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(ASPA)**

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**Italian Journal  
of Animal Science  
2015; volume 14  
supplement 1**

# **italian journal of animal science**

**ASPA 21<sup>st</sup> Congress  
Milano, June 9-12, 2015**

**Book of Abstracts**

**Guest Editor: Giovanni Savoini**

# Italian Journal of Animal Science

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and Production Association

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## Italian Journal of Animal Science

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# Italian Journal of Animal Science

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## ASPA 21<sup>st</sup> Congress Milano, June 9-12, 2015

**Guest Editor**  
**Giovanni Savoini**

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## ***Milano, June 9-12, 2015***

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# ASPA 21<sup>st</sup> Congress

Milano, June 9-12, 2015

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# ASPA 21<sup>st</sup> Congress

## Milano, June 9-12, 2015

### Programme of the Congress

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#### Tuesday, June 9

13.00-15.30	Arrival - Registrations - Welcome coffee
15.30-18.00	Parallel sessions
18.00-19.30	Welcome cocktail

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#### Wednesday, June 10

08.00-09.00	Registration
09.00-10.30	Opening ceremony and main lectures
10.30-11.00	Coffee break and poster session
11.00-13.00	Parallel sessions
13.00-14.00	Lunch and poster session
14.00-15.30	Parallel sessions/Editorial Board Meeting
15.45	Departure to <i>Polo Universitario Veterinario</i> , Lodi
16.15-20.00	Main lectures and scientific visit at the facilities of <i>Polo Universitario Veterinario</i> , Lodi
20.00	Country dinner at the <i>Polo Universitario Veterinario</i> , Lodi

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#### Thursday, June 11

09.00-10.45	Parallel sessions
10.45-11.15	Coffee break and poster session
11.15-13.00	Parallel sessions
13.00-14.00	Lunch and poster session
14.00-16.00	Parallel sessions
16.00-16.30	Coffee break and poster session
16.30-17.15	Reports from study commissions
17.15-19.30	ASPA meeting
20.30	Social dinner

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#### Friday, June 12

System approach for improving the sustainability of animal production, health and welfare  
*Organized jointly by: Scientific Committee for EXPO, University of Milan, EAAP (European Association of Animal Production), and ASPA (Animal Science and Production Association)*

09.00-10.00	Registration and welcome address
10.00-10.30	Keynote speech
10.30-11.45	Session I: Sustainability analysis and life cycle assessment of animal production
11.45-12.15	Coffee break
12.15-13.30	Session II: The impact of animal welfare and health on food quality and safety
13.30-14.30	Lunch
14.30-15.45	Session III: Mitigating the use of antiparasitic and antimicrobial drugs in livestock productions
16.00	Visit Expo sites
20.00	Dinner at Expo



# ASPA 21<sup>st</sup> Congress

## Milano, June 9-12, 2015

### Italian Journal of Animal Science

#### 2015; volume 14: supplement 1

#### Agenda for oral presentations

##### Tuesday, June 9 - Livestock and environment/welfare - Room 211

**Chairpersons: Valentina Ferrante - Flavia Gottardo**

- 15.30-16.00 Elisabetta Canali, Sara Barbieri, Michela Minero, Valentina Ferrante, Silvana Mattiello, Adroaldo Zanella  
*AWIN project: innovation in animal welfare assessment*..... C-001
- 16.00-16.15 Susanna Lolli, Inma Estevez, Lorenzo Ferrari, Tatiane Terumi Negrão Watanabe, Sezen Ozkan, Carlo Tremolada, Valentina Ferrante  
*Protocol development for welfare assessment in commercial turkey farms*..... C-002
- 16.15-16.30 Monica Battini, Sara Barbieri, Guido Bruni, Giorgio Zanatta, Silvana Mattiello  
*Testing the feasibility of a prototype welfare assessment protocol in intensive dairy goat farms* ..... C-003
- 16.30-16.45 Katia Parati, Rossana Capoferri, Livia Moscati, Marco Sensi, Guerino Lombardi, Francesca Battioni, Gianpietro Sandri, Carlo Briani, Andrea Galli  
*The effect of the relaying mode on welfare of the pregnant sow*..... C-004
- 16.45-17.00 Marta Brscic, Giulia Vida, Annalisa Scollo, Giulio Cozzi, Flavia Gottardo  
*Relationship between pig welfare in the pre-slaughter phase and superficial bruises of their carcasses*..... C-005
- 17.00-17.15 Maria Lúcia Pereira Lima, João Alberto Negrão, Claudia Cristina Paro de Paz  
*Corral modification for humane livestock handling can improve cattle behavior and reduce serum cortisol*..... C-006
- 17.15-17.30 Isabella Lora, Marta Brscic, Luisa Magrin, Clelia Rumor, Flavia Gottardo  
*Effects of innovative horizontal fans on beef cattle health, growth and welfare*..... C-007
- 17.30-17.45 Miriam Iacurto, Roberto Steri, Germana Capitani, Federico Vincenti  
*Animal welfare in beef cattle: performances and meat quality*..... C-008

##### Tuesday, June 9 - Genetics and genomics/miscellany - Plenary Room

**Chairpersons: Alessio Valentini - Roberta Davoli**

- 15.30-15.45 Emiliano Lasagna, Simona Rimoldi, Simone Ceccobelli, Stefano Paolo Marelli, Maria Cristina Cozzi, Francesca Maria Sarti, Genciana Terova  
*The genetic of welfare: gene expression and heat stress in chicken*..... C-009
- 15.45-16.00 Paolo Zambonelli, Martina Zappaterra, Maurizio Mazzoni, Massimiliano Petracchi, Francesca Soglia, Federico Sirri, Claudio Cavani, Roberta Davoli  
*Broiler Pectoralis major muscle affected by emerging abnormalities: histology and gene expression*..... C-010
- 16.00-16.15 Genciana Terova, Simona Rimoldi, Elena Bossi, Sheenan Harpaz, Marco Saroglia  
*Transcript quantification of intestinal neutral amino acids and oligopeptides transporters in European sea bass (Dicentrarchus labrax) reared in fresh water and fed fish and plant protein sources*..... C-011
- 16.15-16.30 Genciana Terova, Simona Rimoldi, Karolina Kwasek, Marco Saroglia  
*Dietary methionine in salmonid fish feed alters the expression of genes involved in methionine metabolism* ..... C-012
- 16.30-16.45 Gianluca Sottile, Maria Teresa Sardina, Salvatore Mastrangelo, Marco Tolone, Marcello Chiodi, Baldassare Portolano  
*Identification of breed informative single nucleotide polymorphisms for assigning individual in Sicilian dairy sheep*..... C-013
- 16.45-17.00 Maria Grazia Manca, Jessica Serdino, Paolo Urgeghe, Antonio Puledda, Ignazio Ibba, Marino Contu, Nicolò P.P. Macciotta  
*Multivariate factor analysis of milk composition, coagulation properties and individual cheese yield in Sarda sheep*..... C-014



- 17.00-17.15 Marco Tolone, Salvatore Mastrangelo, Rosalia Di Gerlando, Giuseppina Monteleone, Anna Maria Sutura, Maria Teresa Sardina, Baldassare Portolano  
*Polymorphisms at  $\beta$ -defensin genes and mastitis in Valle del Belice dairy sheep: a case control study*.....C-015
- 17.15-17.30 Alessio Valentini, Lorenzo Bomba, Paolo Ajmone Marsan, Aleksey Zimin, M. Elizabete J. Amaral, Giovanni Chillemi, John L. Williams  
*Strategies to improve full genome sequences for livestock species*.....C-016
- 17.30-17.45 Licia Colli, Marco Milanese, Elia Vajana, Daniela Iamartino, Lorenzo Bomba, Ezequiel Luis Nicolazzi, Sahar Saad El-din Ahmed, Jesus Rommel V Herrera, Libertado Cruz, Shujun Zhang, Liguang Yang, Xingjie Hao, Fuyuan Zuo, Song-Jia Lai, Shuilian Wang, Ruyu Liu, Yundeng Gong, Mahdi Mokhber, Hossein Moradi Shahrababak, Yongjiang Mao, Feng Guan, Augustin Vlaic, Luigi Ramunno, Gianfranco Cosenza, Ali Ahmad, Ihsan Soysal, Emel Özkan Ünal, Mariena Ketudat Cairns, Jose Fernando Garcia, Yuri Tani Utsunomiya, Rangsun Parnpai, Marcela Gonçalves Drummond, Peter Galbusera, James Burton, Eileen Hoal, Yulnawati Yusnizar, Cece Sumantri, Bianca Muioli, Alessio Valentini, Alessandra Stella, John L. Williams, the International Buffalo Consortium, Paolo Ajmone Marsan  
*Patterns of diversity in swamp and river buffalo as revealed by SNP molecular markers*.....C-017
- 17.45-18.00 Simona Rimoldi, Genciana Terova, Laura Benedito-Palos, Jaume Pérez-Sánchez  
*Lipid metabolism related gene expression in European sea bass (*Dicentrarchus labrax*): effects of fasting and refeeding*.....C-018

## Tuesday, June 9 - New technologies in animal science - Room 111

**Chairpersons: Fabio Luzi - Alessandro Agazzi**

- 15.30-16.00 Leonardo Nanni Costa  
*Innovative technologies for the future of animal production*.....C-019
- 16.00-16.15 Giuseppe Pulina, Giuseppe Curreli, Anna Nudda, Gianni Battacone  
*A new strategy to increase sheep meat production in Sardinia*.....C-020
- 16.15-16.30 Leonardo Nanni Costa, Agnese Arduini, Emilio Scotti, Davide Sacchi, Roberta Davoli, Vincenzo Russo  
*The effect of chemical dehairing of pig carcass on sanitation and meat quality*.....C-021
- 16.30-16.45 Matteo Ottoboni, Valentina Caprarulo, Carlotta Giromini, Davide Gottardo, Federica Cheli, Vittorio Dell'Orto, Luciano Pinotti  
*Image analysis for characterization of fishmeal material in aquafeed* .....C-022
- 16.45-17.00 Katarzyna Stadnicka, Anna Bajek, Tomasz Drewa, Marek Bednarczyk  
*In vitro characterization of proliferation, differentiation and pluripotency markers in hen oviduct epithelial cells which are potential model to study expression of exogenes delivered by nucleofection*.....C-023
- 17.00-17.15 Edo D'Agaro, Tiziana Bongiorno, Emilio Tibaldi, Francesca Tulli, Maria Messina, Giovanna Lippe, Astrid Frabbro, Mara Stecchini  
*A human stunning and killing method applied to marine aquatic species*.....C-024
- 17.15-17.30 Giorgia Stocco, Claudio Cipolat-Gotet, Alessandro Ferragina, Giovanni Bittante  
*Cheese chemical and physical properties predicted by Vis-NIR reflectance and NIR transmittance spectrometry*.....C-025

## Tuesday, June 9 - Animal products and human health/nutrition and meat quality - Medicina Room

**Chairpersons: Vincenzo Chiofalo - Oreste Franci**

- 15.30-15.45 Siria Tavaniello, Domenico Di Memmo, Anna Wilkanowska, Mario Gambacorta, Giuseppe Maiorano  
*Influence of multiple injections of vitamin E on carcass characteristics and meat quality of Laticauda lambs* .....C-026
- 15.45-16.00 Sihem Dabbou, Francesco Gai, Luca Rotolo, Carola Lussiana, Attawit Kovitvadh, Vanda Maria Malfatto, Ahmed Nouredine Helal, Ivo Zoccarato, Laura Gasco  
*Organic Bilberry pomace in rabbit nutrition: effect on meat quality and fatty acid profile* .....C-027
- 16.00-16.15 Erica Longato, Giorgia Meineri, Pier Giorgio Peiretti, Pier Paolo Mussa  
*Effects of diets containing linseed oil and supplemented with grain amaranth (*Amaranthus caudatus*) on growth performances, oxidative status and serum biochemical parameters in broilers*.....C-028
- 16.15-16.30 Nadia Guzzo, Cristina Sartori, Lucia Bailoni, Roberto Mantovani  
*Carcass traits and meat quality in Italian Heavy Draught Horse foals fed two diets differing in protein levels and slaughtered at 13 or 18 months*.....C-029

16.30-16.45	Marco Cullere, Giulia Tasoniero, Barbara Contiero, Antonella Dalle Zotte <i>Sensory acceptability of rabbit meat patties manufactured with increasing levels of rooibos (Aspalathus linearis) tea extract.....</i>	C-030
16.45-17.00	Patrizia Morera, Eleonora Bartolini, Loredana Basicò, Umberto Bernabucci, Bruno Ronchi <i>No detection of transgenic DNA (tDNA) in tissues from rabbits fed with genetically modified soy-bean meal.....</i>	C-031
17.00-17.15	Federica Maghin, Raffaella Rossi, Sabrina Ratti, Grazia Pastorelli, Simone Stella, Erica Tirloni, Carlo Corino <i>Antioxidant mixture supplementation in the medium-heavy pigs: effects on performances and shelf life of Longissimus dorsi muscle. ....</i>	C-032
17.15-17.30	Attilio Luigi Mordenti, Elena Bonfante, Massimo Dall'Olio, Mattia Fustini, Luca Sardi, Andrea Formigoni <i>Effects of breed and a different lipid supplement on beef quality in heifers: performances, meat quality and fatty acid composition of Longissimus dorsi muscle .....</i>	C-033
17.30-17.45	Petra Hovorkova,, Stepanka Kruntoradova, Eva Skrivanova <i>Caprylic acid and its effect on Campylobacter jejuni in broiler chickens .....</i>	C-034
17.45-18.00	Giuseppe Maiorano, Cinzia Abiuso, Katarzyna Stadnick, Siria Tavaniello, Joanna Bogucka, Marek Bednarczyk <i>Effect of in ovo prebiotic administration on growth, carcass characteristics and meat quality of broiler chickens .....</i>	C-035

### **Wednesday, June 10 - Livestock and environment/environment - Room 211**

**Chairpersons: Giulio Cozzi - Luciana Bava**

11.00-11.15	Marco Berton, Giacomo Cesaro, Luigi Gallo, Giacomo Pirlo, Maurizio Ramanzin, Franco Tagliapietra, Enrico Sturaro <i>A survey on environmental footprint of intensive beef herds based on farm data: gate-to-gate LCA approach .....</i>	C-036
11.15-11.30	Mirko Cattani, Laura Maccarana, Franco Tagliapietra, Stefano Schiavon, Lucia Bailoni <i>Effects of five additives with antimicrobial properties on in vitro rumen fermentation and methane production of a commercial diet for dairy cows .....</i>	C-037
11.30-11.45	Sara Salvador, Anna Zuliani, Mirco Corazzin, Edi Piasentier, Alberto Romanzin, Stefano Bovolenta <i>Sustainability of conventional and organic dairy farms in mountain areas.....</i>	C-038
11.45-12.00	Anna Sandrucci, Maddalena Zucali, Alberto Tamburini, Luciana Bava <i>Green house gas emissions in the production of heavy pig.....</i>	C-039
12.00-12.15	Valentina Cesari, Maddalena Zucali, Luciana Bava, Ivan Toschi <i>Global warming potential of broiler chicken production system using a life cycle assessment .....</i>	C-040
12.15-12.30	Laura Maccarana, Mirko Cattani, Roberto Mantovani, Franco Tagliapietra, Stefano Schiavon, Lucia Bailoni <i>Assessment of factors influencing in vitro gas and methane production by meta-analysis.....</i>	C-041

### **Wednesday, June 10 - Genetics and genomics/cattle - Plenary Room**

**Chairpersons: Giovanni Bittante - Paolo Ajmone Marsan**

11.00-11.30	Filippo Miglior, Jacques Chesnais <i>Genomics: an essential tool to improve limited and novel phenotypes in dairy cattle breeding.....</i>	C-042
11.30-11.45	Nicolò P.P. Macciotta, Paolo Ajmone Marsan, Marco Milanese, Daniele Vicario, Alessio Valentini, Silvia Sorbolini, Corrado Dimauro <i>A comprehensive strategy for detecting genomic regions associated with traits of economic interest using information generated in genomic selection programmes .....</i>	C-043
11.45-12.00	Stefano Capomaccio, Marco Milanese, Elia Vajana, Lorenzo Bomba, Elisa Eufemi, Licia Colli, Riccardo Negrini, Katia Capelli, Ezequiel L. Nicolazzi, Andrea Talenti, John L. Williams, Bruno Stefanon, Paolo Ajmone Marsan <i>Genome-wide gene-based analysis reveals new associations between SNP and production and morphological traits in Italian Holstein.....</i>	C-044
12.00-12.15	Christos Dadousis, Claudio Cipolat-Gotet, Stefano Biffani, Ezequiel L. Nicolazzi, Giovanni Bittante, Alessio Cecchinato <i>Genome-wide association study to identify chromosomal regions associated with coagulation properties, curd firmness and syneresis modeling, and acidity in milk from Italian Brown Swiss cows .....</i>	C-045

- 12.15-12.30 Marco Milanese, Stefano Capomaccio, Yuri Tani Utsunomiya, Lorenzo Bomba, Licia Colli, Elisa Eufemi, Jan Thijs Van Kaam, Katia Cappelli, Stefano Biffani, Ezequiel Luis Nicolazzi, Riccardo Negrini, José Fernando Garcia, Carl Rubin, Alessandro Nardone, Nicolò P. P. Macciotta, Alessio Valentini, John L. Williams, Paolo Ajmone Marsan  
*Combining exome sequencing and high density SNP analysis for the detection of common deleterious recessive mutations segregating in Italian Holstein bulls*.....C-046
- 12.30-12.45 Andrea Talenti, Marco Milanese, Ezequiel Luis Nicolazzi, Letizia Nicoloso, Stefano Frattini, Beatrice Coizet, Giulio Pagnacco, John L. Williams, Paolo Ajmone Marsan, Paola Crepaldi  
*Birth date regression to identify genomic signatures of recent selection in Italian Holstein*.....C-047
- 12.45-13.00 Antonio Puledda, Marco Milanese, Giustino Gaspa, Corrado Dimauro, Paolo Ajmone Marsan, Nicolò P. P. Macciotta  
*Study of genomic prediction accuracy using high density SNP panel in Italian Holstein cattle*.....C-048

### **Wednesday, June 10 - Research and development in animal science/ processing and technology transfer part 1 - Room 111**

**Chairpersons: Biagina Chiofalo - Ambra Rita Di Rosa**

- 11.00-11.30 Giovanni Bernardini, Rosalba Gornati, Genciana Terova, Marco Saroglia  
*Nanotechnology for animal production*.....C-049
- 11.30-11.45 Angela Trocino, Alessandra Piccirillo, Marco Birolo, Eirini Filiou, Massimiliano Petracci, Gerolamo Xiccato  
*Factors affecting growth performance, carcass quality and the occurrence of white striping and wooden breasts in broilers* .....C-050
- 11.45-12.00 Marco Birolo, Angela Trocino, Marco Tazzoli, Eirini Filiou, Gerolamo Xiccato  
*Feed restriction programs and slaughter age in growing rabbits* .....C-051
- 12.00-12.15 Maria Antonietta Colonna, Francesco Giannico, Pasqua Rotondi, Lumturi Papa, Marco Ragni, Prospero Cagnetta, Giuseppe Marsico, Anna Caputi Jambrenghi  
*Effect of feeds containing durum wheat milling products and age at slaughter on chemical composition and fatty acid profile of meat from Gentile di Puglia lambs*.....C-052
- 12.15-12.30 Mirco Dalla Bona, Luca Carraro, Stefano Schiavon, Luigi Gallo  
*Growth and carcass traits of 145 kg body weight pigs fed according to different feeding regimes*.....C-053
- 12.30-12.45 Gerolamo Xiccato, Elia Beltrami, Marco Birolo, Nicola Rigo, Angela Trocino  
*Effect of gender and slaughter age on carcass and meat quality of brown hares (*L. europaeus*)*.....C-054
- 12.45-13.00 Alessandra Roncarati, Francesca Mariotti, Alberto Felici, Paolo Melotti  
*Use of submerged cage and discards as feed for tub gurnard (*Chelidonichthys lucerna* L.) fattening in the mid Adriatic sea*.....C-055

### **Wednesday, June 10 - Animal products and human health/ milk and dairy products quality - Medicina Room**

**Chairpersons: Andrea Summer - Angela Gabriella D'Alessandro**

- 11.00-11.30 Giovanni Niero, Antonio Masi, Martino Cassandro  
*Preliminary characterization of soluble thiols in bovine milk*.....C-056
- 11.30-11.45 Manuela Renna, Simone Ravetto Enri, Massimiliano Probo, Carola Lussiana, Paolo Cornale, Alberto Bellio, Sara Astegiano, Lucia Decastelli, Luca Maria Battaglini, Giampiero Lombardi  
*Production regulations and characteristics of cow Piedmontese Noble Milk*.....C-057
- 11.45-12.00 Adriana Bonanno, Antonino Di Grigoli, Nicola Francesca, Raimondo Gaglio, Francesca Mazza, Francesca Vitale, Marco Alabiso, Luca Settanni  
*The effects of the traditional producing system on physicochemical, microbial and sensory properties of Caciocavallo Palermitano cheese* .....C-058
- 12.00-12.15 Paolo Gottardo, Mauro Penasa, Massimo De Marchi  
*Fatty acid composition of milk from Holstein-Friesian, Brown Swiss, Simmental and Alpine Grey cattle breeds routinely predicted by mid-infrared spectroscopy*.....C-059
- 12.15-12.30 Federica Di Frangia, Massimo Malacarne, Piero Franceschi, Paolo Formaggioni, Michele Faccia, Angela Costanzo, Enrico Santus, Attilio Rossoni, Andrea Summer  
*Influence of milk composition and  $\kappa$ -casein B content on mozzarella cheese yield and cheesemaking losses*.....C-060

- 12.30-12.45 Massimo Malacarne, Federica Di Frangia, Angela Costanzo, Piero Franceschi, Paolo Formaggioni, Andrea Summer  
*Influence of milk somatic cell content on cheese yield and cheesemaking losses*..... C-061

### Wednesday, June 10 - Physiology and metabolism/microbiome and gastrointestinal tract processing and technology transfer part 1 - Room 113

**Chairpersons: Achille Schiavone - Cesare Castellini**

- 11.00-11.15 Paola Cremonesi, Giuseppe Conte, Emanuele Capra, Federica Turri, Marco Severgnini, Luca Rapetti, Stefania Colombini, Stefania Chessa, Marcello Mele, Bianca Castiglioni  
*Evaluation of the effects of different diets on bacterial diversity and on fatty acid composition in goat rumen*..... C-062
- 11.15-11.30 Arianna Buccioni, Carlo Viti, Mariano Pauselli, Roberta Pastorelli, Sara Minieri, Grazia Pallara, Valentina Roscini, Luciana Giovannetti, Marcello Mele  
*Response of rumen microbial ecosystem to diets integrated with chestnut or quebracho tannins in dairy ewes* ..... C-063
- 11.30-11.45 Sara Minieri, Carlo Viti, Stefania Colombini, Arianna Buccioni, Giuseppe Conte, Luca Rapetti, Luca Malagutti, Stefano Rapaccini, Marcello Mele  
*Effect of dietary starch concentration and fish oil supplementation on fatty acid profile and microbial composition of rumen fluid in lactating dairy cows*..... C-064
- 11.45-12.00 Maria Pia Franciosini, Patrizia Casagrande-Proietti, Claudio Forte, Daniela Beghelli, Gabriele Acuti, David Ranucci, Alessandro Dal Bosco, Cesare Castellini, Massimo Trabalza-Marinucci  
*Effects of using an oregano aqueous extract on performance, gut microbiota and immune function in broiler chickens*..... C-065
- 12.00-12.15 Paolo Bosi, Davide Priori, Michela Colombo, Alfons J.M. Jansman, Sietse Jan Koopmans, Paolo Trevisi  
*The interaction of early intestinal microbial colonisation with the effects of luminal perfusion with enterotoxigenic E. coli, F4ac fimbria or Lactobacillus amylovorus on the jejunal transcriptome in piglets*..... C-066
- 12.15-12.30 Maria Grazia Cappai, Franziska Koop, Laura Pistis, Saara J. Sander, Corrado Dimauro, Walter Pinna, Josef Kamphues  
*Evaluation of Peyer's patch morphological traits as local immune response in relation to different physical forms of one complete diet fed to growing pigs* ..... C-067
- 12.30-12.45 Riccardo Fortina, Isabel Macchiorlatti Vignat, Frine Eleonora Scaglione, Paola Pregel, Enrico Bollo, Manuela Renna  
*Performance and rumen papillae development of Friesian calves fed with pelleted starter or total mixed ration*..... C-068

### Wednesday, June 10 - Genetics and genomics/swine - Plenary Room

**Chairpersons: Paolo Carnier - Bianca Castiglioni**

- 14.00-14.15 Giuseppina Schiavo, Giuliano Galimberti, Daniela Giovanna Calò, Emilio Scotti, Francesca Bertolini, Antonia Bianca Samorè, Vincenzo Russo, Maurizio Gallo, Luca Buttazzoni, Luca Fontanesi  
*Genome wide analysis of the effects of twenty years of artificial directional selection in the Italian Large White pig breed*..... C-069
- 14.15-14.30 Anisa Ribani, Francesca Bertolini, Giuseppina Schiavo, Emilio Scotti, Valerio Joe Utzeri, Stefania Dall'Olio, Paolo Trevisi, Paolo Bosi, Luca Fontanesi  
*Next generation semiconductor based sequencing of bitter taste receptor genes in different pig breeds and populations and association study of identified polymorphisms using a DNA pooling strategy*..... C-070
- 14.30-14.45 Roberta Rostellato, Valentina Bonfatti, Paolo Carnier  
*Quantification of boar taint compounds in adipose tissue of intact male pigs at 160 and 220 days of age and estimates of genetic parameters* ..... C-071
- 14.45-15.00 Roberta Davoli, Gennaro Catillo, Marcello Mele, Andrea Serra, Luca Buttazzoni, Roberto Steri, David Meo Zilio, Paolo Zambonelli, Vincenzo Russo  
*Study on genetic parameters of subcutaneous fatty acid composition in Italian Large White pig breed* ..... C-072
- 15.00-15.15 Martina Zappaterra, Paolo Zambonelli, Roberta Davoli  
*Perilipins and the complex gene network of lipid metabolism enzymes in muscle are related to porcine intramuscular fat deposition*..... C-073

## Wednesday, June 10 - Research and development in animal science/ processing and technology transfer part 2 - Room 111

**Chairpersons: Andrea Formigoni - Mattia Fustini**

- 14.00-14.15 Agnese Arduini, Vincenzo Pace, Veronica Redaelli, Fabio Luzi, Leonardo Nanni Costa  
*Survey on pre-slaughter handling and skin damages on pig carcasses* ..... C-074
- 14.15-14.30 Marisa Palmeri, Cinzia Cardamone, Massimo Todaro, Luca Settanni, Raimondo Gaglio, Isabella Mancuso, Maria Luisa Scatassa, Onofrio Corona  
*An investigation of the shelf-life of pdo Vastedda della Valle del Belice cheese subjected to different packaging systems alternative to vacuum*..... C-075
- 14.30-14.45 Andrea Cabiddu, Mauro Decandia, Giovanni Molle, Michael Lee  
*Plant secondary metabolites and traceability of dairy products: a key role for livestock production and efficiency in ruminant dairy products* ..... C-076
- 14.45-15.00 Carlotta Giromini, Raffaella Rebutti, Francesca Saccone, Eleonora Fusi, Antonella Baldi  
*Cytotoxicity, DNA integrity and methylation in mammary and kidney epithelial cell lines exposed to Ochratoxin A*..... C-077
- 15.00-15.15 Stefano Biffani, Cesare Lubiano, Davide Pravettoni, Antonio Boccardo  
*Predicting survivors of neonatal calf diarrhea using logistic regression or gradient boosting*..... C-078
- 15.15-15.30 Eugenio Demartini, Alberto Pirani, Mattia Bertocchi, Maria Elena Marescotti, Anna Gaviglio  
*The hidden costs of animal health in dairy cattle breeding: evidences from a case study*..... C-079

## Wednesday, June 10 - Physiology and metabolism/ feed nutritional quality evaluation - Room 113

**Chairpersons: Lucia Bailoni - Umberto Bernabucci**

- 14.00-14.15 Nadia Musco, Federico Infascelli, Raffaella Tudisco, Laura Addi, Raffaella Grazioli, Pietro Lombardi, Giuseppe Vassalotti, Serena Calabrò, Monica Isabella Cutrignelli  
*Nutritional and functional evaluation of cereals and legumes seeds* ..... C-080
- 14.15-14.30 Achille Schiavone, Michele De Marco, Silvia Martínez, Fuensanta Hernandez, Francesco Gai, Luca Rotolo, Sihem Dabbou, Attawit Kovitvadhi, Laura Gasco  
*Nutritional value of two different insects meal (*Tenebrio Molitor* and *Hermetia Illucens*) for broiler chickens: apparent ileal amino acid digestibility and apparent metabolizable energy* ..... C-081
- 14.30-14.45 Mattia Fustini, Alberto Palmonari, Giorgia Canestrari, Nicola Negri, Andrea Formigoni  
*Effect of alfalfa hay digestibility and inclusion rate in lactating dairy cows diets on feed intake, digestibility, ruminal pH and productive performance*..... C-082
- 14.45-15.00 Francesca Martuzzi, Federico Righi, Yarin Mazzoni, Afro Quarantelli  
*Relationship between horse faecal particle size and forage type/dry matter digestibility*..... C-083
- 15.00-15.15 Serena Calabrò, Raffaella Tudisco, Valeria Terzi, Monica I. Cutrignelli, Laura Addi, Nadia Musco, Caterina Morcia, Federico Infascelli  
*In vitro rumen fermentation of barley grain contaminated with *Fusarium mycotoxins** ..... C-084
- 15.15-15.30 Alberto Palmonari, Mattia Fustini, Giorgia Canestrari, Antonio Gallo, Alessandro Lotto, Andrea Formigoni  
*Evaluation of inoculants addition on corn silage nutritional value* ..... C-085

## Thursday, June 11 - Livestock and environment/feed and food - Room 211

**Chairpersons: Stefano Schiavon - G. Matteo Crovetto**

- 9.00-9.15 Aldo Prandini, Samantha Sigolo, Mauro Morlacchini, Gianluca Giuberti, Maurizio Moschini  
*Pasta by-product as alternative source of starch in diets for finishing pigs* ..... C-086
- 9.15-9.30 Luca Malagutti, Gianluca Galassi, Luca Rapetti, Stefania Colombini, Mauro Spanghero, Diego Capraro, G. Matteo Crovetto  
*Digestibility and energy balance of heavy pig fed high cut corn silage*..... C-087
- 9.30-9.45 Luigi Gallo, Luca Carraro, Mirco Dalla Bona, Alessio Cecchinato, Stefano Schiavon



	<i>Effect of genetic group and dietary crude protein content on technological properties of thighs intended for dry-cured ham production.....</i>	C-088
9.45-10.00	Giuseppe Conte, Alice Cappucci, Andrea Serra, Eleonora Bulleri, Federica Mannelli, Marcello Mele <i>Multivariate analysis of milk fatty acid composition is able to discriminate dairy farm according to feeding regimen and predicted methane emission.....</i>	C-089
10.00-10.15	Gabriella Cobellis, Claudio Forte, Gabriele Acuti, Zhongtang Yu, Massimo Tralbalza-Marinucci <i>Effects of rosemary extracts on sheep rumen microbiome.....</i>	C-090

## **Thursday, June 11 - Genetics and genomics/goat - Plenary Room**

**Chairpersons: Fabio Pilla - Paola Crepaldi**

9.00-9.30	Alessandra Stella, Ezequiel Luis Nicolazzi, the Adapt Map Group <i>Integration of data to study goat diversity and adaptation: the AdaptMap project.....</i>	C-091
9.30-9.45	Andrea Talenti, Ezequiel Luis Nicolazzi, Letizia Nicoloso, Stefano Frattini, Beatrice Coizet, Stefania Chessa, Giulio Pagnacco, Fabio Pilla, Paolo Ajmone Marsan, Paola Crepaldi, the Italian Goat Consortium <i>Parentage assessment with 200 single nucleotide polymorphisms on 15 Italian goat breeds.....</i>	C-092
9.45-10.00	Stefano Frattini, Emanuele Capra, Barbara Lazzari, Beatrice Coizet, Debora Groppetti, Pietro Riccaboni, Alessandro Pecile, Silvana Arrighi, Stefania Chessa, Bianca Castiglioni, Alessia Giordano, Davide Pravettoni, Andrea Talenti, Letizia Nicoloso, John L. Williams, Paola Crepaldi, Alessandra Stella, Giulio Pagnacco <i>The analysis of the methylome of Capra hircus.....</i>	C-093
10.00-10.15	Emanuele Capra, Stefano Frattini, Barbara Lazzari, Beatrice Coizet, Debora Groppetti, Pietro Riccaboni, Alessandro Pecile, Silvana Arrighi, Stefania Chessa, Bianca Castiglioni, Alessia Giordano, Davide Pravettoni, Andrea Talenti, Letizia Nicoloso, Paola Crepaldi, John L. Williams, Giulio Pagnacco, Alessandra Stella <i>MicroRNAs expression in hypothalamus and pituitary of Saanen goat.....</i>	C-094
10.15-10.30	Gustavo Gandini, Federica Turri, Rita Rizzi, Flavia Pizzi <i>Economic evaluation of genetic improvement with inbreeding control in the Verzaschese goat.....</i>	C-095

## **Thursday, June 11 - Research and development in animal science/feed additives - Room 111**

**Chairpersons: Giovanni Savoini - Eugenio Demartini**

9.00-9.30	Adam Smith, Fabrizio Pepe <i>Use of protease enzymes in poultry feed offers promising economic and environmental benefits.....</i>	C-096
9.30-9.45	Xian-Ren Jiang, Alessandro Agazzi, Federica Cheli, Ajay Awati, Maurizio Crestani, Francesca Vitari, Helena Bento, Giovanni Loris Alborali, Cinzia Domeneghini, Valentino Bontempo <i>Effects of a blend of essential oils and an enzyme combination on growth performance, microbial counts, and ileum morphology in Escherichia coli K88 challenged piglets.....</i>	C-097
9.45-10.00	Xian-Ren Jiang, Marcello Comi, Federica Cheli, Carlotta Giromini, Davide Gottardo, Raffaella Rebutti, Valentino Bontempo <i>Effects of a novel emulsifier supplementation on growth performance and carcass yield of female and male broiler chicks.....</i>	C-098
10.00-10.15	Giuseppina Avantaggiato, Donato Greco, Fiorenza Minervini, Antonella Garbetta, Francesco Grieco, Angelo Visconti <i>In vitro studies to assess the efficacy and potential toxicity of multi-mycotoxins adsorbing agents used as feed additives.....</i>	C-099
10.15-10.30	Pier Paolo Danieli, Umberto Bernabucci, Bruno Ronchi <i>Organic laminaria and selenized yeast as dietary integrators of iodine and selenium in organic dairy goat farming.....</i>	C-100
10.30-10.45	Federico Righi, Marco Renzi, Afro Quarantelli <i>Effect of dried extracts of Aspergillus oryzae and their association with Saccharomyces cerevisiae on mid lactation dairy cattle productivity under moderate heat stress conditions.....</i>	C-101

## Thursday, June 11 - Animal products and human health/ animal products characterization - Medicina Room

**Chairpersons: Agostino Sevi - Adele Meluzzi**

- 9.00-9.30 Antonella della Malva, Marzia Albenzio, Mariangela Caroprese, Antonella Santillo, Agostino Sevi, Rosaria Marino  
*Factors contributing to meat tenderness: interaction between myofibril structure and proteolytic changes in beef* .....C-102
- 9.30-9.45 Federico Sirri, Massimiliano Petracci, Claudio Cavani, Adele Meluzzi  
*Quality characterization of products from Romagna chicken breed: 2. Eggs* .....C-103
- 9.45-10.00 Massimiliano Petracci, Francesca Soglia, Federico Sirri, Paolo Zambonelli, Roberta Davoli, Claudio Cavani  
*Broiler Pectoralis major muscle affected by emerging abnormalities: composition and technological traits*.....C-104
- 10.00-10.15 Paolo Polidori, Ambra Ariani, Silvia Vincenzetti  
*Meat and carcass quality in Martina Franca donkey foals* .....C-105
- 10.15-10.30 Mauro Vasconi, Laura Borella, Fabio Caprino, Federica Bellagamba, Vittorio Maria Moretti  
*Chemical characterization of European eels (*Anguilla anguilla*) of different origins collected from Italian market*.....C-106

## Thursday, June 11 - Livestock and environment/miscellany - Room 211

**Chairpersons: Marco Saroglia - Luca Maria Battaglini**

- 11.15-11.30 Cristina Rossi, Loredana Basiricò, Pier Paolo Danieli, Bruno Ronchi  
*The  $\beta$ -hexachlorocyclohexane ( $\beta$ -HCH) affects the oxidative status of bovine peripheral blood mononuclear cells in vitro* .....C-107
- 11.30-11.45 Luciana Bava, Anna Sandrucci, Stefania Colombini, Milena Brasca, Tiziana Silvetti, Alberto Tamburini, Maddalena Zucali, G. Matteo Crovetto  
*Milking procedure can affect anaerobic spore-forming bacteria in milk* .....C-108
- 11.45-12.00 Maddalena Zucali, Luciana Bava, Alberto Tamburini, Anna Sandrucci, Silvana Mattiello, Giovanna Battelli, Milena Brasca  
*Global milk quality: evaluating tool for dairy farm* .....C-109
- 12.00-12.15 Giulio Cozzi, Anna Benedet, Paola Prevedello, Dario Tonietto, Ilario Bazzoli, Claudio Valorz, Gianbattista Rigoni Stern  
*Animal husbandry as a tool for post-war recovery and reconciliation. An update from The Transhumance of the Peace project*.....C-110
- 12.15-12.30 Alberto Tamburini, Anna Sandrucci, Maddalena Zucali, Luciana Bava, Gabriele Mattachini, Giorgio Provolo  
*Integrated approach to evaluate primiparous dairy cows performance*.....C-111
- 12.30-12.45 Luca Parma, Daniela Bertotto, Erika Bonvini, Elena Negrato, Marco Chiumento, Pier Paolo Gatta, Alessio Bonaldo  
*Light conditions affect development and cortisol response in common sole (*Solea solea L.*) eggs and larvae: preliminary findings*.....C-112
- 12.45-13.00 Gloriana Cardinaletti, Tiziana Bongiorno, Matteo Gava, Maria Messina, Massimiliano Bruno, Francesca Tulli, Emilio Tibaldi  
*Compensatory growth following long term multi-phase cyclic feeding in rainbow trout (*Oncorhynchus mykiss*)* .....C-113

## Thursday, June 11 - Genetics and genomics/cattle - Plenary Room

**Chairpersons: Roberta Ciampolini - Baldassare Portolano**

- Not published.....C-114
- 11.15-11.30 Cristina Sartori, Nadia Guzzo, Serena Mazza, Roberto Mantovani  
*Genetic correlations among selected traits and inbreeding depression in dual purpose Rendena breed* .....C-115
- 11.30-11.45 Roberta Ciampolini, Sara Casu, Salvatore Mastrangelo, Laurence Flori, Katayoun Moazami-Goudarzi, Tiziana Sechi, Francesca Cecchi, François Casabianca, Anne Lauvie, Mathieu Gautier, Antonello Carta, Baldassare Portolano, Denis Laloë  
*Genetic diversity of Mediterranean cattle breeds related to geography and climate* .....C-116
- 11.45-12.00 Salvatore Mastrangelo, Marco Tolone, Maria Teresa Sardina, Rosalia Di Gerlando, Luca Fontanesi, Baldassare Portolano  
*Genomic inbreeding estimation in small populations: evaluation of runs of homozygosity in local cattle breeds*.....C-117
- 12.00-12.15 Simone Ceccobelli, Piera Di Lorenzo, Hovirag Lancioni, Irene Cardinali, Licia Colli, Marco Rosario Capodiferro, Luca Ferretti, Paolo Ajmone Marsan, Francesco Panella, Emiliano Lasagna, Alessandro Achilli  
*The distinctive mitochondrial DNA signature of Podolic cattle in Italy*.....C-118



- 12.15-12.30 Lorenzo Bomba, Hans D. Daetwyler, Iona M. MacLeod, Sunduimijid Bolormaa, Amanda J. Chamberlain, Licia Colli, Marco Milanese, Elia Vajana, Ben J Hayes, Paolo Ajmone Marsan, The NEXTGEN Consortium  
*Investigation of Bos indicus and Bos taurus admixture in Sanga cattle from Uganda by whole genome sequence analysis.* ..... C-119
- 12.30-12.45 Marisilvia D'Andrea, Denis Guiatti, Andrea Serra, Marco Milanese, Sandy Sgorlon ..... C-120  
*Fatty acids milk composition in Italian Simmental and Italian Holstein cows*

### **Thursday, June 11 - Animal products and human health/ nutrition and milk quality - Medicina Room**

**Chairpersons: Oliviero Olivieri - Federico Infascelli**

- 11.15-11.30 Raquel Martínez-Loperena, Francisco J. Solorio-Sánchez, Armin Ayala-Burgos, Octavio A. Castelán-Ortega  
*Effect of an intensive silvopastoral feeding system based on Leucaena leucocephala on the physico-chemical and sensory characteristics of the artisan cheese from Michoacán, Mexico* ..... C-121
- 11.30-11.45 Ludovica Mammi, Mattia Fustini, Luigi Grazia, Andrea Formigoni  
*Influence of monensin continuous-release intraruminal device on milk and whey starter quality used for Parmigiano Reggiano cheese production*..... C-122
- 11.45-12.00 Anna Nudda, Fabio Correddu, Alessandra Marzano, Gianni Battacone, Giuseppe Pulina  
*The inclusion of a by-product from myrtus communis in the diet of lactating ewes: effects on milk production traits*..... C-123
- 12.00-12.15 Maria Giovanna Ciliberti, Marzia Albenzio, Rosaria Marino, Antonella Santillo, Agostino Sevi, Mariangela Caroprese  
*Effect of PUFA supplementation on milk production and fatty acid profile in sheep under hot season*..... C-124
- 12.15-12.30 Massimo Todaro, Marco Alabiso, Antonio Console, Antonino Di Grigoli, Francesca Mazza, Giuseppe Maniaci, Adriana Bonanno  
*Effect of the inclusion of lemon citrus pulp in the diet of Valle del Belice lactating ewes. Milk production and composition*..... C-125
- 12.30-12.45 Alice Cappucci, Valentina Roscini, Giuseppe Conte, Arianna Buccioni, Eleonora Bulleri, Andrea Serra, Stefania Urbani, Maurizio Servili, Mariano Pauselli, Marcello Mele  
*Effect of olive pomace and extruded linseed on milk yield and fatty acid composition from dairy ewes*..... C-126

### **Thursday, June 11 - Physiology and metabolism/ nutrition and physiology part 1 - Room 113**

**Chairpersons: Monica Cutrignelli - Luciano Pinotti**

- 11.15-11.30 Maria Messina, Massimiliano Bruno, Gloriana Cardinaletti, Bianca Maria Poli, Graziella Chini Zittelli, Francesca Tulli, Emilio Tibaldi  
*Growth response, plasma metabolites and intestinal brush border enzyme activity of sea bass fed diets including a blend of two marine microalgae*..... C-127
- 11.30-11.45 Jessica Michela Caputo, Guido Invernizzi, Anna Campagnoli, Greta Farina, Mariella Ferroni, Alessandro Agazzi, Juan J. Loor, Giovanni Savoini  
*Dietary fish oil and stearate action on adipose lipid metabolism transcriptomics in periparturient dairy goats*..... C-128
- 11.45-12.00 Daniele Dipasquale, Loredana Basiricò, Patrizia Morera, Andrea Serra, Marcello Mele, Arnulf Troescher, Umberto Bernabucci  
*Effects of conjugated linoleic acids isomers on oxidative mammary gland metabolism*..... C-129
- 12.00-12.15 Erminio Trevisi, Fiorenzo Piccioli Cappelli, Matteo Mezzetti, Giorgia Lovotti, Paolo Bani  
*Effect of the ruminal slow-release of monensin during the transition period of dairy cows on health status, energy metabolism and inflammatory conditions*..... C-130
- 12.15-12.30 Giacomo Cesaro, Erika Pellattiero, Franco Tagliapietra, Stefano Schiavon, Giovanni Bittante  
*Alteration of bovine milk fatty acid profile caused by the dietary crude protein content supplemented or not with rumen protected conjugated linoleic acids*..... C-131
- 12.30-12.45 Fiorenzo Piccioli-Cappelli, Andrea Minuti, Luigi Calamari, Erminio Trevisi  
*Intrajugular infusion of long chain omega-3 fatty acids at calving: effect on metabolic profile, feed intake and milk yield*..... C-132

## Thursday, June 11 - Genetics and genomics/cattle - Plenary Room

**Chairpersons: Anna Maria Caroli - Luigi Ramunno**

- 14.00-14.15 Alessandro Bagnato, Johanna Vilkki, Terhi Iso-Touru, Erika Frigo, Maria Cristina Cozzi, Maria Giuseppina Strillacci, Fausta Schiavini, Raphaelle Teresa Matilde Maria Prinsen, Mario Vevey, Attilio Rossoni, Luca Fontanesi, Marlies Dolezal  
*Copy number variation in cattle breeds* ..... C-133
- 14.15-14.30 Raffaella Finocchiaro, Jan-Thijs van Kaam, Maurizio Marusi  
*Haplotype detection for monogenic factors in the Italian Holstein cattle breed* ..... C-134
- 14.30-14.45 Stefano Biffani, Stefania Chessa, Alessandra Stella, Filippo Biscarini  
*A statistical learning approach to detect carriers of the HHI haplotype in Italian Holstein Friesian cattle* ..... C-135
- 14.45-15.00 Giulietta Minozzi, Marcello Del Corvo, Isabella Della Noce, Mario Luini, Alessandra Stella, Giulio Pagnacco, John Luis Williams  
*Fine mapping of loci on BTA8 associated to antibody response to Mycobacterium avium paratuberculosis in cattle* ..... C-136
- 15.00-15.15 Mauro Penasa, Denis Pretto, Alice Varotto, Massimo De Marchi  
*Heritability of milk  $\beta$ -hydroxybutyrate and its genetic association with milk yield and fat-to-protein ratio in Italian Holstein cows* ..... C-137
- 15.15-15.30 Alessio Cecchinato, Claudio Cipolat-Gotet, Giorgai Stocco, Christos Dadousis, Giovanni Bittante  
*Genetic and phenotypic relationships of milk coagulation properties and curd firmness modeling with the cheese yield and curd nutrients recovery in bovine milk* ..... C-138
- 15.30-15.45 Valentina Bonfatti, Roberta Rostellato, Daniele Vicario, Paolo Carnier  
*Effects of variation in milk coagulation properties on cheese yield, curd composition and recovery rates of the main milk constituents measured by micro-cheese making* ..... C-139

## Thursday, June 11 - Research and development in animal science/feed materials - Room 111

**Chairpersons: Valentino Bontempo - Luciana Rossi**

- 14.00-14.30 Carlos Dapoza, Luca Iacoianni  
*Amino acids as advanced technology to improve sustainable livestock production* ..... C-140
- 14.30-14.45 Elena Bonfante, Mattia Fustini, Nicola Negri, Alberto Palmonari, Giorgia Canestrari, Andrea Formigoni  
*Complete diet in pellet for ruminants nutrition* ..... C-141
- 14.45-15.00 Luciano Pinotti, Valentina Caprarulo, Matteo Ottoboni, Alessandro Agazzi, Luciana Rossi, Radmilo Čolović, Olivera Đuragić, Đuro Vukmirovi, Jovanka Lević  
*Feedneeds: new prospective for R&D in the Italian and Serbian feed sectors* ..... C-142
- 15.00-15.15 Matteo Ottoboni, Thomas Spranghers, Patrick De Clercq, Stefaan De Smet, Wesley De Jaeghere, Mia Eeckhout  
*The inclusion of black soldier fly material in an experimental extruded feed: extrusion optimization and its impact on digestibility* ..... C-143
- 15.15-15.30 Luciana Rossi, Elisabetta Onelli, Alessandra Moscatelli, Angela Lombardi, Antonella Baldi  
*Morphological evaluation of Nicotiana tabacum plants transformed for the expression of verocytotoxic Escherichia coli antigens* ..... C-144
- 15.30-15.45 Alessandra Moscatelli, Elisabetta Onelli, Mauro Zaninelli, Francesca Saccone, Luciana Rossi  
*Proteomic characterisation of Nicotiana tabacum seeds expressing verocytotoxic Escherichia coli antigens* ..... C-145
- 15.45-16.00 Riccardo Primi, Pier Paolo Danieli, Francesco Rossini, Roberto Ruggeri, Mercedes Muzquiz, Mercedes Martin Pedrosa, Catia Stamigna, Domenico Chiaretti, Emiliano Chiaretti, Giulia Falcone, Giovanni Giuliano, Bruno Ronchi  
*Chemical, amino-acidic and anti-nutritional composition of new sweet genotypes of narrow-leaf (Lupinus angustifolius L.) and white lupines (Lupinus albus L.) seeds* ..... C-146

**Thursday, June 11 - Physiology and metabolism/  
nutrition and physiology part 2 - Room 113**

**Chairpersons: Adriana Bonanno - Marcello Mele**

- 14.00-14.15** Andrea Serra, Eleonora Bulleri, Laura Casarosa, Alice Cappucci, Federica Mannelli, Marcello Mele  
*Effect of different doses of cracked whole soybean on milk fatty acid composition in buffalo*..... C-147
- 14.15-14.30** Adriano Pilotto, Guido Invernizzi, Antonella Baldi, Giovanni Savoini  
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## P-079

**Variability of the IGF2 locus in the Nero Lucano pig population and its effect on quality and colourimetric characteristics of meat**

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According to literature data, the IGF2 (Insulin-like Growth Factor 2) gene plays a role in regulating proliferation, differentiation and apoptosis of cells in many different tissues. Furthermore, polymorphisms located in intron 3 of this gene have been associated with meat quality traits such as intramuscular fat content, marbling and backfat thickness. The aim of this study was to analyze the genetic structure of two known IGF2 SNPs (-225C>G and -182T>C), located in the promoter region P2 of IGF2 gene, in the *Nero Lucano* pig and their effects on quality and colourimetric characteristics of meat. Till 10 years ago, the *Nero Lucano* pig was a breed in danger of extinction. Today, thanks to Basilicata Regional Institutions, such as ARA, Alsia, Comunità Montana del Medio Basento, and University of Basilicata, the *Nero Lucano* pig population shows an increasing consistency. We typed 153 pigs at IGF2 SNPs -225C>G and -182T>C by means of RFLP-PCR analyses using Eco0109I and DraIII restriction enzymes, respectively. The frequencies of -225 C and G alleles are identical to those of -182 T and C alleles, that is 0.13 and 0.87, respectively. According to the genotype distribution it appears that only two haplotypes are present in this population: -225G -182C, and -225C -182T. For each individual, the meat from two representative muscles (*Longissimus dorsi*, and *Psoas*) was collected. Colourimetric characteristics (CIELab lightness, L\*; redness, a\*; yellowness, b\*; CIE, 1976), dry matter, total protein, fat content, ash (ASPA,1996) Fe heme (Hornsey 1956), oxymyoglobin (MbO<sub>2</sub>), deoxymyoglobin (deoxyMb), and metamyoglobin (metMb) content (Krzywicki 1979) were evaluated. Analysis of variance was performed on all the variables measured using the GLM procedure (SAS, 1996). The results of this study show that in *Nero Lucano* pig these two IGF2 haplotypes are associated with significantly different effects on chemical composition and colourimetric characteristics of meat. In particular, meat from pigs homozygous for the -225G -182C haplotype show higher values of fat, Fe heme, metMb, and lower values of protein, deoxyMb, MbO<sub>2</sub>, L\* and b\* parameters (P<0.05). No differences between the two haplotypes were observed for dry matter, ash and a\* parameter. According to these results, the polymorphism at the IGF2 locus can be used for selection purposes in this autochthonous breed.

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## P-080

**Analysis of patterns of peaks in somatic cells count of Italian Holstein Friesian cows**

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Mastitis is one of the major diseases in dairy herds. It induces economic costs for breeders mainly due to worsening of milk quality and increase of health care cost. Somatic cells count (SCC) are indicators of both resistance and susceptibility of cows to intramammary infections. Lactation-mean SCC or test-day SCC are generally used as mastitis indicators. Recently, other traits that are derived from SCC have been suggested as alternatives to improve genetic evaluations for mastitis resistance, such as maximum SCC, standard deviation of SCC, and patterns of SCC peaks. Aim of this research was to investigate patterns of peaks of SCC, for the definition of a new trait for breeding value estimation of udder health based on SCC in Italian Holstein Friesian cows. Patterns of SCC were used to distinguish lactations with short or longer periods of increased SCC, and also lactations with and without recovery from the increase in SCC. Data on SCC and production traits were extracted from the milk recording scheme (76,879,502 test-day records) of Italian Holstein Breeders Association (ANAFI). A subset was created with 9,041 Italian Holstein cows from 5,442 herds and they were edited to include records from the first 3 lactations and test-day records of SCC between 5 and 600 DIM. Healthy and recovered cows were assumed to have less than 200,000 somatic cells/ml, and cows with intramammary infections were assumed to have more than 400,000 cells/mL. Therefore, test-day records of SCC were categorised as low when the uncorrected SCC measured was < 200,000 cells/mL, and when the uncorrected SCC was > 400,000 cells/mL, the test-day record of SCC was categorised as high. An intermediate category was defined for SCC between 200,000 and 400,000 cells/mL. Preliminary analysis showed that a distribution of patterns of peak was 78.3% for the low SCC category, 13.7% for the intermediate SCC and 8% for the high SCC category. In particular the frequency of the low SCC category is larger in the first parity than in the other parities and the intermediate and high category were larger in the second and third parity. Within each parity the low SCC category was the largest while the high SCC was the smallest. In conclusion, the udder health can be improved through selection, and this information is partly already included in the PFT Italian index but, in the future, this could be changed with the use of the SCC patterns, or used next to the current index.