



PROTEIN ESTIMATION IN *DAVAINEA SHINDEI* N. SP. AMONG *GALLUS GALLUS DOMESTICUS* COLLECTED FROM SOLAPUR, MAHARSHTRA STATE, INDIA.

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ABSTRACT

There are many species of cestodes that infect poultry and determine significant economic losses. The most important of poultry are the Raillietina, Hymenolepis, Choanotaenia and Davainea species. The present paper deals with protein estimation of genus *Davainea* and its species. *Davainea shindei n.sp.* worm having 11.54 mg/gm wet weight of tissue and intestine having 13.95 mg/gm of protein.

KEY WORDS: Biochemical characterization, *Davainea*, *Gallusgallus gallus domesticus*, protein estimation.

INTRODUCTION

The chickens infected with cestode parasites show loss of appetite, weight loss, diarrhea and decreased egg production. The lesions included the villous atrophy and desquamation of epithelium, catarrhal enteritis, granuloma formation in duodenum, congestion, cellular infiltration, desquamation of submucosal glands and haemorrhagic exudate (Anwar *et al.*, 2000). Proteins are essential for parasites and host *Gallus gallus domesticus*. Proteins are digested at host parasites interface by activity of proteolytic enzymes and secreted by cestode teguments. In India, Bhaware *et al.*, (1992). Find out new species of the genus *Davainea* (Cestoda:Davaineidae) from Maharashtra. Shinde (1972). Observed a new species of cestode *Davainea indica* (Davaineidae) from a fowl, *Gallus domesticus* in India. Major end products of proteins are urea, uric acids and ammonia, Smyth J.D. and McManus D.P. (2007) observed the physiology and biochemistry of Cestodes.

MATERIALS AND METHODS

Removed intestine of slaughtered *Gallus gallus domesticus*, and collected cestode parasites for further study from Solapur District, Maharashtra State, India. Cestode parasites collected from infected intestines and observed under microscope. For identification few worms fixed in 4% formalin and stained with Harri's Haematoxyline and identified as, *Davainea shindei n. sp.*. Estimation of protein content cestode parasites carried out by Biuret method by Gornall *et al.*, (1949) method. Identical worms dried on blotting paper to remove excess of water, wet weight of tissue taken material transferred weighed watch glass, kept in oven at 60°C for twenty four hours, dry weight of material taken and powder prepared, material weighed on sensitive balance, grind in mortar paste to free fine homogenate 5ml of 10% TCA added to solution and centrifuged for 10 minutes at 2000 RPM, discard supernatant and taken residue in test tube, added 1ml of distilled water and 3ml of Biuret solution, test tube kept for half hour, until lavender colour developed then red. On colorimeter with 530 mu filter to note optical density of coloured protein.

RESULTS AND DISCUSSION

Domestic fowl (*Gallus gallus domesticus*) is one of the most common and widespread domestic animal that acts as the source of meat, eggs, feathers and organic manure of high fertility. This biotic resource is means of income for many sections of Maharashtra State.

The Cestode parasite identified with the keys and the references of the Bhaware *et al.* 1992; Dama *et al.*, 2012; Wongsawad and Jadhav 1998; Hange *et al.*, 2007; Sinde 1972; Yamaguti, 1905, 1959a, 1959b).

Amount of protein in worm and its host's intestine can be concluded by formula

$$\frac{\text{O.D. of unknown tissue}}{\text{O.D. of known tissue}} \times \frac{\text{mg of protein}}{\text{weight of tissue taken}} \times 1000$$

Results are in mg/gm wet weight of tissue.



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Davainea shindei n.sp worm having 11.54 mg/gm wet weight of tissue of protein and intestine having 13.95 mg/ gm of wet weight of tissue protein.

Genus *Davainea* and its species of host *Gallus domesticus* i.e. *D. shindei* could maintains good balance in protein This tapeworm, one of the most damaging of poultry, is of considerable economic importance. They infect the small intestine of fowl, from where it obtains nutrition from the digested food of the host. Serious injury to the intestinal walls, diarrhea, stunted growth, emaciation and decreased egg production (Small, 1996). content and histopathological relation with the host Hen *Gallus gallus domesticus*. This study highlights the fact that Proteins in *D. shindei*, among *Gallus gallus domesticus*. The present study suggested that appropriate control strategies need to be invented in order to minimize the risks of strong infestations in rural poultry.

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