Book of Abstracts of the 69th Annual Meeting of the European Federation of Animal Science

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EAAP

European Federation of Animal Science

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Welcome to Dubrovnik and Croatia

On behalf of the Croatian Organising Committee, we are pleased to invite you to attend the 69th Annual Meeting of the European Federation of Animal Science (EAAP). The meeting will be held in the Valamar Resort in Dubrovnik, one of the most prominent tourist destinations in the Mediterranean, from 27th to 31st August 2018.

For decades, the Annual Meeting has hosted scientists and experts from the field of animal science, not only from Europe but also from other countries around the globe. The EAAP Congress provides insights into the latest research results from many areas of animal science. It is a unique opportunity for industry and scientists to meet and acquire new knowledge as well as to exchange experience. Carried out through many sessions, presentations and discussions about scientific achievements in the European and world livestock production are also an opportunity for the application of new ideas in practice. Furthermore, there will be a focus on international research collaboration and knowledge exchange towards innovation. All these preferences make the EAAP one of the largest animal science congresses in the world – we expect approximately 1000 participants from more than 50 countries.

The main topic of the congress is 'Conventional and traditional livestock production systems – new challenges' and it includes sustainability, animal welfare, agroecology and product quality. The programme contains various disciplines and the latest findings regarding farm animals such as genetics, nutrition, management, health, welfare and physiology of cattle, sheep, goats, pigs, horses, poultry and fur animals, as well as the use of insects for feed and precision livestock farming..

We are delegated to invite you to participate in the 69th Annual Meeting of EAAP which focuses on translating research into animal production practice.

Assist. Prof. Zdravko Barać,
Chairman of the Organising Committee,
Croatian Agricultural Agency

Mr. Tomislav Tolušić,
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Combined selection for milk and weigth in cattle in the tropical environment

R.R. Rizzi[1], M.O. Oropeza[2], F.C. Cerutti[2] and J.C.A. Alvarez[2]
[1]Department of Veterinary Medicine, Via Celoria, 10, 20133 Milan, Italy, [2]Asociación de Criadores de Raza Carora, Av. Francisco de Miranda, 3050 Carora, Venezuela; rita.rizzi@unimi.it

In dairy cattle, production is positively related to the size of the animal; in fact, the selection for some type traits, such as stature, body depth and chest width improves milk production. However, large cows have larger nutritional requirements than small cows. In areas where food availability is low, it might be useful to improve milk production, taking into account the live weight. In particular, in breeds reared in a tropical environment, more emphasis should be placed on the production of milk per unit of live weight (or metabolic weight) in order to improve biological efficiency. The purpose of this note is to estimate genetic parameters for milk production as a function of live weight and selection response of the live weight. For this analysis 16,759 weights and 12,718 lactations of 3,050 Carora cows were considered. For each lactation milk per 500 kg of live weight were calculated. An Animal Model Multiple trait was used to estimate the components variance for weight, milk in a standard lactation and milk/weight ratio were estimated. The (co) variances and genetic parameters were used to calculate the genetic gain for weight. The heritability of weight, milk in a standard lactation and milk/weight ratio were 0.44, 0.20 and 0.18, respectively. Weight was positively correlated both to milk (rG=0.33) and to milk/weight (rG=0.22). Given a selection intensity equal to 1, in Carora cattle a decrease in weight in one generation was observed if direct selection is made on mil/weight. In order to obtain an animal with good milk yield but of reduced size, it is possible to select for cows that have higher productions at the same weight. The selection for this trait must however be monitored taking into account also other morphological and reproductive aspects.

Heat tolerance or extensive ability to acclimate

A. Geraldo[1,2], F. Silva[1], C. Pinheiro[1,2], L. Cachucho[1], C. Matos[1], E. Lamy[1,2], F. Capela E Silva[1,2], P. Infante[1] and A. Pereira[1,2]
[1]University of Évora/ECT, Apartado 94, 7002-554, Portugal, [2]ICAAM, Apartado 94, 7002-554, Portugal; ageraldo@uevora.pt

Heat thermal stress is a major concern environmental stress for dairy cattle, it limits animal growth, metabolism, and productivity. Taken this, the joint selection for productivity and adaptability should be considered in the actual dairy farms programs. This study aimed to evaluate the seasonal acclimatization process of cows with different milk yield potential. From a dairy farm located in Alentejo, Portugal, 13 Holstein-Friesian cows were chosen, 7 with high milk yield potential (HMP), ≥9,000 kg of milk at 305 days of lactation, and 6 with low milk yield potential (LMP), <9,000 kg. The trail was separated in 3 periods: (P1) Summer: acclimated cows in heat stress; (P2) Summer: acclimated cows in thermoneutrality; (P3) Winter: acclimated cows in thermoneutrality. Respiratory frequency (RF), rectal temperature (RT) milk composition and plasma triiodothyronine levels (T3) were collected. No differences were found in RF and RT between HMP and LMP cows in any of the periods. RF and RT values were significantly higher in P1 (64.13±12.78 mov./min. and 38.82±0.68 °C) than in P3 (36.13±7.67 mov./min. and 38.06±0.52 °C). Although, in P1, some HMP cows had RT values that indicated heat stress. We found no differences between groups in the lactose, protein, fat, β-Hydroxybutyric acid and somatic cell count. Urea was significantly higher in P1 in the HMP (293.62±35.97 mg/kg) than in LMP (253.69±33.81 mg/kg). T3, in both groups, gradually increased from P1 to P3 (P1-142.00±13.77; P2 – 157.36±10.72; P3 – 170.69±17.78 ng/dl). During summer, HMP had T3 values significantly lower than the LMP cows (P1: HMP-133.33±8.14, LMP-152.40±11.97; P2: HMP-146.50±7.64; LMP-170.40±12.29 ng/dl). Despite these results had revealed that HMP and LMP cows did not show significant differences in RF and RT variables, ongoing the acclimatization process, the HMP presented a lower metabolic activity as well a change in the nitrogen metabolic pathways.