Histochemical Observations of Vagina in Pre-laying and Laying Japanese Quail (Coturnix coturnix japonica)

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SUMMARY

The entire oviduct starting from infundibulum to vagina excised from 12 birds each at 4th week, 5th week (Pre-laying period), 6th week and 7th week (laying period) were collected and histochemical observations were recorded on the vagina at different age groups of the pre-laying and laying stages. Histologically, in all age groups of birds, the vaginal wall was composed of three layers viz., tunica mucosa, tunica muscularis, and tunica serosa from interior to exterior. The presence of the glycogen varied from moderate to intense at different ages in various components of vagina suggests the energy source required for development, cellular proliferation, and significant cellular physiological functioning during growth. The weak to moderate ABPAS activity in the lining epithelium and other components of vagina in all ages during the present study may be attributed to its necessity for providing optimum condition for growth and physiological requirements of tissue components.

Key words: Histochemistry, Vagina, Quail, Pre- laying and Laying

Glycogen:

The PAS activity for the presence of glycogen in the vaginal mucosal epithelium was weak in all age groups of birds. The connective tissue of lamina propria-submucosa and the wall of the vessels showed strong PAS activity in all age groups of birds. However, the tunica muscularis exhibited moderate PAS activity (Figure 1 and 2). In line with present observations, Deka et al. (2018) in Pati and Chara-Chemballi ducks reported a weak PAS reaction in the lining epithelium of the vagina. However, Bansal et al. (2010) in Punjab white quail reported weak to moderate PAS activity in the vaginal epithelium. Sharaf et al. (2013) in ostrich reported a strong PAS reaction in the apical portion of non-ciliated cells of the vaginal epithelium. This variation in the PAS reaction may be attributed to the species or age variation. PAS activity recorded in the sperm host glands was moderate in the 4th week age and strong in 5th, 6th, and 7th week age groups of birds (Figure 3 and 4). The observations of the present study do not agree with the reports made by Renden et al. (1981) in Japanese quail and Bakst (1987) in Turkey, where they reported the absence of the PAS activity in the sperm host glands.

Acid mucopolysaccharides:

The presence of acid mucopolysaccharides was recorded by Alcian Blue Periodic Acid Schiff’s (ABPAS) method. In agreement with the findings of Bansal et al. (2010) in Punjab white quail the birds of all age groups showed weak to moderate ABPAS activity in the vaginal mucosal epithelium. The remaining component of the vaginal wall showed the presence of neutral mucopolysaccharides (Fig. 5 and 6).
The sperm host glands in all age groups under the present study exhibited negative activity for the presence of acid mucopolysaccharides (Figure 6). However, Sukhadeve et al. (2018) in Punjab white quail reported moderate to strong acid mucopolysaccharide reaction in the sperm host glands.

REFERENCES


