Czech Academy of Agricultural Sciences

Open Access Agricultural Journals

Czech Journal of

ANIMAL SCIENCE

Table of Contents

IN PRESS
CJAS 2015
CJAS 2014
CJAS 2013
CJAS 2012
CJAS 2011
CJAS 2010
CJAS 2009
CJAS 2008
CJAS 2007
CJAS 2006
CJAS 2005

Czech Journal of Animal Science

The relationship between culling rate, herd structure and production efficiency in a pig nucleus herd

Houška L.:

Czech J. Anim. Sci., 54 (2009): 365-375

[fulltext]

Computer simulation of sow culling was run in a nucleus herd. The specified constant culling rate from 15 to 21% was simulated for all parities. The resultant different age structure of a herd was

production and other production indicators. With increasing culling rate the percentage of mated gilts was increased in order to maintain the constant size of the sow herd. With 15% simulated culling, which required 17.09% of mated gilts, the percentage of sows at parity 1 and 2 and the percentage of sows at parities 3–5 were balanced (31.62% and 31.77%, respectively). Annual herd replacement was 37.62%. After five parities only a little more than a half (55.63%) of the total number of sows in the herd was removed. Similar results were obtained with 16% culling, which also made it possible to maintain the recommended herd structure. With higher culling rate parities 1 and 2 became dominant in the herd. With 21% culling and 19.84% of mated gilts the percentage of sows at parities 1 and 2 was 35.52% while it was only 29.90% at parities 3–5. Annual herd replacement amounted to 43.67%, and almost 70% of sows were removed after five parities in this case. With increasing culling rate the average age of sows removed from a herd decreased (1 158.1–1 021.2 days), the number of barren days in a herd per year

increased (6 174–6 680 days) and the number of piglets weaned per sow per year decreased (19.54–18.92 piglets). At the same time, there was a decrease in total costs (64 789–63 519 Kč), returns (79 816–77 327 Kč) and profit (15 026–13 808 Kč) in the herd, as recalculated per sow per year, and profitability also decreased.

Keywords:
pig; computer simulation; culling rate; herd structure; costs; profitability

[fulltext]