

Morphological characterization of the Amiata donkey breed through the data reported in the Anagraphic Register

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ABSTRACT

The Anagraphic Register of the Amiata donkey breed has been established in 1993, and is maintained by the association of breeders of the Grosseto province (APA-GR). Being an endangered breed, subjects with unknown pedigree have been allowed to be recorded, provided that females scored at least 60 and males at least 75 points on morphological evaluation. Recording is still open for females, whereas it has been closed in 1997 for stallions. In the present work, we have investigated the morphological structure of the Amiata donkey through the data reported in the Anagraphic Register.

This last was started recently and was maintained on paper only, meaning that it inevitably includes a certain degree of incompleteness. The morphological records of 74 unrelated Amiata donkeys (62 females and 12 males) were collected at the APA-GR in 2005. For each animal the following biometrical data was available: 10 individual scores (from 1 to 10) for coat colour, head shape, neck, withers, shoulders, back, back-lumbar line, limbs and plumbs, walking and foot, evaluated by certificated experts of the breed; in addition, measurements of withers height, chest and cannon circumference were individually reported. As an index of body compactness, the ratio chest/cannon circumference was calculated from data.

One-way analysis of variance was used to test the differences between male and females for total scores and morphological measurements. Data were analysed by JMP software version 5.0 of SAS Inst. (2002). No significant differences were observed among females and males: Mean (\pm s.d.) withers height (WH) were 129.0 ± 3.2 cm in females and 131.8 ± 3.1 cm in males. Chest circumference (CH) were 148.4 ± 5.1 cm and of 150.8 ± 5.5 cm, for males and females respectively, and cannon circumference (CC) were 16.6 ± 1.2 cm and 17.1 ± 0.4 cm, for males and females respectively. The ten evaluation scores were added up for each animal; means were 72.4 ± 6.2 in females (range 61-88) and 77.2 ± 3.0 (range 71-80) in males. The ratio CH/CC, an index of body compactness, was 0.11 ± 0.01 in males (range 0.11-0.12) and 0.11 ± 0.01 in females (range 0.09-0.13). All these measurements indicate low variability among individuals as well as limited sexual dimorphism.

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