

**Prevalence of Foot and Mouth Disease (FMD) amongst livestock of migratory
shepherds in Pin Valley, Spiti sub-division, Himachal Pradesh**

A note on preliminary observations

Submitted to the Spiti Wildlife Division, Kaza

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Background:

The Pin Valley National Park continues to be accessed by migratory herders and their livestock. The majority of the herders are from Kinnaur District with some of them also from Shimla District. In the Parahio Valley alone, we recorded the presence of at least 6 groups of herders (one each at Chhohem, Khamengar, Noor and Killung; two in Debsa valley). Of these, we recorded infection by Foot and Mouth Disease (FMD) in one herd. The concerned herder group uses pastures in the Upper Debsa Nalla. The group leader has been herding in Parahio valley for over 40 years now, and is accompanied by his son. They cross the Bhaba Pass during end May or early June, and reach the camp site in Upper Debsa by mid-June. The group stays in Debsa till end of August or early September. During mid-July 2015, the authors visited the camp-site of this herder group and interacted with the group-leader. The group was carrying ca. 900 goat and sheep. The livestock had contracted FMD, and within a short time period more than 200 goat and sheep were infected.

Timeline:

- 2nd July 2015: One of us happened to meet the group leader on a bus from Kaza to Sagnam. His herd was not yet infected with FMD at that time.
- 6th July 2015: One of the authors visited the campsite of this group. The herd had begun showing symptoms of FMD. The herders reported discovering 10-12 animals infected that day, and a few each of the previous two days. The father-son duo lacked the manpower to keep the infected animals separate from the others.
- 16th July 2015: Both authors visited this camp again— by this time, nearly 250 animals were infected and a couple of them had already succumbed to the disease.
- 30th August 2015: Villagers at Sagnam informed us that this herder's group had already passed by the village on their return journey to Kinnaur. The herd had grazed at some of the village pastures on their way, and the villagers now detected symptoms of FMD among many of their cattle who also graze at the same pastures.

Evidences:

According to the herders:

- Since the first week of July, the disease spread very fast, infecting 15-20 new animals every day.
- Initially, the herders tried to treat the animals with medicine and vaccines they were carrying. Eventually they ran out of medicines.
- The group leader tried to contact the veterinary department office at Sagnam. He was informed by the concerned personnel that there was no stock of medicine at Sagnam.
- He requested some villagers in Sagnam to inform the forest department office and veterinary department at Kaza about this ordeal.

Observations:

- We took photographs of a few infected animals and collected fecal samples from infected and uninfected animals.
- Typical symptoms of FMD were indeed observed.
- Affected animals were limping potentially due to weakening of hooves from infection (inflammation and pus formation) inside the toes.

- Peeling of skin around mouth and scaly mucous membrane in buccal cavity were observed.
- Many infected animals were suffering from fever, sitting in a head-down posture, shivering and salivating.
- We were informed by the herders that food intake by affected animals reduce considerably, before eventually the animal succumbs to the infection.
- If not vaccinated *a priori*, the chance of recovery and survival of infected animals is usually very low.

Comments from villagers:

Key-informant villagers in Pin Valley reported that FMD in livestock of migratory herders is a serious threat to resident livestock and cattle. It is often the case that if village-livestock graze in the same area as the infected migratory livestock even one or two years after the occurrence of FMD, the village-livestock seem to contract the disease. This causes heavy loss to goat, sheep, cow, *dzo* and *dzomo*. The villagers suggested that vaccination camps may be better and more frequently organized through the concerted and active efforts of the forest department and the veterinary department in the wintering areas of the migratory herders, in order to prevent occurrence of FMD amongst migratory livestock. This may also safeguard resident ibex populations from getting infected by FMD.

Remarks:

Soft-copy of photographs of FMD-infected livestock are provided separately. Any further relevant information that might emerge from the analyses of the fecal samples will be duly shared with the forest department.