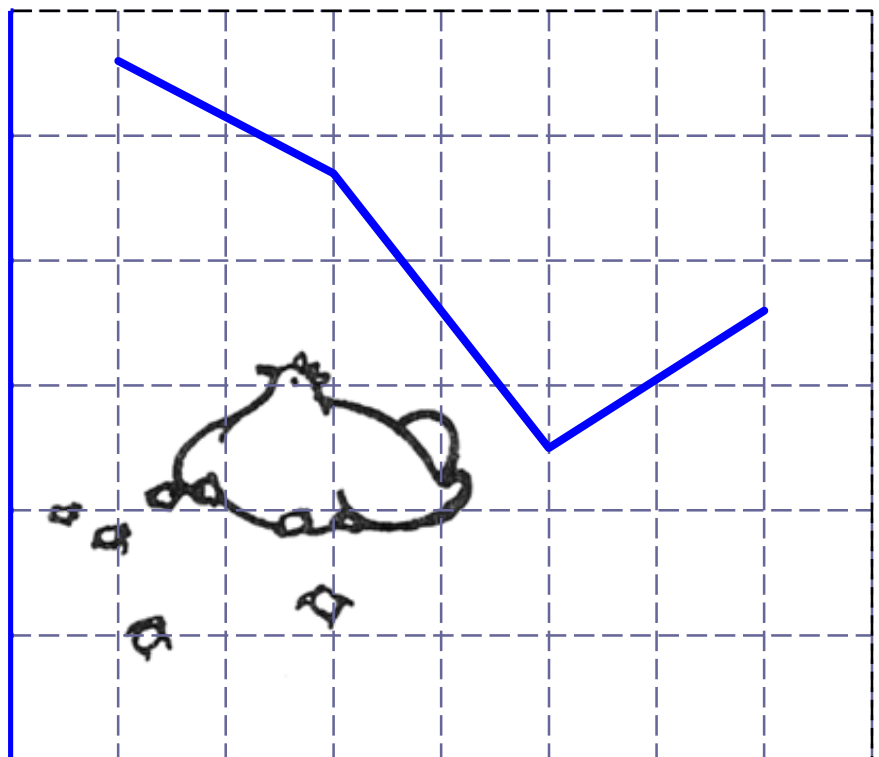


Recent advances in animal welfare science VI



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INBREEDING DEPRESSION ON MORPHOLOGICAL TRAITS IN AN ITALIAN POPULATION OF THE BASSET HOUND DOG

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In the selection the inbreeding is used as a mating method because allows to fix the characteristics of the best representative of a breed. However this mating method can lead to high rates of inbreeding with disadvantageous phenomena particularly threatening small populations and those originating from a small number of ancestors. Inbreeding can increase genetic diseases, puppy mortalities and can cause inbreeding depression in terms of the animal's fitness problem and can also lead to a decrease in selection response for economic traits in livestock. As well known, dog breeders choose animals on the basis of standard characteristics, so it would be interesting to know the effects of inbreeding on morphological traits in order to estimate the changes associated with an increase in inbreeding. The aim of this study was to assess the effects of inbreeding on morphological traits in a population of the Basset Hound dog breed raised in Italy. Basset Hound belongs to Group 6 of the ENCI (Ente Nazionale Cinofilia Italiana) and over 400 puppies were registered every year. Currently in Italy there are 32 official breeders, who breed dogs mostly of American and British bloodlines. Traits were taken from 75 dogs (mean age 2.17 ± 1.545 years) (36 males and 39 females) belonging to 19 Italian breeders. For each animal the individual inbreeding coefficient (F) was estimated; the following biometrical measurements were considered: height at withers, height of chest, depth of chest, body length, length at rump, ischiatic width of rump, circumference of chest, circumference of cannon, length of ear, and length of nose. ANOVA was used to test the differences in morphological traits between sexes, among breeders and among animals with different F level. A linear regression of each trait on inbreeding coefficient was added to the model to estimate inbreeding depression. Results showed a significant effect of inbreeding on the depth of chest. The breed standard reports that chest should be neither narrow nor excessively descended. So, in this case, a reduction of the depth of chest could be a "good" inbreeding effect for animals with an excessive depth of chest that would be an undesirable feature for farmers.

