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## JOURNAL ARTICLE

# Testicular composition, number of A spermatogonia, germ cell ratios, and number of spermatids in three different breeds of boars

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Seminal quality, including the number of spermatozoa in the ejaculate, varies among breeds of boars. Variation in seminal quality may be explained by breed differences in testicular size and composition. The objective of this study was to characterize testicular composition and population sizes of germ cells and somatic cells in three different breeds of boars. Testes from mature and normal Meishan (M, n = 5; age 225 days), Whitecross (WC, n = 5; age 346 days), and West African (WA, n = 5; age 322 days) boars were either fixed in Zenker-formol or perfused with glutaraldehyde, embedded in Epon, sectioned at 0.5 microns or 20 microns and evaluated stereologically for germ cells, Leydig cells, Sertoli cells, and other testicular structures. The paired parenchymal weight was higher ( $P < 0.05$ ) in the WC (498 +/- 35 g) than in the M (247 +/- 17 g) or WA (133 +/- 10 g). The nuclear volumes per boar of Sertoli cells, type A spermatogonia, leptotene, zygotene, pachytene, secondary spermatocytes, spermatids with spherical nuclei, and spermatids with elongated nuclei were higher ( $P < 0.05$ ) in the WC than in the M or WA. The nuclear volumes per boar of blood vessels and Leydig cells were exceptionally higher ( $P < 0.05$ ) in the M than in the WC or WA. The average germ cell nuclear diameters were similar ( $P > 0.05$ ) for the M and WC but least ( $P < 0.05$ ) in the WA breed. Also, the nuclear diameters of Leydig cells and Sertoli cells were higher ( $P < 0.05$ ) in the M than in the WC or WA. The population sizes of all the intratubular components were positively correlated ( $P < 0.05$ ) with testicular size (weight). Volume density of seminiferous tubules was similar in the WA and WC, but was lowest in the M, who had the highest density of Leydig cells. However, due to the larger testes, all germ cell types and Sertoli cells were higher in the WC than in the WA or M. The M and WA had similar low numbers of type A spermatogonia, but there was less term cell degeneration in M than in Wa, such that M spermatids were intermediate in number between WA and WC.

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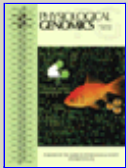
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