32nd ANNUAL MEETING

SEPTEMBER 5-8, 2021

BOLOGNA - ITALY
Plesso di Agraria - University of Bologna

Under the auspices of

CHAIR OF THE MEETING
Federica Zanetti - University of Bologna - Italy

PROGRAM
Hybrid Conference
Bologna, 5-8 September 2021

Venue: Plesso Agraria - University of Bologna
Viale G. Fanin 44
Bologna

Program

DAY 1 (SUNDAY - 05/09/2021)

<table>
<thead>
<tr>
<th>Time</th>
<th>Activity</th>
</tr>
</thead>
</table>
| 16.00 | Picking up at Savoia Regency Hotel  
Via S. Donato, 159 - Bologna                                            |
| 16.20 | Picking up at DISTAL  
Viale Fanin, 44 - Bologna                                                  |
| 16.30 | Arrival at Cadriano experimental station                                 |
| 16.30-18.00 | PRESENTATION OF THE EXPERIMENTAL STATION ACTIVITIES  
AND SHORT FIELD TOUR                                                       |
<p>| 18.00-20.00 | Welcome reception at Cadriano experimental station                        |
| 20.15 | Return to hotels - end of day 1                                        |</p>
<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
</tr>
</thead>
<tbody>
<tr>
<td>9.00 - 12.00</td>
<td><strong>MAGIC project event</strong></td>
</tr>
<tr>
<td>9.00</td>
<td>The MAGIC project</td>
</tr>
<tr>
<td></td>
<td><em>Efthymia Alexopoulou, CRES, MAGIC project coordinator</em></td>
</tr>
<tr>
<td>9.15</td>
<td>Development of genetic tools for rapid improvement of orphan biomass crops for marginal lands</td>
</tr>
<tr>
<td></td>
<td><em>Francesco Pancaldi, UW</em></td>
</tr>
<tr>
<td>9.40</td>
<td>An overview of industrial crops on European marginal lands</td>
</tr>
<tr>
<td></td>
<td><em>Danilo Scordia, UNICT</em></td>
</tr>
<tr>
<td>10.05</td>
<td><strong>Coffee break</strong></td>
</tr>
<tr>
<td>10.30</td>
<td>Utilization of industrial crops for the phytomanagement and remediation of heavy metal contaminated soils</td>
</tr>
<tr>
<td></td>
<td><em>Eleni Papazoglou, AUA</em></td>
</tr>
<tr>
<td>10.55</td>
<td>Integrated sustainability assessment of selected products from marginal land: from industrial crops to value chains and the assessment of impact</td>
</tr>
<tr>
<td></td>
<td><em>Nils Rettenmaier, IFEU</em></td>
</tr>
<tr>
<td>11.20</td>
<td>Biomass Production on Marginal Land: Mapping the Economic Feasibility Prospects for Multiple Value Chain</td>
</tr>
<tr>
<td></td>
<td><em>Lazaros Karaoglanoglou, AUA</em></td>
</tr>
<tr>
<td>11.45</td>
<td><strong>Wrap up session</strong></td>
</tr>
<tr>
<td>12.00 - 13.00</td>
<td><strong>Lunch</strong></td>
</tr>
</tbody>
</table>
DAY 2 (MONDAY - 06/09/2021)

13.15  Starting time of
**32nd AAIC ANNUAL MEETING** program

13.20  **Dr. Federica Zanetti** - AAIC President
*Greetings and conference opening*

13.25  **Prof. Giovanni Molari** - Director of DISTAL
*Greetings from the DISTAL*

13.30  **Prof. Luca Fontanesi** - Research delegate at DISTAL
*Research activities at the Department of Agricultural and Food Sciences*

13.45  **Prof. Fabio Fava** - FF University of Bologna & IT Representative in the
BBI JU SRG and EU Bioeconomy Policy Forum
*The Biobased industry in Europe and Italy: state of the art and perspectives*

14.00  **Prof. Marisol T. Berti** - Editor in Chief of Industrial Crops and
Products Journal
*Presentation of the Congress Special Issue on ICP*

14.10 - 14.30  **Short Break**

14.30 - 16.55  **Plenary Speakers**

14.30  **Nicola Di Virgilio** - EC DG AGRI (Belgium)
*EU main policies for renewables*

14.55  **Jack Grushcow** - CEO SmartEarth Camelina (Canada)
*Moving Camelina from Novelty to Mainstream - Our 15 year Journey*

15.20  **Giacomo Fanin** - Business Development Manager - Cereal Docks (Italy)
*General perspective and potential opportunities of non-food crops
in Italy from one national Agribusiness leader, Cereal Docks case*

15.45 - 16.05  **Coffee Break**

16.05  **Alan Garosi** - Head of marketing at Fulgar (Italy)
*Castor oil as an ingredient for the biobased textile: EVO by Fulgar*

16.30  **Jean Luc Dubois** - R&D responsible at Arkema (France)
*Risk analysis of vegetable oils conversion to monomers.
Main lessons learned*

16.55  **Round table discussion**

17.05 - 17.20  **Short Break**
17.20 - 19.00  
**POSTER PRESENTATION - SESSION 1**  
(GENERAL CROPS AND PRODUCTS - MEDICINAL AND NUTRACEUTICAL PLANTS)  
Chairs: Prof. Ana Luisa Fernando / Prof. Diana Jasso de Rodríguez

### GENERAL CROPS AND PRODUCTS

17.20 - 17.23  
P.1  
Salvador Carlos-Hernández  
LCA BASED STRATEGY FOR TELEMETRIC MONITORING OF AN AQUAPONICS SYSTEM

17.23 - 17.26  
P.2  
Salvador Carlos-Hernández  
PROSPECTIVE LIFE CYCLE ASSESSMENT OF A BASED ORANGE WAX FUNGICIDE

17.26 - 17.29  
P.3  
María L. Flores-López  
EDIBLE COATING BASED ON BLACK CHIA (SALVIA HISPANICA) SEED MUCILAGE CONTAINING MYRTILLOCACTUS GEOMETRIZANS FRUIT PHENOLIC EXTRACTS

17.29 - 17.32  
P.4  
María L. Flores-López  
RHUS MICROPHYLLA LEAF EXTRACTION OBTAINED BY OHMIC HEATING AND THEIR PHYSICOCHEMICAL CHARACTERIZATION

17.32 - 17.35  
P.5  
María L. Flores-López  
CHIA (SALVIA HISPANICA L.) SEED MUCILAGE-CHITOOLIGOSACCHARIDES BASED SYSTEM FOR ENCAPSULATION OF β-GALACTOSIDASE

17.35 - 17.38  
P.6  
Jaqueline de Mattia  
INDUSTRIAL PROCESSING OF SUGARCANE JUICE EXTRACTED FROM DIFFERENT VARIETIES AIMING THE PRODUCTION OF ENERGY DRINK

17.38 - 17.41  
P.8  
Anna Karova  
PEST CONTROL APPROACHES IN ORGANIC CULTIVATION OF OIL-BEARING ROSE (ROSA DAMASCENA MILL.)
### DAY 2 (MONDAY - 06/09/2021)

<table>
<thead>
<tr>
<th>Time</th>
<th>Page</th>
<th>Author</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>17.41 - 17.44</td>
<td>P.12</td>
<td>Emilia Mihaylova</td>
<td>AERIAL MULTISPECTRAL IMAGING TO DISCRIMINATE BETWEEN DIFFERENT GENOTYPES OF COMMON WINTER WHEAT</td>
</tr>
<tr>
<td>17.44 - 17.47</td>
<td>P.13</td>
<td>Roberta Paris</td>
<td>BY-PRODUCTS FROM INDUSTRIAL HEMP INFLORESCENCES</td>
</tr>
<tr>
<td>17.47 - 17.50</td>
<td>P.14</td>
<td>Mariana Petkova</td>
<td>SOLANACEAE PLANTS GROWTH-PROMOTING AND ANTIFUNGAL ACTIVITIES OF TWO ENDOPHYTIC YEAST STRAINS</td>
</tr>
<tr>
<td>17.50 - 17.53</td>
<td>P.15</td>
<td>Slaveya Petrova</td>
<td>GENOTYPE REACTION OF SORGHUM SPECIES TOWARDS ALLELOPATHIC INFLUENCE OF SOME TYPICAL WEEDS</td>
</tr>
<tr>
<td>17.53 - 17.56</td>
<td>P.16</td>
<td>Nikolina Shopova</td>
<td>EFFECT OF MICROORGANISMS ON THE GROWTH OF TOMATO SEEDLINGS</td>
</tr>
<tr>
<td>17.56 - 17.59</td>
<td>P.17</td>
<td>Nikolina Shopova</td>
<td>HERBICIDE CONTROL OF THE WEEDS IN TOMATO (SOLANUM LYCOPERSICUM L.)</td>
</tr>
<tr>
<td>17.59 - 18.02</td>
<td>P.18</td>
<td>Krasimira Uzunova</td>
<td>USE OF PCA (ANALYSIS OF THE MAIN COMPONENTS) IN WHEAT CULTIVATION UNDER UNCONVENTIONAL CONDITIONS</td>
</tr>
<tr>
<td>18.02 - 18.05</td>
<td>P.19</td>
<td>Ciro Vasmara</td>
<td>THERMO-KOH PRE-TREATMENT AND CO-DIGESTION WITH PIG SLURRY IMPROVE METHANE YIELD AND DIGESTATE QUALITY FROM GIANT REED (Arundo Donax L.)</td>
</tr>
<tr>
<td>18.05 - 18.08</td>
<td>P.21</td>
<td>Flavia Fulvio</td>
<td>CHARACTERIZATION AND COMPARISON OF ESSENTIAL OIL COMPOSITION FROM 11 CANNABIS SATIVA GENOTYPES FROM TWO CULTIVATION SEASONS</td>
</tr>
</tbody>
</table>
DAY 2 (MONDAY - 06/09/2021)

MEDICINAL AND NUTRACEUTICAL PLANTS

18.08 - 18.11 P.22
Mattia Alpi
SAFFRON AQUAPONICS CULTIVATION TECHNIQUES: PRODUCTIVITY EVALUATION

18.11 - 18.14 P.23
Luciana Gabriella Angelini
COMPOSITION AND ANTIFUNGAL ACTIVITY OF THE ESSENTIAL OILS HYDRODISTILLED FROM THREE ACCESSIONS OF PASTINOCELLO CARROT

18.14 - 18.17 P.24
Violina
PHYTOREMEDIATION POTENTIAL OF VETIVER GRASS (CHRYSOPOGON ZIZANIOIDES L.)

18.17 - 18.20 P.25
María L. Flores-López
COMPOSITION AND BIOLOGICAL PROPERTIES OF RHUS MICROPHYLLA AND MYRTILLOCACTUS GEOMETRIZANS FRUIT EXTRACTS

18.20 - 18.23 P.26
Maria Lourdes Diaz Jimenez
STABILITY ENHANCEMENT OF GARLIC-ALLICIN BY ENCAPSULATION IN ORGANIC AND INORGANIC MATRICES

18.23 - 18.26 P.27
Félix Martín
SETTING UP PRELIMINARY TESTS TO PROVE THE EFFECT OF COCONUT FATTY ACID AS AN APHID REPELLENT IN PEPPER

18.26 - 18.29 P.28
Elettira Frassineti
NEW PERSPECTIVE FOR THE GREEN ROOF SECTOR: SEDUM SPP. COVERING ACCESSIONS WITH BIOMEDICAL APPLICATIONS

18.29 - 18.32 P.29
Adelina Harizanova
THE EFFECT OF THE PREDECESSOR AND THE NITROGEN RATE ON THE PRODUCTIVITY AND THE ESSENTIAL OIL CONTENT OF CORIANDER (CORIANDRUM SATIVUM L.) IN SOUTH-EAST BULGARIA
<table>
<thead>
<tr>
<th>Time</th>
<th>Page</th>
<th>Title</th>
<th>Authors</th>
</tr>
</thead>
<tbody>
<tr>
<td>18.32 - 18.35</td>
<td>P.30</td>
<td><strong>Dennise Anahí Carrillo-Lomelí</strong>&lt;br&gt;FLOURENSIA MICROPHYLLA: EFFECTS OF ULTRASOUND ASSISTED EXTRACTION ON PHENOLIC COMPOUNDS, ANTIOXIDANT AND ANTIFUNGAL ACTIVITY OF PHENOLIC EXTRACT</td>
<td></td>
</tr>
<tr>
<td>18.35 - 18.38</td>
<td>P.31</td>
<td><strong>Juliana Navarro Rocha</strong>&lt;br&gt;CULTIVATION OF AROMATIC-MEDICINAL PLANTS, A MEETING POINT BETWEEN RESEARCH AND SOCIAL INCLUSION</td>
<td></td>
</tr>
<tr>
<td>18.38 - 18.41</td>
<td>P.32</td>
<td><strong>Juliana Navarro Rocha</strong>&lt;br&gt;WORMWOOD CANDIAL VARIETY ESSENTIAL OIL YIELD UNDER CULTIVATION IN ARAGÓN, SPAIN</td>
<td></td>
</tr>
<tr>
<td>18.41 - 18.44</td>
<td>P.33</td>
<td><strong>Valtcho D. Zheljazkov</strong>&lt;br&gt;ALLELOPATHIC EFFECTS OF JUNIPER ESSENTIAL OILS ON SEED GERMINATION AND SEEDLING GROWTH OF SOME WEED SEEDS</td>
<td></td>
</tr>
<tr>
<td>18.44 - 18.47</td>
<td>P.34</td>
<td><strong>Mariyana Shishkova</strong>&lt;br&gt;OPPORTUNITIES FOR SUSTAINABLE PRODUCTION OF ROSA DAMASCENA THROUGH APPLICATION OF THE PRINCIPLES OF BIOECONOMY - A CASE STUDY FROM PLOVDIV REGION</td>
<td></td>
</tr>
<tr>
<td>18.47 - 18.50</td>
<td>P.35</td>
<td><strong>Valtcho D. Zheljazkov</strong>&lt;br&gt;ANTIMICROBIAL ACTIVITY AND ALLELOPATHIC EFFECTS OF ESSENTIAL OILS ON SEED GERMINATION OF BARLEY</td>
<td></td>
</tr>
<tr>
<td>18.50 - 18.53</td>
<td>P.36</td>
<td><strong>Ali Baghdadi</strong>&lt;br&gt;IMPACT OF HARVESTING TIME ON PHYTOCHEMICAL CONSTITUENT AND ANTIOXIDANT PROPERTIES OF SWEET BASIL VARIETIES</td>
<td></td>
</tr>
<tr>
<td>18.53 - 18.56</td>
<td>P.37</td>
<td><strong>Diana Jasso de Rodríguez</strong>&lt;br&gt;FLOURENSIA RETINOPHYLLA: AN OUTSTANDING PLANT, FROM NORTHERN MÉXICO WITH ANTIBACTERIAL ACTIVITY</td>
<td></td>
</tr>
<tr>
<td>18.56 - 18.59</td>
<td>P.38</td>
<td><strong>Roberta Paris</strong>&lt;br&gt;CANNABIS MEDICA NAZIONALE - CAMED: INNOVATION AND ENHANCEMENT OF THE PRODUCTION OF MEDICAL CANNABIS PLANT MATERIAL FOR NATIONAL DEMANDS AND NEW VARIETAL CONSTITUTION FOR PHARMACEUTICAL USE</td>
<td></td>
</tr>
</tbody>
</table>
8.00 - 12.20 **STUDY TOUR**

8.00  Picking up at Savoia Regency Hotel  
*Via S. Donato, 159 - Bologna*

8.10  Picking up at DISTAL  
*Viale Fanin, 44 - Bologna*

8.15  Departure to *Ferrari Museum* (Maranello)

9.15  Arrival to Maranello & Visit of Ferrari Museum

11.00  Departure from Maranello

12.20 - 13.00  Arrival in Conference Venue and *quick lunch*

---

**Room: AULA MAGNA**

13.00 - 14.40  **Concurrent scientific sessions**  
**GENERAL CROPS AND PRODUCTS**  
Chair: Prof. *Ana Luisa Fernando*

13.00 - 13.20  **Luigi Pari (Keynote Speaker)**  
A PROTOTYPE TO CREATE SUBSURFACE WATER RETENTION SYSTEM (SWRS) TO FACE CLIMATE CHANGE: FIRST ASSESSMENT OF WORK PERFORMANCE

13.20 - 13.32  **Marisol T Berti**  
CAN FORAGE SORGHUM TYPES BE GROWN AS FEEDSTOCK FOR BIOENERGY IN NORTHERN LATITUDES?

13.32 - 13.44  **Maha Elbana**  
PRODUCTION OF CACTUS PEAR CROP UNDER WATER AVAILABILITY/DROUGHT CONDITIONS AND ITS IMPACT ON FRUIT PHYTOCHEMICAL CHARACTERISTICS

13.44 - 13.56  **Leandro Gomes**  
PROSPECTS OF CULTIVATING GIANT REED (*Arundo donax L.*) AND SWITCHGRASS (*Panicum virgatum L.*) IN SOILS CONTAMINATED WITH HEAVY METALS - BRIDGING BIOENERGY AND BIOMATERIALS PRODUCTION WITH ECOLOGICAL REMEDIATION
<table>
<thead>
<tr>
<th>Time</th>
<th>Speaker</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>13.56 - 14.08</td>
<td>Mariusz Jerzy Stolarski</td>
<td>HOW DOES THE DOUBLE HARVEST OF PERENNIAL HERBACEOUS CROPS IN ONE YEAR AFFECTS THE BIOMASS YIELD AND ITS QUALITY?</td>
</tr>
<tr>
<td>14.08 - 14.40</td>
<td>Questions &amp; Answers</td>
<td></td>
</tr>
<tr>
<td>Room: AULA 3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>13.00-14.40</td>
<td><strong>Concurrent scientific sessions</strong></td>
<td>MEDICINAL AND NUTRACEUTICAL PLANTS</td>
</tr>
<tr>
<td></td>
<td>Chair: Prof. Diana Jasso de Rodríguez</td>
<td></td>
</tr>
<tr>
<td>13.00 - 13.20</td>
<td>Dimitrios Argyropoulos (Keynote)</td>
<td>UNLOCKING THE POTENTIAL OF DATA-DRIVEN RESEARCH AND INNOVATION IN MEDICINAL PLANT VALUE CHAIN</td>
</tr>
<tr>
<td>13.20 - 13.32</td>
<td>Dimitrios Argyropoulos</td>
<td>CURRENT RESEARCH ON DRYING OF MEDICINAL AND AROMATIC PLANTS (MAPs) BELONGING TO LAMIACEAE FAMILY</td>
</tr>
<tr>
<td>13.32 - 13.44</td>
<td>María J. Pascual-Villalobos</td>
<td>CHARACTERIZATION OF BIOACTIVE VOLATILE BASED PRODUCTS AND ITS EFFICIENCY IN APHID POPULATION CONTROL ON A PEPPER CROP</td>
</tr>
<tr>
<td>13.44 - 13.56</td>
<td>Hristo Djugalov</td>
<td>CONTENTS OF CERTAIN MACRO, MICRO ELEMENTS AND BIOLOGICALLY ACTIVE SUBSTANCES IN THE FRUIT OF THE GOJI BERRY VARIETIES (LYCIUM BARBARUM L.)</td>
</tr>
<tr>
<td>13.56 - 14.08</td>
<td>Rumyana Georgieva</td>
<td>USE OF SOME PRODUCTS FOR FOLIAR APPLICATION FOR IMPROVING THE PRODUCTIVITY, QUALITY AND ESSENTIAL OIL CONTENT OF CORIANDER SEEDS (CORIANDRUM SATIVUM L.) UNDER SOUTH-EASTERN BULGARIA CONDITIONS</td>
</tr>
</tbody>
</table>
Diana Jasso de Rodríguez
ANTIOXIDANT AND ANTIPROLIFERATIVE ACTIVITIES OF FLOURENSIA SPP

Questions & Answers

Coffee Break

Room: AULA MAGNA

Concurrent scientific sessions
GENERAL CROPS AND PRODUCTS
Chair: Prof. Ana Luisa Fernando

Mariusz Jerzy Stolarski
SHORT ROTATION WOODY CROPS AS A SOURCE OF BIOACTIVE COMPOUNDS

Manuel Cantó-Tejero
ANISEED ESSENTIAL OIL BOTANICAL INSECTICIDES FOR THE MANAGEMENT OF THE LETTUCE APHID

Carolina Rodrigues
PECTIN EXTRACTION FROM OPUNTIA SPP. CLADODES: PROCESS OPTIMIZATION AND CHARACTERIZATION

S. Joseph Asadauskas
BIO-DERIVED FEEDSTOCKS FOR NATURAL DEEP EUTECTIC SOLVENTS

Ewelina Olba-Zięty
ECONOMIC ANALYSIS OF THE PRODUCTION OF SUPERCritical EXTRACT CONTAINING BIOACTIVE SUBSTANCES FROM POPLAR

Questions & Answers
**Room: AULA 3**

**15.00-16.30 Concurrent scientific sessions**

**MEDICINAL AND NUTRACEUTICAL PLANTS**

Chair: Prof. Diana Jasso de Rodríguez

15.00 - 15.12  
**Heriberto Torres Moreno**  
SEASONAL EFFECT ON THE ANTIPROLIFERATIVE AND ANTIINFLAMMATORY ACTIVITIES OF BURSERA MICROPHYLLA

15.12 - 15.24  
**Susana Fisher**  
BIOACTIVE COMPOUNDS IN FRUITS OF WILD MAQUI IN DIFFERENT RIPENING STAGES AND ENVIRONMENTS

15.24 - 15.36  
**Ilaria Marotti**  
AGRONOMIC AND NUTRACEUTICAL CHARACTERISTICS OF STINGING NETTLE GROWN UNDER ORGANIC FARMING IN ITALIAN ENVIRONMENTS

15.36 - 15.48  
**Eugenia Mazzara**  
MICROWAVE-ASSISTED EXTRACTION OF HEMP (CANNABIS SATIVA L.) TO RECOVER THREE VALUABLE FRACTIONS (ESSENTIAL OIL, PHENOLIC COMPOUNDS AND CANNABINOIDs): A CENTRAL COMPOSITE DESIGN OPTIMIZATION STUDY

15.48 - 16.00  
**Alan Taylor**  
HEMP FUNGICIDE SEED TREATMENTS TO CONTROL DAMPING-OFF

16.00 - 16.30  
Questions & Answers

16.30-16.45  
**Short Break**
Room: AULA MAGNA

16.45 - 18.03 POSTER PRESENTATION - SESSION 2
(OILSEEDS - FIBERS AND CELLULOSIC CROPS - NATURAL RUBBER AND RESIN)
Chair: Dr. Hussein Abdel-Haleem / Dr. Efthymia Alexopoulou
Dr. Sam Wang

OILSEEDS

16.45 - 16.48 P.39
Efthymia Alexopoulou
CRAMBE - WHICH VARIETY FITS BEST IN GRECE?

16.48 - 16.51 P.40
Giulio Balestrieri
COMPOSITION IN FATTY ACIDS AND TOTAL POLYPHENOLIS IN DIFFERENT GENOTYPES OF CANNABIS SATIVA L.

16.51 - 16.54 P.41
Sara Berzuini
CAMELINA A CASH COVER CROP FOR THE MEDITERRANEAN REGION: PRELIMINARY RESULTS FROM THE 4CE-MED PROJECT

16.54 - 16.57 P.42
Petar Čanak
CAMELINA GERMINATION UNDER OSMOTIC STRESS - TREND LINES, TIME-COURSES AND CRITICAL POINTS

16.57 - 17.00 P.43
Sarah Chen
TOWARDS AUTOMATING EARLY VIGOR RATINGS FOR BRASSICA PLANTS

17.00 - 17.03 P.45
Flavia Fulvio
IDENTIFICATION OF A FAD2 POINT MUTATION PUTATIVELY RESPONSIBLE FOR HIGH OLEIC SEED OIL PHENOTYPE IN AN EMS-MUTAGENIZED MILK THISTLE POPULATION

17.03 - 17.06 P.46
Adelina Garapova
FATTY ACID COMPOSITION OF THE OIL FROM EXPRESS-SUN ® SUNFLOWER HYBRIDS, DEPENDING ON SOIL FERTILITY

17.06 - 17.09 P.47
Hristofor Kirchev
OIL CONTENT AND YIELD OF TRIBENURON-METHYL RESISTANT SUNFLOWER HYBRIDS IN CONDITIONS OF DIFFERENT SOIL NUTRITION
<table>
<thead>
<tr>
<th>Time</th>
<th>Page</th>
<th>Presentation Title</th>
<th>Authors</th>
</tr>
</thead>
<tbody>
<tr>
<td>17.09-17.12</td>
<td>P.48</td>
<td>MUTAGENESIS AS TOOL FOR ENHANCEMENT OF FATTY ACID COMPOSITION OF RAPESEED (BRASSICA NAPUS L.)</td>
<td>Marina Marcheva</td>
</tr>
<tr>
<td>17.12-17.15</td>
<td>P.49</td>
<td>DIVERSITY OF POTENTIAL AND QUALITY OF CAMELINA (CAMELINA SATIVA) FOR HEALTHY FOODS AND BIO-ECONOMY</td>
<td>Marina Marcheva</td>
</tr>
<tr>
<td>17.15-17.18</td>
<td>P.52</td>
<td>CAMELINA ON MARGINAL LAND: A CULTIVATION TRIAL ON STEEP SLOPE IN ITALY</td>
<td>Luigi Pari</td>
</tr>
<tr>
<td>17.18-17.21</td>
<td>P.53</td>
<td>WHO’S BEST? A FIELD TRIAL WITH 10 CAMELINA VARIETIES TO STUDY THEIR ADAPTATION TO SEMIARID MEDITERRANEAN CONDITIONS</td>
<td>Noemi Codina</td>
</tr>
<tr>
<td>17.21-17.24</td>
<td>P.54</td>
<td>CAMELINA (CAMELINA SATIVA L. CRANTZ) A NEW OILSEED CROP FOR MEDITERRANEAN AND BALKAN EUROPEAN CLIMATES</td>
<td>Federica Zanetti</td>
</tr>
<tr>
<td>17.24-17.27</td>
<td>P.55</td>
<td>PHYTOREMEDIATION POTENTIAL OF DIFFERENT OIL CROPS IN HEAVY METALS CONTAMINATED SOILS</td>
<td>Ana Luisa Fernando</td>
</tr>
<tr>
<td>17.27-17.30</td>
<td>P.56</td>
<td>COMPARATIVE PROCESSING OF WILD-TYPE PENNYCRESS AND LIGHT-COLORED COVERCRESS TM SEEDS</td>
<td>Roque Evangelista</td>
</tr>
<tr>
<td>17.30-17.33</td>
<td>P.57</td>
<td>DOES SOWING PATTERN AFFECT THE COMPETITIVE ABILITY OF CAMELINA (CAMELINA SATIVA (L.) CRANTZ) AGAINST WEEDS?</td>
<td>Aritz Royo-Esnal</td>
</tr>
<tr>
<td>17.33-17.36</td>
<td>P.58</td>
<td>UNCOVER MORPHO-PHYSIOLOGICAL DIVERSITY IN CAMELINA (CAMELINA SATIVA L. CRANTZ) UNDER DIFFERENT ENVIRONMENTAL CONDITIONS IN EUROPE</td>
<td>Federica Zanetti</td>
</tr>
<tr>
<td>17.36-17.39</td>
<td>P.59</td>
<td>PHENOLOGY OF BRASSICA NAPUS L. FROM REMOTE SENSING DATA</td>
<td>Emilia Mihaylova</td>
</tr>
</tbody>
</table>
FIBERS AND CELLULOSIC CROPS

17.39 - 17.42 P.61
Ana Luisa Fernando
UNDERSTANDING THE POTENTIAL OF KENAF (HIBISCUS CANNABINUS L.) IN SOILS CONTAMINATED WITH HEAVY METALS IN MOZAMBIQUE

17.42 - 17.45 P.62
Michał Krzyżaniak
LIFE CYCLE ASSESSMENT OF SUPERCritical EXTRACT OBTAINED FROM POPLAR BIOMASS

17.45 - 17.48 P.63
Emilia Mihaylova
LASER RADIATION TO STIMULATE TOBACCO GROWTH

17.48 - 17.51 P.64
Walter Zegada-Lizarazu
POTENTIAL SOC ACCUMULATION OF TWO FIBER CROPS

17.51 - 17.54 P.65
Eleni G. Papazoglou
COULD RAMIE BE AN ALTERNATIVE CROP FOR REMEDIATION OF CONTAMINATED SOILS IN SOUTH EUROPE?

NATURAL RUBBER AND RESIN

17.54 - 17.57 P.66
M. Engracia Carrión
IDENTIFICATION OF NEW POLYPHENOLS IN LEAF OF GUAYULE AND ITS HYBRIDS

17.57 - 18.00 P.67
M. Mercedes García-Martínez
GUAYULE RESIN AND PORMENORIZED GUAYULIN CONTENT BY NEAR-INFRARED SPECTROSCOPY (NIR)

18.00 - 18.03 P.68
Juana Rozalén
COMPARISON OF ACCELERATED SOLVENT EXTRACTION EQUIPMENT’S FOR RESIN AND RUBBER DETERMINATION IN GUAYULE STEM
Day 4 (Wednesday - 08/09/2021)

Room: AULA MAGNA

9.00-12.00 Workshop
“National and EU perspectives on non-food crops, circular and biobased economy”
(Moderator: Dr. Federica Zanetti, UNIBO)

9.00 Giorgio Matteucci (Director of CNR Bioeconomy Unit, Italy)
Potential and possible limitations of non-food crops for a circular bioeconomy in the EU

9.20 Giorgio Testa (SIA executive committee member)
The relevance of non-food crops in Italy: the perspective of the Italian Society for Agronomy (SIA)

9.30 Ákos Kristóf (Head of Unit - Hungarian Ministry of Agriculture)
The BIOEast Initiative: challenges and opportunities for non-food crops

9.50 Marina Montedoro (Regional director of Coldiretti)
Actual and future regional policies for the development of the biobased economy and non-food crops

10.10-10.30 Coffee Break

10.30 Andrea Monti (UNIBO, Italy, BECOOL project coordinator)
Advanced results from the BECOOL (Brazil-EU Cooperation for Development of Advanced Lignocellulosic Biofuel) project

10.50 Efthy Mia Alexopoulos (CRES, Greece, GOLD project coordinator)
The GOLD project: Bridging the gap between phytoremediation solutions on growing energy crops on contaminated lands and clean biofuel production

11.10 Ana Luisa Fernando (FCT-UNL, Portugal, MEDIOPUNTIA project coordinator)
The MediOpuntia project: Promoting cactus plantation on large scale in marginal lands of Mediterranean countries

11.30 Andreas Kiessel (University of Hohenheim, Germany, GRACE project coordinator)
Progress and interim results of the BBI demo project GRACE

11.50 Final roundtable discussion

12.00-13.00 Lunch
Room: AULA MAGNA

13.00-14.36 Concurrent scientific sessions

**OILSEEDS**
Chair: Dr. Hussein Abdel-Haleem

13.00 - 13.12 Barbara Alberghini
SCREENING OF SPECIALIZED METABOLITES IN SIX CAMELINA VARIETIES

13.12 - 13.24 Efthymia Alexopoulou
LONG-TERM FIELD SCREENING TRIALS FOR CAMELINA IN GREECE

13.24 - 13.36 Luigi Pari
SWATHING AS A SUITABLE ALTERNATIVE FOR HARVESTING CAMELINA

13.36 - 13.48 Christina Eynck
A LONG TIME COMING: DEVELOPMENT OF THE HERBICIDE RESISTANT CAMELINA CULTIVAR SES1154HR

13.48 - 14.00 Aritz Royo-Esnal
WINTER WEED SUPPRESSION CAPACITY OF CAMELINA (CAMELINA SATIVA (L.) CRANTZ)

14.00 - 14.12 James V Anderson
ANALYSIS OF MOLECULAR MECHANISMS ASSOCIATED WITH LOW TEMPERATURE INDUCED FREEZING TOLERANCE AND FLORAL COMPETENCE IN CAMELINA SATIVA

14.12 - 14.24 Hussein Abdel-Haleem
GENETIC DIVERSITY AND POPULATION STRUCTURE OF USDA COLLECTION BRASSICA JUNCEA POPULATION

14.24 - 14.36 Questions & Answers
### Concurrent scientific sessions

**FIBERS AND CELLULOUSIC CROPS**  
Chair: Dr. Efthymia Alexopoulou

<table>
<thead>
<tr>
<th>Time</th>
<th>Speaker</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>13.00 - 13.20</td>
<td>Francesco Mirizzi (Keynote)</td>
<td>OVERVIEW AND PERSPECTIVES ON THE HEMP FIBRE VALUE CHAIN IN EUROPE</td>
</tr>
<tr>
<td>13.20 - 13.32</td>
<td>Dilpreet Bajwa</td>
<td>BIOBASED PLASTICIZER AND CELLULOSE NANOCRYSTALS IMPROVE MECHANICAL PROPERTIES OF POLYLACTIC ACID COMPOSITES</td>
</tr>
<tr>
<td>13.32 - 13.44</td>
<td>João Pires</td>
<td>CHARACTERIZATION OF CHITOSAN BIOFILMS REINFORCED WITH NANOCELLULOSE EXTRACTED FROM DIFFERENT LIGNOCELLULUSIC BIOMASSES</td>
</tr>
<tr>
<td>13.44 - 13.56</td>
<td>Ciro Vismara</td>
<td>GIANT REED HYDROLYSATE FOR SINGLE CELL OIL PRODUCTION BY OLEAGINOUS YEASTS LIPOMYCES STARKEYI AND RHODOSPORIDIOBOLUS AZORICUS</td>
</tr>
<tr>
<td>13.56 - 14.08</td>
<td>Dilpreet Bajwa</td>
<td>ENHANCING UV-SHIELDING AND MECHANICAL PROPERTIES OF POLYLACTIC ACID NANOCOMPOSITES BY ADDING LIGNIN COATED CELLULOSE NANOCRYSTALS</td>
</tr>
<tr>
<td>14.08 - 14.20</td>
<td>Francesco Pancaldi</td>
<td>GROWING NOVEL PERENNIAL BIOMASS CROPS ON MARGINAL LANDS: CHALLENGES FOR PLANT BREEDING</td>
</tr>
<tr>
<td>14.20 - 14.32</td>
<td></td>
<td>Questions &amp; Answers</td>
</tr>
<tr>
<td>14.36-14.50</td>
<td></td>
<td>Short Break</td>
</tr>
</tbody>
</table>
**Room: AULA MAGNA**

14.50-16.15  **Concurrent scientific sessions**  
**OILSEEDS**  
Chair: Dr. Hussein Abdel Haleem  

14.50 - 15.02  **Mukhlesur Rahman**  
OILSEED BREEDING PROGRAM AT NORTH DAKOTA STATE UNIVERSITY  

15.02 - 15.14  **Russ W. Gesch**  
IMPROVING PENNYCRESS ESTABLISHMENT THROUGH EARLIER CORN HARVEST  

15.14 - 15.26  **Liv S. Severino**  
CASTOR MEAL FOR ANIMAL FEEDING AND CONTROLLING NEMATODES STUDIES IN PROGRESS  

15.26 - 15.38  **Federica Zanetti**  
SAFFLOWER (CARTHAMUS TINCTORIUS L.) A MULTIPURPOSE OILSEED CROP FOR THE MEDITERRANEAN REGION  

15.38 - 15.50  **Nesho Neshev**  
AMELIORATIVE BIOSTIMULANT APPLICATION AT SUNFLOWER HYBRIDS TREATED WITH INAPPROPRIATE HERBICIDES  

15.50 - 16.15  Questions & Answers  

**Room: AULA 3**

14.50-16.20  **Concurrent scientific sessions**  
**NATURAL RUBBER AND RESIN**  
Chair: Dr. Sam Wang  

14.50 - 15.10  **Evan Sproul (Keynote)**  
SUSTAINABILITY ASSESSMENT OF PRODUCING GUAYULE RUBBER WITH COPRODUCTS  

15.10 - 15.22  **Olivier Taugourdeau**  
ADAPTING INDUSTRIAL CROPS TO URBAN BROWNFIELDS: THE FRENCH GUAYULE CASE  

15.22 - 15.34  **Jose Antonio Reche-Vilches**  
COLD RESISTANCE OF GUAYULE CULTIVATED IN CASTILLA-LA MANCHA, SPAIN
**Room: AULA MAGNA**

16.40 - 17.30  **Concurrent scientific sessions**  
**FIBERS AND CELLULOSIC CROPS**  
Chair: Dr. Efthymia Alexopoulou

16.40 - 16.52  **Efthymia Alexopoulou**  
HOW THE IRRIGATION AFFECTS THE MISCANTHUS YIELDS IN THE DRY MEDITERRANEAN REGION

16.52 - 17.04  **Danilo Scordia**  
SOIL WATER AVAILABILITY ON BIOMASS YIELD AND WUE OF PERENNIAL GRASSES IN A SEMIARID AREA

17.04 - 17.16  **Eleni G Papazoglou**  
TOLERANCE TO AND ACCUMULATION OF CADMIUM IN THREE BAST FIBER CROPS

17.16 - 17.30  Questions & Answers

**Room: AULA 3**

16.40 - 17.42  **Concurrent scientific sessions**  
**NATURAL RUBBER AND RESIN**  
Chair: Dr. Sam Wang

16.40 - 16.52  **Francisco Miguel Jara**  
GUAYULE: ALTERNATIVE CROP FOR SEMI-ARID REGIONS IN SPAIN

16.52 - 17.04  **Sophia Alami Tazi**  
IMPLEMENTATION GAPS FOR THE BUILDING OF A SUSTAINABLE BIOECONOMY VALUE CHAIN. LESSONS FROM GUAYULE CASE IN OCCITANIA
DAYS 4 (WEDNESDAY - 08/09/2021)

17.04 - 17.16  Guayente Latorre  
IMPROVING GUAYULINS SELECTIVE EXTRACTION

17.16 - 17.28  Daniel Alberto Zuniga Vazquez  
OPTIMAL DESIGN OF GUAYULE AND GUAR SUPPLY CHAINS FOR THE AMERICAN SOUTHWEST

17.28 - 17.40  Sam Wang  
IRRIGATION EFFECTS ON SEASONAL GROWTH AND RUBBER PRODUCTION OF DIRECT-SEEDED GUAYULE

17.40 - 17.50  Questions & Answers

Room: AULA MAGNA

17.50-19.00  Closing and Award Ceremony

20.00-23.00  Gala Dinner  
at Savoia Regency Hotel
**DAY 1**
**SUNDAY 05/09/2021**

<table>
<thead>
<tr>
<th>Time</th>
<th>Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>16.00</td>
<td>WELCOME RECEPTION &amp; PRESENTATION OF THE EXPERIMENTALE STATION ACTIVITIES AND SHORT FIELD TOUR</td>
</tr>
<tr>
<td>20.00</td>
<td></td>
</tr>
</tbody>
</table>

**DAY 2**
**MONDAY 06/09/2021**

<table>
<thead>
<tr>
<th>Time</th>
<th>Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>09.00</td>
<td>AULA MAGNA</td>
</tr>
<tr>
<td>09.00</td>
<td>MAGIC EVENT</td>
</tr>
<tr>
<td>12.00</td>
<td>Lunch</td>
</tr>
<tr>
<td>13.00</td>
<td>Lunch</td>
</tr>
<tr>
<td>13.00</td>
<td>Lunch</td>
</tr>
<tr>
<td>14.10</td>
<td>Short break</td>
</tr>
<tr>
<td>14.30</td>
<td></td>
</tr>
<tr>
<td>14.30</td>
<td>OPENING SESSION</td>
</tr>
<tr>
<td>15.45</td>
<td>Short break</td>
</tr>
<tr>
<td>16.05</td>
<td></td>
</tr>
<tr>
<td>15.45</td>
<td>Coffee break</td>
</tr>
<tr>
<td>16.05</td>
<td></td>
</tr>
<tr>
<td>16.45</td>
<td>PLENARY SESSION</td>
</tr>
<tr>
<td>17.05</td>
<td>Short break</td>
</tr>
<tr>
<td>17.20</td>
<td></td>
</tr>
<tr>
<td>17.05</td>
<td>Poster presentation Session 1</td>
</tr>
<tr>
<td>19.00</td>
<td></td>
</tr>
</tbody>
</table>
## TIMETABLE

### DAY 3
**TUESDAY 07/09/2021**

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
</tr>
</thead>
</table>
| 08.00 | STUDY TOUR

  **Motorvalley : Ferrari - Museum**

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
</tr>
</thead>
<tbody>
<tr>
<td>12.00</td>
<td>Lunch</td>
</tr>
<tr>
<td>13.00</td>
<td>Lunch</td>
</tr>
<tr>
<td>12.00</td>
<td>Lunch</td>
</tr>
<tr>
<td>12.00</td>
<td>Lunch</td>
</tr>
<tr>
<td>13.00</td>
<td>Lunch</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
</tr>
</thead>
</table>
| 09.00 | **AULA MAGNA**

  **GENERAL CROPS AND PRODUCTS**

  (oral presentations)

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
</tr>
</thead>
<tbody>
<tr>
<td>14.40</td>
<td>Coffee break</td>
</tr>
<tr>
<td>15.00</td>
<td>Coffee break</td>
</tr>
<tr>
<td>14.36</td>
<td>Short break</td>
</tr>
<tr>
<td>14.50</td>
<td>Short break</td>
</tr>
</tbody>
</table>
| 16.30 | **AULA MAGNA**

  **GENERAL CROPS AND PRODUCTS**

  (oral presentations)

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
</tr>
</thead>
<tbody>
<tr>
<td>16.45</td>
<td>Short break</td>
</tr>
</tbody>
</table>
| 17.05 | **Poster presentation**

  **Session 2**

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
</tr>
</thead>
<tbody>
<tr>
<td>18.03</td>
<td><strong>CLOSING &amp; AWARD CEREMONY</strong></td>
</tr>
</tbody>
</table>

### DAY 4
**WEDNESDAY 08/09/2021**

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
</tr>
</thead>
</table>
| 09.00 | **AULA MAGNA**

  **Workshop**

  National and EU prospects on non-food crops, circular and biobased economy

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
</tr>
</thead>
<tbody>
<tr>
<td>12.00</td>
<td>Lunch</td>
</tr>
<tr>
<td>12.00</td>
<td>Lunch</td>
</tr>
<tr>
<td>12.00</td>
<td>Lunch</td>
</tr>
<tr>
<td>12.00</td>
<td>Lunch</td>
</tr>
<tr>
<td>13.00</td>
<td>Lunch</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
</tr>
</thead>
</table>
| 13.00 | **AULA MAGNA**

  **OIL SEED**

  (oral presentations)

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
</tr>
</thead>
</table>
| 14.30 | **AULA MAGNA**

  **FIBER AND CELLULOSIC CROPS**

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
</tr>
</thead>
</table>
| 16.20 | **AULA 3**

  **OIL SEED**

  (oral presentations)

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
</tr>
</thead>
</table>
| 16.40 | **AULA 3**

  **NATURAL RUBBER AND RESIN**

  (oral presentations)

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
</tr>
</thead>
</table>
| 17.50 | **Poster presentation**

  **Session 1**

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
</tr>
</thead>
<tbody>
<tr>
<td>19.00</td>
<td><strong>CLOSING &amp; AWARD CEREMONY</strong></td>
</tr>
</tbody>
</table>
Special thanks to

Gold Sponsor

Bronze Sponsor

Meeting venue

Aula Magna - Plesso di Agraria
University of Bologna
Viale Fanin 44-46 - Bologna

Contacts during the Conference

ON-SITE
+39 335 5302981

ON-LINE
+39 348 2487176

www.aaic2020.com

ORGANIZING SECRETARIAT

Avenue media®
Conference & Expo
Viale Aldini 222/4 - 40136 Bologna - Italy
Tel. +39 051 6564300 - Fax +39 051 6564334
congressi@avenuemedia.eu - www.avenuemedia.eu
AAIC BOARD OF DIRECTORS

President: Federica Zanetti, Alma Mater Studiorum – Università di Bologna, Bologna, Italy

President-Elect: Dilpreet Bajwa, Montana State University, Bozeman, MT, USA

Past president: Von Mark Cruz (Bridgestones Americas), Phoenix, AZ, USA

Secretary: Claire Heinitz, ARS-USDA, USA

Registrar/Membership: Valerie Teetor, University of Arizona, Tucson, AZ, USA

Treasurer: Burton Johnson, North Dakota State University, Fargo, ND, USA

Webmaster: Von Mark Cruz (Bridgestones Americas), Phoenix, AZ, USA

Proceeding editors & curators:

Federica Zanetti, DISTAL, Alma Mater Studiorum – Università di Bologna, Bologna, Italy

Erika Facciolla, DISTAL, Alma Mater Studiorum – Università di Bologna, Bologna, Italy

Marisol T. Berti, North Dakota State University, Fargo, ND, USA

Dulan Samarappuli, North Dakota State University, Fargo, ND, USA
# Table of Contents

ABSTRACTS GENERAL CROPS DIVISION .................................................................................................................. 4

**ORAL + KEYNOTE PRESENTATIONS** .................................................................................................................. 4

ABSTRACTS GENERAL CROPS DIVISION .................................................................................................................. 16

**POSTERS** ......................................................................................................................................................... 16

ABSTRACTS MEDICINAL & NUTRACEUTICAL PLANTS DIVISION ........................................................................... 33

**ORAL + KEYNOTE PRESENTATIONS** .................................................................................................................. 33

ABSTRACTS MEDICINAL & NUTRACEUTICAL PLANTS DIVISION ........................................................................... 45

**POSTERS** ......................................................................................................................................................... 45

ABSTRACTS NATURAL RUBBER AND RESINS DIVISION .......................................................................................... 63

**ORAL + KEYNOTE PRESENTATIONS** .................................................................................................................. 63

ABSTRACTS NATURAL RUBBER AND RESINS DIVISION .......................................................................................... 75

**POSTERS** ......................................................................................................................................................... 75

ABSTRACTS FIBERS & CELLULOSICS CROPS DIVISION ......................................................................................... 79

**ORAL PRESENTATIONS** ........................................................................................................................................ 79

ABSTRACTS FIBERS & CELLULOSICS CROPS DIVISION ......................................................................................... 88

**POSTERS** ......................................................................................................................................................... 88

ABSTRACTS OILSEEDS DIVISION ............................................................................................................................ 94

**ORAL PRESENTATIONS** ........................................................................................................................................ 94

ABSTRACTS OILSEEDS DIVISION ............................................................................................................................ 107

**POSTERS** ......................................................................................................................................................... 107
Camelina [Camelina sativa (L.) Crantz] is native species of Eurasia, which is gaining interest worldwide due to its better cold, heat, and drought tolerance, and less susceptibility to disease and pests than oilseed rape (Brassica napus L.). Furthermore, studies conducted in Canada and USA reported that as far as yield is concerned, camelina could be competitive against other Brassicas. Water shortage during germination is one of the major constraints that induces irregular and delayed seed germination and emergence, leading to poor plant establishment. Camelina has relatively low water requirement and high tolerance to drought, at all stages of development, even at germination and early seedling growth. Aiming at understanding the response of camelina germination under osmotic stress and the identification of critical soil moisture levels for successful establishment, two spring cultivars, developed at the Institute of Field and Vegetable crops Novi Sad, were compared (NS Slatka and NS Zlatka) under 9 levels of osmotic stress, ranging from 0 MPa to -1.6 MPa. Seeds were kept at 20°C and 8/16 h light/dark cycle. Osmotic potential of solution was obtained by using polyethylene glycol. Seeds were considered germinated when radicle was at least 2 mm long. Germination was surveyed daily, while final germination was determined when no germinated seeds were recorded for 3 consecutive days, or after 15 days of incubation. Results showed that both cultivars did not decrease germination under mild and medium osmotic stress levels of (i.e., < -0.6 MPa). Higher levels of osmotic stress induced significant germination decrease in both cultivars, with NS Zlatka being the most sensitive one. Significant increase on germination speed was noticed at -0.4 MPa. A significant interaction G x OS interaction was surveyed with NS Zlatka having quicker germination in the control (0 MPa) and under the mildest level of osmotic stress (-0.4 Mpa). When osmotic stress was increased a significant bi-linear trend for both cultivars was surveyed. The inflection points were detected at -1.15 and -1.18 MPa, in NS Slatka and NS Zlatka, respectively, with trend in germination rapidly declining after this level. Furthermore, the estimated osmotic potentials for completing stopping germination were -1.45 and -1.46 Mpa, for NS Slatka and NS Zlatka, respectively. MPa. Time to 50% germination showed also a significant bi-linear trend in response to osmotic potential, but in the opposite direction than the one observed in germination. Inflection points were recorded at -0.77 MPa and -0.78 MPa for NS Slatka and NS Zlatka, respectively. After those points, time to 50% of germination increased rapidly. Number of days for initiating germination progressively increased with the decrease of osmotic potential. In control condition (0MPa) and under the mildest level of osmotic stress (-0.2 MPa), germination began the first day after incubation, with NS Zlatka having a more rapid start. Under more severe stress level (-0.8 MPa) germination began after 2 days, and only NS Slatka fulfilled its germination potential, but both cultivars reached 90% of germination. Under higher osmotic stress levels germination was postponed for a few days and maximum germination was obtained later. At -1.6 MPa camelina didn’t germinate. Camelina confirmed to withstand high levels of drought stress at germination and could be considered a more suitable option than oilseed rape on marginal lands, or areas with irregular precipitation.

Contact: Petar Čanak, Institute of Field and Vegetable Crops, National Institute of the Republic of Serbia, M. Gorkog 30. 21000 Novi Sad, Serbia. Email: petar.canak@ifvcns.ns.ac.rs