

TIPS FOR MAKING IT EASIER TO DEAL WITH THE ICY WEATHER AND FOR PREVENTING FROST DAMAGE ON FARMS

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After last winter, many farmers made resolutions to be prepared for the worst this year. Unfortunately, the improvements don't always measure up to the resolutions and once again, urgent issues need to be addressed. These include getting water to stock, milking the cows and avoiding damage to machinery and equipment.

Milking Machines

The simplest solution to freezing up of milking machines is to dry off the cows and many have chosen this option. However, it is not a solution for everyone.

Over 90% of milking machine problems can be figured out by talking to the milking machine technician over the phone. The main areas of the milking machine that will cause problems in freezing conditions are the vacuum pump, the milk pump, pulsation relays, and generally water in clusters, milklines and other pipelines.

Most problems are caused from trying to wash the machine, having to deal with water freezing in the clusters, milk tubes and milk-lines. Draining out the machine after rinsing is essential. Some are using a salt solution in the final rinse; just enough to coat the internal surfaces. A 2.5% solution is suggested as a suitable concentration for the salt solution, for example, a half kg of salt dissolved in about 20 litres of water. Circulate-just enough to coat the internal surfaces, run to waste and drain the machine. Rinse the machine with water just before the next milking to get rid of the remaining salt solution. If this rinse is inclined to freeze-up, start milking without rinsing and let the first few gallons of milk run to waste. Prolonged use of a saline solution may cause some damage to rubber and stainless steel surfaces.

One supplier of salt to Co-op stores, etc., is Nutribio Ltd., see www.nutribio.ie and <http://www.nutribio.ie/ingredienttrading/SupraseSalt.pdf> .A 25 kg costs about €8.75.

Autowashers may cause problems also because some are set to automatically rinse the machine with water before milking; giving the machine time to freeze-up before milking begins. One suggestion is to use double strength detergent, leaving the stain in contact with the plant for the day with a manually controlled rinse (using the autowasher) just before milking. Another option is to set the autowasher to rinse the plant just after the wash and be on hand to drain the machine immediately. The milking machine technician can adjust the settings on the autowasher, or if the farmer is fairly familiar with the autowasher programme settings it could be done over the phone.

Modern high speed vacuum pumps can be damaged if the vanes are frozen. There is always some moisture inside these pumps which can freeze and stick the vanes to the pump housing. Rolling the pump by hand would check if it's free or not. To do this electricity to the motor must be switched off (fuse and isolation switch) and any guards removed to do this must be replaced.

Diaphragm milk pumps are also prone to damage if iced-up and so always need to be drained out fully after rinsing the machine. The best way to do this is to loosen the pump head to let off the water. Release any water above and below the valves also.

Centrifugal milk pumps can also be damaged if clogged with ice. The overload can trip, the impeller can be broken, or worse still the motor shaft can get bent. If the outlet pipe from the pump is plugged with ice the overload will trip out. Once the ice is cleared, the reset button in the milk pump control box needs to be reset before it will work again. If the reset button is inside the box, disconnect the power before opening the box to reset it. Ring the milking machine technician if in doubt.

Most centrifugal pumps have drain valves to drain themselves automatically, but check to see the valves are draining them properly. Bypass plate coolers that can't be drained or are giving problems.

You can install some sort of heaters in the milking parlour, dairy and plant room. Options are infra red lamps, thermostatically controlled fan heaters, or space heaters. Infra red lamps can be plugged in at night or for a few hours before milking to thaw things out. They can be controlled either by a timer, thermostatically or plugged in and out as required. These lamps need to be properly wired i.e. live, neutral and earth and plugged in to an RCD protected socket. Fan heaters have their own built-in thermostats. Be wary of makeshift wiring. Get your electrician to do the wiring.

Plug-in timers would generally be able to cope with 13 amps so would easily supply five 300 watt infrared lamps. Check the wattage of the bulbs so as not to overload cables and fuses. The lamps should have an integral cowl to prevent drips blowing the bulbs. The areas needing heat are the vacuum pump, the milk pump and the relays. Milking machines will freeze up less by minimising the airflow through the parlour. So, keep doors and windows closed. The hardness of the frost, the openness of the parlour, shelter and the orientation of the parlour to the cold wind all have a bearing. Putting some sort of insulating blanket/plastic sheet at the entrance to the parlour to quell the cold air flow should help, and hold in the heat from any heaters.

The pulsation relays can freeze and stick. Heaters over the relays will get them going again. However, be careful that the heat source is not so near PVC pipes to cause softening or other damage.

There are reports of ice blocking pulsation airlines at the bend where the airline rises up at the front of the pit. You will know this if there is no vacuum getting back along the line, the relays should be clicking away but there is no vacuum in the long pulse tubes i.e. there is no pulsation getting to the liners. The vacuum regulator and vacuum gauge should be working normally. Open the valve/bung at the end of the pulsation airline to check for vacuum. Thawing out the ice in the

bend will free it up. After milking, make sure that any water at this lowest point in the airline is allowed drain fully. It could reoccur so it could have to be freed-up at some other milkings as well. It may not block the airline completely, but it blocks it enough to prevent the pulsation from working.

Keeping an eye on the vacuum gauge reading and listening for air hissing through the regulator is very always important.

Those narrow bore transparent PVC pipes for controlling relays, cluster removers, recorder jars, etc can collect drops of water, especially where they loop or sag. If these are frozen the pipe will be blocked. Thaw out the water and shake out the drops from the pipe.

Water supply

Protecting pumps, pressure vessels and main supply pipes is important. A lot of pumps are deep well submersible so they will be fine, although they may trip out if pumping against an ice plugged pipe. The pipes and fittings from the pump to the pressure vessel and from the pressure vessel to the sheds need to be kept thawed. Putting a thermostatically controlled fan heater in the pump house is one of the simplest ways to do this.

If you can get the water supply as far as the shed, with any bit of a thaw, water should start to flow in the troughs. The supply pipe to the troughs could be extended on further out of the house after the last trough to a tap. This tap can be left on enough so that a trickle of water is flowing the whole time during freezing conditions. This would be fine where the water is being sourced from a well, however it wouldn't be recommended if the water is supplied from the County Council mains.

With the amount of water the animals are using and the heat from the animals there is a good chance that the pipes will not freeze up. How effective it is will depend on various factors, such as, whether the shed is open fronted or not, and where the pipes are routed, etc. Water supply pipes to the sheds that are above ground will cause endless problems. Ideally these should be put under ground. If

this is not practical some other solution, such as rigging up a temporary supply of a few troughs along the feed barrier that can be filled from time to time from a pipe that can be drained when not in use. A bit of ingenuity is needed as every situation is different and what will be feasible in one place won't be somewhere else. Leaks are always an issue at this time so lag, drain or provide heat for vulnerable pipes e.g. copper and have a supply of spares to make repairs.

Washdown Pumps

Farmers were hassled last year because impeller housings on washdown pumps froze solid and leaked profusely when thawed. These housings are very easily broken in this way. The only solution is to shut off the water to the pump and drain the impeller housing completely. High pressure washers are also at risk. Drain them out and store away from frost.

Scrapers

There are various reports of some trouble with scrapers. Outdoor scrapers are collecting snow as well which has to be cleared at tank entry points. Problems arise when frost is really hard and slurry freezes causing problems with ratchet mechanisms. Keeping the ratchet mechanism clean and the track free of frozen slurry in vulnerable areas i.e. near doors, etc., should help.

Tractors

Keeping the tractor in a shed when not in use will keep it ready for action in most cases. The cooling system obviously needs antifreeze. This rarely causes problems nowadays; however, if the cooling system has been drained during the year or is being regularly topped up the block is in danger. Any leaks need to be attended to and antifreeze put in the cooling system.

There have been some problems with diesel jelling-up. Traces of water in fuel lines will freeze regardless of the antifreeze in the fuel and end up blocking fuel flow. Water in filter bowels will freeze and can crack the glass. Plastic Filter bowels on fuel storage tanks are also prone to damage in this way, so check these on storage tanks; don't forget to check central heating fuel tanks, as well.

Batteries

Fully charged batteries are better able to cope with the extra demands of starting during cold conditions. A bench charge will give them that bit extra power to cope and the life of the battery should be prolonged also. Batteries produce hydrogen gas (which can explode) when charged so care is needed.

Sprayers

Make sure pumps are fully drained and/or run an antifreeze solution through them. Pressure gauges are very prone to damage from freezing. The ice strains the gauge so that it reads incorrectly and won't return to zero. Remove the gauge(s) from the sprayer and store away from frost. Drain out pipes and hoses also. Pipes full of water can crack when frozen, especially, ones rigid types made of PVC or stainless steel. Ball/lever valves should be left open.