



**UNIVERSITÀ  
DEGLI STUDI DI BARI  
ALDO MORO**

**DISSPA**  
DIPARTIMENTO DI SCIENZE DEL SUOLO,  
DELLA PIANTA E DEGLI ALIMENTI  
DEPARTMENT OF SOIL, PLANT AND FOOD  
SCIENCE



**UNIVERSITY  
of LIFE SCIENCES**  
in Lublin



**Wallonie  
recherche  
CRA-W**



# FARM MACHINERY AND PROCESSES MANAGEMENT IN SUSTAINABLE AGRICULTURE

**XIII International Scientific Symposium**

**University of Bari Aldo Moro**

*Atheneum main building*

*Students' center*

**Piazza Umberto I, 1**

**Bari – Italy**

**10-12 June 2026**

## Final Programme



ASSOCIAZIONE ITALIANA  
DI INGEGNERIA AGRARIA



**EurAgEng**



**PTIR**



**REGIONE PUGLIA**



**CITTÀ METROPOLITANA DI BARI**



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# Symposium organization & Schedules



## 10 June 2026

- 14:30 – 16:00**      **Registration of Participants – Welcome Coffee**  
*Atheneum main building – Central humanistic and community library*
- 16:00 – 16:30**      **Authorities Welcome Addresses**  
*Atheneum main building – Central humanistic and community library*  
**Vito Leccese**                      **Bari Mayor**  
**Roberto Bellotti**                **Rector of the University of Bari Aldo Moro**  
**Maria De Angelis**               **Head of DiSSPA Department - UNIBA**
- 16:30 – 18:15**      **Single Session**  
*Atheneum main building – Central humanistic and community library*
- 20:00**                **Dinner**  
*Antica Osteria delle Travi – Largo Chiurlia, Bari Old Town*

## 11 June 2026

- 10:00 – 11:45**      **Parallel Sessions**  
*Atheneum main building – Central humanistic and community library*  
*Atheneum main building – Students' Center – Lecture Hall "A"*  
*Atheneum main building – Students' Center – Lecture Hall "B"*
- 11:45 – 14:30**      **Light Lunch**  
*Atheneum main building*
- 14:30 – 16:15**      **Parallel Sessions**  
*Atheneum main building – Central humanistic and community library*  
*Atheneum main building – Students' Center – Lecture Hall "A"*  
*Atheneum main building – Students' Center – Lecture Hall "B"*
- 18:00**                **Polignano a Mare – Guided tour**  
*Bus departure (Petruzzelli Theatre main entrance)*
- 20:00**                **Gala Dinner**  
*Calapà Restaurant (Lungomare Domenico Modugno 33, Polignano)*  
*Casual dress code*

## 12 June 2026

- 10:00 – 13:00**      **A walk through history and monuments in "Bari Vecchia"**  
*Prof. Giuliano De Felice - Methodologies for archaeological research*  
*Meeting point in Old Town –Piazza del Ferrarese*

**10 June 2026**  
**Single Session**  
**Central humanistic and community library**  
**Atheneum main building – Piazza Umberto I, 1**



**Topic 01 - Management of field and livestock production machinery**

*Chair: Prof. Bruno Huyghebaert*

Time	Presented paper
16:30 - 16:45	Theoretical investigation of the parameters of the side-cutting knives of a vibratory digging working body for carrot root crops Pascuzzi S.; Bulgakov V.; Polishchuk D.; Holovach I.; Olt J.; Ihnatiev Y.; Paciolla F.; Ruzhylo M.; Korenko M.
16:45 - 17:00	Theoretical investigation of the parameters of the side-cutting knives of a vibratory digging working body for carrot root crops Pascuzzi S.; Bulgakov V.; Polishchuk D.; Holovach I.; Olt J.; Ihnatiev Y.; Paciolla F.; Ruzhylo M.; Korenko M.
17:00 - 17:15	Experimental studies of a combined pneumatic device for dosing and applying mineral fertilizers Olt J.; Liivapuu O.; Ihnatiev Y.
17:15 - 17:30	Analytical study of the interaction between the working bodies of a feeler-rotary cleaner and sugar beet root crowns during removal of top residues Ihnatiev Y.; Borys A.; Prysazhnyi V.; Mitkov V.; Olt J.
17:30 - 17:45	Determination of the mean angle of mineral fertilizer distribution using a centrifugal spreader Przywara A.; Kachel-Górecka M.; Sobczak P.; Żukiewicz-Sobczak W.
17:45 - 18:00	Technological possibilities for dog feed production Sobczak P.; Mazur J.; Łusiak P.; Starek-Wójcicka A.; Żukiewicz-Sobczak W.
18:00 - 18:15	Stress relaxation of potatoes under quasi-static loading conditions Stropek Z.

**11 June 2026**  
**Parallel Session 1**  
**Central humanistic and community library**  
**Atheneum main building – Piazza Umberto I, 1**



**Topic 06 - Smart Farming and sustainability**

*Chair: Prof. Artur Przywara - Prof. Stanislaw Parafiniuk*

Time	Presented paper
10:00 - 10:15	Smart strategy for insect targeting: influence of nozzle location and pressure on droplet deposition and whitefly efficacy Alheidary M.; Ibraheem S.; Aleid F.; Dawood D.
10:15 - 10:30	Experimental validation of EKF lateral estimation for GNSS-Free inter-row navigation using RTK reference measurements Betrò G.; Santoro F.; Farella A.; Pascuzzi S.; Paciolla F.
10:30 - 10:45	Hybrid AI-FEM model for predicting the flow instability of Dead Sea salt in vibrating conveyors Ekielski A.
10:45 - 11:00	Calibration and testing of a handheld NIR spectrometer for soil moisture monitoring in tomato plants grown under different LED lighting conditions Paciolla F.; Paciolla C.; Santoro F.; Pascuzzi S.
11:00 - 11:15	Investigating the potential of hyperspectral proximal sensing and multivariate analysis for assessing bean ( <i>Phaseolus vulgaris</i> L.) response to water stress Di Venosa M.; Albrizio R.; Hachem A.; Mzid N.; Todorovic M.; Colovic M.; Garofalo S.; Sathsarani M.; Stellacci A.
11:15 - 11:30	The Izydor autonomous sprayer for row crop protection Parafiniuk S.; Kopyński Ł.; Karpiński P.; Ogrodniczek J.
11:30 - 11:45	Agricultural quadruped robots: a brief overview Paciolla F.; Farella A.; Betrò G.; Santoro F.; Pascuzzi S.
<b>Light lunch break</b>	
14:30 - 14:45	W@llHerbe: a Decision Support System for grassland management in Wallonia Lucau-Danila C.; Debauche O.; Bertozzi C.; Reding E.; Roukh A.; Mahmoudi S.; Lambert R.; Himdi H.; Knoden D.
14:45 - 15:00	The performance comparison of artificial intelligence algorithms with hyperspectral data to diagnosis of soybean infection intensity with charcoal rot disease Alahmadi A.; Subr A.; Parafiniuk S.; Watson D.; Milanowski M.; Lorencowicz E.
15:00 - 15:15	UAV-based multispectral monitoring for crop yield estimation in experimental plots under different irrigation and fertilization treatments Pasetti F.; Rozzi N.; Penzotti G.; Saccuti A.; Graziano S.; Marmioli N.; Caselli S.
15:15 - 15:30	Design of a robot for gentle fruit picking Saccuti A.; Monica R.; Lodi Rizzini D.; Caselli S.
15:30 - 15:45	Consumers' perception of the circular economy – An analysis of survey results Stoma M.; Dudziak A.
15:45 - 16:00	DSS (Decision Support Systems) and on-line Pest Warning System as a support tool for integrated pest management. Tratwal1 A.; Jakubowska M.; Roik K.

**11 June 2026**  
**Parallel Session 2**  
**Students' Center – Lecture hall "A"**  
**Atheneum main building – Piazza Umberto I, 1**



**Topic 02 - Management of biomass and agroenergy production**

*Chair: Prof. Jüri Olt*

Time	Presented paper
10:00 - 10:15	Paddle tester for determining the suitability of loose biomass for storage Gancarz M.; Rusinek R.; Wiącek J.; Kobyłka R.; Stasiak M.
10:15 - 10:30	Effect of growth conditions on biomass production and metabolite composition in single-celled algae Krzemińska I.; Szymańska M.; Ciempiel W.
10:30 - 10:45	Effects of an agri-pv plant with bifacial modules on microclimate, crop and electricity yield in a biological crop rotation in Eastern Austria Moitzi G.; Eitzinger J.; Weihs P.; Thaler S.; Höckner E.; Höller M.; Wagenristl H.
10:45 - 11:00	Evaluation of the feasibility of utilizing orchard production waste biomass for the manufacture of commercial-quality fuel pellets Szyszlak-Bargłowicz J.; Zajac G.; Kuranc A.

**Topic 07 - Labour organization and ergonomics**

*Chair: Prof. Wioletta Żukiewicz-Sobczak*

Time	Presented paper
11:00 - 11:15	Increasing the resilience to cybersecurity threats of the University of Agriculture in Krakow through the implementation of the SOCCER project Cupial M.; Ponikiewicz M.; Faber Ł.
11:15 - 11:30	Impact of industrial automation and data-driven management on operational and economic efficiency in a manufacturing enterprise supporting the machinery sector Łyp-Wrońska K.; Gładyś K.; Głowa M.
11:30 - 11:45	Application of the 5S method to improve work ergonomics at an agricultural machinery repair workstation Jurecka W.; Łakomy K.; Nowacki K.

**Light lunch break**

**Topic 04 - Plant protection, soil management and agrochemicals application**

*Chair: Prof. Gerhard Moitzi*

Time	Presented paper
14:30 - 14:45	A biomimetic artificial foam simulates Philaenus spittle in laboratory tests Vicino F.; Valverde Urrea M.; Picciotti U.; Garganese F.; Gargano L.; Paciolla F.; Milella A.; Porcelli F.; Pascuzzi S.; Husein A.
14:45 - 15:00	RiskPPP: A decision-making tool to prevent point source pollution by plant protection products Herinckx J.; Maillard D.; Weickmans B.; Planchon V.; Veillet M.; Van Wittenberge F.; Triolet N.; Godeaux D.; Deprez M.; Huyghebaert B.
15:00 - 15:15	OADérive: A decision-support tool for selecting mitigation measures to reduce pesticide spray drift exposure of nearby residents Huyghebaert T.; Weickmans B.; Habran S.; Lenartz F.; Minon A.; Dury M.; Szekely I.; Thaon P.; Huyghebaert B.
15:15 - 15:30	UAV-based spraying in Italy: a technical study and regulatory analysis of the authorization regime between environmental protections and experimental simplifications Paciolla F.; Esposito S.; Farella A.; Maele A.; Pascuzzi S.
15:30 - 15:45	Digestate as a biofertilizer in crop production: effects on yield, soil properties and sustainable nutrient management - a review Szwed M.; Koszel M.; Tkaczyk P.
15:45 - 16:00	Weed management alternatives in chicory: assessment of localized herbicide applications, non-selective products with safety zones, and intra-row mechanical weeding Firs Limbourg Q.; Theys J.; Bienfait P.; Hubaux A.; Rabier F.

**11 June 2026**  
**Parallel Session 3**  
**Students' Center – Lecture hall "B"**  
**Atheneum main building – Piazza Umberto I, 1**



**Topic 10 - Sustainable agriculture in the European Union and other countries**

*Chair: Prof. Edmund Lorencowicz*

Time	Presented paper
10:00 - 10:15	Safe2ReUse: A decision-making tool and solution-oriented tool to assess risk from wastewater reuse, Redivo B.; Mazel V.; Weickmans B.; Gérard J.; Huart J.; Luyten M.; Cavenaile A.; Huyghebaert B.
10:15 - 10:30	Regulatory framework for Exogenous Organic Matter (EOM) recycling: alignment with soil contaminant threshold values Van Der Smissen H.; Jacquemin P.; Hardy B.; Huyghebaert B.
10:30 - 10:45	Epoxidized oils as bio-based functional materials for agricultural technologies Krawczuk A.
10:45 - 11:00	The role of agricultural biogas plants in sustainable farm management and circular bioeconomy Pilarska A.; Pilarski K.
11:00 - 11:15	Selection of biogas technologies for available agricultural substrates: technological challenges and process optimisation Pilarski K.; Pilarska A.
11:15 - 11:30	Flight dynamics of economically important aphid species collected using a Johnson's suction trap in the Wielkopolska Voivodeships in 2024–2025. Roik K.; Tratwal A.; Małas S.
11:30 - 11:45	Precise variable application of solid organic fertilizers Czechlowski M., Wojciechowski T.

**Light lunch break**

**Topic 03 - Reduction of costs, energy and machinery input**

*Chair: Dr. Francesco Paciolla*

Time	Presented paper
14:30 - 14:45	Outsourcing of technological processes as one of the methods of reducing production costs in agriculture Lorencowicz E.; Uziak J.
14:45 - 15:00	Berry fruit as valuable additive in directly expanded gluten-free snacks processed via extrusion-cooking Wojtowicz A.; Soja J.; Combrzyński M.; Mitrus M.; Oniszczuk T.; Milanowski M.; Kutnik E.

**Topic 05 - Methodologies, procedures and measurements in sustainable agriculture**

*Chair: Prof. Katarzyna Łyp-Wrońska*

Time	Presented paper
15:00 - 15:15	Consumer profiling and preferences for alternative protein products Zukiewicz-Sobczak W.; Bieńczak A.; Sobczak P.; Mazur J.; Starek-Wójcicka A.; Przywara A.; Franczak S.
15:15 - 15:30	Non-invasive evaluation of the effects of biostimulation of runner bean using a portable spectrometer in the aspect of sustainable crop management Kocira S.; Kocira A.; Parafiniuk S.; Iwanicka N.
15:30 - 15:45	Dynamic analysis of a road-transportable mobile power station Pellja A.; Liivapuu O.; Olt J.
15:45 - 16:00	Image analysis to monitor weeding dynamics and improve the evaluation of mechanical weeding techniques Rabier F.; Breuse D.; Fievet T.; Limbourg Q.; Hubaux A.