

Poster Number: 31

Topic Area: Reproduction

Title: The influence of diet on boar stud productivity: a case report from Southern of Brazil

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Introduction

Reproduction is affected by many things, one of them is nutrition. But in addition, for males, the sperm production is also affected by genetic, age and interval collection. The composition of swine diet pellet feed can influence the quality of the ejaculate, which influences some variables as: volume, morphology, motility and consequently the number of doses. Based on this, the aim of the present abstract is to show the production data of a period of sperm dose production comparing two diet pellet feeds, A and B.

Methods

We used the production data from boar stud located in Southern Brazil. The diets were offered from September 1st to December 12th/2021 for diet B (n=259) and for diet A from December 13th/2021 to May 15th/2022 (n=274), approximately 3 spermatogenesis for each one. Only data from approved ejaculates was used. The data comes from computer aided sperm analysis (CASA) Magavision and Gesipor software (Magapor®). We compared three age groups (0,5-1,0; 1,0-1,5 and 1,5-2,0 years) and collection interval (CI) (CI3, CI5 and CI7, days) between diet pellet feed A and B. Composition of diet A: soybean meal, ground linseed, whole ground corn, vegetable oil and alfalfa hay. Dry matter (87,6%), crude protein (19,02%), crude fiber (3,21%), ether extract (4,03%), moisture (12,35%), mineral matter (4,96%). Diet B: whole ground corn, soybean meal, defatted corn germ, wheat bran and fish oil, mineral and vitamins. Dry matter (87,4%), crude protein (18,78%), crude fiber (3,8%), ether extract (4,9%), moisture (12,5%), mineral matter (7,19%), mineral and vitamins.

We proceeded the statistical analysis by R Core Team (2021), analysis of variance (AOV).

Results

For motility: CI3 and CI5 there were statistical differences ($P < 0,05$) with better results for diet pellet feed A, CI3: 0,5-1,0 ($4,75 \pm 1,03$) and 1,0-1,5 ($4,57 \pm 1,07$) (age); CI5: 0,5-1,0 ($5,04 \pm 0,86$), 1,0-1,5 ($4,84 \pm 0,91$). And all age groups in CI7: 0,5-1,0 ($5,05 \pm 0,84$), 1,0-1,5 ($4,62 \pm 1,08$), 1,5-2,0 ($4,69 \pm 1,01$). Pellet feed B CI3: 0,5-1,0 ($4,49 \pm 1,05$) and 1,0-1,5 ($3,94 \pm 1,11$); CI5: 0,5-1,0 ($4,46 \pm 1,14$), 1,0-1,5 ($4,15 \pm 1,19$); CI7: 0,5-1,0 ($4,42 \pm 1,12$), 1,0-1,5 ($4,32 \pm 1,08$), 1,5-2,0 ($4,39 \pm 1,10$). We have less sperm pathology with diet B, for CI3 on age groups 1,0-1,5 and 1,5-2,0; CI5 on 1,5-2,0 and CI7 of all age groups. For ejaculate volume we find better results with diet A, for CI3 and CI5 on 1,0-1,5, and CI7 in all age groups. Sperm concentration statistical showed differences for diet B, CI3 and CI5 on 1,0-1,5 and CI7 for all age groups. Finally, for number of doses, just for CI7 there was statistical difference for 1,5-2,0 age group for diet B against A.

The result that stands out is motility, that in all collection interval and almost all age groups presented better results with diet A, which contains alfalfa hay and ground linseed. Linseed oil was recently mentioned as it improves progressive motile sperm boars and ejaculate volume.

Conclusion

Motility seems to be a variable that was mostly influenced by diet in this case.