



## **Severe Weather Conditions – Advice for Farmers**

Freezing weather conditions affects farming in several ways. The more significant effects are the provision of feed and water to livestock; the delivery of feed to farms and the transport of products from farms; the freezing of water pipes to sheds and outdoor water troughs; the freezing of milking machines and other equipment in milking parlours; freezing of coolant and diesel in tractors; damage to forage crops being grazed in-situ or stored in farmyards. There are also the personal risks of working and driving over icy surfaces.

Livestock will survive for a period of time without food but animals will show signs of dehydration if left longer than 24 hours without water. With cattle in sheds, the provision of feed is generally not a problem as forage and meal is usually stored in the farmyard or nearby. The most vulnerable groups of animals to water shortage are milking cows, animals on high concentrate diets and animals fed hay, straw or other very dry feeds.

- Milking cows must have access to drinking water at all times. A cow producing 30 litres of milk and being fed a silage-based diet requires 75-90 litres (16-20 gallons) of water per day.
- Finishing animals on high levels of dry feed, such as high concentrate diets have a big demand for water. These animals should always have free access to water. An animal consuming 10kg dry matter of dry feed will need 60 litres (13 gallons) of water daily. Concentrate feeding levels should be reduced and animals put on wet silage fed to appetite, where an adequate water supply cannot be provided. These animals need to be introduced to meals gradually again once water supply is restored.
- Reducing mineral intake may reduce the demand for water, particularly in sheep.
- If access of livestock to water has been restricted and then suddenly made available, over-drinking or water toxicity can cause health problems and even fatalities in extreme cases. Allow gradual access to water initially, when animals are extremely thirsty.

## **Transport**

Large trucks have poor traction on icy, untreated roads and can get stuck on even modest inclines. Before ordering feed, consider if the truck can make it into your yard. If there is a risk of getting stuck it may be better to decide on an alternative such as getting a temporary supply by tractor and trailer or four-wheel drive vehicle. Roadways and yards may need gritting to get milk collection vehicles in and out of the farmyard. Have a supply of gritting material available.

## **Frozen Water Pipes**

- Where there is an on-farm supply from a deep well, the deep submersible pump should not freeze but pipes and fittings from the pump to the pressure vessel (tank) and from there to the sheds need to be kept free of ice.
- Have a thermostatically controlled fan heater in the pump-house.
- Water pipes to the shed should be underground and any exposed pipes should be insulated.
- In very low temperatures, pipes have frozen at the entrance to the shed and inside the shed in the supply to the troughs. In such situations, even when thawed out they are likely to freeze again. The supply pipe to the troughs could be extended on further out of the house to a tap. This tap can be left to run at a low rate to keep water flowing where there is an on-farm supply source. This option cannot be used if the water is supplied by the Local Authority or Group Scheme.
- It may be necessary to bring in an alternative supply to fill water troughs or other containers in the feed passage. It may be possible to tap into the underground supply outside the shed and attach a hose to fill these water containers.
- Make sure the connection to the underground supply is well-insulated after use and drain all the water from the connecting hose after filling the containers in the shed.

## **Out-Wintered Stock**

Cattle can cope with low temperatures provided they have plenty of feed. Even young calves are not seriously affected by low temperatures if they have shelter from chilling wind and driving snow/rain. Water supply is a huge problem with outdoor stock. Surface ice needs to be broken twice per day.

**Sheep** are the largest group of out-wintered stock.

- Ewes in early and late pregnancy have higher energy requirements than those in mid-pregnancy.
- Ewes in early and late pregnancy should get a supply of forage (hay or silage) and about 0.5 kg meal / day where there is a blanket of snow and no grass available.

- Ewes in mid-pregnancy will get adequate energy from hay or silage, fed to appetite.
- Sheep need access to water where dry feeds (hay/meals) are fed. Introduce meal gradually to avoid acidosis.
- Forage should be fed in a round feeder or behind a feed barrier to avoid wastage. Meal should be fed in troughs or on a packed line of snow – this can be made by tractor or quad driving on the snow and forming packed lines. Feed the concentrate, preferably as nuts on the packed lines of snow.

### **Frozen Milking Machine**

To reduce the risk of ice forming in milking machines:

- Make sure that all doors into the parlour are kept closed.
- Install a thermostatically-controlled heater in the plant room which should cut in when the temperature falls to 1<sup>0</sup>C. Items such as the power washer should be kept in the plant room to prevent the pump from freezing.
- Let the machine run a little bit longer to ensure that all excess water is removed from the plant after the final rinse. Open the machine at the low points, particularly at the fitter sock. Some machines may also have a drain at the base of the receiver jar.
- Remove the jettors from the claw pieces and let them hang down.
- Circulate a saline solution through the milking machine, having first made sure that all the detergent has been rinsed out of the plant. The saline (salt) solution is made by mixing half a kg of salt in 5 gallons of water. Salt will drop the freezing point of water. Rinse before milking to remove salt traces. If the rinse is inclined to freeze, start milking without rinsing and let the first few gallons go to waste or feed to calves.
- Diaphragm milk pumps can also cause problems. Open the locking nuts to allow any excess water to escape or alternatively place an infra-red light over it.
- Longer-term solution: Install a line of infra-red lights above the milk and wash lines. All wiring should be done by a certified electrician.
- Close off the entrance to the parlour with plastic sheeting or insulating blanket to reduce the amount of freezing air getting in and to keep as much heat as possible inside.
- The machine should be designed in such a way that it drains easily.

### **Slurry Scrapers**

- Clear snow from outdoor scrapers at entrance to the tank.
- Keep the ratchet mechanism and tracks free of frozen slurry.

### **Tractors**

- Keep tractors in the shed when not in use.

- Have adequate anti-freeze in the cooling system. It can become diluted if being topped up during the year.
- Traces of water in fuel lines can freeze and block flow.
- Have batteries fully charged to cope with the extra demands of starting in freezing conditions.

### **Sprayers**

- Make sure pumps are fully drained.
- Remove pressure gauges from sprayers and store away from frost.
- Clean out and drain the sprayer thoroughly including all pipes filters and nozzles.
- If the sprayer cannot be stored in a frost-free shed, put about 10 litres of anti-freeze mixture (33%) into the tank, pump it through all valves and pipe work by opening the appropriate valves.
- Drain all pipes and hoses.

### **Forage Crops**

- Heavily frosted brassica crops (kale, rape, etc.,) if consumed at a high rate will cause scouring, digestive upsets and even death in severe situations.
- Brassica crops are normally grazed in-situ and in most cases could be expected to have thawed by midday when the strip wire can be moved and animals fed.
- Do not feed brassica crops if frozen but bring in silage or hay in round feeders.
- If the feed allowance from brassicas is limited, bring in extra fodder to match the reduced intake of brassicas.
- Avoid feeding frosted beet, as it contains oxalic acid, which can be poisonous if consumed in large quantities.
- Fodder beet that is stored outside can be damaged by severe frost. Cover outdoor clamps of beet with straw and an old silage cover to prevent freezing and keep off fresh snowfalls.

### **Safety**

- There is increased risk of injury during severe weather conditions.
- Most injuries result from slips and falls causing fractures and head injuries.
- Clear a number of tracks around the farmyard, treat with de-icing salt and keep to these safe walkways.
- Grit sloped yards and roadways to facilitate traffic.
- Herd out-wintered livestock during daylight hours and be back before nightfall.
- Keep away from hazardous areas and rough terrain.
- Bring a mobile phone when going out herding or on other journeys.
- If rigging up additional lamps and heaters use the correct wiring and ensure these are protected by a 30 milliamp RCD (Residual Current Device) on the switch or fuse board to prevent electric shocks.