Outbreak of *Sarcoptes scabiei* Infestation in a Flock of Sheep in Palestine

*(Scientific Note)*

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**ABSTRACT**

During April to August 2007, an outbreak of *Sarcoptes scabiei* mange occurred in a flock of sheep (Awassi and East-Friesian breeds) as investigated in Tulkarem, Palestine. Skin lesions were confined to the lips, nostrils, ears, face, and characterized by pruritus, initiated by erythema, papule formation, alopecia and scab formation. Animals were suffering from emaciation, weakness and reduce in milk production. The morbidity rate was 100%. *Sarcoptes scabiei* and their developmental stages were demonstrated microscopically in the skin scrapings.

**Keywords:** *Sarcoptes scabiei*, Mange, Pruritus, Acarology, Mite, Clinical, Sheep, Palestine.

**1. INTRODUCTION**

*Sarcoptes scabiei* causes saroptic mange *scabieis* in human and more than 100 other species of mammals and marsupials. There are several subtypes of this organism including *S. scabiei var. hominis*, *S. sabiei var.* and *S. scabiei var. ovis* depending on host specificity (Office International Des Epizoties, 2005). Recent investigation based on molecular analysis of the ITS-2 of the rRNA gene suggests that the genus *Sarcoptes* is monospecific (Zahler et al., 1999). *Sarcoptic* mites have the entire four stages of life cycle on the host. Female mites penetrate the keratinized layers of the skin and burrow or tunnel through the epidermis. Over a 10 to 15 days period, the female deposits 40 to 50 eggs within the tunnel. After egg deposition, the female dies. Larvae emerge from the eggs in 3 to 10 days and exit the tunnel to wander on the skin surface (Soluspy, 1982). *Sarcoptes scabiei* is contagious and extremely pruritic and the face is the main area affected (Charles, 2002). A firm diagnosis of scabies must be based on the recovery and identification of the mite and specialized Illustrated keys must be consulted (Baker, 1999). This reports for the first time an outbreak of mange caused by *Sarcoptes* in a flock of sheep in Palestine.

**2. MATERIALS AND METHODS**

During April to August 2007, a flock of sheep located in Tulkarm Governorate, north Palestine, with a total number of 67 heads (14 Awassi, 27 East-Friesian breeds and 26 lambs) were housed in two narrow pens beside each other, one for adults and the other for lambs. All animals were vaccinated annually against sheep pox, pest des Petits ruminants and foot and mouth disease and no ecto-parasite control measures were taken. Feeding rations were hay and concentrates. Sheep were fed using a commercial sheep ration and hay. Tap water was always made available.

Complete clinical examination was performed on the flock at the end of August 2007. Specimens from the edge of the lesions on lips, nostrils, ears, and face were taken by scalpel and collected in Petri dishes containing 70% alcohol. A part of the specimens was shipped to an acarologist at the Parasitology Laboratory, Faculty of Veterinary Medicine, Jordan University of Science and Technology, Irbid, Jordan, for mite identification and classification. A part of the specimens was prepared as described before (Armitage, 1935). and sediment is examined microscopically.

**3. RESULTS AND DISCUSSION**

The flock showed pruritus, the lesions appeared in non-woolly skin of the body mainly confined to the face. Morbidity rate was 100% in both adult animals and
lambs. The skin lesions were characterized by the presence of small red papules and general erythema which starts near the mouth (lips, nostrils) and spread to other parts of the head, face and ears. As the disease progressed, the animal showed intense itching and frequently excoriated by biting, loss of hair, thick brown scabs formation and thickening, wrinkling of the surrounding skin fig. (1). The flock suffered from emaciation, weakness and reduce in milk production.

Skin scrapings examination revealed different stages (Margaret et al., 1994), fig. (2) and fig. (3).

Sarcoptic or head mange in sheep, caused by *Sarcoptes scabiei* var. ovis has been recorded in Europe, Africa, Middle East, Balkan, India and South and Central America, but has never been recorded in UK (Bates, 2000). Animals in poor condition appear to be the most susceptible (Bates, 2000, Walker, 1994). Sarcoptic mange is often associated with poor feeding and overcrowding as we have seen in this study. In sheep, *Sarcoptes scabiei* var. ovis is rare and affects only sparsely haired parts of the body such as face and ears (Solusby, 1982, Bates, 2000, Radostits et al., 1997). Those findings were similar to the present study. The appearance of the disease in spring and it is spread within the entire flock by summer is attributed to the crowdness, mismanagement, and absence of ecto-parasites control programme.

Good husbandry, regular dipping with approved dips and compulsory treatment of the suspected cases at one time are recommended measures.

![Fig.1. Showing scratching of the head skin against the wall, red papule and general erythema of face of adult sheep.](image-url)
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Fig. 2. Oval eggs of *Sarcoptes scabiei*. Note the emergence of a six legged larval mite.

Fig. 3. Adult *Sarcoptes scabiei* mite. Note the long unjointed pedicels (stalk), with suckers on the ends.
REFERENCES


