ABSTRACTS

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FOLLICLE POPULATION, CUMULUS MUCIFICATION AND OOCYTE CHROMATIN CONFIGURATION DURING THE PERI-OVULATORY PERIOD IN THE BITCH

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Objectives - This study was designed to describe follicle population and cumulus mucification in the bitch ovary during the preovulatory period, and to evaluate the association in time between the LH peak/ovulation and the oocyte chromatin configuration.

Materials and methods - In the initial experiment, ovaries of 45 Beagle bitches were collected before LH peak (21 bitches, 284 follicles) or after LH peak-before ovulation (24 bitches, 264 follicles). All large (>2mm) follicles were measured and punctured. The numbers of oocytes collected and the degree of cumulus mucification were recorded. In a second experiment, ovaries were collected from 33 bitches, before LH peak (13 bitches, 92 oocytes) and after LH peak-before ovulation (11 bitches, 57 oocytes) or following ovulation (9 bitches, 39 oocytes). Chromatin configuration of collected oocytes was observed by DNA/tubulin staining and confocal microscopy.

Results - Before LH peak, an average of 13.5 ± 0.7 follicles per bitch were detected. After the LH peak, 11.0 ± 0.7 follicles were present. A fully mucified cumulus was observed only in > 4 mm follicles. Multi-oocytic follicles were detected represented 7% (before LH peak) and 4% (after LH peak) of the follicle population. All oocytes were at the GV stage, but three chromatin configurations could be distinguished (diffuse, partly- and fully-grouped chromatin). The proportion of oocytes with fully-grouped chromatin increased with follicle diameter and also after the LH peak.

Conclusions - These results suggest that (1) large follicles > 4 mm are already present during early proestrus, (2) the ability for cumulus mucification is acquired during the late steps of follicle growth (3) three GV patterns may be observed during the peri-ovulatory period.