

Preface

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On July 24 2011, many participants from all over the world gathered in Oulu, Finland to discuss the latest trends in potato science during the 18th Triennial Conference of the European Association for Potato Research. The area was selected with great care: the surroundings of Oulu are one of the most northern places where potatoes are commercially grown, and the area has been marked as one of the five High Grade Seed Potato Areas of Europe. The programme of the Conference included key note papers, oral presentations, poster sessions, workshops, scientific excursions, social events and the general meeting of the members of the Association. The local organizers had identified five main issues to be discussed during the Conference:

1. From genomes to practice: what should be the priorities in utilizing genomic data from the potato and its pests and pathogens?
2. Where is potato breeding going?
3. Is there a future for transgenic and cisgenic potatoes in European agriculture?
4. What can potato research do to increase potato consumption?
5. What is required from research to make potatoes a true food security crop in the developing world?

These issues were also highlighted in the 13 plenary key notes held throughout the scientific programme of the Conference and presented by world experts in these areas. Seven of these key notes were further elaborated into papers and are published in this special issue of *Potato Research*, which also includes a report on the debate held during a very well-attended workshop on the use of genetic modification and biotechnology in potato.

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These seven papers and the workshop report together present an excellent overview on:

1. Contributions of both traditional and innovative breeding approaches to scientific potato improvement;
2. The latest developments in molecular diagnostics for resistance to biotic and abiotic stress and for quality improvement in potato;
3. Developing and testing transgenic potatoes with abiotic stress tolerance;
4. Latest developments in research on late blight resistance and *Potato virus Y* epidemiology;
5. Tools to monitor the sustainability of potato cultivation;
6. The debate on the role of genetic modification in potato improvement.

We are grateful to the authors for their contributions and hope the readers of *Potato Research* will appreciate their papers as much as we do.

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