SECTIONAL ABSTRACTS 2010

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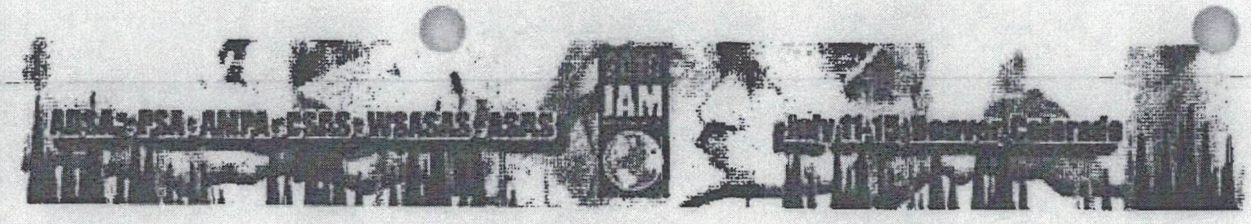

Abstracts

American Dairy Science Association®
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Journal of Animal Science

About *Journal of Animal Science*

History of the journal

Impact factor and rank among animal and dairy science journals:
The *Journal of Animal Science* (*JAS*) is the premier journal for animal science and serves as the leading source of new knowledge and perspective in this area. *JAS* publishes more than 400 fully reviewed research articles, invited reviews, technical notes, and letters to the editor each year. According to the Institute for Scientific Information (ISI), *JAS* consistently ranks as one of the top journals (among 47 titles) in the category of Agriculture, Dairy, and Animal Sciences in terms of impact factor, immediacy index, and cited half-life and is in the top 1% of STM publishing (50,000+ titles) by total ISI citations. As a testament to its rank as a leading international journal, the Impact Factor continues to increase each year (Impact Factor) and the cited half-life is the highest given by ISI at >10 yr.

Purpose and scope:
The mission of the American Society of Animal Science (ASAS) is to foster communication and collaboration among individuals and organizations associated with animal science research, education, industry, or administration. *"To discover, disseminate and apply knowledge for sustainable use of animals for food and other human needs."* The *Journal of Animal Science*, which is published monthly by ASAS, accepts manuscripts presenting information for publication with this mission in mind. Articles published in *JAS* encompass a broad range of research topics in animal production and fundamental aspects of genetics, nutrition, physiology, and preparation and utilization of animal products. Articles typically report research with beef cattle, companion animals, goats, horses, pigs, and sheep; however, studies involving other farm animals, aquatic and wildlife species, and laboratory animal species that address fundamental questions related to livestock and companion animal biology will be considered for publication. Manuscripts that report research on production issues in animals other than those constituting the main focus of the journal should be submitted to other journals.

Intended readership:
Readers of *JAS* typically represent education, industry, and government, including research, teaching, administration, extension, management, quality assurance, product development, and technical services. Those interested in *JAS* typically include biochemists, animal breeders, economists, embryologists, engineers, food scientists, geneticists, microbiologists, nutritionists, physiologists, processors, public health professionals, and others with an interest in animal production and fundamental aspects of animal sciences.

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egue, M. D. Lindemann, and G. L. Cromwell, *University of Kentucky, Lexington.*

Stocking density and/or floor space allowance can influence pig performance and, consequently, profitability. The objective of this study was to determine the effects of stocking density and floor space allowance during the nursery period on growth performance of gilts compared to barrows. Gilts were then retained to examine continuing effects on growth with the intent of following them through reproduction. During a 6-wk crowding period, a total of 240 pigs (120 gilts and 120 barrows; mean age of 21 d; 6.8 ± 1.0 kg BW) were allotted to 3 space allowances (SA) in a 2 × 3 arrangement (sex [gilts vs barrows] and SA [SA1, 6 pigs in a full pen: 1.22 × 2.44 m^2, 0.50 m^2/pig; SA2, 12 pigs in a full pen: 0.25 m^2/pig; SA3, 6 pigs in a half pen: 1.22 × 1.22 m^2, 0.25 m^2/pig)]. Feeder space and water nipple availability was identical for each pig in all treatments; diets were nutritionally adequate (NRC, 1998). During the grow-finish period, gilts had adequate floor space (6 pigs in a pen; 0.93m^2/pig). For the 6-wk nursery period, crowding reduced ADG ($P < 0.01$) in gilts (577, 536, and 558 g/d for SA1, SA2, and SA3, respectively) and barrows (578, 539, and 527 g/d). While ADFI and F/G were not affected by stocking density or SA, there was a much larger change in ADFI among treatments (gilts: 907, 845, 884; barrows: 916, 891, 858 g/d) than there was in F/G. (gilts: 1.57, 1.58, 1.58; barrows: 1.58, 1.65, 1.63). There was no sex by SA interaction on performance measures. During the grow-finish period, when gilts were housed at the same density in pens with the same space, there were no differences ($P > 0.10$) in ADG (890, 864, and 891 g/d), ADFI (2,677, 2,559, and 2,636 g/d), or F/G (3.01, 2.96, and 2.96) based on previous nursery housing treatment. These results demonstrated that crowding stress during the nursery period negatively affected growth performance of both gilts and barrows during that period of stress, but a continued effect of that stress was not manifested in gilts when subsequently housed in adequate space during the grow-finish period.

Key Words: nursery pigs, crowding stress

W469 Feed intake of gilts following intracerebroventicular injection of the novel hypothalamic RFamide (RFa) neuropeptide, 26RFa. C. J. Rogers*[1], N. L. Heidorn[1], C. R. Barb[2], G. J. Hausman[2], M. J. Azain[1], R. Rekaya[1], and C. A. Lents[1], [1]*University of Georgia, Athens,* [2]*USDA-ARS Richard B. Russell Agriculture Research Center, Athens, GA.*

RFamide (RFa) peptides have been implicated in a broad spectrum of biological processes including energy expenditure and feed intake. 26RFa is a recently discovered hypothalamic neuropeptide that altered the release of pituitary hormones and stimulated feed intake via a NPY-specific mechanism in rats. Voluntary food intake in the pig is regulated by changes in NPY, and we speculate that 26RFa is involved in the process. Thus, we tested the hypothesis that 26RFa stimulates food intake in the domestic pig. Prepuberal gilts (73 ± 17 kg BW) were fitted with intracerebroventricular (i.c.v.) cannulas and housed in individual pens. Pigs were allowed ad libitum access to feed for 7 d prior to treatment to establish a base line for voluntary feed intake. On the day of the experiment, feeders were removed from all pens at 0900 h. Beginning at 1100 h, gilts received i.c.v injection of either 10 (n = 8), 50 (n = 7) or 100 μg (n = 7) of 26RFa in 0.9% saline. Control animals received either 100 μg of NPY (n = 5) or 0.9% saline alone (saline; n = 5). Feeders were placed in all pens immediately after the last i.c.v. injection (1200 h) and cumulative intake was determined at 4, 8 and 24 h. Treatment had no effect on feed intake at 4 h. Feed intake of saline treated gilts at 8 h was not different when compared with 26RFa treated animals. However, NPY treated pigs ate more at 8 h (1.64 ± 0.20 kg) than saline treated pigs (1.07 ± 0.20 kg; $P < 0.05$) or pig receiving either 10 μg (0.90 ± 0.16 kg; $P < 0.01$) or 50 μg (1.13 ± 0.16 kg; $P < 0.06$) of 26RFa. Feed intake at 8 h of pigs treated with 100 μg (1.27 ± 0.17 kg) of 26RFa was not different from either NPY or saline treated animals. There were no differences between treatments in feed intake at 24 h. We conclude that 26RFa is not an orexigenic neuropeptide in the pig. Further study is needed to determine the effects of i.c.v. injection of 26RFa on hormone release from the anterior pituitary gland of the gilt.

Key Words: feed intake, 26RFa, hypothalamus

W470 Increasing productivity and disease control on swine farms trough management tools: A field study. G. Rocha-Chavez*[1], J. Castañeda[2], A. Sepulveda[1], J. G. Michel-Parra[1], M. A. Pinto[2], O. Montañez[1], A. Martínez[1], and J. M. Tapia- Gonzalez[1], [1]*Universidad de Guadalajara, Cd Guzman, Jalisco, Mexico,* [2]*Private Practice, Tamazula, Jalisco, Mexico.*

Current swine production systems use genetic and other technological tools to increase effectivity and profitability, however, emergent and old diseases are always devastating potential capacity of swine business. The present paper discuss a field study that combine a series of management tools that increased competitiveness in a porcine farm. Although this model has been implemented in different swine production systems, we describe the field experience of a small farm located at the southern part of Jalisco state in Mexico. A Farrow-to-finish 200-sow farm was selected for the present study. The farm was PRRS and PCV positive with glasser disease and mycoplasm persistent outbreaks. A very low feed efficiency and kg/sold/sow/year was present at the farm before intervention as well as high production costs (see table for more parameters). The following tools were implemented for 2 years: (1) Closed herd: the genetic progress was achieved by means of artificial insemination with no live animal introduction whatsoever. (2) Close monitoring of reproduction management: Heat detection and insemination was priority number one on morning chores. (3) Autovaccination program: A professional and well controlled autogenous vaccination program was implemented using exclusively row material from the farm. (4) Employers management program: an incentive-based program was implemented on the premise of happy workers are efficient partners.

Table 1. Production parameters at a pig farm before or after implementing selected management tools

Production parameter	Before	After
Wean to finish mortality, %	7.3 [a]	1.9 [b]
Farrowing rate, %	78.3 [a]	87.7 [b]
Feed efficiency, (feed to gain ratio)	3.7 [a]	2.8 [b]
Veterinary Services/Medicine per Cwt, US$	9.27	6.32
Total Cost per Cwt of Pork Produced, $	164.00 [a]	117.00 [b]

Different letters in the same line are statistically different, $P < 0.05$).

Key Words: swine, profitability, management tools