

==== POSTER ABSTRACTS ====

**The State of the Art in Inducing PVY Resistance into Potato Cultivars
by Biotechnological Methods**

Adriana Aurori¹, Carmen Bădărău² and Elena Rakosy-Tican^{1, ✉}

Inducing resistance to pathogens in different crops was a continuous concern of the researchers and several biotechnological methods have been developed. Due to its high economic importance, potato raised a huge interest in developing such researches and having a significant contribution in refining of several methods. One of the most threatening pathogen of potato is represented by potato virus Y (PVY), this being able to jeopardize up to 80% of the crop yield. The high variability of PVY, as a result of naturally raised mutations or recombination was a continuous challenge, very often leading to overcoming the resistance of different potato cultivars. Today potato virus Y has a high genetic variability with a significant number of strains: PVY⁰, PVY^C, PVY^Z, PVY^N, PVY^{NTN}, and PVY^{N-W}. The last two strains: PVY^{NTN} (N-tuber-necrosis) and PVY^{N-W} (N-Wilga) have a rapid spread and produce Potato Tuber Necrotic Ringspot Disease (PTNRD), affecting both leaves and tubers, and hence producing very height yield loses.

Two major approaches for inducing resistance to PVY in potato were performed, one of it is based on pathogen derived resistance (genetic transformation) and the other one relies on the host derived-resistance (somatic hybridization, cis-genesis or intragenic improvement). The application of both strategies is facilitated by the good response of potato to *in vitro* culture, several successes being

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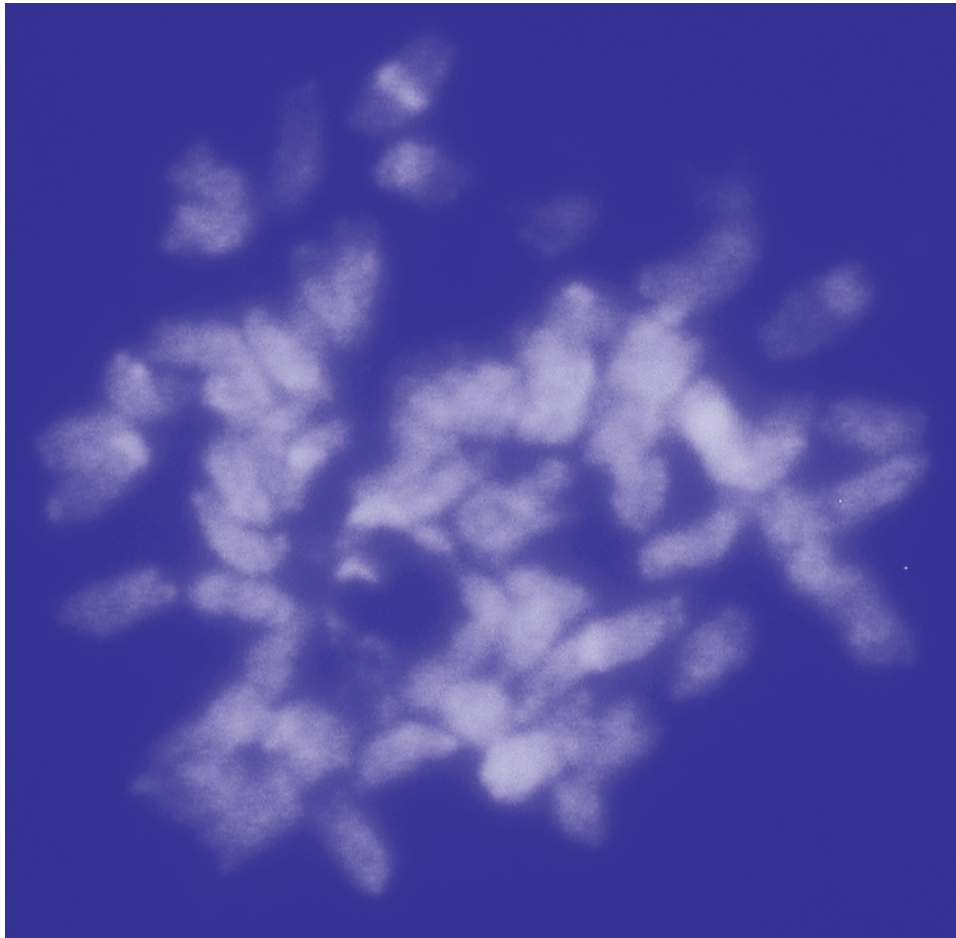
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encountered. The aim of the present study was to review the progresses that have been made in the field and to highlight the new direction in obtaining resistance to PVY by “genetically modified” elite potato.

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All authors are responsible for submitting manuscripts in comprehensible US or UK English and ensuring scientific accuracy.

Original pictures on front cover: DAPI staining of the chromosomes of a somatic hybrid between potato and the wild species *Solanum chacoense* (x 2000)

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THIS ISSUE IS DEDICATED TO THE CONFERENCE:

*“Jubilean and celebratory session –
40 years of plant cells and tissue cultures in Romania
and 40 years of research activity and management
of the Romanian Association of Plant Cells and Tissues
of Professor Dorina Cachiță-Cosma, Ph.D.”*

19th of March 2016, Cluj-Napoca, Romania



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**The “Babeş-Bolyai” University (U.B.B.),
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“Jubilean and celebratory session – 40 years of plant cells and tissue cultures in Romania and 40 years of research activity and management of the Romanian Association of Plant Cells and Tissues of Professor Dorina Cachiță-Cosma, Ph.D.”

9.00 – 9.30 Welcome – moderator Elena Rakosy -Tican

Message from the UBB management team – prorector Bálint Markó

Message from the organizers

ORAL PRESENTATIONS:

Moderator – Anca Butiuc-Keul

9.30 - 10.00 Dorina Cachiță-Cosma, Constantin Crăciun, Aurel Ardelean, *40 de ani de la inițierea tehnicilor de culturi de țesuturi și celule vegetale în România*

10.00 - 10.20 Gogu Ghiorghită, *În semn de omagiu”Doamnei culturilor in vitro la plante” – dr. Dorina Cachiță-Cosma*

10.20 - 10.40 **Coffee break**

Moderator – Adela Halmágyi

10.40 - 11.00 Dorina Cachiță-Cosma, Constantin Crăciun, *Celulele stem vegetale, aspecte teoretice și practice.*

11.00 - 11.20 Aurelia Brezeanu, *Abordări teoretice și biotehnologice în Institutul de Biologie București, în perioada 1975 - 2015, folosind tehnologia culturilor de celule și țesuturi vegetale*

11.20 - 11.40 Gina Cogălniceanu, *Utilizarea sistemelor vegetale in vitro pentru sinteza nanoparticulelor de metale nobile*

11.40 - 12.00 Elena Rakosy-Tican, Ramona Thieme, Adriana Aurori, Imola Erdelyi-Molnár, Tünde-Éva Dénes, Enikő Besenyey, Antonia Maria Mărginean, Daniel Cruceriu, Raluca Alina Mustață, *Biotehnologia combinatorie aplicată în ameliorarea rezistenței cartofului cultivat la factori de stres biotic și abiotic*

12.00 - 13.00 **Lunch break**

Moderators – Gina Cogălniceanu and Gogu Ghiorghită

13.00 - 13.10 Adela Halmágyi, *Crioconservarea unor specii ornamentale*

13.10 - 13.20 Anca Keul, *Analiza stabilității genetice a plantelor obținute in vitro cu ajutorul markerilor moleculari*

13.20 - 13.30 Adriana Petruș, *Micropropagarea și conservarea in vitro a biodiversității vegetale*

13.30 - 13.40 Camelia Sand-Sava, Maria-Mihaela Antofie, *Etape semnificative în evoluția cercetării din domeniul biotehnologiilor vegetale în România*

- 13.40 - 13.50** Camelia Sava-Sand, Maria-Mihaela Antofie, Cornelia Sandu, Dana Constantinovici, Nicoleta Chiru, Mira Bălan, *Brașovul - Centru pilon al biotehnologiei vegetale românești*
- 13.50 - 14.00** Maria Mihaela Antofie, *Etape critice în cercetarea fiziologiei celulare bazată pe cultura de țesuturi*
- 14.00 - 14.10** Daniel Cruceriu, Adriana Aurori, Imola Erdelyi-Molnár, Zorita Diaconeasa, Carmen Socaciu, Elena Rakosy-Tican, *Efecte fiziologice ale culturii in vitro asupra explantelor vegetale aparținând unor genotipuri de Solanum*
- 14.10 - 14.20** Victoria Cristea, Ana Coste, Adela Halmágyi, Irina Holobiuc, Anca Butiuc-Keul, Oana Roșca-Casian, Liliana Jarda, *In vitro multiplication of Romanian endemic and rare species Lychnis nivalis Kit.*
- 14.20 - 14.30** Adriana Petruș, Andrei Fordon, *In vitro multiplication and conservation of Euphorbia canariensis L.*
- 14.30 - 14.40** Irina Holobiuc, Rodica Cătană, Carmen Maximilian, Gina Cogălniceanu, Paulina Anastasiu, Victoria Cristea, *In vitro introduction of the vulnerable taxon Moehringia Janke Griseb Ex Janka for conservative purpose*

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- 15.10 - 15.30** Gina Cogălniceanu, Film Sahia – consultant științific Aurelia Brezeanu, *MUGURI*
- 15.30 - 16.00** Dana Constantinovici, prezentarea Băncii de gene Suceava (film) – Stațiunea pilot de multiplicare *in vitro* Codlea
- 16.00 - 16.10** Film – Electrofuziunea protoplastelor – Elena Rakosy-Tican, Ioan Turcu

16.10 – 16.40 Book presentation:

- “Organismele modificate genetic și implicațiile lor” by Gogu Ghiorghita, Ed. Pim Iași, 2015
- “Aniversarea a patru decenii – 1976 - 2016 - de la inițierea cercetărilor de biotehnologie vegetală în România” by Dorina Cachiță-Cosma and Camelia Sava Sand

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15. Dana Constantinovici, Codruta Silea, Iustina Coibanu, *Aspecte ale evoluției inoculilor de cartof (Solanum tuberosum L.), conservati in vitro timp de 40 de luni, la Banca de Gene Suceava*
16. Mihaela Duțu, Aurel Ardelean, Mirela Ardelean, Dorina Cachiță-Cosma, Andrei Lobiuc, Elida Rosenhech, Burducea Marian, *Creșterea conținutului de antioxidanți prin optimizarea condițiilor de micropropagare in vitro a speciei Lycium barbarum*

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