

The influence of contact with humans on physiological and behavioural responses in commercial broiler chickens and red jungle fowl when reared separately or intermingled

ABSTRACT

This study investigated the effects of regular physical and visual contacts with human beings on bird-to-bird pecking behaviour, tonic immobility (TI) duration, corticosterone, heterophil to lymphocyte ratio (HLR) and growth in commercial broilers (CB) and jungle fowl (JF) raised from hatching as separate and intermingled flocks. On day 0, chicks were randomly assigned to 27 floor pens: nine with CB (20 birds / pen), nine with JF (20 birds / pen) and nine where chicks from the two genotypes were intermingled (10 CB and 10 JF / pen). The following treatments were applied (three pens per treatment) daily from day 1 to 21 to both CB and JF: (1) non-handled controls received no physical or visual contact with humans other than the routine husbandry (control), (2) each chick in the physical contact group were picked up individually, and stroked gently for 30 s once daily (PC), (3) a chick in the visual contact group was randomly caught, picked up and stroked gently for 10 min twice daily (VC). Both PC and VC treatments were done in the chicks' home pens to allow other birds in the flock to view the procedure. On day 42, CB that were raised as separate flocks had significantly greater body weights than those of intermingled flocks, similarly to CB subjected to PC in comparison with controls and VC. However, the body weights of JF were not affected by flock type or human contact. Intermingling increased bird-to-bird pecking activity in JF, and retarded body weight, elevated plasma levels of corticosterone and HLR in CB. Both PC and VC significantly reduced the incidence of harmful pecking and attenuated HLR and TI reactions in CB. Irrespective of flock type, JF, as measured by TI duration, were significantly more fearful than their CB counterparts. Regular physical contact was more effective than visual contact in ameliorating the TI reaction in JF. Regular human contact may attenuate the expression of bird-to-bird pecking and its harmful consequences.

Keyword: Broiler; Jungle fowl; Human contact; Pecking behaviour; Fear; Stress