

International Meeting on

VETERINARY AND ANIMAL SCIENCE

August 06 - 07, 2018 | Dubai, UAE

Effect of the stage of sexual cycle and season on follicular dynamics and oocyte quality of zebu cattle under sudano-sahelian climate

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This study was carried out at the Ngaoundere Slaughterhouse (Adamawa region, Cameroon) on 353 normal cyclic zebu cows to investigate the effects of the stage of sexual cycle and season on follicular dynamics and quality of cumulus-oocyte complexes (COCs). The apparent follicles on each ovary were measured using an electronic Stainless Hardened caliper then counted and classified according to their diameter into small (<3 mm), medium (3-8 mm) and large (>8 mm) follicles. The size and colour of corpus luteum on the ovary permitted to distinguish four stages of the sexual cycle (proestrus, estrus, metestrus and diestrus). The oocytes were retrieved and classified according to the morphology and expansion of COCs. Grade I: pluristratified cumulus cell mass (more than three layers) compact and a homogenous cytoplasm; grade II: Compact

cumulus cell mass with one or two layers, and a homogenous cytoplasm; grade III: less compact cumulus cell mass and a less regular cytoplasm with dark zones; grade IV: denuded oocyte with a dark or irregular cytoplasm. The results indicated that the follicular population was 27.26 ± 1.95 follicles per cow. Oocytes recovery rate was 10.14 ± 8.37 per cow. The oocyte quality index and oocytes grade I and II acceptable for in vitro embryo production (IVEP) were 2.35 and 58.28%, respectively. The rainy season offers a higher number of follicles and oocyte quality than the dry season. To obtain the best rate of yield and oocytes quality, this study indicated that they should be retrieved in the rainy season at estrus or metestrus stage.

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