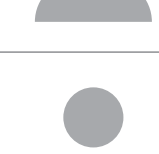## PLENARY ROOM

8:45 – 8:50	**OPENING** by Dr. Zsolt Feldman, *State Secretary for Agriculture, Ministry of Agriculture*
8:50 – 8:55	Geert Kits Nieuwenkamp, *Agricultural Attaché, Embassy of the Kingdom of the Netherlands*
8:55 – 9:15	Award for Agricultural Digitalization 2021
9:15 – 9:20	Dr. Erzsébet Knáb, *Chair, Board of Trustees of the Foundation for the Széchenyi István University*
9:20 – 9:35	Prof. Dr. Csaba Gyuricza, *Rector, Hungarian University of Agriculture and Life Sciences*
9:35 – 9:50	Norbert Kovács, CEO, *State Stud Farm and Study Farm of Mezőhegyes*
9:50 – 10:20	Prof. Raj Khosla, *Kansas State University – Farming the Data – New paradigm in Precision Agriculture*
10:20 – 10:50	Jacob van den Borne, *Farmer – Precision farming in practice*
11:00 – 11:30	**Coffee break**

11:30 – 13:00	**Session 1 – Topic 21: Education in Precision Agriculture – Chair: A. J. Kovacs**
11:30 – 11:50	**Using Virtual Reality Field Demonstrations to Increase Engagement with Farmers** E. M. Hawkins, B. W. Beam, A. A. Klopfenstein, S. A. Shearer, J. P. Fulton
11:50 – 12:10	**Virtual PA-dagogy: Design and delivery of an eWorkshop on PA under COVID19 restrictions** A. L.-H. Pang
12:10 – 12:30	**Increasing adoption of precision agriculture via gamification: The Farming Simulator case** T. Pavlenko, D. S. Paraforos, D. Fenrich, S. Braun, A. Murdoch, R. Tranter, Y. Gadanakis, M. Arnoult, T. Engel
12:30 – 12:50	**Teaching precision farming and entrepreneurship for European students: Sparkle online course** C. Valero, A. Krus, P. Barreiro, B. Diezma, M. Garrido-Izard, N. Hernández, G. Moreda, E. C. Correa, J. R. Marqués Da Silva, A. Ribeiro, A. Guadagni, M. Pérez-Ruiz, M. Vieri, V. De Pascale, S. Lombardo, D. Sarri, R. Lisci, T. Bournaris, E. Loizou, S. Nastis
13:00 – 14:00	**Lunch**

14:00 – 16:00	**Session 2 – Topic 04: Precision Crop Protection – Chair: F. Abdelghafour**
14:00 – 14:20	**Early detection of soil-borne diseases in field crops via remote sensing** A. Chen, M. Jacob, G. Shoshani, M. Dafny-Yelin, O. Degani, O. Rabinovitz
14:20 – 14:40	**High Throughput Field Phenotyping of wheat and weed cover in plot field experiments using RGB images** C. Gée, V. Mignon, L. Dujourny, E. Denimal
14:40 – 15:00	**A four-channel weed detection and classification using ML algorithms based on hyperspectral images** A. Lazar, A. Bechar
15:00 – 15:20	**Determination of wheat rust severity using hyperspectral imagery and 3D plant modeling** J. N. Rodríguez-Vázquez, O. E. Apolo-Apolo, P. Castro-Valdecantos, M. Pérez-Ruiz, J. Martínez, F. Martínez, I. Solis, G. Egea
15:20 – 15:40	**Satellite-based spectral indices for monitoring Helicoverpa armigera damage in maize** F. E. Sári-Barnácz, M. Szalai, M. Kun, D. Iványi, M. Chaddadi, F.M. Barnácz, J. Kiss
15:40 – 16:00	**Comparing Sensor-based adjustment of weed Harrowing intensity with conventional harrowing under heterogeneous field conditions** M. Spaeth, R. Gerhards
16:00 – 16:30	**Coffee break - Poster session**

TERRA ROOM

8:45 – 10:50	Keynote Speaches in Plenary Room

11:00 – 11:30	*Coffee break*

11:30 – 13:00	Session 1 – Topic 01/1: Precision Agriculture – Chair: Y. Reckleben	
11:30 – 11:50	**Considering resilience in digital farming systems** S. Bökle, L. Könn, D. Reiser, D. S. Paraforos, H. W. Griepentrog	💻
11:50 – 12:10	**Leaf Area Index Estimation in Maize Breeding Trials from RGB Imagery and Machine Learning Algorithms** P. Castro-Valdecantos, O. E. Apolo-Apolo, M. Pérez-Ruiz, G. Egea	💻
12:10 – 12:30	**A simple web-based tool for optimizing nitrogen variable rate application in durum wheat** R. Ferrise, G. Trombi, S. Costafreda Aumedes, G. Padovan, M. Pasqui, E. Di Giuseppe, J. Moretto, F. Morari	💻
12:30 – 12:50	**Evaluation of different crop model-based approaches for variable rate nitrogen fertilization** S. Gobbo, F. Morari, R. Ferrise, M. De Antoni Migliorati, L. Furlan, L. Sartori	👤

13:00 – 14:00	*Lunch*

14:00 – 16:00	Topic 01/2: Precision Agriculture – Chair: I. M. Kulmany	
14:00 – 14:20	**A farm scale evaluation of VRA application for improving liquid digestate agronomic performances** F. Grillo, I. Piccoli, I. Furlanetto, F. Ragazzi, S. Obber, F. Morari	💻
14:20 – 14:40	**Real-time fuzzy system for variable rate nitrogen application based on multiple parameters** A. Heiß, D. S. Paraforos, G. M. Sharipov, M. Karampoiki, H. W. Griepentrog	💻
14:40 – 15:00	**Real-time spectral information to control crop water stress (in VRI irrigation technology)** A. Nagy, A. Szabó, B. Gálya Farkasné, J. Tamás	💻
15:00 – 15:20	**Multi Species Weed Detection with RetinaNet One-Step Network in Maize Field** J. Lopez-Correa, J. Karouta, J. Bengochea, A. Ribeiro, A. Arija, R. Gerhards, G. Peteinatos, D. Andújar	👤
15:20 – 15:40	**Influence on rooting intensity and nutrient utilization of maize at different plant spacing** Y. Reckleben, B. Brandenburg	💻
15:40 – 16:00	**Modelling of in-field dynamic response of a centrifugal disk spreader to variable rate application** G. M. Sharipov, A. Heiß, M. Karampoiki, H. W. Griepentrog, D. S. Paraforos	💻

16:00 – 16:30	*Coffee break – Poster session*

AQUA ROOM

8:45 – 10:50	Keynote Speaches in Plenary Room

11:00 – 11:30	*Coffee break*

11:30 – 13:00 — Session 1 – Topic 05/1: Proximal and Remote Sensing of Soil and Crop – Chair: R. Marani

11:30 – 11:50	**Thermal sensitivity index: monitoring the spatial variability of water stress sensitivity in fields** V. Gonzalez-Dugo, P. Zarco-Tejada, D. Intrigliolo, J. Ramirez-Cuesta
11:50 – 12:10	**Early detection of grapevine downy mildew using thermal imaging** B. Cohen, Y. Edan, V. Alchanatis, A. Levi
12:10 – 12:30	**Mapping of hailstorm and strong wind damaged crop areas using LAI estimated from multispectral imagery** J. Furlanetto, N. Dal Ferro, F. Briffaut, L. Carotta, R. Polese, A. Dramis, E. Pracucci, C. Miele, A. Persichetti, L. Nicoli, F. Morari
12:30 – 12:50	**Detection of Irrigation Malfunctions Based on Thermal Imaging** N. Kalo, Y. Edan, V. Alchanatis

13:00 – 14:00	*Lunch*

14:00 – 16:00 — Session 2 – Topic 22: On Farm Experimentation with Site-Specific Technologies – Chair: B. Tisseyre

14:00 – 14:20	**Potential of time series of VIS images from connected static camera for decision support in vineyard** G. Brunel, S. Moinard, L. Pichon, B. Tisseyre
14:20 – 14:40	**Variability of the active hydraulic downforce system related to cotton seed depth and emergence** L. P. Oliveira, B. V. Ortiz, R. P. Silva, G. Pate
14:40 – 15:00	**iFAROS - A digital farming system for site-specific mineral nitrogen application in winter wheat** D. S. Paraforos, G. M. Sharipov, T. Pavlenko, M. Pérez Ruiz, J. Martínez Guanter, J. Carballido, A. Abecker, T. Anken, F. Argento, D. Argyropoulos
15:00 – 15:20	**Detecting spatial variability of potato canopy using different various remote sensing data** S. Samborski, R. Leszczyńska, D. Gozdowski
15:20 – 15:40	**Assessment of a web-based irrigation decision support without the use of field sensors** T. Shilo, O. Beeri, R. Pelta, S. Mey-Tal
15:40 – 16:00	**Can on-farm experiments benefit intensive farming systems with small- to moderate-scale fields?** T. Tanaka, R. Tanabe, T. Matsui

16:00 – 16:30	*Coffee break - Poster session*

SOLAR ROOM

8:45 – 10:50	Keynote Speaches in Plenary Room

11:00 – 11:30	*Coffee break*

11:30 – 13:00 — Session 1 – Topic 14: Drainage Optimization and Variable Rate Irrigation – Chair: S. Samborski

11:30 – 11:50	**Variable rate irrigation based on UAV imagery and real-time sensor data in pear orchards** J. Vandermaesen, S. Delalieux, D. Bylemans, S. Remy
11:50 – 12:10	**On-Farm Testing of Soil Moisture Sensor-Based Dynamic Variable Rate Irrigation** G. Vellidis, V. Liakos, X. Liang, M. Tucker
12:10 – 12:30	**Variable Rate Irrigation: Investigating Within Zone Variability** E. A. Woolley, R. Kerry, N.C. Hansen, B. G. Hopkins
12:30 – 12:50	**Methodology for comparison between uniform and variable rate application in a drip-irrigated peach orchard** L. Katz, A. Naor, M. I. Litaor, A. Ben-Gal, V. Alchanatis, M. Peres, A. Peeters, Y. Cohen

13:00 – 14:00	*Lunch*

14:00 – 16:00 — Session 2 – Topic 15: Geostatistics, mapping and spatial data analysis – Chair: A. J. Kovacs

14:00 – 14:20	**Producing grain yield maps by merging combine harvester and remote sensing data** M. Karampoiki, A. Heiß, G.M. Sharipov, S. Mahmood, L.C. Todman, A. J. Murdoch, H. W. Griepentrog, D. S. Paraforos
14:20 – 14:40	**Sampling Needs to Establish Effective Management Zones for Plant Nutrients in Precision Agriculture** R. Kerry, B. Ingram, M. Oliver
14:40 – 15:00	**A Constraint Programming approach to optimize the delineation of within-field zones** C. Leroux, P. Vismara
15:00 – 15:20	**Model and auxiliary data for an accurate estimate of mean field yield** B. Oger, S. Roux, G. Le Moguedec, P. Vismara, B. Tisseyre
15:20 – 15:40	**Georeferenced Image Stitching with Pose Optimization using Image Similarity with Little Overlap** T. Sasaki, Y. Moriuchi, H. Mihara, K. Nakamura, J. Murayama
15:40 – 16:00	**Using OBIA for detection of canopy and row-gap with using a drones images in vineyards** A. Šupčík, V. Oršulová

16:00 – 16:30	*Coffee break – Poster session*