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ASPA 25th Congress Book of Abstract

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ASPA 25th Congress

Monopoli (BARI - ITALY), June 13-16, 2023

Guest Editors

Angela Gabriella D'Alessandro, Pasquale De Palo, Aristide Maggiolino, and Marcello Mele

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ASPA 25th Congress

Monopoli (BARI – ITALY), June 13–16, 2023

#ASPA2023

ASPA 25th Congress Book of Abstract

The 25th congress of the Animal Science and Production Association

"Animal Production Science: Innovations and sustainability for future generation" is under patronage of Loghi patrocini

Monopoli (BARI – ITALY),

June 13–16, 2023

Venue

Torre Cintola Natural Sea Emotions

Località Capitolo – Monopoli (BARI – ITALY)

17:50 Ablondi Michela, Cipolat-Gotet Claudio, Stocco Giorgia, Crepaldi Paola, Cortellari Matteo, Negro Alessio, Summer Andrea, Biffani Stefano
How to combine microsatellite and SNP for parentage verification in sheep? **O377**

17:55 Callegaro Simone, Biffani Stefano, Tiezzi Francesco, Fabbri Maria Chiara, Bozzi Riccardo
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17:15 Berardi Giovanna, Di Taranto Aurelia, Vita Valeria, Iammarino Marco
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17:30 della Malva Antonella, Gagaoua Mohammed, Santillo Antonella, Priolo Alessandro, di Corcia Martina, Marino Rosaria, Ciliberti Maria Giovanna, Caroprese Mariangela, Sevi Agostino, Albenzio Marzia
Plasma proteome, a non-invasive biofluid to monitor lamb meat quality **O116**

17:45 Soglia Francesca, Babini Elena, Mazzoni Maurizio, Petracci Massimiliano
Collagen and extracellular matrix composition of chicken breast meat affected by growth-related abnormalities **O229**

18:00 Baldi Giulia, Zampiga Marco, Soglia Francesca, Gagliano Mara Antonia, Petracci Massimiliano, Sirri Federico
Microalgae as alternative protein source to soybean: effects on the main quality traits of broiler breast meat **O109**

18:15 Huerta Almudena, Trocino Angela, Pirrone Fabrizio, Bordignon Francesco, Xiccato Gerolamo, Birolo Marco
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18:30 Polidori Paolo, Cammertoni Natalina, Vincenzetti Silvia
Mule carcass characteristics and meat quality **O577**

18:45 Frongia Andrea, Acciaro Marco, Manca Carla, Pintone Andrea. Picconi Stefano, Sitzia Maria
Heavy lamb production as a way to differentiate dairy sheep livestock system **O583**

19:00 Nardelli Valeria, Ingegno Mariateresa, Della Rovere Ines, Chiappinelli Andrea, Casamassima Francesco, Tomaiouolo Michele, Iammarino Marco
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19:15 Iammarino Marco, Berardi Giovanna, Ferrara Alfredo, Di Taranto Aurelia
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Chairs: Buccioni Arianna – Conte Giuseppe

17:00 Palmonari Alberto, Federiconi Alessia, Ghiaccio Francesca, Buonaiuto Giovanni, Cavallini Damiano
Impact of dietary lipid source on fecal microbiota composition in dairy cows **O263**

17:15 Giagnoni Lucia, Salza Sara, Melillo Rita, Piras Gabriella, Tondello Alessandra, Stevanato Piergiorgio, Cecchinato Alessio, Squartini Andrea, Tedde Tiziana, Mudadu Alessandro Graziano, Spanu Carlo
Study of microbial communities, pathogenic and emerging microorganisms in sheep's milk cheese processing facilities of Sardinia using a DNA metabarcoding approach **O085**

O229

Collagen and extracellular matrix composition of chicken breast meat affected by growth-related abnormalities

Francesca Soglia[a], Elena Babini[a], Maurizio Mazzoni[b] and Massimiliano Petracci[a]

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The present study aimed at deepening the knowledge on the implications of the connective tissue components in the development of growth-related abnormalities affecting broilers *Pectoralis major* muscles (PM) with special reference to the wooden breast (WB) and spaghetti meat (SM) conditions. In fact, although with antithetical features, alterations in the connective tissue are among the distinctive traits of these abnormalities which are respectively characterized by an extensive accumulation (up to fibrosis) (WB) and a progressive rarefaction (SM) of the interstitial connective tissue composing the perimysial septa. For this purpose, 3 h *post-mortem* 15 PM were selected from a homogenous batch and grouped according to their phenotype as unaffected (NORM), or severe WB or SM cases (5/group). Total glycosaminoglycans (GAGs) were quantified along with the proportion of soluble and insoluble collagen. Then, collagen type III, selected due to its association with muscle regeneration, was isolated and its amino acid composition assessed by HPLC method. Data were analysed by one-way ANOVA considering the phenotype (NORM, WB, SM) as main effect and, when significant, means were separated by Tukey-HSD test. All statistical differences were considered significant at a level of $p \leq 0.05$. Overall, the findings obtained in this study evidenced that the occurrence of growth-related abnormalities remarkably affects the connective tissue components within the PM. In fact, if compared to NORM and SM, a 3-fold increase ($p < 0.001$) in the concentration of GAGs was found in WB thus suggesting an increased deposition of extracellular matrix. In addition, significant differences ($p < 0.01$) were observed for both insoluble and soluble collagen content among the groups. In detail, the last was found to be significantly higher ($p < 0.01$) in WB in comparison with NORM (0.73 *vs.* 0.58%) whereas SM exhibited intermediate values (0.65%). Remarkable differences were also observed between WB and SM in most of the amino acids composing collagen type III. In detail, among the others, if compared with SM, a significantly ($p < 0.01$) higher amount of glycine and proline was found in WB along with a concurrent increase in the concentration of hydroxyproline (+63%) and hydroxylysine (2-fold) whereas NORM exhibited intermediate values. In conclusion, these findings seem to suggest a key role of the extracellular matrix composition in differentiating WB and SM conditions.