

INFLUENCE OF AUSTRALIAN INFECTIOUS BRONCHITIS VIRUSES ON GROWTH OF MALE BROILER CHICKENS

G. AFANADOR, R. B. CHUBB and D. J. FARRELL

Catch-up or compensatory growth occurs during recovery after severe dietary restriction in broilers (McCartney and Brown, 1977). Previously, we reported an adaptive response to infectious bronchitis virus (IBV) characterized by changes in body weight (BW), feed intake and energy metabolism (Afanador et al, 1991). Two experiments were carried out to quantify on a large scale either the changes in growth rate or on general performance of male surviving broilers after they were vaccinated by eye-drop method at 2 days (d) with VicS-strain IBV ($10^{4.2}$ EID₅₀/bird) and challenged by the same route using T-IBV strain ($10^{4.6}$ EID₅₀/bird) at 15 d of age.

Vaccination resulted in significantly ($P < 0.05$) lower BW in vaccinated-challenged (VC) group than in both control (C) and unvaccinated-challenged (UC) broilers at 15 d of age. Challenge resulted in a further reduction in BW of VC and UC broilers compared to C group at weekly intervals until 28 d of age ($P < 0.05$). Following infectious bronchitis (IB), BW approached normal in VC and UC surviving male broilers (Figure 1).

At 15 d of age, feed intake was reduced significantly ($P < 0.05$) by vaccination. Challenge decreased feed intake in UC group more than in VC group, but both groups were significantly ($P < 0.05$) different to C group at 42 d of age. Water intake was higher in both UC and VC broilers compared to C group. Carcass weight and abdominal fat pad were reduced by challenge in absolute terms ($P < 0.05$).

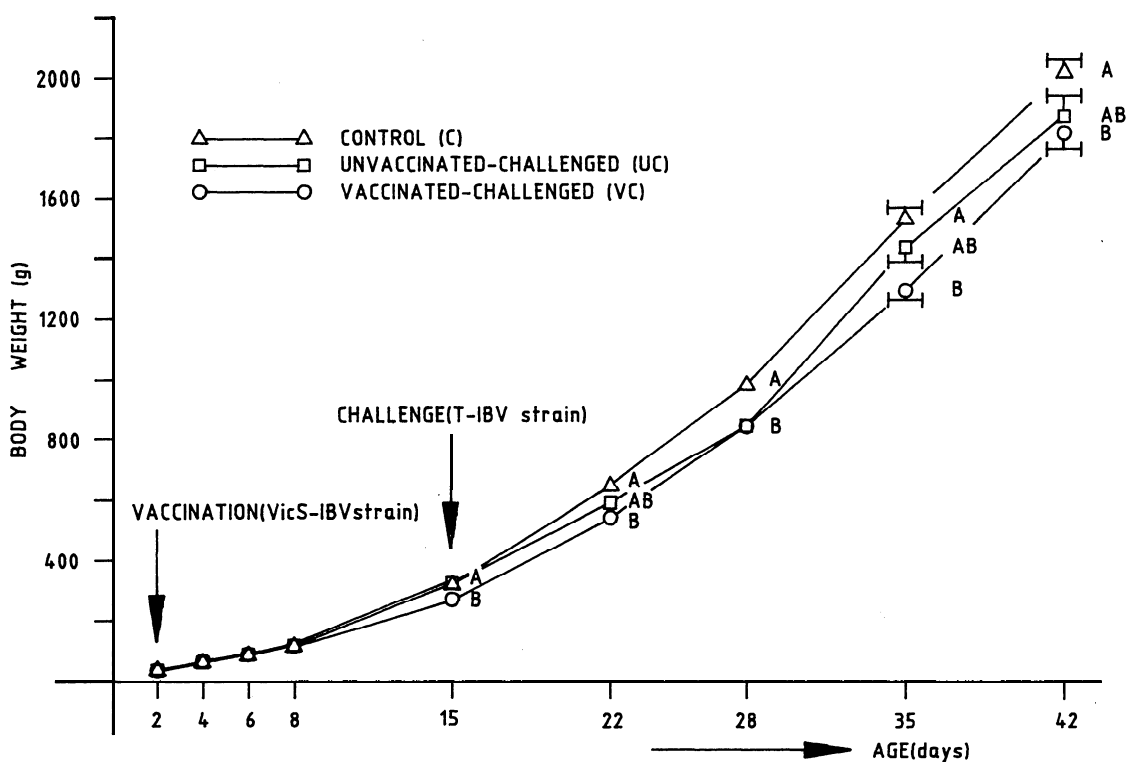


FIGURE 1. Growth curves of body weights of surviving male broilers exposed to Australian IBV. Mean \pm SEM. For each value ($n=22$ C; $n=12$ UC; or $n=24$ VC). Where the SEM is not indicated it is within the compass of the symbol. Means bearing different superscripts differ significantly ($P < 0.05$).

It is concluded that decreased feed intake was a well characterized response to vaccination or challenge with IBV. Compensatory growth occurred during recovery after infection, but surviving broilers did not regain lost weight at 42 d of age.

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