td>
<td>245</td>
</tr>
<tr>
<td>H.P. Dai, H.B. Chen, C. Zhang and J. Lu</td>
<td></td>
</tr>
<tr>
<td>Raspberry production in greenhouse in northeast China</td>
<td>251</td>
</tr>
<tr>
<td>C.H. Tan, H.P. Dai, J. Lu and W. Shi</td>
<td></td>
</tr>
<tr>
<td>Transformation of bush training system into vertical cordons, a pathway to boost the mature currant orchards</td>
<td>257</td>
</tr>
<tr>
<td>A. Asânică, F. Stânîcă, A. Iacob and M. Ungurenuş</td>
<td></td>
</tr>
<tr>
<td>First results of vertical cordon training system for red and black currants in Romania</td>
<td>265</td>
</tr>
<tr>
<td>A. Asânică, F. Stânîcă, A. Iacob, L. Perojuc and M. Ungurenuş</td>
<td></td>
</tr>
<tr>
<td>Evaluation of organic fertilizers for primocane raspberries in high tunnel</td>
<td>271</td>
</tr>
<tr>
<td>I. Kalnina, S. Strautiţa and V. Laugale</td>
<td></td>
</tr>
<tr>
<td>Vegetative parameters of new plants of golden currant (Ribes aureum) in mulched and non-mulched plots</td>
<td>277</td>
</tr>
<tr>
<td>K. Kampuss</td>
<td></td>
</tr>
<tr>
<td>Optimization of the root environment for raspberry production on substrate</td>
<td>283</td>
</tr>
<tr>
<td>C. Carlen, A. Ançay and B. Christ</td>
<td></td>
</tr>
<tr>
<td>Trichoderma application increases yield and individual fruit weight of blackberries grown by small farmers in Ecuador</td>
<td>287</td>
</tr>
<tr>
<td>W. Viera, M. Noboa, A. Martínez, R. Jácome, L. Medina and T. Jackson</td>
<td></td>
</tr>
</tbody>
</table>
Primocane blackberry cultivar response to pseudo double-cropping  
H. Hatterman-Valenti, A. Espe, J. Stenger and C. Auwarter  

Primocane raspberry cultivars for industrial cultivation in Russia  
S.N. Evdokimenko, F.F. Sazonov, M.A. Podgaetsky and D.N. Skovorodnikov  

Plant physiology  

Flowering and dormancy relations of raspberry and black currant and effects of management and climate warming on production  
A. Sønstebry and O.M. Heide  

Effect of genotype and environment on the chemical composition of raspberry fruits  
F. Will, E. Krüger, K. Kumar, C. Patz and A. Sønstebry  

Managing vigor of blackberry with prohexadione calcium: effects on primocane and floricane development  
T.M. Kon, G.E. Fernandez, P. Perkins-Veazie and K. Blaedow  

Effects of different substrate composition on the growth and physiology of blackberries in soilless system  
H.Y. Yang, W.L. Wu, S.S. Dong, Z.J. Huang, L.F. Lyu and W.L. Li  

Comparative analysis of flowering and fruiting characteristics between five blackberry (Rubus L.) hybrid strains and their parents  
Z.J. Huang, Y.L. Wei, W.L. Wu and W.L. Li  

Effectiveness of red mason bees on pollination of floricane raspberry cultivars 'Lagorai Plus' and 'Vajolet'  
P. Zucchi, L. Osti and G. Comploi  

Endodormancy in six blackcurrant (Ribes nigrum) cultivars  
P. Palonen, J. Kemppinen and S. Karhu  

Crumbliness in red raspberry – a review of the research in Weinsberg  
G. Muster  

Biology of flowering as an element in the red raspberry breeding, focused on avoiding interference in embryo sac development and reduction in drupelet numbers  
A. Orzeł, W. Lech, J. Jagła, K.B. Danek and M. Bieniasz  

Effect of water stress on some physiological indices in raspberry canes  
K. Lepaja, E. Kullaj, L. Lepaja and N. Krasniqi  

Plant protection  

Current status of the Drosophila suzukii control in Europe  
C. Ioriatti, G. Anfora, A. Grassi, S. Puppato and M.V. Rossi Stacconi  

Past efforts and future perspectives of managing major diseases of red raspberries in British Columbia  
R.R. Burlakoti and M. Dossett
Ribes-infecting viruses – how many and how harmful are they?  
J. Špák, J. Příbylová, K. Petrzík, I. Koloniuk and D. Kubelková  
403

Effectiveness of fungicides in control of yellow rust (Phragmidium rubi-idaei)  
T. Gasparski, P. Krawiec, M. Korzeniowski and M. Krawiec  
409

The use of Phytium oligandrum to control grey mold in raspberry  
P. Krawiec and M. Krawiec  
413

Cultivar susceptibility and stress hormone response in raspberry (Rubus idaeus) to two-spotted spider mite (Tetranychus urticae)  
L. Leus, C. Minguely, C. Van Poucke, J. Audenaert and J. Witters  
417

Quality and postharvest treatments

Flavour and nutrition of fruits and vegetables create added value to consumers  
425

Development of advanced mechanical techniques to phenotype raspberry and blackberry texture  
L. Giongo, M. Ajelli, P. Poncetta, M. Ramos-García, P. Sambo and B. Farneti  
433

Food safety regulations in the US and their impact on international produce growers and importers  
E.A. Bihn, G.L. Wall and M.C. Humiston  
441

Postharvest ozone treatment on raspberries  
S. Gabioud Rebeaud, V. Varone, L. Vuong, P.Y. Cotter, A. Ançay and D. Christen  
449

Postharvest shelf life and composition of black raspberry selections and cultivars  
P. Perkins-Veazie, G.E. Fernandez and G. Ma  
455

Monitoring the quality parameters for organic raspberries in order to determine the optimal storage method by packaging  
A. Stan, O.C. Bujor, A. Dobrin, G. Haida, L. Bădulescu and A. Asănică  
461

Using an online survey to determine consumer perceptions of fresh-market blackberries  
R.T. Threlfall, A.N. Dunteman, J.R. Clark and M.L. Worthington  
469

Effects of harvest time (7:00 am and 12:00 pm) on postharvest quality of Arkansas fresh-market blackberries  
M. Felts, R.T. Threlfall, J.R. Clark and M.L. Worthington  
477

Innovative storage technology of modern commercial black currant cultivars  
V.A. Gudkovskii, L.V. Kozhina, M.Y. Akimov and T.V. Zhidekhina  
487

Phenolic bioactive-linked antioxidant, and anti-hyperglycemic functionalities of blackberry (Rubus sp.) from two different maturation stages  
A. Espe, D. Sarkar, H. Hatterman-Valenti and K. Shetty  
495

Screening of blackberry cultivars for phenolic bioactive-linked antioxidant and anti-hyperglycemic properties  
A. Espe, D. Sarkar, H. Hatterman-Valenti and K. Shetty  
505