

The Effects of Red Onion (*Allium cepa*) Extract on Histopathological Appearance of Bursa fabricius in Layers in Open House System

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Abstract : Layer chickens are a poultry commodity that has an important role in producing eggs and meat to support the availability of animal proteins. The layer chickens still have obstacles to increasing their productivity, especially due to poultry diseases which can result not only in decreased egg production but also morbidity and mortality. To overcome this condition, phyto-therapeutic and/or phyto-preventive approaches which are efficacious, safe and cheap are needed. One of the herbal spices from Indonesia which is greatly possible to be promoted as an herbal medicine is a red onion (*Allium cepa*). The objective of the present study was to identify and determine the effect of red onion extract (*Allium cepa*) as anti-infection and immuno-modulator of Bursa fabricius in layer chickens raised in an open house system. Eighteen layer chickens at 17 days of age were divided randomly into three group of six each. Those were layer chickens without red onion extract (Group K I), Group K II gave red onion extract via drinking water and Group K III gave red onion extract peroral for 30 days. Water and feed were given ad libitum. Necropsy was conducted every 10 days by taking two samples of layer chickens/Group. Bursa fabricius was processed histopathologically and stained-routinely with hematoxylin-eosin and was then examined under light microscope. The results of the present study indicated that bursa fabricius in layer chickens in Groups K I, K II, and K III that were necropsied at days 10 and 20 had normal histologic structures. However, Bursa fabricius in Group K I at day 30, had vacuolization with mild to moderate large vacuoles containing homogenous eosinophilic fluid and atrophy of lymphoid follicles. Mild vacuolization in the follicle of Bursa fabricius was seen in layer chickens in Group K II, whereas layer chickens in Group K III had normal histologic structures of Bursa fabricius. It was concluded that apparently, red onion extract (*Allium cepa*) has herbal preventive effects against the pathological lesions in the Bursa fabricius of layer chickens.

Keywords : Bursa fabricius, disease of poultry, hematoxylin-eosin, layer chickens, red onion extract

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