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SISTER CHROMATID EXCHANGE (SCE) IN TWO ENDANGERED PIG BREEDS RAISED IN SOUTHERN-ITALY

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Chromosome stability ensures that genetic information is correctly transmitted during the DNA replication and cell proliferation. Several studies report a variable rate of genome stability according to the livestock species analysed. Sister chromatid exchange (SCE) test has been largely applied to test chromosome stability in animal cells naturally exposed to environmental mutagens present in the food chain or during *in vitro* cell exposure. SCE-mean number may vary among and between species depending by species, breed and environmental conditions.

In this study, representative groups of animals of two endangered pig breeds (Casertana and Siciliana black) were analyzed by using SCE-test to check their chromosome stability under their normal breeding and environmental conditions. 28 pigs, 16 males and 12 females from Casertana breed (from 3 different farms), and 18 pigs, 8 males and 10 females, from Nero Siciliano breed (from two farms) were studied. 5-Bromodeoxyuridine was added to cell cultures 26 hours before harvesting. Colcemid (0.1 µg/10 ml) was added 1.5 h before harvesting. SCE mean numbers were $6,54 \pm 2,86$ and, $6,56 \pm 2,9$ in Casertana and Siciliana pig breeds, respectively. No statistical differences were found between the two breeds, neither between males or females within the same breed.

The data obtained in the two pig breeds reveals that SCE-mean value in pig is one of the lowest compared to other livestock species studied so far supporting the hypothesis that pig genome is more stable than that of other species, probably depending also for the young age of animal breeding of this species, compared to that of other domestic species.

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