

Accepted Manuscript

Title: Trade-offs between litter size and offspring fitness in domestic pigs subjected to different genetic selection pressures

Authors: Marko Ocepek, Ruth C. Newberry, Inger Lise Andersen

PII: S0168-1591(17)30098-9
DOI: <http://dx.doi.org/doi:10.1016/j.applanim.2017.03.008>
Reference: APPLAN 4432

To appear in: *APPLAN*

Received date: 17-10-2016
Revised date: 18-3-2017
Accepted date: 26-3-2017

Please cite this article as: Ocepek, Marko, Newberry, Ruth C., Andersen, Inger Lise, Trade-offs between litter size and offspring fitness in domestic pigs subjected to different genetic selection pressures. *Applied Animal Behaviour Science* <http://dx.doi.org/10.1016/j.applanim.2017.03.008>

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

Trade-offs between litter size and offspring fitness in domestic pigs subjected to different genetic selection pressures

Marko Ocepek*; Ruth C. Newberry; Inger Lise Andersen

Norwegian University of Life Sciences, Department of Animal and Aquacultural Sciences, PO Box 5003, 1432 Ås, Norway

*Corresponding author: Marko Ocepek, e-mail: marko.ocepek@nmbu.no, Tel: +47 41430972, Fax: +47 64965101

Highlights

- Selection for pig litter size offers a model for exploring reproductive trade-offs
- Sows responded to teat stimulation from larger litters by decreasing their nursing rate
- Larger litters had higher mortality and smaller piglets with more variable weights
- Selection for maternal traits did not avoid many adverse effects of greater litter sizes
- Selection for even larger litters will cause serious negative side effects

Abstract

Artificial selection of the domestic pig (*Sus scrofa domesticus*) offers a useful model for investigating changes in behaviour associated with reproductive trade-offs between litter size and fitness of offspring. The aim of this study was to evaluate effects of litter size on teat stimulation, sibling competition, and pre-weaning survival and growth in three populations of domestic pigs subjected to different selection pressures (a maternal line selected for high reproductive investment, a paternal line selected for meat production traits, and a crossbred line). We predicted that, with increasing litter size, piglets would spend more time in udder massage, be less likely to gain access to a teat during milk letdown and, if surviving to weaning, have lower, more variable body weights. We also predicted that maternal line sows would wean more piglets of higher weight, despite larger litter sizes, than paternal

Download English Version:

<https://daneshyari.com/en/article/5763396>

Download Persian Version:

<https://daneshyari.com/article/5763396>

[Daneshyari.com](https://daneshyari.com)