Conference Paper

The Identification Blood Parasites On Pig (*Susdomesticus*) In Polewali Mandar District

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Abstract

Parasite is a detrimental living creature that using other living creature food in its life. Blood parasite is one of the quite important livestock disease which is endemic and can lead to fairly large economic losses which include weight loss, employment loss, and death of livestock. Blood parasites that usually attack livestock are *Theileria sp*, *Babesia sp*, *Anaplasma* and *Plasmodium*. The purpose of the research is to identify blood parasite of swine in Polewali Mandar district. This research was conducted on 25 August to 23 September 2016. The samples are 80 swine which obtained from all Swine People Ranch at Polewali in Polewali Mandar district, West Sulawesi. The samples made into an blood thinner then examined under a microscope. From 80 samples, the results showed that there are 4 samples which is positive infested *Theileria sp*.

Keywords: Blood Parasite, Swine, *Theileria*, *Theileriosis*.

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1. INTRODUCTION

The role of livestock in the farming system has been increasingly observed in the last decade. Livestock contribute significantly to the welfare of farmers [1]. Pigs are one of the farmed animals, because they have potential to be developed. Pigs or their processed products are sufficient as national export commodities. This commodity market is still wide open to various countries such as Singapore and Hongkong [2]. The health of pigs is influenced by many factors including environmental conditions of maintenance, food, management patterns, disease seeds and metabolic abnormalities. The percentage of diseased livestock by endoparasites can reach 30% and the mortality rate that can be generated is as much as 30% [3]. One of the endoparasites that attack pigs is the blood parasite. The blood parasite is one of the important and endemic livestock diseases that can cause considerable economic disadvantage such as weight loss, loss of labor and the death of livestock [4]. Parasites are living creatures that in their lives use the food of other living beings so that its disadvantage [5].

The tropical climate in Indonesia is an ideal environment for the development and transmission of parasites. The incidence of blood-borne parasitic disease spread by tick always increases every year [6]. If the disease has attacked the pigs, then the cost of production will rise rapidly, because the delay in growth let alone the death of livestock will reduce the profit from pigs. For that pig farmers must do the prevention of parasites and diseases, for example by maintaining the cleanliness of the cage, vaccinate regularly, and pay attention to the food of his livestock [7]. If the disease has attacked the pigs, then the cost of production will rise rapidly, because the delay in growth let alone the death of livestock will reduce the profit from pigs. For that pig farmers must do the prevention of parasites and diseases, for example by maintaining the cleanliness of the cage, vaccinate regularly, and pay attention to the food of his livestock [7]. Based on the above background it is necessary to conduct research on "The Identification of Blood Parasites in Pigs (Sus Domesticus) In Polewali Mandar, West Sulawesi" which is useful in knowing any blood parasites that infest pigs in Polewali Mandar.

2. MATERIALS AND METHODS

This research is descriptive research, with method used in sampling is random. Samples were randomly selected from several Pig Farms in PolewaliMandar Sub-district, Polewali Mandar District, West Sulawesi.

The formula for determining the number of samples is by using the *Slovin* formula [8].

$$n = \frac{N}{Nd^2 + 1}$$

Where, n = number of Sample

N = population

d = precision value of 90% or sig. = 0.1.

If the population of pigs in Polewali Mandar as much as 426 head [8] and precision value of 0.1% then got the number samples that is 80 pigs.

Examination of blood samples in this study using examination of blood smear. The way of making blood smear are: Blood samples are taken through auricular vein on pig ears with the ear first cleaned with alcohol to dry. Then the auricular vein is dammed and pierced by the use of a sterilized syringe. Then make a thin pillowcase preparation on the object glass by dripping a drop of blood at the end of the glass object, then place one end of the glass cover and make an angle of 30 ° then touch the drop of blood so the blood flows along the bottom of the cover glass, then push it slightly

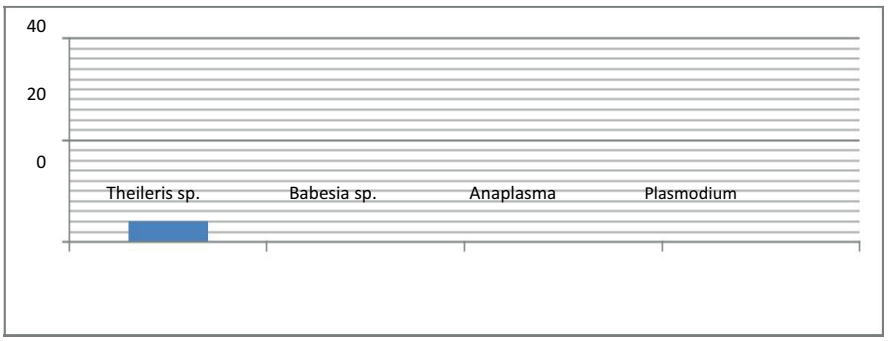
Quickly cover the glass towards the front along the surface of the glass object. Then the blood smear is dried.The dried blood preparation is then fixed with methanol for 3-5 minutes. After that it is labeled with a description of the name of the pig, date, time of collection and other records deemed necessary. After dry it on the preparation box for laboratory tests.

This laboratory examination is a continuation of blood sampling by performing a blood smear preparation method are take the blood smear then stained with Giemsa and allowed to stand for ± 15 minutes. Preparations are rinsed with running water and then dried it. The blood smear are dispersed with immersive oil and then observed using a light microscope with 100x magnification. Observations were made to identify the parasites present in the preparations.

3. RESULTS

A total of 80 samples of pig blood found from 7 community farms in Polewali sub-district, Polewali Mandar district, West Sulawesi that have been examined, found 4 positive blood samples. From observations made under the microscope, the blood parasite found in *Theileria sp*. Data of blood parasites found can be seen in the following diagram:

Table 1: Diagram of data of the result of blood parasites found.



Results of research on pigs in Sub District of Polewali, Polewali Mandar district, West Sulawesi there is a blood parasitic infection of *Theileria sp*. But did not show clinical symptoms as did the infected animal *Theileria sp*. Namely fever, swollen lymph nodes, jaundice, tremor, weight loss, weakness and a little anemia [9]. Pigs look healthy and do not look thin or weak. *Theileriasp*is a blood-borne disease-causing parasite that causes decline in livestock production and death. Here's a picture of *Theileria sp*. Research results seen under a microscope with 1000 x magnification.

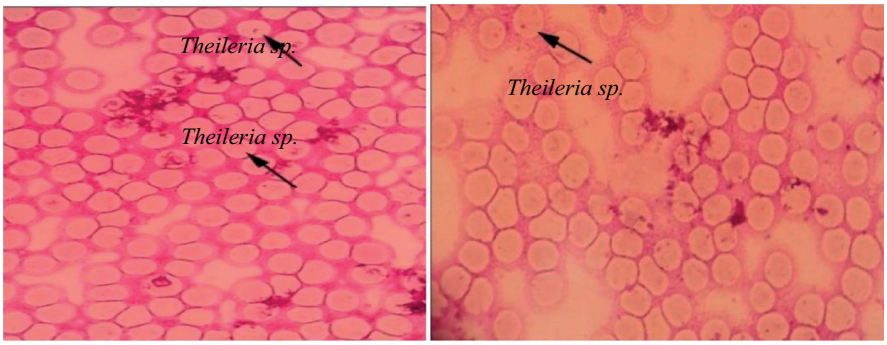


Figure 1: Microscopic image *Theileriasp*(Research Results.

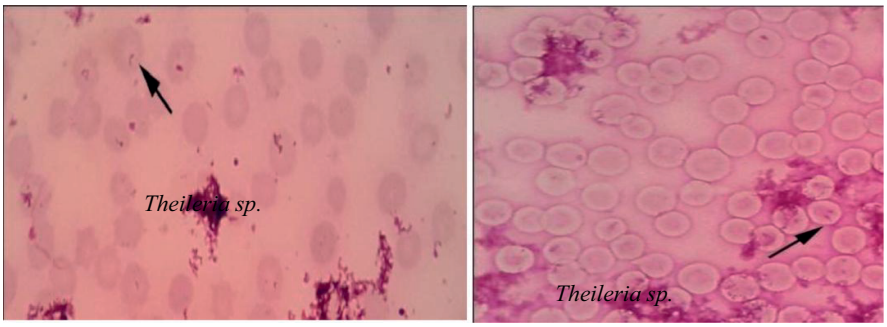


Figure 2: Microscopic image *Theileriasp* (Research Results).

The microscope observation results show that the parasites found in the erythrocytes of pig blood samples that have been examined are in a coma and are shaped like tadpole-like stems and have a tail according to [10] Theileria sp. In the most prominent erythrocytes is a rod shape having a size of approximately 1.5 - 2.0 × 0.5 - 1.0 µm. Other forms commonly found in erythrocytes are round, oval and may also be in coma.

Naturally, *Theileriasp*is transmitted by infected lizard vectors such as Boophilus sp. Mechanism of infection *Theileria sp*. In the host body begins with a stage of schizogoni that takes place in the lymphocyte and ends with a form of pyroclastic that infects the erythrocytes [12].

4. DISCUSSION

Prevention and control can be done by controlling the spread of warts by reducing the population vector through dipping, and sanitation cage. Giving a parasitide of acaricide is to kill larvae, nymph and adult warts. Acaricide is commonly used in livestock by immersion and spraying and is considered to be a more effective immersion system. However, the akarsida is quite expensive, and causing environmental damage can

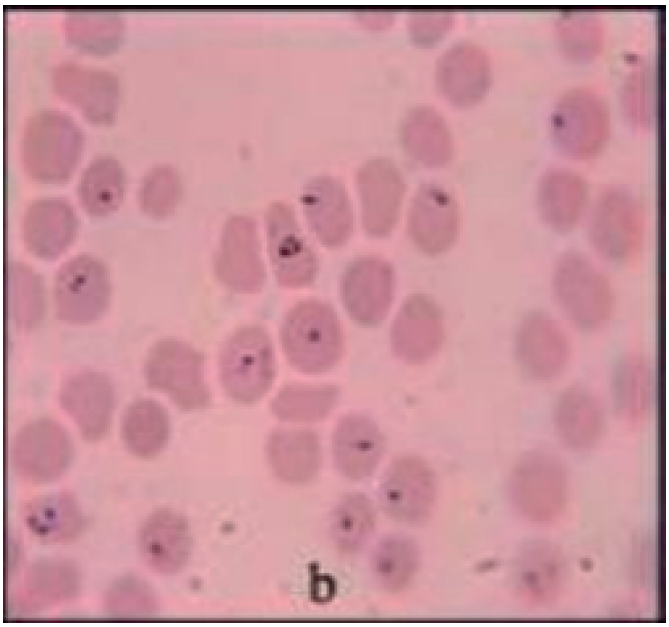


Figure 3: *Theileria sp* with Giemsa staining [11].

even make the tickbecome resistant. The best theileriasis control strategy is to eradicate integrated warts. The effectiveness of the strategy requires a better knowledge of the dynamics of disease agents, host, tick vector and its environment [13].

5. CONCLUSION

Based on the results of this study can be obtained conclusion that 80 samples of examined blood tested pigs, found 4 samples of pineapple blood smear positive infected parasites namely *Theileria sp.* The case of Theileriosis case in pigs in Subdistrict of Polewali, PolewaliMandar district, West Sulawesi can be affected by the condition of the cage that is not maintained clean.

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