



To whom it may concern...

21 April 2010

# Volcanic activity in Iceland

Possible effects on food safety, animal health and animal welfare

## The eruption

The Icelandic Coastguard flew with experts to the volcano yesterday afternoon (19/04/10) in order to monitor the eruption. There is still considerable volcanic activity at the site and three seemingly separate craters were still erupting. The plume is still rising but it is smaller and lighter, indicating that there is not much ash in it. Accumulating ash seems to be forming a ridge along the edges of the volcano. Lava splatter was hurled 1,5 – 3 km up in the air by explosions in the crater on Tuesday morning. Further to the south clouds of ash reached a height of 5-6 km. No lava flow was observed from the volcano. There is no risk of flash floods because the water is continuously flowing off the glacier.

Further information: <http://www.earthice.hi.is> and <http://www.almannavarnir.is>.

## Composition of the ash

From Monday 19. April the amount of ash has reduced. Its composition is mostly the same, except for fluorine, where the amount has increased from about 25 mg/kg (14/04/10) to about 850 mg/kg (19/04/10). The ash is now also more glassy and the particle size is still unusually small. Information received today indicates that downfall of ash will mainly be near the eruption side. For further information on the composition of the ash, please contact the University of Iceland: Guðrún Larsen ([glare@raunvis.hi.is](mailto:glare@raunvis.hi.is)) and Níels Óskarsson ([nielso@hi.is](mailto:nielso@hi.is)). Information given to the public from the Directorate of Health can be found on the website: <http://www.landlaeknir.is>.

## Food safety

So far the downfall of ash has only affected a small area on the South coast of Iceland. In the area there is only one milk production holding with the older version of milk tank where it cannot be ensured that the milk will not be contaminated by the volcanic ash. This milk is not collected for human consumption. Milk samples from farms in the affected area are being sent for analysis.

Some farm animals from the affected area have been slaughtered and veterinary controls at the slaughterhouse have not shown any damage of tissue or organs. Samples are taken for further analysis. Due to the fact that all animals are being fed with hay from big bales wrapped last summer with plastic and that every effort is taken to ensure that the drinking water for the animals is of the same quality as for humans, contamination of meat and milk is not expected. The season for growing potatoes and other vegetables has not started and consequently no problems have been considered in this respect at the moment.

## Fish and aquaculture

The volcanic activity in Iceland is not expected to have any influence on aquaculture as the water source in these facilities is mainly from closed wells and boreholes and if the outdoor tank facilities should be affected by downfall of ash the water exchange in the tanks is sufficient to prevent any sub-optimal condition to occur. The harvested fish should therefore be of the same



quality as before the volcanic activity in Iceland started and the situation is being monitored continuously.

Fish from the sea are not affected as shown by tests conducted by the Marine Research Institute.

### **Water for human consumption**

Groundwater is the main supply of water for human consumption in Iceland and consequently in the most affected areas. No pollution is registered in ground water or drinking water at farms in the area of the eruption.

### **Animal health and welfare**

Farmers are advised to follow closely information in the media regarding possible downfall areas. A simple way to monitor downfall on own farm is to put out a white dish. Once downfall of ash is confirmed the recommendation is to put all animals that are outside into stables and feed and water the animals inside during the downfall period and as long as the ash persists on the ground. In Iceland, most sheep and cattle are kept indoors over the winter. However, it is more common to keep horses outside where they have wind shelters and are fed baled hay. Horse owners are urged to provide their animals that are kept outside with plenty of hay and clean running water and prevent the animals from grazing contaminated ground and drinking from stagnant pools or ditches. Most farms in Iceland are connected to safe water supplies from underground sources, but where this is not the case, it is important to prevent ash and surface water from reaching the water supplies, for both Public and Animal Health reasons and safe milk production.

The main problem that can arise from the downfall of volcanic ash is from high content of fluorine in the ash. Intake of fluorine is known to cause problems in bones and teeth, especially in growing animals. Problems with calcium metabolism is also known. The ash can also have mechanical effects on feet and teeth of the animals and cause problems in respiratory and digestive systems.

The fluorine content of the ash from the volcano in the Eyjafjallajökull glacier in samples taken on the first day of the eruption was 25 – 35 mg/kg (dry ash), which equals 700 – 1000 mg/m<sup>2</sup> in a layer of ash of 1 cm thickness.

Samples collected April 19 show same composition as early in the explosive phase, but fluorine content is considerably higher. Samples collected 19 April have 850 mg/kg (initially it was 25-35 mg/kg). This is due to the change in eruptive style – tephra is now not washed to the same extent by water in the eruptive plume. However, there is indication that the plume does not contain as much ash as before.

Animal health in the affected area does not seem to be affected and no casualties have been reported. However, long term effects on animal health cannot be ruled out and the situation will be monitored closely.

The Icelandic Food and Veterinary Authority will publish on its website [www.mast.is](http://www.mast.is) further information, as it becomes available.