



ELSEVIER

Available online at www.sciencedirect.com

 ScienceDirect

Veterinary Parasitology 140 (2006) 334–343

**veterinary
parasitology**

www.elsevier.com/locate/vetpar

Comparison of scratching behaviour of growing pigs with sarcoptic mange before and after treatment, employing two distinct approaches

M. Loewenstein^{a,*}, A. Ludin^a, M. Schuh^b

^a *Institute of Parasitology and Zoology, Department of Pathobiology, University of Veterinary Medicine Vienna, Veterinaerplatz 1, A-1210 Vienna, Austria*

^b *Clinic for Swine Diseases, Clinical Department for Farm Animals and Herd Management, University of Veterinary Medicine Vienna, Veterinaerplatz 1, A-1210 Vienna, Austria*

Received 13 January 2006; received in revised form 24 March 2006; accepted 3 April 2006

Abstract

In a closed pig breeding and finishing herd suffering from sarcoptic mange, two selected groups of pigs were filmed during a period of 10 days before and after treatment. The observation always commenced each hour and lasted for 15 min. Before treatment, observations were done round the clock, after treatment from 8:00 to 22:15.

Before treatment the pens were stocked with 11 (pen A) and 10 (pen B) growing pigs (Large White × Landrace sows; 5 months old) with an average weight of ~70 kg examined for sarcoptic mange by skin scrapings and ELISA. The animals had never been treated with an acaricide or endectocide before.

After 10 days, the pigs were treated twice (18 days interval) with Dectomax[®] 1% solution for pigs (Pfizer, Austria) at a dose of 0.3 mg Doramectin i.m./kg body weight. After treatment, seven pigs were observed in both pens.

Most scratching actions both before (83.1%) and after (94.5%) treatment were of one to 10 s. After treatment, the 10 s scratching episodes decreased by 67.3% (from 21.2 to 6.9 mean SRE/pig), and the scratching actions of longer than 10 s by 91.7% (from 4.3 to 0.4 mean SRE/pig), such that the latter could be observed only occasionally after treatment.

A distinct increase in scratching activity both before and after treatment could be observed primarily between 10:00 and 15:00. Significant differences of scratching and rubbing activity between before and after treatment could also be seen at midday.

The interpretation of the scratching index values before and after the treatment were carried out according to Cargill et al. [Cargill, C., Davies, P., Carmichael, I., Hooke, F., Moore, M., 1994. Treatment of pigs with doramectin to control sarcoptic mange. Proceedings of the 13th IPVS Congress, Bangkok, Thailand, p. 238] with the maximum and minimal limiting values specified in the literature, and compared with calculations using the method described by Hollanders et al. [Hollanders, W., Harbers, A.H.M., Huige, J.C.M., Monster, P., Rambags, P.G.M., Hendriks, W.M.L., 1995. Control of *Sarcoptes scabiei* var. *suis*

* Corresponding author. Tel.: +43 1 250 77 2203; fax: +43 1 250 77 2290.

E-mail address: Michael.Loewenstein@vu-wien.ac.at (M. Loewenstein).

with ivermectin: influence on scratching behaviour of fattening pigs and occurrence of dermatitis at slaughter. *Vet. Parasitol.* 58, 117–127].

Depending on the methods used and the limiting values set, 6.7–34.6% of the observations before and 2.0–17.3% of the observations after treatment revealed a “strong evidence of mange” or a “suspicion of mange”. All other observations indicated that the pigs were free from mange.

© 2006 Elsevier B.V. All rights reserved.

Keywords: *Sarcoptes scabiei*; Sarcoptic mange; Diagnosis; Scratching index; Pig

1. Introduction

Sarcoptic mange in pig breeding and finishing farms is a major economic problem. The economic losses by mange are caused by the costs of treatment and damage to piggery fixtures through permanent rubbing, reduced feed conversion efficiency, increased return rates and piglet mortalities (Davies, 1995). Horst (2004) estimated that the loss due to reduced feed conversion efficacy and increased piglet mortalities at €66 per mangy sow and year. Kirchner (1998) reported a mortality of 11.5% in piglet as a consequence of frequent unrest (pruritus) in untreated mangy sows, in contrast to 3.7% in treated sows. Damriyasa et al. (2004) examined 11 breeding farms with a total of 2754 sows and estimated the mean economic loss due to *Sarcoptes scabiei* infestation at €4200 per affected farm and year. Based on these economic losses and the animal welfare issues, there is a need to eradicate and prevent sarcoptic mange and to establish mange-free pig farms.

To achieve a mange-free status and certification a reliable management and control program, and sensitive and specific diagnostic methods are required as complementary tools. The enzyme-linked immunosorbent assay (ELISA), skin scraping, clinical score, papular dermatitis score and scratching index are tools with differing specificities and sensitivities (Cargill and Dobson, 1979a,b; Davies et al., 1991, 1992; Hollanders et al., 1992, 1995; Cargill et al., 1994, 1996, 1997; Davies, 1995; Rambags et al., 1998; Smets et al., 1998, 1999; Vesseur et al., 1998; Bokma-Bakker et al., 1999; van der Heijden et al., 2000; Smets and Vercruyse, 2000; Matthes and Wendt, 2003; Vercruyse and Geurden, 2003).

Of these, the scratching index using different limiting values is often used and has been

recommended by various authors as an additional method for the diagnosis of sarcoptic mange (Davies et al., 1992; Hollanders et al., 1992, 1995; Pointon et al., 1995; Cargill et al., 1996; Bokma-Bakker et al., 1999; Richter and Barthel, 1999; Matthes and Wendt, 2003).

The aim of the present study was to observe the scratching behaviour of growing pigs suffering from sarcoptic mange in a closed herd before and after treatment, to calculate scratching indices using different methods and to critically evaluate the results obtained employing recommended limiting values.

2. Materials and methods

2.1. Pigs, treatment and trial setup

On a closed pig breeding and finishing farm sarcoptic mange was diagnosed in gilts, sows, piglets and finishing pigs by means of skin scraping and ELISA and the total prevalence in this farm was 38.7% according to the results of skin scrapings and 28.2% according to the ELISA-results (Dolischka, 2001).

Two pens (A and B) in the breeding area (growing pens) were selected randomly and observed using video cameras over a period of 10 days each, both before and after treatment. The position of the video cameras enabled the complete area of the pens to be filmed. Eleven and 10 growing pigs (Large White × Landrace; average body weight of ~70 kg; 5 months of age) were housed in pens A and B, respectively, before treatment. The pigs had not been treated previously with an acaricide or an endectocide. After the first recording (10 days), the pigs in pens A and B were treated two times (at an interval of 18 days) with Dectomax[®] 1% solution for pigs

Download English Version:

<https://daneshyari.com/en/article/2472411>

Download Persian Version:

<https://daneshyari.com/article/2472411>

[Daneshyari.com](https://daneshyari.com)