

EFFECT OF AVIAN REOVIRUS ON GROWTH IN BROILERS

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SUMMARY: The effect of reovirus on growth in 140 broilers from day old to 53 days was investigated. Three groups of birds, each consisting of 35 chicks were inoculated with the virus either orally, subcutaneously, or through the foot-pads while the fourth group was the uninoculated control. Reduction in growth was recorded in all three inoculated groups with the greatest reduction observed in the foot-pad inoculation group.

Keywords: reovirus, growth, broilers

INTRODUCTION

Avian reovirus has been associated with various syndromes including chronic respiratory disease (Sahu and Olson, 1975), enteric disease (Dutta and Pomeroy, 1967) and a runting and malabsorption syndrome (Hieronymus *et al.*, 1983). These various syndromes have been reported using reovirus isolated from tendon materials (Kibenge and Wilcox, 1983).

Recently, a reovirus was isolated from broilers with leg weakness and inducement of tenosynovitis was experimentally reproduced (Sharifah *et al.*, 1989). Hitherto, there were no reports of avian reovirus in Malaysia. This work attempts to study the effects of reovirus on growth in broilers from day-old to 53 days of age.

MATERIALS AND METHODS

Virus

The virus used (VRI 586/85) was originally isolated from tendons from a field case in broilers with leg weakness. The virus was characterized in the laboratory and found to be pathogenic (Sharifah *et al.*, 1989).

Chicks

Day-old chicks with no evidence of infection with avian reovirus were obtained from the Poultry Breeding Centre at Bukit Mertajam. The chicks were divided into four treatment groups of 35 chicks per group, with each group housed separately in different rooms. The chicks were reared in deep litter system and were identified using tags.

Experimental Design

When the chicks were three days old, birds from each of three treatment groups were inoculated either orally, subcutaneously, or through the foot-pads with the reovirus. Group 4 was the uninoculated control group. All the chicks in the three groups were given 0.2 ml of the inoculum containing $10^{5.6}$ TCID₅₀ of the virus. At day 22, Newcastle disease "F" vaccination and fowl pox vaccination were given to all the birds. A second "F" vaccination was given at day 38. Commercial broiler feed and water were given *ad libitum* throughout the experiment. Each bird was weighed two times a week up to 53 days of age.

Statistical Analysis

Significant differences in body weight between each treatment group was determined using the one-way analysis of variance carried out at the end of the experiment.

RESULTS AND DISCUSSION

None of the birds in the foot-pad inoculation group had difficulty in walking during the second week post inoculation. The affected birds recovered subsequently after a few days. None of the birds in the other group showed clinical signs of infection or other abnormality.

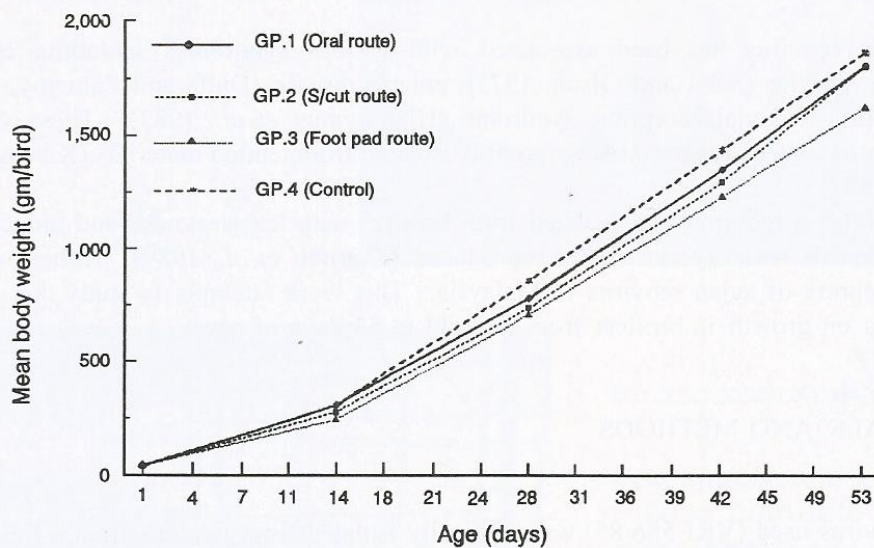


Figure 1. Mean body weight of broilers until 53 days of age using different inoculation routes

Very few studies have been published concerning the effects of avian reoviruses on growth in broilers. It is obvious from our experiment that growth of birds were affected after four days (Fig. 1). The greatest reduction in growth was apparent in the foot-pad inoculation route followed by the subcutaneous route and the least affected were the birds

RINGKASAN

KESAN REOVIRUS AVIAN TERHADAP PERTUMBUHAN AYAM PEDAGING

Kesan reovirus terhadap pertumbuhan 140 ekor ayam pedaging berumur satu hari hingga 53 hari telah diselidik. Tiga kumpulan ayam, setiap kumpulan mengandungi 35 ekor anak ayam telah diinokulkan dengan virus berkenaan melalui sama ada oral, subkutis, atau menerusi tapak kaki sambil kumpulan keempat merupakan kawalan tanpa penguinokulan. Kemerotan pertumbuhan telah berlaku pada ketiga-tiga kumpulan yang telah diinokulkan dengan kumpulan yang penguinokulan tapak kaki menunjukkan kemerotan pertumbuhan paling tinggi.