

CHAPTER 1 INTRODUCTION

1.1 Background

Indonesia is an agricultural country and poultry commodity including duck is a big part of it. Poultry farm business has also entrenched especially in Javanese society. According to Agus Wariyanto (2021), total population of ducks in Central Java reached 4,978,129 heads with the production data was 3,603,429 kg, while the duck's slaughter level reached 3,318,834 heads. It is possible that breeders often experience problems especially diseases or other health issues that attack their poultry (Rasyaf, 2001).

The most common occurrence in poultry farming is the emergence of parasitic disease which are generally caused by some types of worms. All breed have the same opportunity to be infected which will affect the growth, health, and productivity of poultry (Rabbi et al., 2006). The control of parasitic diseases is not easy because of the intensity and distribution strongly influenced by many factors such as climate changes, geographical, and economical factors (Kusnoto, 2005). Humidity and environmental conditions may support worm's growth (William, 1993). According to Hardjosworo and Rukmiasih (2006), the incidence of worm infection in ducks will affect the production of meat and egg. This happened because the living worms in the body of the ducks absorb the nutrients that should be used for the duck itself.

According to Sandhu (2021), common diseases found in ducks are hepatitis virus, enteritis virus, toxins, aflatoxin poisoning, insecticides,

rodenticides, coccidiosis, and helminthiasis. The actual cases found in the research location are poultry's weight loss and reduction in the amount of production so that a further study is needed to obtain a scientific data about the case. Those cases happened because of the housing system does not provide a good sanitation, this condition accelerate the infection of parasites.

A case of zoonotic *Echinostoma* infection recorded in free-grazing ducks in rice paddy fields in Thailand. In this study, a total of 90 free-grazing ducks from northern, central, and northeastern regions of Thailand were examined and showed the result 56.7% ducks were infected by one or more species of zoonotic echinostomes such as *Echinostoma revolutum*, *Echinoparyphium recurvatum*, and *Hypoderaeum conoideum*. (Saijuntha et al., 2013). Since zoonotic disease can also affect public health, those diseases should be given a serious attention.

Fecal examination by Permatasari (2015) showed the worm's prevalence result, which are *Ascaridia galli* (11.7%), *Heterakis* sp. (8.3%), and *Echinostoma* sp. (6.7%), with the infection degree classified as low infection (0-500 EPG). This result will be used as reference since there are no previous research about prevalence and infection degree of gastrointestinal tract parasite of duck in Kudus, Central Java.

1.2 Problem Statement

From the explanation of the research background, problem statements of the reasearch can be stated below:

- 1) What kind of parasites infect the gastrointestinal tract of ducks raised in Kudus, Central Java?
- 2) How much is the prevalence of the gastrointestinal parasite found in ducks raised in Kudus, Central Java?
- 3) How is the infection degree of the gastrointestinal parasite found in ducks raised in Kudus, Central Java?

1.3 Research Aim

The purpose of this research are:

- 1) To know several genus of parasites both worms and protozoa which infect gastrointestinal tract of ducks raised in Kudus, Central Java.
- 2) To know the prevalence of parasitic infection both worms and protozoa in gastrointestinal tract of ducks raised in Kudus, Central Java.
- 3) To know the infection degree of parasitic infection both worms and protozoa in gastrointestinal tract of ducks raised in Kudus, Central Java.

1.4 Research Outcome

The outcome obtained from this research are expected to be useful for duck farming bussiness development especially in Kudus and Central Java regions so that the data of parasitic disease that infects duck in this area can be completed as a scientific guide for duck farmers to control and prevent parasitic disease that may happen in the future to maintain the productivity.

1.5 Theoretical Base

Helminths and protozoa are common gastrointestinal parasite of commercial poultry. Macklin (2019) stated that helminthiasis is infection by members of the phylum Nematoda (roundworms) or the class of Cestoda (tapeworms and flatworms). From the examination of the research done by Rabbi, et al. (2006) total six species of helminth parasites were recorded such as *Ascaridia galli*, *Heterakis gallinarum*, *Capillaria annulata*, *Raillietina tetragona*, *Amoebotaenia sphenoides*, and *Catatropis verrucosa*. While the common species of protozoa found in ducks is *Eimeria* sp.

Parasitic infections can be spread in a number of transmission both direct and indirect. For example, protozoa and helminths can be transmitted through contaminated water, food, waste, soil, and blood. Some can be passed through sexual contact and some other transmitted by vectors (Nunn et al., 2011). According to Subekti, et al. (2014) the occurrence of parasitic infections in poultry are mostly chronic and do not always show clear clinical symptoms, except for severe infections, change of appetite, weakness, lethargic, and anemia. The incidence of parasitic infection affects the health and productivity.

The high prevalence of gastrointestinal parasite in ducks might be due to the extensive and semi-intensive management system. The overcrowd situation in duck's habitat which prevent proper cleaning, contamination through indiscriminate disposal of fecal droppings or from the soil while feeding themselves that contained egg, oocysts, larvae, and worm segments, and also adequate rainfall could push for higher prevalence of gastrointestinal parasite in

ducks (Farjana et al., 2004). Reports exist by Anisuzzaman, et al. (2005) noting that high prevalence of parasite in poultry is usually found in winter and rainy seasons. Female ducks and those over a year old have higher prevalence than male ducks (Yousuf, 2009).