

SCE-TEST REVEALS GENOMIC INSTABILITY IN CATTLE AFFECTED BY CHRONIC ENZOOTIC HAEMATURIA

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Chronic enzootic haematuria (CEH) is a pathology specifically found in cattle grazing naturally or fed with plants rich in bracken fern (*Pteridium aquilinum*) which is widely spread all over the world and particularly in southern Italy. This plant is known to contain toxic compounds such as ptaquiloside and quercetin, which have mutagenic and cancerogenic effects, mainly in the bladder.

Previous cytogenetic studies on cows affected by CEH using normal staining technique and analyses of chromosome abnormalities (gap, chromatid and chromosome breaks, fragments) revealed a significant increasing of chromosome abnormalities in cows affected by CEH, compared to the control (Lioi et al., 2004). In the present study we applied the sister chromatid exchange (SCE) test on 30 cows with CEH (all these cows were slaughtered to check for the presence of CEH) and 10 control cows fed without bracken fern. All animals aged from five to twelve years. At least 35 metaphase plates per animal were examined.

Higher levels of SCE (SCE/cell = 7.51 ± 3.58) were found in the cows affected by CEH when compared with the control (SCE/cell = 5.82 ± 3.05) and the differences were highly significant ($P < 0.001$). The present study confirms genomic instability in cells of animal affected by CEH, as revealed earlier by using other cytogenetic test (Lioi et al. 2004). To our knowledge, this is the first investigation in a representative sample of cattle with CEH using the SCE test.

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