

**Book of Abstracts of the 68th Annual Meeting of the
European Federation of Animal Science**



EAAP

European Federation of Animal Science

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Book of Abstracts of the 68th Annual Meeting of the European Federation of Animal Science

Tallinn, Estonia, 28 August – 1 September 2017



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Welcome to Tallinn, Estonia

On behalf of the Estonian Organising Committee, it is my pleasure to welcome you to the 68th Annual Meeting of the European Federation of Animal Science at the Solaris Tallinn. It is our first opportunity to host the EAAP Annual Meeting – the Europe's largest animal scientific conference.

The main theme of this years' meeting is Patterns of Livestock Production in the Development of Bioeconomy, which is a hot topic worldwide and a very appropriate subject in view of the current challenges for both human society and livestock industry. Knowledge-based innovation in the livestock sector is needed to integrate animal production into a viable bioeconomy value chain and ensure food security along with improving animal health and reducing environmental impacts. The programme will cover the latest findings and views on developments in animal genetics, health and welfare, nutrition, physiology, livestock farming systems, precision livestock farming, insects and cattle, horse, pig, sheep and goat production, as well as their allied industries.

The participants will have the opportunity to attend a very interesting scientific programme, to meet scientists working with a wide range of animal species and in various disciplines, to make new contacts and discuss the latest developments in animal sciences. The social events will offer the participants a unique occasion to get a glimpse of Estonian culture and the beautiful city of Tallinn.

We hope that all of you will have a very productive meeting and that you will enjoy the social events and our warm and friendly atmosphere.

Toomas Kevvai

Chairman of the Estonian Organising Committee
Deputy Secretary General for Food Safety, Research and Development
Ministry of Rural Affairs of the Republic of Estonia

National organisers of the 68th EAAP Annual Meeting

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Friends of EAAP

By creating the 'Friends of EAAP', EAAP offers the opportunity to industries to receive services from EAAP in change of a fixed sponsoring amount of support every year.

- The group of supporting industries are layered in three categories: 'silver', 'gold' and 'diamond' level.
- It is offered an important discount (one year free of charge) if the sponsoring industry will agree for a four years period.
- EAAP will offer the service to create a scientific network (with Research Institutes and Scientists) around Europe.
- Creation of a permanent Board of Industries within EAAP with the objective to inform, influence the scientific and organizational actions of EAAP, like proposing choices of the scientific sessions and invited speakers and to propose industry representatives for the Study Commissions.
- Organization of targeted workshops, proposed by industries.
- EAAP can represent and facilitate activities of the supporting industries toward international legislative and regulatory organizations.
- EAAP can facilitate the supporting industries to enter in consortia dealing with internationally supported research projects.

Furthermore EAAP offers, depending to the level of support (details on our website: www.eaap.org):

- Free entrances to the EAAP annual meeting and Gala dinner invitation.
- Free registration to journal *animal*.
- Inclusion of industry advertisement in the EAAP Newsletter, in the banner of the EAAP website, in the Book of Abstract and in the Programme Booklet of the EAAP annual meeting.
- Inclusion of industry leaflets in the annual meeting package.
- Presence of industry advertisements on the slides between presentations at selected standard sessions.
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- Public Recognition by the EAAP President at the Plenary Opening Session of the annual meeting.
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- Invitation to meetings (at every annual meeting) to discuss joint strategy EAAP/Industries with the EAAP President, Vice-President for Scientific affair, Secretary General and other selected members of the Council and of the Scientific Committee.

Contact and further information

If the industry you represent is interested to become 'Friend of EAAP' or want to have further information please contact jean-marc.perez0000@orange.fr or EAAP secretariat (eaap@eaap.org, phone : +39 06 44202639).

The Association

EAAP (The European Federation of Animal Science) organises every year an international meeting which attracts between 900 and 1500 people. The main aims of EAAP are to promote, by means of active co-operation between its members and other relevant international and national organisations, the advancement of scientific research, sustainable development and systems of production; experimentation, application and extension; to improve the technical and economic conditions of the livestock sector; to promote the welfare of farm animals and the conservation of the rural environment; to control and optimise the use of natural resources in general and animal genetic resources in particular; to encourage the involvement of young scientists and technicians. More information on the organisation and its activities can be found at www.eaap.org

Beef characteristics predicted by NIRS

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The importance of objective, on-line evaluation of the nutritional and sensory characteristics of fresh meat is increasing for both selective and commercial purposes. NIRS (Near-Infra-Red Spectroscopy) may allow to reach these objectives. The aim of this study was to evaluate the possibility to predict by NIRS the chemical composition and physical properties of beef. The spectra were collected by using NIRFlex N-500 (Büchi, Switzerland) on samples of *Longissimus dorsi* m. dissected at slaughter from 280 young bulls. The spectral acquisition was obtained in a range from 4,000 to 10,000 cm⁻¹ on entire fresh meat, kept at 4 °C for 48 h. The proximate and fatty acids (FA) analysis, color, cooking loss, Warner Bratzler shear force (WBSF) were carried out on the same samples. The chemometric analyses were performed using Buchi NIRCal 5.5. The PLS models predicted humidity with a coefficient of determination of calibration (R^2_c) of 0.682 (standard error of calibration, SEC, 1.09%, n=173) and a coefficient of determination of validation (R^2_p) of 0.479 (standard error of validation, SEP, 1.11%, n=85), ether extract ($R^2_c=0.594$; SEC=0.59%, n=110; $R^2_p=0.550$; SEP=0.54%, n=47), ash ($R^2_c=0.760$; SEC=0.06%, n=205; $R^2_p=0.787$; SEP=0.05%, n=73), lightness ($R^2_c=0.555$; SEC=1.90, n=122; $R^2_p=0.557$; SEP=1.89, n=58), WBSF ($R^2_c=0.781$; SEC=5.09N, n=134; $R^2_p=0.740$; SEP=5.15N, n=57), cooking loss ($R^2_c=0.693$; SEC=2.84%, n=96; $R^2_p=0.714$; SEP=2.80%, n=45), monounsaturated FA ($R^2_c=0.756$; SEC=1.83%, n=119; $R^2_p=0.738$; SEP=1.82%, n=49), polyunsaturated FA ($R^2_c=0.854$; SEC=2.25%, n=115; $R^2_p=0.869$; SEP=2.21%, n=56). In conclusion, NIRS was able to reliably predict proximate and FA composition, color, cooking loss, and WBSF of entire fresh meat. Consequently, it may be a useful technology for an on-line application. This project was funded by CRITA of FVG Autonomous Region.

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Poster 16

Pasture-based finishing of early- and late-maturing breed suckler bulls at 19 months of age

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Pasture-based finishing of cattle is economically attractive however achieving a commercially adequate level of carcass fatness (6, scale 1-15) with grazing suckler bulls is difficult. Performance of early- (EM) and late-maturing (LM) sired spring-born suckler bulls finished at pasture, with or without concentrate supplementation, at 19 months of age was evaluated. Sixty yearling bulls (live weight 399 (SD 42.5) kg and 446 (SD 41.2) kg, for EM and LM, respectively) previously offered grass silage *ad libitum* and supplementary concentrates were blocked within breed by weight, and randomly assigned to a 2 (breed type: EM and LM) × 2 (finishing strategies: grass only (G0) or grass + 3.2 kg dry matter (DM) barley-based concentrate daily (GC)) factorial arrangement. They were turned out to pasture on 7 April and slaughter occurred 192 days later. Concentrates were introduced 97 days post-turnout for GC. Bulls rotationally grazed *Lolium perenne*-dominant swards. Data were statistically analysed using ANOVA with terms for breed, finishing strategy and their interactions, and block in the model. There were no (P>0.05) breed × finishing strategy interactions. Mean estimated herbage dry matter intake (kg/day) during the supplementation period for EM G0 was 8.7 and for GC, 7.2. Corresponding values for LM were 10.0 and 8.2. LM had higher slaughter weight (697 v. 632 kg, P<0.001), carcass weight (400 v. 355 kg P<0.001), kill-out proportion (575 v. 561 g/kg, P<0.01), carcass conformation (9.7 v. 8.3, scale 1-15, P<0.001), and lower carcass fat (6.8 v. 5.6, P<0.01) scores than EM. Supplementation increased average daily gain (P<0.001) during the grazing season (1.42 v. 1.21) and supplementation phase (1.44 vs 1.05), slaughter weight (683 v. 646 kg, P<0.01), carcass weight (391 v. 364 kg, P<0.001), kill-out proportion (573 v. 564 g/kg, P=0.07), carcass fat score (6.8 v. 5.7, P<0.01), subcutaneous fat 'L', (P=0.06), 'a', 'b', and muscle 'b' values (P<0.05) and, reduced muscle 'L' (P<0.01). In conclusion, EM carcasses were lighter but adequately finished, with or without concentrates, whereas the heavier LM carcasses were only adequately finished when supplemented.