

Ethogram and reactivity in three chicken Italian Breeds

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Information about the production and behaviour of traditional Italian chicken breeds is scarce; thus it is important to investigate their characteristics to discover the impact of genetic profile on welfare, health and ability to cope and to preserve biodiversity. The aim of this research was to study the effect of a mild stress (crowding) on the ethogram and productivity in three typical Italian poultry breeds: Valdarnese Bianca (VB), Bionda Piemontese (BP) and Robusta Maculata (RM). Sixty chicks (one day old) per breed were randomly chosen at hatching and identified with a small wing-clip. Birds were reared in three different floor pens with wood shavings litter. The stocking density was 30 kg/m² (15 birds/m²) as in conventional meat poultry farms. Each bird was weighed weekly and feed consumption was registered for each breed. Each pen was equipped with a video camera, time lapse video recorders and digital field switchers and at 39 and 79 days of age video-recorded observation was carried out for 24 h. Inactive behaviour (birds ground picking, sitting or standing), active behaviour (walking, eating, drinking), comfort behaviour (dust-bathing preening, stretching, wing flapping, wing stretching, leg stretching) and interactions (fight and feather pecking) were recorded from videotapes. At 40 and 80 days of age, a tonic immobility test (TI) was performed in all birds. The TI reaction was induced by placing the bird on its back, and restraining it for 10 seconds (Ferrante *et al.*, 2005). Maximum acceptable TI duration and induction were set at 180 seconds and three times, respectively. Data were analysed using ANOVA test. VB birds showed a significantly lower weight gain (1054.24 g \pm 179.78) than BP (1060.64 g \pm 174.46) and RM (1171.15 g \pm 195.16; P<0,05). The main differences between the three groups were observed for inactive behaviour, while walking behaviour was similar among the groups. Regarding TI, RM showed a higher number of inductions (2.2) and lower duration of tonic immobility (63.8 sec) than VB (1.6 and 73.3 sec) and BP (2.0 and 95.2 sec), (P=n.s.). These results seem to confirm that human fear reactions are more pronounced in animals less genetically selected, as is the case in VB and BP.

Keywords: Italian poultry breeds, production, behaviour, TI