

Alberta

Sarcoptic mange in ranch foxes

On August 18, 1991, the Regional Veterinary Laboratory, Airdrie, received three ranch foxes from an established ranch of 1,400 foxes. Foxes with thickened hocks and elbows had been noticed that summer, and were treated with injectable penicillin and liberal applications of furazolidone cream. Affected animals were isolated and treated repeatedly, but many deteriorated and died. Postmortem examination revealed severe emaciation, and extensive crusting of the skin over the entire head, elbows, hocks, and distal extremities. Histological study revealed extensive parakeratotic hyperkeratosis, moderate acanthosis, and a heavy load of *Sarcoptes* sp. mites located beneath the hyperkeratotic debris. Treatment with ivermectin (Ivomec, MSD Agvet, Kirkland, Quebec) was initiated; a moderate response was observed, but deaths continued. A repeat submission of foxes to the laboratory was made on October 24, 1991, to investigate complicating diseases. Necropsy of these foxes revealed continued mite infestation.

The farm was visited on November 14, 1991, because the problem was persisting. Of an initial population of 1,400 foxes, 500 were alive. The foxes were housed in raised wood and wire pens in groups of 2-8, segregated by age, sex, and color, within a four hectare compound with a two meter chainlink perimeter fence. Escape from cages occurred frequently, and foxes were recaptured from the compound when labor was available. A ration of whole chicks, meat byproducts, organ meats, and ground grain was provided in abundance. Foxes without skin lesions were bright, alert, and in good condition with excellent pelts, but one third of the population was depressed, anorectic, emaciated, and had thickened skin on the elbows and hocks. All affected foxes had been treated at least once with injectable ivermectin (10 mg/mL), 0.5 mL for a 4-5 kg animal, intramuscularly in a hind limb. This dose was repeated at two week intervals until a response was seen. Records were not maintained, but the owner reported a fair response among treated animals.

Wild coyotes were regularly observed at the perimeter fence, presumably attracted by the smell of foxes and feed. Mange in coyotes was at a high level, and scent marking by rubbing along the fences could

have been the source of mites for foxes loose in the compound. The massive number of mites carried by the infested coyotes suggested that mites present on hair snagged by the fence could have resulted in transmission to foxes. Transmission of sarcoptic mange from coyotes to dogs by direct contact has been recognized in this laboratory.

Management decisions contributed to the severe economic loss experienced by this farm. Veterinary assistance was obtained only after many animals were severely affected. Asymptomatic animals which were not treated may have been carriers. Disinfection of wooden cages was virtually impossible, and foxes loose in the compound were a vector of mites as they contacted the caged foxes. The dose of ivermectin was five times that recommended, and was given by an incorrect route. The drug is not licensed for use in foxes, and toxicity may have contributed to mortality, although the clinical signs reported in dogs were not seen. Tissue analysis and pharmacokinetic data for foxes were not available and possible toxicity was not further evaluated, but the dose was reduced from 0.5 mL to 0.1 mL for a 4-5 kg fox. Infectious disease and nutrition were not compounding factors in this case.

The economic loss was severe. Several distinct color lines and generations of selection progress were lost with death of breeding stock. All foxes were retained for breeding and no pelts were taken, so income was severely compromised. **This situation is an example of the potentially devastating effects of a parasitic problem that is easily diagnosed and readily treated. It is not a condition to be taken lightly, and it is essential to insure that recommendations are understood and carried out.**

References

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