



TOPIC: Reproductive Cytogenetics

Poster

Oral XXX

TITLE: 'Baseline' level of aneuploidy in bovine (*Bos taurus*) spermatozoa and secondary oocytes by using dual color fluorescent *in situ* hybridization (FISH)

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TEXT:

Estimation of the baseline level of aneuploidy in germ cells of domestic animals is an important step for monitoring future trends of the reproductive health of the various species/breeds engaged in animal production, especially in relation to managemental errors and environmental hazards.

Sperm-FISH. Xcen and Y painting probes were hybridized on sperm nuclei from 10 bulls of the Italian Friesian breed, 10 of the Italian Brown, 5 of the Podolian, 5 of the Maremmana, 5 of the Modicana and 6 of the Agerolese breed. By adding data from other 5 bulls of the Swedish Friesian previously analyzed by Hassanane and collaborators, the total number of bulls investigated, in so far, sums up to 46, for a total of 268,258 sperm analyzed, 634 of which were found to be aneuploid (0.236 %), 465 disomic (0.173 %) and 169 diploid (0.063 %). No significant interbreed differences were found. The baseline level of aneuploidy in the sperm population of the species *Bos taurus* can be estimated –according to the conservative law- as 5.19 %.

Ovo-FISH. Xcen and 5 painting probes were hybridized on MII oocytes plus 1st polar body from a total of 81 cows belonging, respectively, to the Italian Friesian (23), Italian Brown (19), Podolian (24) and Maremmana (15) breeds. Out of 400 MII oocytes plus 1st polar body (100 for each breed), 9 (2.25%) were aneuploid; of these, 4 were disomic (1%) and 5 (1.25%) nullisomic. No significant interbreed differences were found. The baseline level of aneuploidy in the *in vitro* matured oocyte population of the species *Bos taurus* can be estimated –according to the conservative law- as 30 %.

Acknowledgements: This work was supported by the SpermOvoFISH project no. 291/7303/06 of the MiPAAF of Rome (Italy), by the RARECA- PSR 214 project of the Campania Region (Italy) and by the project MZE CR n. 002716202 (Czech Republic).

