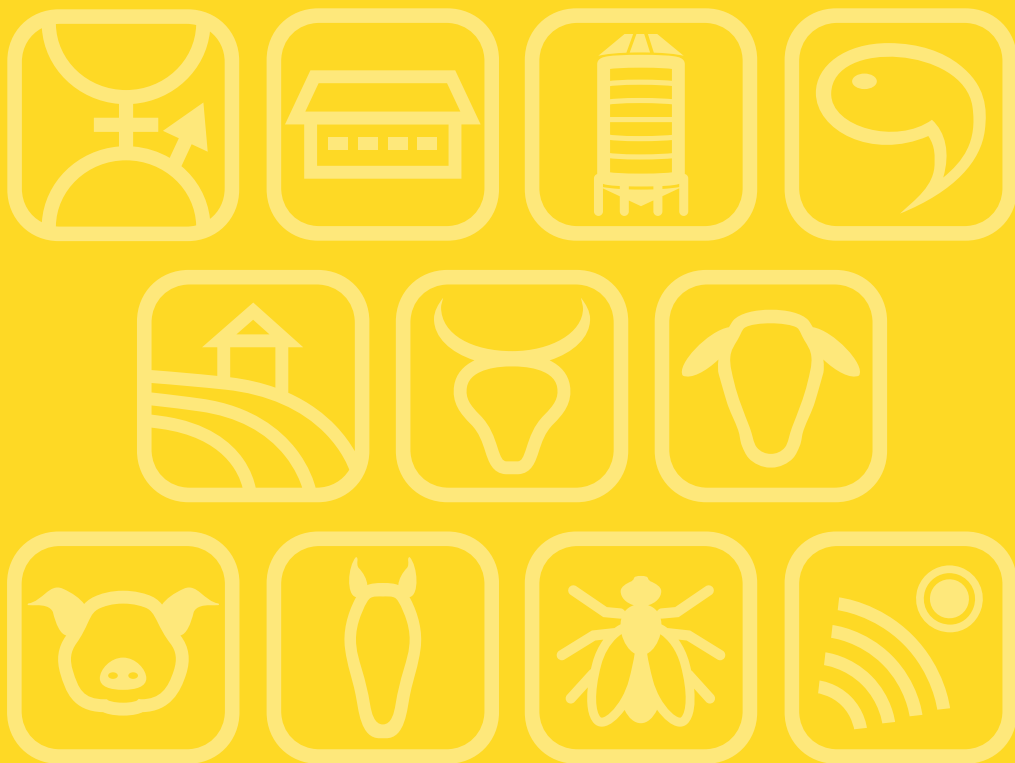


# Book of Abstracts of the 73<sup>rd</sup> Annual Meeting of the European Federation of Animal Science



**Book of abstracts No. 28 (2022)**

**Porto, Portugal**

**5 – 9 September, 2022**

## **Welcome to the EAAP 2022 in Porto**

On behalf of the Portuguese Organizing Committee, we are honored and delighted to welcome you at the 73<sup>rd</sup> EAAP Annual Meeting being held at the wonderful world heritage city of Porto, in Portugal. The last EAAP meeting held in Portugal was in 1987. 35 years and one pandemic later, Portugal has the privilege to finally again host the annual meeting of EAAP.

The years we are living show us that our sector never stops, that animal production continues to put food in people's houses, and that we are an essential part of society. This year, recent war events at our door have put the society under high economic and societal changes. To add up we are faced with the undergoing climate urgency and still adapting to the post pandemic crisis. This conjuncture increases the challenges of Animal Science making them even more relevant than ever, with a consequent higher engagement and responsibility from the scientific community.

The program will cover various areas of knowledge, such as nutrition, genetics, physiology, animal health and welfare, livestock farming systems, precision livestock farming, insect production and use, cattle, horse, pig, sheep and goat production. These topics will be filled with innovation and recent scientific results leading animal production in the right path.

The European Federation of Animal Science (EAAP) Annual Meeting gives an opportunity for the application of new ideas in practice through many parallel sessions, poster presentations, and discussions about scientific achievements in livestock production all around the world. The Plenary Session, under the topic "The coexistence of wildlife and livestock" is a must of 2022 Porto Meeting.

Moreover, as we know, this Meeting is a privileged discussion forum where the research community meets with the industry, to discuss and plan for and how to address the multiple challenges that the animal science sector has to cope with in the upcoming years. All these activities make the EAAP Annual Meeting one of the largest animal science congresses in the world.

Of course our unforgettable social program throughout the week promotes all this scientific activities and networking even more. Starting with the welcome ceremony the programme follows with a typical Portuguese night, a gala dinner and finishes with remarkable technical tours. In parallel an exquisite accompanying persons program is available.

We hope that the 73<sup>rd</sup> Annual Meeting of EAAP: EAAP 2022, is a unique opportunity to add work with pleasure. We wish you a very pleasant stay in our beautiful city and country!

***Ana Sofia Santos and Olga Moreira***

Chairmen of the Portuguese Organizing Committee

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Chair: Aluwé / Bee

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**Effect of immunocastration on body lesions in heavy pigs: preliminary results**

E. Dalla Costa<sup>1</sup>, G. Pesenti Rossi<sup>1</sup>, A. Motta<sup>2</sup>, M. Borciani<sup>2</sup>, A. Gastaldo<sup>2</sup>, G. Berteselli<sup>1</sup>, E. Canali<sup>1</sup>, M. Minero<sup>1</sup> and S. Barbieri<sup>1</sup>

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Immunocastration is an interesting alternative to surgical castration in piglets. Studies have shown promising results in terms of production performance (e.g. maintaining adequate meat quality) also in heavy pig production; and improvement of animal welfare (e.g. preventing distress and pain caused by surgical castration). Aggressive and mounting behaviours, that often result in body lesions, seems to be reduced in light pig production; however, no studies have yet investigated animal welfare of heavy pigs subjected to immunocastration. This study aimed at evaluating the effect of immunocastration on welfare of heavy pigs by monitoring body lesions during growing and fattening period. Commercial-hybrid male pigs were randomly allocated to treatment groups: Immunocastration (IC; n=94), pigs receiving 4 doses of Improvac® at 15, 22, 32, and 36 weeks of age; Surgical Castration (SC; n=94), pigs surgically castrated at 4 days of age. IC and SC pigs received the same feeding regimen, they were housed in the same conditions and their management complied with Dir. 2008/120/EC. Before each Improvac administration, body lesions were recorded through direct observations and scored on a three-point scale (none, mild, severe). Independent T-test was used to determine differences between groups at each considered time point. Before the first administration of Improvac (15 weeks of age), IC pigs showed a significantly higher body lesion score (0.60±1.04) compared to SC (0.2±0.48) (P=0.001). The body lesion score remains higher in the other time points, but the difference between groups is not significant. A high level of agonistic behaviour before the suppression of testicular function suggests anticipating the vaccination protocol in relation to the onset of puberty and to increase the number of interventions in heavy pigs. Further research is needed to evaluate the sustainability of different timing of immunocastration, maintaining high level of animal welfare together with productive and economic benefits of the procedure.

## Session 73

## Theatre 1

**Environmentally sustainable horse feeding and management**

M. Saastamoinen

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Sustainable nutrition and management of horses are part of the socioeconomic effects of horse industry. Horse nutrition is based on forages and grazing, supplemented usually with grains and minerals. However, the diets are often supplemented – concerning mainly protein (nitrogen) and minerals – in amounts which exceed their requirements. This leads to increased faecal excretion of these nutrients. Concerning nitrogen, leaching from manure (dung and urine + beddings) is very potential, but also nitrous GH-gases are evaporated. In the case of minerals, phosphorus is the most harmful to the environment. In addition, some trace minerals can be toxic to plants, microorganisms and aquatic organisms. Leaching and evaporation can be happened from stables, manure stores and composts as well as from pastures and when applying manure. There is a positive relationship between the nutrient intake and faecal excretion. To reduce excretion, most important way is to balance the diets and improve the feed quality and, thus, availability of the nutrients. Fibre content and digestibility of the diet nutrients is necessary to consider. Supplementing forage diets with grains improves the digestibility of many nutrients. Also, regarding the methanogenesis in the gut of the horse, decrease of fibre (ADF) content may reduce methane production. Further, mitigation strategies have been studied in this context. Because horse manure may contain many important and valuable nutrients for plants, it is important to recover these preventing their leaching and evaporation. Pasturing of horses is beneficial to biodiversity if overgrazing is avoided. One aspect regarding the influence on the nature biodiversity, is to avoid spreading of weed seeds via dung when grazing and moving with horses. Horse industry has a potential to 'compensate' its possible harmful environmental effects by circulating nutrients, offering biomass for biogas production and carbon to soil, in the form of manure.

# Effect of immunocastration on body lesions in heavy pigs: preliminary results

E. Dalla Costa<sup>1</sup>, G. Pesenti Rossi<sup>1\*</sup>, A. Motta<sup>2</sup>, M. Borciani<sup>2</sup>, A. Gastaldo<sup>2</sup>, G. Berteselli<sup>1</sup>, E. Canali<sup>1</sup>, M. Minero<sup>1</sup>, S. Barbieri<sup>1</sup>

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## 1. Introduction

Immunocastration is an interesting alternative to surgical castration in piglets. Studies have shown promising results in terms of production performance and improvement of animal welfare (e.g., preventing distress and pain caused by surgical castration) [1].

Aggressive and mounting behaviours, that often result in body lesions, seems to be reduced in light pig production [2-4]; however, no studies have yet investigated animal welfare of heavy pigs subjected to immunocastration.



This study aimed at evaluating the effect of immunocastration on welfare of heavy pigs by monitoring body lesions during growing and fattening period

## 2. Materials & Methods

188 commercial-hybrid male pigs were randomly allocated to two treatment groups:



Immunocastration (IC;  $n = 94$ ), pigs receiving Improvac<sup>®</sup> at 15, 22-24, 32, and 36 weeks of age



Surgical Castration (SC;  $n = 94$ ), pigs surgically castrated at 4 days of age, according to standard farming procedure

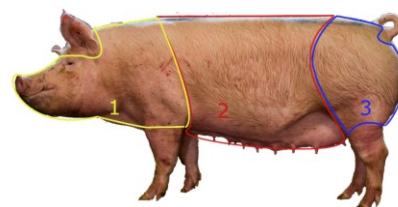
IC and SC pigs received the same feeding regimen, they were housed in the same conditions and their management complied with Dir. 2008/120/EC.



Before each Improvac<sup>®</sup> administration, body lesions of three anatomical regions were recorded through direct observations and scored on a three-point scale (none, mild, severe) [5].



Independent T-test was used to determine differences between groups at each time point.



Modified Welfare Quality<sup>®</sup> scoring system was used. Body lesion score of each animal was calculated by summing the single scores of each region.

## 3. Results

Body Lesion Score $\pm$ SE	Data Collection	Immunocastrated Pigs	Surgically Castrated Pigs	T-test
	15 weeks	0.60 $\pm$ 1.04	0.20 $\pm$ 0.48	$p = 0.001$ *
	22 weeks	0.33 $\pm$ 0.55	0.19 $\pm$ 0.47	$p = 0.068$ n.s.
	32 weeks	0.21 $\pm$ 0.50	0.18 $\pm$ 0.45	$p = 0.703$ n.s.
	36 weeks	0.06 $\pm$ 0.29	0.04 $\pm$ 0.20	$p = 0.736$ n.s.

Before the first Improvac<sup>®</sup> administration (15 weeks of age), IC pigs showed a significantly higher body lesion score (0.60 $\pm$ 1.04) compared to SC (0.20 $\pm$ 0.48) ( $P=0.001$ ).

The body lesion score remained higher in the other time points, but the difference between groups was not significant.

## 4. Discussion

A high level of agonistic behaviour before the suppression of testicular function suggests anticipating the vaccination protocol in relation to the onset of puberty and increasing the number of interventions in heavy pigs. Further research is needed to evaluate the sustainability of different timing of immunocastration, maintaining high level of animal welfare together with productive and economic benefits of the procedure.

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### Ethic statement

The protocol was approved by the Animal Welfare Committee of the University of Milan (OPBA\_26\_2020), according to the Directive 2010/63/EU.



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