

V CONVEGNO AISSA #UNDER40

LE SCIENZE AGRARIE NELL'ANTROPOCENE:
DALLA PRODUTTIVITÀ ALLA TUTELA
DEL PATRIMONIO MATERIALE E CULTURALE

BOOK OF ABSTRACTS

26-27 GIUGNO 2024
UNIVERSITÀ DI FIRENZE,
CAMPUS DI NOVOLI, EDIFICIO D6

110 anni di
Agraria

Il futuro è
nell'agrAria



Con il patrocinio di:



UNIVERSITÀ
DEGLI STUDI
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DAGRI
DIPARTIMENTO DI SCIENZE
E TECNOLOGIE AGRARIE,
ALBERGARIA, AMBIENTALE, FORESTALI

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11:30 **SESSIONE S3 - aula 007**

Dal miglioramento genetico al recupero del patrimonio autoctono

Chairs: Stefania Marzario UNIBAS, Alice Checucci UNIFI, Maria Chiara Fabbri UNIFI

Chiara Delvento (UNIBA) S3 - 01
High-density linkage mapping and genetic dissection of resistance to broomrape (*orobanche crenata* forsk.) in pea (*pisum sativum* L.)

Martina Ferrero (UNITO) S3 - 02
Downy mildew resistance 6 (DMR6): how to enhance biotic stress tolerance in eggplant through genome editing

Lia Obinu (UNISA) S3 - 03
The reference-free pangenome of *Arabidopsis thaliana*

Dario Paolo (CNR-IBBA) S3 - 04
Development of a biotech toolbox for bean research

Gabriele Usai (UNIPI) S3 - 05
Exploring the genetic diversity in Mediterranean fig (*Ficus carica* L.) varieties

Andrea Delle Donne (UNIMI) S3 - 06
Cows' resilience of two intensive farms in Lombardy

Short communications

Leandra Leto (UNIPR) S3 - SC01
Virus-derived hop plantlets, var. Magnum, are a rich source of bioactive compounds

Lorenzo Antonio Marino (UNITO) S3 - SC02
From Orchard to Table: enhancing *Castanea sativa* traceability using DNA molecular markers along the supply chain

Vera Pavese (UNITO) S3 - SC03
Development of new biotechnological strategies for improving breeding in woody species

Susanna Cialli (SANT'ANNA) S3 - SC04
Unveiling hidden potential: wild tomatoes for enhancing agrobiodiversity and face salinity stress in the Anthropocene

Fabiana Marino (UNITO) S3 - SC05
Morphological and qualitative characterization of four tomatoes (*Solanum lycopersicum* L.) landraces from Piedmont

TERZA SESSIONE S1 - aula 018

Economia circolare, sviluppo sostenibile e tecnologico, consumatori

Chairs: Matteo Garau UNISS, Andrea Dominici UNIFI, Luisa Leolini UNIFI

Nuria Goldáraz-Salamero (UNITO) S1 - 17
Exploring Environmental and Economic Implications of Introducing Hazelnut Skins in Livestock Diets

Marco Martinoli (CREA) S1 - 18
Improved shelf-life of gilthead seabream fillets fed an organic diet including crayfish meal

Agnese Spadi (UNIFI) S1 - 19
Comparison of different olive pomace maturation system for vermicompost production

Diana Vanacore (CNR) S1 - 20
Use of distillation of pruning waste from *Pistacia lentiscus* L. to produce essential oils and tannins extracts as natural-based agrochemicals: towards green solutions for circular economy in nursery practices

Giulia Dallavalle (F. MACH) S1 - 21
Influence of Mint and Rose extraction method on *in vitro* rumen fermentations

Riccardo Paoloni (UNIFI) S1 - 22
Natural or artificial Christmas tree? An environmental dilemma solved by Life Cycle Assessment methodology

Short communications

Martino Rogai (CNR) S1 - SC11
Agile fuelbreak maintenance with multipurpose excavators equipped with mini-winch

Raffaella Ofano (UNINA) S1 - SC12
Soil Geochemical fingerprinting for agri-food authenticity and traceability

Carlotta Breschi (UNIFI) S1 - SC13
Extraction and use of fruit by-product's bioactive compounds for gluten free and vegan cookies fortification

Tommaso Ugolini (UNIFI) S1 - SC14
Olive tree (*Olea europaea* L.) leaves: intra- and interannual variability of the phenolic profile of 4 typical Tuscan cultivars

Emma Copelotti (UNIPI) S1 - SC15
Effects of saturated fatty acid enriched diets on *Tenebrio molitor* larvae

Adja Lira De Medeiros (UNIFI) S1 - SC16
Diets containing sesamin and alpha-lipoic acid and lipid quality of pacu's fillets

TERZA SESSIONE S2 - aula 015

Strumenti e nuove tecnologie smart applicate ai cicli produttivi

Chairs: Domenico Rongo UNISA, Leonardo Verdi UNIFI, Giulia Angeloni UNIFI

Cassandra Detti (UNIFI) S2 - 14
Investigating the physiological responses of *Cinnamomum camphora* to different irrigation regimes coupled with online monitoring of leaf water content in nursery settings

Ester Curci (UNITUS) S2 - 15
Assessing Carbon Stock in Small Landscape Features: study area of Northeast Italy

Silvia Parrini (UNIFI) S2 - 16
Discriminant analysis as a tool to classify grasslands based on near-infrared spectra

Andrea Pagliari (UNIFI) S2 - 17
The DRONE4AGRI project: first field results on spray quality using UAV technology in high slope terraced vineyards

Alessandro Zanchin (UNIPD) S2 - 18
Three oenological applications of Digital Twins for assessing Grapevine bunch compactness

Andrea Confessore (UNIFI) S2 - 19
Does age affect the adaptation of dairy cows managed with a virtual fence system?

Short communications

Leonardo Pace (UNITUS) S2 - SC08
Soil mapping with a limited number of samples by coupling emi and nir spectroscopy in hazelnut tree orchard

Gianmarco Alfieri (UNITUS) S2 - SC09
Feasibility assessment of a low-cost visible spectroscopy-based prototype for monitoring polyphenol extraction in fermenting musts

Simone Marcolini (SANT'ANNA) S2 - SC10
Uncovering arbuscular mycorrhizal fungi diversity with proteomics

Lorenzo Pippi (UNIPI) S2 - SC11
Quality and safety of baby leaf lettuce grown in floating system with different nitrogen and salt conditions can be assessed by hyperspectral data

Giuseppe Quaratiello (UNIPI) S2 - SC12
Using hyperspectral data to predict leaf physiological traits and discriminate ozone effects grapevine (*Vitis vinifera* L.)

SECONDA SESSIONE S8 - aula 016

Pratiche innovative di mitigazione e adattamento ai cambiamenti climatici

Chairs: Paola Cetera UNISS, Mauro De Feudis UNIBO, Giulio Castelli UNIFI

Tommaso Frioni (UNICATT) S8 - 06
Superabsorbent Hydrogels: a new tool for vineyard water management?

Livia Passarino (UNIFI) S8 - 07
Automatic mapping and characterization of forest disturbances in Italy using remote sensing Sentinel-2 data

Raffaele Cavaliere (UNISA) S8 - 08
Chitosan nanoparticles loaded with orange essential oil against *aphis gossypii*: characterization, insecticidal activity and selectivity

Gregorio Fantoni (UNIFI) S8 - 09
Evaluating climate change mitigation potential of coppice conversion to high stand in two broadleaves forest in central Italy

Giacomo Marengo (UNITO) S8 - 10
Land use legacy drives post-abandonment forest structure and understorey composition: a multidisciplinary approach to manage novel forest landscapes

Riccardo Napolitano (CREA-ZA) S8 - 11
Caviar and sturgeon meat: from luxury to sustainable food production

Short communications

Silvia Calvani (UNIFI) S8 - SC04
Communication as a social parameter to investigate wildfires

Giulia Quagliata (UNITUSCIA) S8 - SC05
Drought response in wheat involves a changed plant ionic network

Lorenzo D'Asaro (UNIPI) S8 - SC06
Hydrochar from *Myriophyllum aquaticum*: win-win circular strategy to contain an invasive species and produce a new soil amendment

Enrico Lucca (UNIFI) S8 - SC07
The Water-Energy-Food-Ecosystems Nexus approach to managing water resources: a qualitative assessment in Northern Italy

Giambattista Carluccio (UNISALENTO) S8 - SC08
Emerging bacterial diseases: a threat to the sustainability of salento's forests

13:00 Lunch break + Poster session

14:30 Workshop, Sessione partecipativa - **Aula 018**

16:30 Coffee break

17:00 Saluti finali, premiazioni e presentazione Convegno Aissa#Under40 2025 - **Aula 018**

■ S1: Economia circolare, sviluppo sostenibile e tecnologico, consumatori

■ S2: Strumenti e nuove tecnologie smart applicate ai cicli produttivi

■ S3: Dal miglioramento genetico al recupero del patrimonio autoctono

■ S4: L'importanza di biostimolanti, bioinoculanti e probiotici nel miglioramento della crescita e della salute in piante e animali

■ S5: La microbiologia nei settori agrario, alimentare e zootecnico

■ S6: Sviluppo sostenibile e cambiamento climatico: l'impatto sulle produzioni e sui sistemi urbani e rurali

■ S7: Pratiche sostenibili per la gestione del sistema acqua-uolo-pianta-atmosfera

■ S8: Pratiche innovative di mitigazione e adattamento ai cambiamenti climatici

DIETS CONTAINING SESAMIN AND ALPHA-LIPOIC ACID AND LIPID QUALITY OF PACU'S FILLETS

Adja Cristina Lira de Medeiros¹, Julio Guerra Segura², Katia Rodrigues Batista de Oliveira³, Fábio Rosa Susse⁴, César Gonçalves de Lima⁵, Giuliana Parisi¹, Elisabete Maria Macedo Viegas⁵

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Abstract

In recent years, the pacu (*Piaractus mesopotamicus*) has stood out among the native fish species of great economic interest in Brazil. In addition to its excellent adaptation to climatic conditions, this species prefers an omnivorous diet with a strong tendency towards herbivory, being able to feed on fruits, crustaceans, organic debris, small fishes, and mollusks. Thus, the pacu is a species with low protein requirements and can be fed with a low-cost diet. According to the Organization for Economic Co-operation and Development (OECD), the mean of pacu's production in Brazil was around 12,3091 tonnes, as the average for the period 2012-2021. Concerning diets, it is common practice in aquaculture to supplement fish diets with lipids from plant or animal sources to improve diet formulation. Therefore, this study aimed to evaluate the effects of two metabolic modifiers (sesamin from sesame oil and alpha-lipoic acid) on the fatty acid composition and lipid quality of the pacu fillets. A total of n. 480 pacu juveniles (3.35 ± 0.78 g) was divided into 24 experimental units (with n=20 juveniles for each). Six feeding treatments were randomized in a 3x2 factorial design with three oil sources (soybean, sesame, and linseed oil) and two levels of alpha-lipoic acid (0 and 0.1%) in four replicates. Data were analyzed by one-way analysis of variance and Tukey's test (5%). Sesamin provided by sesame oil did not alter the chemical composition and metabolism of polyunsaturated fatty acids in the fillets of pacu juveniles. However, diets containing linseed oil increased the concentration of n-3 polyunsaturated fatty acids in the fillets, mainly α -linolenic (18:3n-3) and eicosapentaenoic (20:5n-3) acids. Fish that did not receive alpha-lipoic acid supplementation had fillets with higher polyunsaturated fatty acids and lower atherogenicity and thrombogenicity indexes, providing a better lipid quality of the fillets.

Keywords

fillets, linseed oil, polyunsaturated, sesame oil, supplementation