**EFFECT OF SOAPNUT SHELL POWDER SUPPLEMENTATION ON REPRODUCTIVE PERFORMANCE OF BROILER BREEDERS**

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**Abstract**

Present experiment was conducted to investigate the effect of soapnut shell powder (SSP) on serum hormone profile, fertility, hatchability and total embryonic mortality of broiler breeders. 120 broiler breeders (96 females and 24 males) of about 38 weeks age were randomly distributed equally to four different treatments consisting of three replicates of 8 female and 2 male birds. All the birds were fed on a basal diet (ICAR, 2013) for 42 days. T1 (control), T2, T3 and T4 were supplemented with 0, 0.0176%, 0.026% and 0.0528% SSP (dose equivalent: 0, 50, 75 and 150ppm saponin), respectively (saponin yield from soapnut shells were 28.4% on DMB). The serum testosterone (ng/ml) was significantly higher (P<0.001) for T4 (5.64) and T3 (4.56) compare to T1 (3.63) and T2 (4.38). The overall mean seminal plasma testosterone (ng/ml) among the treatments were significantly higher (P<0.05) for T4 (1.65) compare to T1 (1.41), T2 (1.47) and T3 (1.55). The serum estrogen level in females were insignificant (P>0.05) among the treatments. The fertility (%) was significantly higher (P<0.01) in SSP supplemented groups (T3-90.23%) compared to control (T1-84.23%). Higher (P<0.001) hatchability on total egg set (TES) and fertile egg set (FES) was observed in T3 87.87 and 95.38%, whereas, lowest was in T1 75.32 and 84.76%, respectively. Total embryonic death was found to be significantly (P<0.001) reduced in dietary treatment groups and was lowest in T3 (4.73%) whereas, highest in T1 (9.06%). It can be concluded that dietary supplementation of 0.026% soapnut shell powder improved reproductive performance of broiler breeders.

**Key word:** Broiler breeders, fertility, hatchability, estrogen, soapnut shell powder, testosterone.