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RESEARCH PAPER

Effect of water deprivation on feed consumption, performance and mortality in layer birds

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ABSTRACT

The study revealed that when body losed water at a rate exceeding the intake, circulatory fluid volume was decreased. This depletion was compensated for by movement of extra cellular fluid into the plasma. High mortality, drop in eggs production and low feed intake were observed. Total mortality ranged from 0.15 to 0.32 % depending on the age. Eggs production depleted in range of 1.45 to 4.51%. These varying effects were seen as per the age group of the birds. Dehydration due to water deprivation was identified. Post mortem examination reveals mortality due to gout, dehydrated kidneys with urates deposition only and free from any infectious disease was ruled out. Combinations of electrolyte, vitamins (B-complex), diuretics and liquid amino acids with provision of sufficient clean and fresh water supply was found to be a choice of control measures.

Key words : Dehydration, Gout, Mortality, Production potential.

The water loss from the body is higher than the consumption, circulatory fluid volume decreases. This depletion in body water level is by movement of extracellular fluid into the plasma. At such instances due to insufficiency of the drinking water, dehydration occurs. Adams (1973) observed reduction in egg production upto the extent of 6 to 15 per cent. In extreme cases subsequent death occurs due to bradycardia, circulatory failure , damage to nervous system and cardiac failure in cases of hyperkalemia (Barragry,1974). Birds drink more water at high environmental temperature to meet the demands for evaporative cooling. However, as water temperature increases, birds seem to drink less water. Stimulation of water intake may increase feed consumption as water and feed consumption is closely related. Body water balance is very important in case of laying birds in terms of shell quality. (Bierer *et al.*, 1966a).

MATERIALS AND METHODS

The present investigation was carried out on water deprivation in relation to feed consumption, production potential and mortality in layer birds at Sai Poultry Farm, Selu, Kalmeshwar Distt. Nagpur. A commercial layer farm with 5 flock size and number of birds in flock 25639, 25366, 18479, 22734 and 13252 with age of 29, 40, 54, 68 and 78 weeks, respectively of BV-300 breed (Table 1) were observed. All groups were experiencing a problem of low feed intake, gradual drop in egg production and increased mortality. The birds were brought for the post mortem examination. The most common indication in necropsy was found with dehydrated kidneys filled with urates deposition, visceral gout and dehydration for consequent 2 to 3 days (Bierer *et al.*, 1966a). Feed samples were sent for estimation of available calcium and phosphorus.

RESULTS AND DISCUSSION

Ruling out all differential symptoms and other possibilities, it has found that the water intake was ceased for 6 to 8 hours as a result of water supply cut off due to managemental negligence. Predisposing factor for the same was summer heat which also accelerated the rate of water loss. Mortality and production drop ranged between 0.15 to 0.32 and 1.45 to 4.5 per cent, respectively. Mortality and production drop were higher in old age flocks (Bierer *et al.*, 1966b). To encounter the present problem, immediate treatment measure was started with combinations of electrolytes 1 g/l (Deyhim and Teeter, 1991) along with vitamins (B-complex)30 ml and amino acid preparation, 40 ml for 1000 birds by wetting the feed which helped the birds to maintain the standard feed consumption (Kellerup *et al.*, 1965). To compensate the kidneys damage and disturbances Diuretic preparation, 6 ml/100 birds through drinking water has been given (Leeson and Summer, 1975). Within 5 days with all corrective measures the mortality could be kept in control and egg production and feed consumption returns to the normal (Table 1 and 2). The results are shown in Table 1 and 2.