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Epidemiological investigation of coccidiosis in piglets in southwest of China

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The coccidiosis in piglets, a protozoal disease, is caused by *Isospora suis* or *Eimeria tenella*. In Europe, the *Isospora suis* is recognized as a frequent and important cause of diarrhea and uneven weight gains in suckling piglets (Gualdi *et al.* 2003). The parasite parasitic on the intestinal epithelial cells of lactation and weanling piglets jejunum or ileum, leading to the epithelial cell of the jejunum or ileum necrosis, shedding and induced diarrhea (Mundt *et al.* 2006a, Taylor *et al.* 2006). *Isospora suis* is the main pathogen cause of coccidiosis in piglets, the characteristics of this pathogen is easy infection, strong pathogenicity, it often causes the piglets severe diarrhea and death (Eustis *et al.* 1981). According to epidemiological surveys 30–100% farms in Europe were found infected with this disease; 76.2% farms prevalence of *Isospora suis* in Germany, Austria and Switzerland (Mundt *et al.* 2005). The prevalence of the farms in Netherlands up to 56% in 1990 (Eysker *et al.* 1994).

The coccidiosis in piglets caused a great economic loss of the large scale pig farms of China, in order to investigation the coccidiosis incidence in southwest of China, 300 faecal specimens of piglets from different regions of southwest of China were checked for the coccidial oocyst.

In present study, 300 faecal specimens from piglets 7–21 days of age (Aliaga *et al* .2011) were collected, the faecal specimens collected from Nanning, Chongzuo and Hezhou city of Guangxi province, Chengdu and Leshan city of Sichuan province, Haikou city of Hainan province, 2 farms and 50 samples each local.

Utilizing the ether-centrifuge method, in this method, the ether can removal the fatty substance mix in the feces, compare with the flotation method, it can improve the detection rate. In this method, take 1 g feces joined in 5 ml 5% acetic acid solution, shaking until appear suspension, precipitation for 1 minutes, then, sieve into the tube, add equal amount of ether and strong shaking the mixture, centrifuge 1 minutes with 1500 rpm, discard supernatant, and examination the sediment by the microscopic. The sediment contains the oocyst of coccidial judged as positive.

The 300 faecal specimens of piglets from different regions of southwest of China were checked for the coccidial oocys. The results showed that, the infection rate of coccidiosis in piglets from different regions have certain difference, the coccidian positive rate of the farms was 100% (12/12). The average infection rate of Guangxi province was 40.7%ÿ Sichuan was 39% and Hainan was 34% respectively, no significant differences were observed.

Table 1. Infection rate of coccidiosis in piglets in different regions of China

Sample source	Sichuan		Guangxi			Hainan
	Chengdu	Leshan	Nanning	Hezhou	Chongzuo	Haikou
Samples	50	50	50	50	50	50
Positive	22	17	26	20	15	17
Positive rate (%)	44	34	52	40	30	34
Average (%)	39			40.7		34

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The highest rates of infection were the samples from Nannign city and the lowest was Chongzuo city (Table 1). Coccidiosis in sucking pigs is a problem on piglet-rearing farms worldwide (Mundt and Daugschies 2000). The incidence of coccidiosis in piglets in southwest of China has increased in recent years. The highest infection rate was in Nanning city, followed by Chengdu city; these areas

should focus on the work of prevention and treatment the coccidiosis in piglets. There is no real treatment against an outbreak of coccidiosis, so prevention is very important. In the method of prevention, an improved hygiene and disinfection helps to decrease the outbreak and infection rates (Meyer *et al.* 1999, Straberg and Daugschies 2007).

SUMMARY

Faecal specimens (300) of piglets (7–21 days of age) from different regions of southwest of China were checked for the coccidial oocyst for investigating the infection rates of coccidiosis in piglets in southwest of China and guidance for prevention of coccidiosis. The results showed that, the infection rates of coccidiosis in piglets in Chengdu, Leshan, Nanning, Hezhou, Chongzuo and Haikou were 44, 34, 52, 40, 30 and 34% respectively. The coccidiosis positive rate of the farms was 100% (12/12). The study provides a basis for prevention the *coccidiosis* in piglets *in China.*

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