EFFECT OF *OCIMUM SANCTUM* (TULSI) ON INFECTIOUS BURSAL DISEASE 
VIRUS PATHOGENESIS IN BROILER CHICKENS 

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Infectious bursal disease virus (IBD) is an acute highly contagious viral disease of young chickens between 3-6 weeks of age caused by avibirna virus and is characterised by immunosuppression as virus preferentially infects immature B-lymphocytes in the bursa of Fabricius. The available vaccines do not provide complete protection in infectious bursal disease as birds are protected clinically but not against bursal damage (Vakharia et al., 1993, Dybing et al., 1998, Tsukamoto et al., 2002). Recently alternative and traditional medicine is gaining importance worldwide. The present studies were carried out to evaluate antimicrobial and immunomodulatory activities of eco-friendly *Ocimum sanctum*, which is one of the most commonly used herb against several conditions such as cough, cold etc in India.

The dried leaf powder (DLP) and steam distilled extracted essential oil of *Ocimum sanctum* were tested in two weeks old broiler chickens (Cobb) divided in to three groups treated with DLP, oil and untreated respectively. These birds in different groups were kept under cage system separately under hygienic housing conditions. One half of birds in each group were experimentally infected with approximately 1x10⁷ TCID₅₀ dose of Georgia strain of IBD per bird orally on 5th day of experiment so as to make six experimental groups. Chickens of DLP treated groups were fed with nontoxic dose i.e. 200 mg of DLP per bird daily for 25 days while chickens in oil treated groups were given orally essential oil of *Ocimum sanctum* @ 10μl/ bird daily for 20 days. The studies included bursal index, gross changes and histopathology of visceral organs (bursa, spleen and thymus) and were conducted at 5, 10, 15, and 20 days post infection (DPI). The virus titration and neutralising antibody titration were carried out at 5, 15 DPI. These studies revealed decrease in virus titre and neutralising antibodies responses as compared to control in DLP and oil treated birds at 15 DPI. Also there were markedly reduced gross (haemorrhages in thigh muscles) and microscopic lesions (depletion of lymphocytes and atrophy in bursal follicles) in chickens treated with DLP of *Ocimum sanctum*; on the other hand essential oil treated show enhancement of disease as evidenced by vasodilatation and haemorrhages in thigh muscles (grossly) and lymphocyte depletion in bursa (histopathologically). These findings may be of future application if the toxic component as evidenced by local vasodilatation and haemorrhages in thigh muscles of oil treated birds is identified and detoxified from the essential oil. Thus preliminary results suggest *Ocimum sanctum* could be useful for improvement of available vaccines as well as for enhancing immune response of immuno compromised chickens.


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