

MATERIAL AND METHODS

The large loss of sheep and lambs on pastures in Norway is an ethical challenge and prevent the exploitation of resources for food production. Predators, diseases and accidents are the main causes.

The cause of death in lambs grazing varies greatly between regions and herds, and this is particularly evident when it comes to the disease alveld. Alveld is a common disease in the coastal areas in Norway.

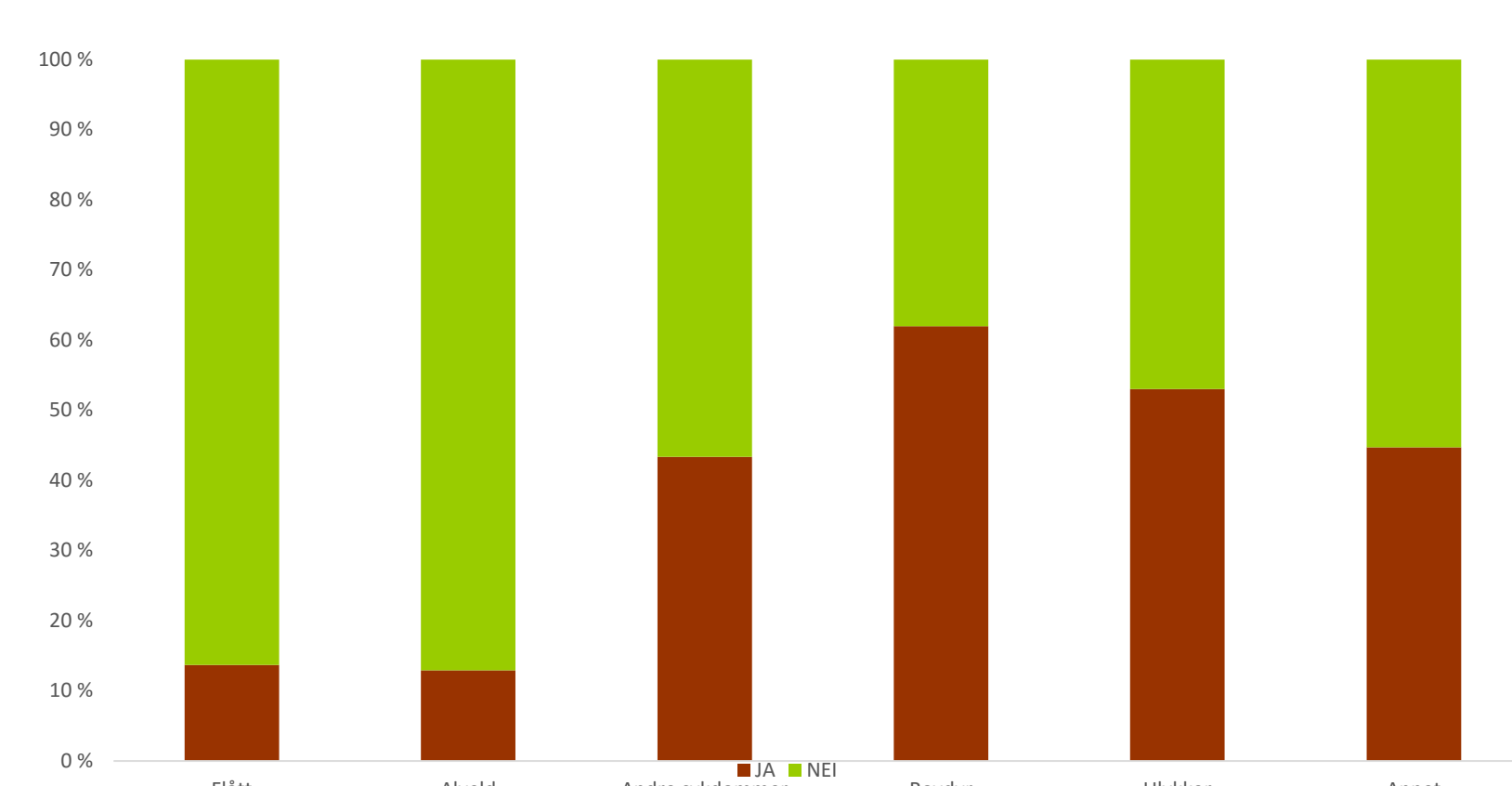
Saponins from *Nartheicum ossifragum* and / or toxins from cyanobacteria have been found to be hepatotoxic and can cause photosensitization in mammals.

In our preliminary study we have looked at whether it is possible to develop a bolus with toxinbinding substances which can be used in the critical grazing period.

We have developed and tested the shape, size and weight of a possible bolus, and conducted a precipitation reaction in a simulated sheep stomach.

RESULTS AND DISCUSSION

13 % of the respondents replied that they had suffered losses due to alveld on summer pastures. In three counties alveld were the main reason for loss of respectively 22, 28 and 33% of the respondents.



Answer from respondents about the main cause of loss of lambs in five regions in Norway.

Testbolus in three different sizes (3 cm/8 g, 3,5 cm/13 g, 4 cm/ 24 g) was added in 6 lambs at 2 months age (weight 16-22 kg) with a standard applicator for parasiticides. X-ray photography showed that all boluses were perfect placed in the reticulum immediately after posting and after 18 days. The lambs were autopsied at slaughtering. Residence time of bolus in the reticulum was about 4 weeks. Bolus did not damage the digestive system. Weight gain in the “bolus-lambs” was not significantly different from a control group. Bolus containing a polymer compound was tested for controlling the release of the polymer, by changing the diameter of the opening. It was observed a clear precipitation by addition of a solution of saponins to a solution of this polymer compound in a simulated sheep stomach.

CONCLUSIONS

A bolus with polymeric compounds and the size described above can be used for felling of saponins in lamb.

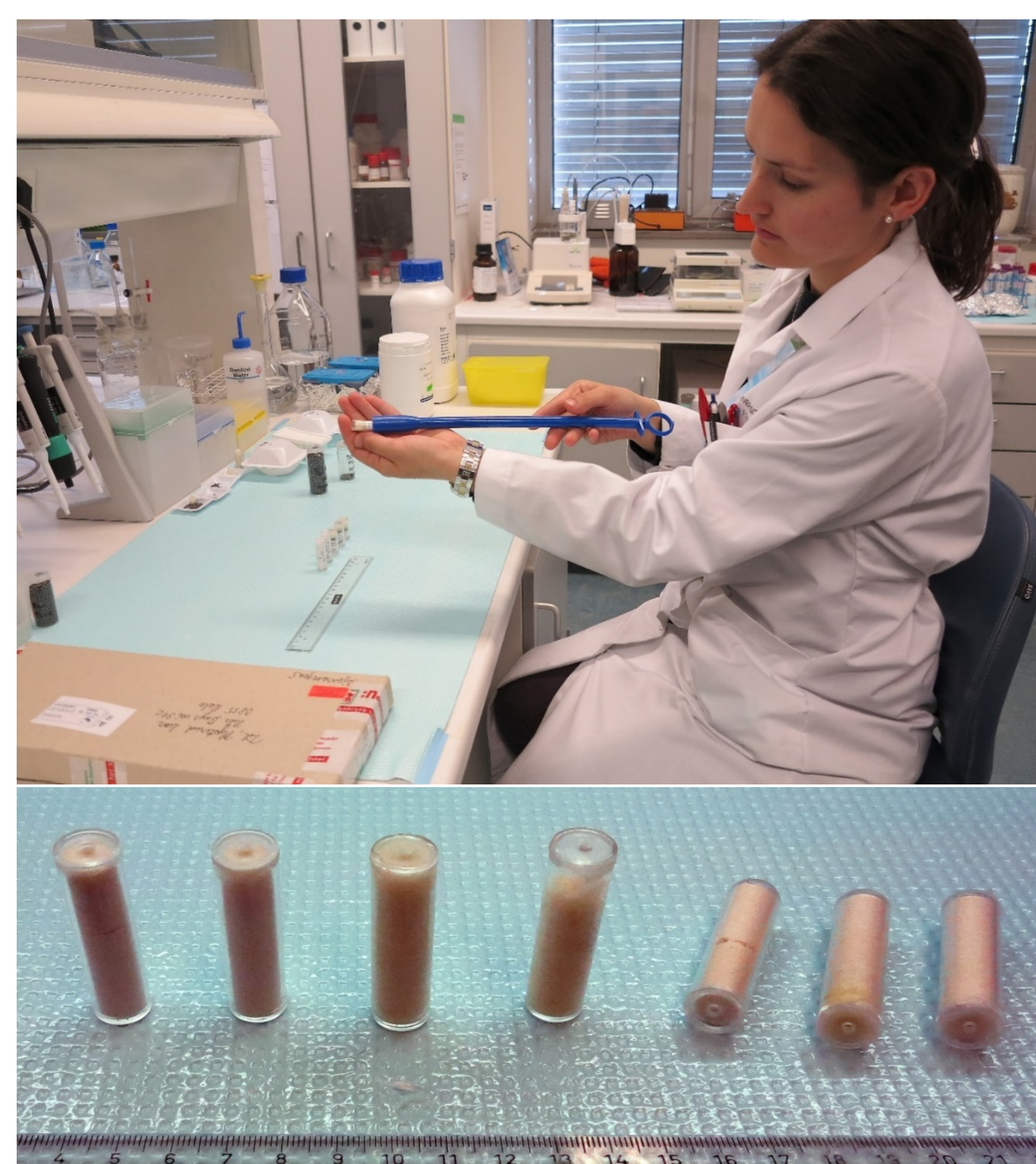
Further work should include studies on the suitability of this polymer on several relevant toxins and in vivo studies testing toxin binding bolus in lambs.

Combining a bolus with toxinbinding substances and mineral supply can be an important measure in many pastures.



Bolus supply to 8 week old lamb, X-ray and autopsy.

Thanks to Regional Research Fund – Mid-Norway, Agriculture Directorate, County Governor of Møre og Romsdal and Sogn og Fjordane and Møre og Romsdal County Council for financing of the project, and representatives of the industry for interest and support.



Production of six testboluses at University of Oslo

