



## Heavy Infection of *Ascaris suum* and *Balantidium coli* Infection in Pig Farm

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### ABSTRACT

*Ascaris suum* and *Balantidium coli* are the common parasites that can affect pigs in a farm setting. Both *A.suum* and *B. coli* can pose significant challenges to pig farm. Tamworth and Desi Pigs of pig farm were presented with a history of diarrhoea, weight loss, reduced appetite and respiratory issues such as coughing and increased respiratory rate. Faecal examination revealed concurrent infection of *Ascaris suum* and *Balantidium coli*. Pigs were therapeutically managed successfully with specific therapy fenbendazole (orally @ 5mg/kg body weight) and metronidazole (@ 20mg /kg body weight) with Furazolidone (@ 10 mg/kg body weight). A total of 140 pigs faecal samples, 71 were from pigs younger than 3 months and 44 were pigs below 6 months 25 from pigs older than 6 months including pregnant sows and adult boars. *Ascaris spp* ova was detected in 129 faecal sample and *Balantidium coli* cysts were found in 131 faecal sample. Still birth was found in 03 sows. The present paper reports an impact due to Ascariosis and Balantidiosis and its therapeutic management in T& D pigs of pig farm Ranchi.

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### INTRODUCTION

*Ascaris suum* commonly known as the pig roundworm, can have significant implication for pig farms (Roesel *et al*, 2017). Whereas *Balantidium coli* is a ciliated protozoan parasite that can infect the large intestine of pigs, other animals and human beings (Ahmed *et al*, 2020). *Ascaris* is a common parasite that can affect pigs in farm setting. The burden of ascaris in pig farms can be a significant concern due to its impact on pig health and productivity. *Ascaris suum* also known as the pig roundworm, is specific species that commonly infect pigs. These parasite can cause various issues, including reduced weight gain, poor feed conversion and increased susceptibility to other diseases. Heavy infestation can lead to intestinal blockages, causing severe health problems and even death in some cases. *Balantidium coli* infected pigs may experience loose watery stool or even dysentery. *B.coli* can contribute to weight loss, reduced growth rates, reduced appetite and abdominal discomfort due to inflammation caused by *B coli*. These parasites not only impact pig health and welfare but also result in economic losses due to reduced productivity and increased mortality rates.

Prevalence of *Ascaris suum* and *Balantidium coli* in total of 140 pigs faecal samples, 71 were pigs below 3 months, 44 were from pigs younger than 6 months and 25 from pigs older than 6 months including pregnant sows and adult boars. Ova of *Ascaris spp* was detected in 129 faecal sample and *Balantidium coli* cysts were found in 132 faecal sample. Still birth was found in 03 sows. Pigs were successfully treated with fenbendazole (orally @ 5mg/kg body weight) and metronidazole (@ 20mg /kg body weight) with Furazolidone (@ 10 mg/kg body weight). Thus, this study aimed at determining the impact of these intestinal parasites and further suggests the need to implement control measures.

### MATERIALS AND METHODS

One advanced pregnant sow aged 2.5 year of pig farm showing respiratory distress, coughing and passing loose faeces for the past 3- 5 days, and persistently losing their body weight meanwhile still birth was found. Similar situation happened to other two pregnant sows. Even other male and female pigs, small and large, began to show similar lesions. Pigs were divided in different groups like piglets (under the age of 3 months), weaners (within 3 to 6 months), adult

boars and sows ( 7 months and above ). A total of 140 samples from individual pigs were collected and grouped as samples from piglets ( 71 ), weaners ( 44 ), adult boars ( 15 ) and adult sows ( 10 ). Immediately faecal samples of each and every pigs of farm were collected and brought to the laboratory for the identification of the pathogen. *Ascaris spp* and *Balantidium spp* were identified on the basis of direct and indirect methods described by (Soulsby,1982) in the department of veterinary parasitology, college of veterinary science Ranchi. All the samples were systematically examined for the presence of ova and oocyst of any parasites. Statistical analysis of the data collected during the experiment were analysed by using standard formulae and methods as described by (Snedecor and Cochran,1994).

## RESULTS AND DISCUSSION

On clinical examination the animal appeared dull, depressed, lustreless hair coat and matted hind quarters. Pigs were weak emaciated and dehydrated. The clinical health parameters were within normal range except loose faeces and respiratory distress. Faecal smear were examined with floatation and sedimentation technique revealed a good number of ova of *Ascaris suum* measuring approximately 75 µm by 50µm and oocyst of *Balantidium coli* measuring upto 50 to 60 µm. Out of 140 Pig samples examined an overall prevalence of 83.57% of ascaris infection and 90.71% of Balantidium infection in pigs were recorded (Table 1).

**Table1. *Ascaris spp* and *Balantidium spp* infection in different age group of pigs.**

Sr. No.	Animal group	No of Sample examined	Number of sample infected with <i>Ascaris spp</i>	Ascaris prevalence %	Number of sample infected with <i>Balantidium spp</i>	<i>Balantidium</i> prevalence %
1	Up to 3 m	71	65	91.55	67	94.36
2	3-6 m	44	32	72.73	36	81.81
3	Adult boar	15	12	80	14	93.33
4	Adult sow	10	8	80	10	100
	Total	140	117	83.57	127	90.71

The prevalence of *Ascaris spp* and *Balantidium spp* were recorded categorywise in boars, sows, weaners and piglets (Table1). Clinical ascariasis is manifested by including reduced weight gain, poor feed conversion and increased susceptibility to other diseases (Roepstorff *et al*, 2011). In balantidiosis symptom may include diarrhoea, weight loss, reduced appetite, abdominal discomfort and anaemia (Ahmed *et al*, 2020). Its important to note that some pigs may show no clinical signs despite being infected, while others may exhibit more severe symptoms. Additionally, co-infection or underlying health conditions can exacerbate the impact of these parasites on pig health.

In this study, pigs suffering from recurrent form of diarrhoea positively responded with the therapeutic intervention in respect of inappetence and consistency of the faeces that regained to normalcy in 3 to 5 day of treatment. *Ascaris suum* expelled out with faecal sample after giving medicine. Fenbendazole was found to be very much effective against ascariasis in pigs (Brian Lassen *et al*, 2017 and Marchiondo *et al*, 1987 ). The use of metronidazole have been found effective against balantidiosis (Bauri *et al*, 2012 ).

Ascariasis and balantidiosis are parasitic diseases that affect pigs, causing significant health issues and economic losses in the swine industry. Prevention and control measures for both diseases include proper sanitation, deworming programs, and biosecurity

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protocols on pig farms. Regular monitoring, diagnosis, and treatment are essential in managing and reducing the impact of these parasitic infections on pig health and productivity.

### CONCLUSION

Educating pig farmers and veterinary professionals about the risks, symptoms, and control strategies for ascariasis and balantidiosis is crucial in preventing outbreaks and minimizing the spread of these diseases. Collaboration between stakeholders, research institutions, and government agencies is key to developing effective control strategies and promoting the health and welfare of pigs in the swine industry. Overall, addressing ascariasis and balantidiosis in pigs requires a holistic approach that combines preventive measures, early detection, and prompt treatment to ensure the well-being of pigs and the sustainability of pig farming practices.

### REFERENCES

- Ahmed A Ijaz M Ayyub R M Ghaffar A Ghauri H N Aziz M U Ali S Altaf M Awais M Naveed M Nawab Y and Javed M U (2020). *Balantidium coli* in domestic animals: An emerging protozoan pathogen of zoonotic significance. *Acta Trop* **203** : 105298
- Bauri R K Ranjan Rajeev Deb A R and Ranjan R (2012). Prevalence and sustainable control of *Balantidium coli* infection in pigs of Ranchi, Jharkhand India. *Vet World* **5 (2)** : 94-99.
- Brian Lassen Claudio O Toomas O Elias J Tapio L Minna Halmi – Hakala and Mari H (2017). Effect of fenbendazole in water on pigs infected with *Ascaris suum* in finishing pigs under field conditions. *Vet Parasitol* **237**: 1-7
- Marchiondo A A and Szanto J (1987). Efficacy of dichlorvos, fenbendazole, and ivermectin in swine with induced intestinal nematode infections. *Am J Vet Res* **48(8)**: 1233-5
- Permin A Yelifari L Bloch P Stenhard N Hansen N P and Nansen P (1999). Parasites in cross bred pigs in the Upper East region of Ghana *Vet Parasitol* **87**:63-71.
- Roepstorff A Mejer H Nejsum P and Thamsborg S (2011). Helminth parasites in pigs: new challenges in pig production and current research highlights. *Vet Parasitol* **180**:72-81
- Roesel K Dohoo I Baumann M Dione M Grace D and Clausen P H (2017). Prevalence and risk factors for gastrointestinal parasites in small scale pig enterprises in Central and Eastern Uganda. *Parasitol Res* **116**: 335-345. doi: 10.1007/s00436-016-5296-7.
- Snedecor G W and Cochran W G (1994). *Statistical Methods*, 7<sup>th</sup> edn. Oxford and IBH Publishing Co., New Delhi.
- Soulsby E J L (1982) *Helminths, Arthropods and Protozoa of Domesticated Animals*. 7<sup>th</sup> edn. (ELBS) Bailliere Tindall, London. p.809.

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