The Case of Helminthiasis on Beef Cattle at Slaughter House in Indonesia

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ABSTRACT

A healthy and prosperous Indonesian society is the goal of our nation. Healthy Indonesian nation will be achieved when eating nutritious food. One of the most nutritious and important foods is food products of animal origin such as eggs, milk and meat. Meat health is obtained if the slaughterhouse meets the hygienic requirements and the animal is also healthy. The main problem of people's livestock is helminthiasis, so this research is done to know the case of helminthiasis in beef cattle in slaughter house in some cities in Indonesia. The method used in this study is a survey to collect data helminthiasis in Batembat RPH Cirebon City, West Java and study of research results in some RPH in big cities in Indonesia.

The results indicated that RPH in several cities in Indonesia such as Jakarta, Medan, Pontianak and Palembang showed that cattle were infected lightly. The meaning that the meat provided for the community was good enough and the supervisory function. The veterinary public health order had been good. Only in Middle of Tapanuli cases of serious infected pharamphistomiasis category. It needs a serious effort to break the *Paramphistomum sp* life cycle so that people can consume meat that is safe, healthy, whole and halal (ASUH).

Keywords: Helminthiasis, Beef Cattle, Slaughter House, ASUH

INTRODUCTION

Animal Slaughter House (RPH)

Smart nation will be achieved if consuming nutritious food. The food consists of 4 healthy and five perfect. Rice, vegetables, side dishes and milk are nutritious and healthy foods. Side dishes as a source of protein must be complete both animal protein and vegetable protein. Animal protein sources include eggs, milk and meat. Meat can come from poultry and ruminants. Sources of ruminant meat are cows, goats and sheep.

Animal Slaughterhouse as RPH is a building or complex of buildings with design and certain conditions used as a place to cut animals for public consumption (Permentan No.13 / 2010). RPH is a community service unit in the provision of meat that is safe, healthy, whole, and halal. Therefore it is necessary to check ante mortem and post mortem examination. The number of RPH in Indonesia there are 800 pieces and only 25 have veterinary control number (Dirjenpetkeswan, 2012).

RPH serves as a means to implement:

1. Proper animal slaughter (in accordance with veterinary public health requirements, animal welfare and religious area);
2. Ante-mortem inspection, post-mortem inspection and carcass inspection to prevent transmission of zoonotic disease to humans;
3. Monitoring and surveillance of animal diseases and zoonosis found in ante-mortem examinations and post-mortem examinations for the prevention, control and eradication of infectious animal diseases and zoonosis in areas of animal origin.

One of the diseases often suffered by cattle at traditionally maintained is worm disease. Worms or in medical dictionaries known as helminthiasis is a disease caused by infestation of worms in the animal body, either in the digestive tract, breathing, liver, or on other body parts. In cattle, worm infestations are commonly found in the gastrointestinal tract and liver. Based on the shape, the type of worms that can attack the cow can be grouped into 3 groups are pinworms (Nematoda), tapeworm (Cestoda) and worm leaves or liver worms (Trematoda).

MATERIALS AND METHODS

Material. The material used in this research is the cattle that are cut at the Cirebon Batembat Slaughterhouse, and RPH spread in 5 locations namely Pontianak, Purwodadi, Malang, Banyumas and Jakarta.

Methods.

Sampling of Feces. Taken a cow's feces randomly each cage rest as much as 8 samples then identified the type of worm. Sampling was done at Batembat Slaughter house, Cirebon. Cows are being rested to cut is Brahman Angus cow as many as 60 head. 8 samples were taken to be tested in the laboratory. Batembat Slaughter house see in Figure 1.

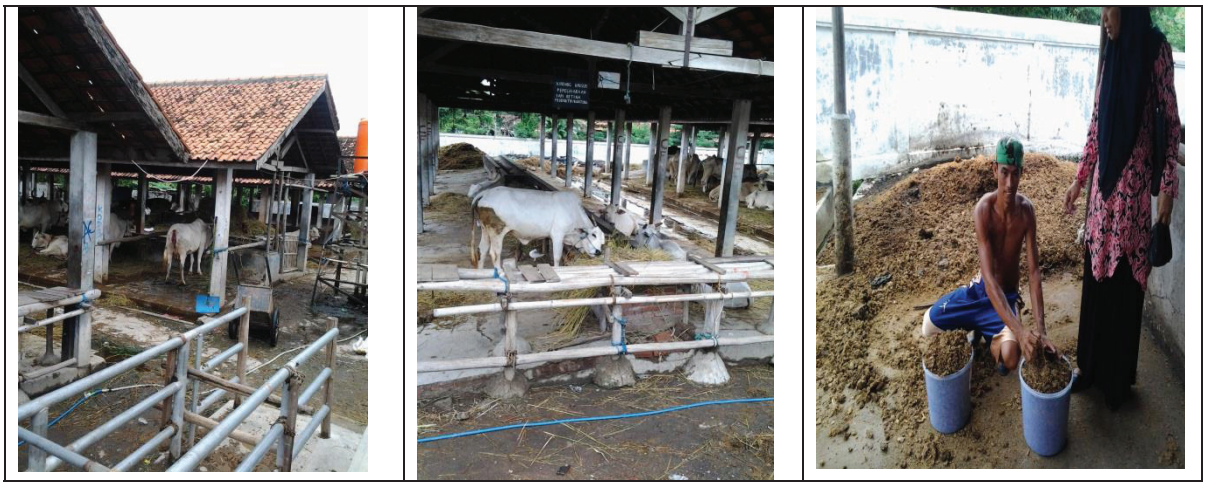

Figure 1. Batembat Cirebon Slaughterhouse

Laboratory examination. Identify worms by McMaster method.

1. Take 3 grams of pounded sample using mortal
2. Enter a saturated 60 ml solution and stir until homogeneous
3. Filtered and put in a glass baker
4. Enter with the pipette to the count room (Whitlock) until fully charged
5. Check under a microscope with magnification 4 x 10
6. Match the worm eggs with the picture.

RESULTS AND DISCUSSION

Results and Discussion. The results of identification of cows that will be cut in RPH Batembat in Table 1.

Tabel 1. Worms Identification in Batembat Cirebon Slaughterhouse

Sample	Nematoda *Strongyle sp*	Protozoa *Coccidia sp*	Cestoda *Fasciola sp*
		----------EPG----------	
1	60	-	1
2	100	-	-
3	40	-	-
4	80	-	-
5	20	-	-
6	20	-	-
7	20	-	-
8	40	-	-
Average	47	-	1

Table 1 showed that the average cattle infected 47 EPG (eggs per gram) *Strongyle sp* 0 EPG *Coccidia sp* and *Fasciola sp* 0.125 EPG. it can be said that the cows that were cut in RPH Batembat in the infection category were very light (see Table 2). This shows that the function of the Regional Government of Cirebon Regency in the veterinary public health task is good.

The standard health of the worm eggs counts of helminthiasis is listed in the following table 2.

Tabel 2. Standard of Worms Infection on Cows

No	Kind of Worms	Light	Middle	Heavy
			------EPG -----	
1	*Strongyle sp*	<200	200-500	>500
2	*Strongyloides sp*	<200	200-500	>500
3	*Moniezai sp*	-	-	-
4	*Fasciola sp*	<10	10-25	>25
5	*Paramphistomum sp*	<50	50-100	>100

Animal Slaughter House in Jakarta. Endah Restuningsih, et. al. (2002) studied the cattle that were cut in Jakarta. Cows were from Probolinggo, Malang, Tuban, Lumajang, Pati, Tulungagung, Yogya, Lampung, Waingapu and East Nusa Tenggara. From 87 samples were 44 identified liver worm (*Fasciola gigantica sp*) in feces.

Tabel 3. The Number of Fasciola gigantica in Heart Cow at RPH Jakarta

Species of Cow	The Number of Fasciola sp	Standard of Worms Infection
	---------- EPG ----------	
PO	1-426	Heavy
Madura	1	Light
Bali	5-40	Heavy
Brahman X	2-86	Heavy
Sahiwal X	51	Heavy

This shows that helminthiasis in cattle cut in Jakarta is very high. The presence of worm eggs in the feces is an indicator of the presence of adult worms in the liver. DKI Jakarta Regional Government needs to improve its supervisory function in carrying out the task of providing food security for the community.

Animal Slaughterhouse at Several Cities. Several studies have been conducted to identify cases of helminthiasis such as Fatmawati Tanjung (2014) examining cattle being cut in RPH Medan and RPH Andam Dewi, Fatmayanti Tanjung. (2014) in Middle Tapanuli, Nana Junita (2015) in Makasar, Erwin Nofyan, Mustaka Kamal, Indah Rosdiana (2010) In Palembang and Setiawati, Siti Novese Tantri, Tri Rina Khotimah (2013) in Pontianak see in Table 4.

Tabel 4. Worms Infection in Several Cities in Indonesia

No	Kind of Endoparacyte	RPH Medan	RPH Tapanuli	RPH Makasar	RPH Pontianak	RPH Palembang
1	*Bunostomum sp*	0,40%				
2	*Chabertia sp*	0,68%				
3	*Cooperia sp*	0,16%	0,08%			
4	*Haemonchus sp*	5,12%	0,20%			4.16%
5	*Paramphistomum sp*	0,04%	89,96%			32.3%
6	*Dicrocoelum sp*		0,48%			
7	*Fasciola sp*		0,28%	6.67%	1,31 EPG	
8	*Taenia sp*				3.75% (111 EPG)	
9	*Trichostrongylus sp*					56.62%
10	*Strongyloide sp*					10.42%
11	*Oesophagostomum sp*					14.58%
12	*Trichuris sp*					13.16%
	Sum of eggs	1-120 EPG	2-5020 EPG			< 500 EPG
	Infection category	Light	Heavy		Light	Light

The results of several studies above are generally infected with mild helminthiasis cattle, similar to those occurring in Cirebon. However, it appears that the number of endoparasites in the middle Tapanuli RPH includes severe infection category. Cows that are cut in conditions infected with this helminthiasis, internal organs such as the liver and intestines should not be consumed by humans. This is to maintain the health of the veterinary community. Infected organs must be destroyed by burial. This indicates that the middle Tapanuli area is allegedly suitable for the breeding of Paramphistomum sp.

Paramphistomiasis is a trematoda disease that can attack cows, goats, sheep and other ruminants. The disease is spread throughout Indonesia with a high prevalence, especially in cattle (50-88.89%). High prevalence is found in areas with good irrigation. The epidemiology of these worm parasites is highly dependent on environmental conditions, especially adequate humidity and sufficient temperature (26-27^{0}C), the condition is necessary for the development of the mirasidium to metacercanal phase as well as the snail's life as an intermediary host.

Habitat: adult worms preselect on rumen and cow, goat, sheep and other ruminants reticulum. While the young worms on the small intestine.

CONCLUSIONS

Cows that were cut at Batembat slaughter house in Cirebon were light infected with helminthiasis. The same in some slaughter houses in cities like Medan, Palembang and Pontianak. Slaughterhouse in Middle Tapanuli is classified as heavily infected with helminthiasis. Environment in Middle Tapanuli is conducive to the life cycle of *Paramphistomum sp*. Further research is needed to continuously monitor the running of

veterinary public health supervision by the Regional Government. In order to overcome the case of repeatedly required control and handling by breaking the life cycle of worms that are sustainable by being supported by the commitment and high awareness of all breeders by creating a healthy environment.

REFERENCES

Endah Estuningsih, S., G. Adiwinata, S. Widjajanti dan S. Partoutomo. 2002. Kasus Kejadian Fasciolosis di Rumah Potong Hewan (RPH) Jakarta. (Case Study on The Evidence of Fasciolosis ata The Abattoir Jakarta). Seminar Nasional Teknologi Peternakan dan Veteriner: 357-359.

Erwin Nofyan, Mustaka Kamal, Indah Rosdiana. 2010. Identitas jenis telur cacing pada ternak sapi (*Bos sp*) dan Kerbau (*Bubalus sp*) di Rumah Potong Hewan Palembang. Jurnal Penelitian Sains. Edisi Khusus Juni 2010 (D) 10 : 6-11

Fatmayanti Tanjung. 2014. Jenis dan Tingkat Infeksi Cacing Endoparasit pada Feses Sapi Rumah Potong Hewan Medan dan Kecamatan Andam Dewi Kabupaten Tapanuli Tengah. Skripsi. Medan (Indonesia) : Fakultas Matematika dan IPA. Universitas Sumatera Utara.

Husarmita Darmin. 2014. Prevalensi Pharamphistomiasis Pada Sapi Bali di Kecamatan Libureng, Kabupaten Bone. Skripsi Makasar (Indonesia): Fakultas Kedokteran Hewan Universitas Hasanudin.

Luh. Gede Sri Astiti. 2010. Manajemen Pencegahan dan Pengendalian Penyakit Pada parasit pada feses sapi (*Bos sp*) Rumah Potong Hewan (RPH) Kota Pontianak Kalimantan Barat. Jurnal Protobiont. Vol 2 (2) : 102-106.

Nana Junita. 2015. Prevalensi Fasciolosis Pada Sapi Bali di UPTD RPH Makasar. Tamangapa. Periode Agustus 2014. Skripsi. Program Studi Kedokteran Hewan. Fakultas Kedokteran. Universitas Hasanudin. Makasar.

Retno Widyani. 2013. Ilmu Lingkungan Ternak. Penerbit Swagai Press. Cirebon.

Retno Widyani. 2013. Kesehatan Hewan. Penerbit Swagati Press. Cirebon.

Rochadi Tawaf. 2011. Standarisasi Manajemen Rumah Potong Hewan di Jawa Barat. Seminar Nasional IV Peternakan Berkelanjutan. Universitas Padjadjaran.

Setiawati, Siti Novese Tantri, Tri Rina Khotimah. 2013. Prevalensi dan intensitas telur cacingTernak Sapi. Balai Pengkajian Teknologi Pertanian NTB.

Thomas Herdt. 2002. Digestion: The fermentative processes. In: James G. Cunningham, DVM, PhD, editors. Texbook of Veterinary Physiology. United States of America (USA): WS Sounder Company. pp. 280-303.