

## **FOAMING AND CHURNING**

There are two serious quality effects if milk is allowed to foam.

Milk contains an enzyme, lipase, which will under certain conditions split milk fat into glycerol and free fatty acids.

Some free fatty acids have a bitter taste and a sharp odour and if present, give milk an off flavour. Such milk is said to have gone rancid.

Mechanical factors can cause the breaking of the outer fat globule membrane and this can lead to fat clumping. This is detected by visible free floating fat on the surface of milk caused primarily by the aeration of milk.

### **Causes in the Plant**

- Milkline nipple at the incorrect angle. Should be mounted between 10 or 11 o'clock.
- Sand or grit under valve of the milk pump preventing complete closure or valve incorrectly installed. Milk is drawn back and forth past valve and seat.
- Milk pump speed set too fast, air being drawn in from receiver, or centrifugal pump speed excessive due to incorrect motor match or probe control not functioning, allowing pump to run dry.
- Badly fitting liners. Distorted by age or hanging on jetter units between milkings. Air admitted to plant around cows' teats.
- Air leakages within the plant, perished or damaged rubberware or leaks in unions etc.
- Over-sized air admission holes.
- Milk delivery line into tank not correctly fitted. The milk should run down the side of the tank. All bottom filling silos require controlled pumping to reduce the aeration of milk.
- Excessive length of long milk tubes or rubbers from cluster to milkline.
- Filter undersized for milk production, or plate cooler of inadequate capacity.
- Milkline fall not sufficient or of too small a diameter for cluster numbers.
- Tank agitators thrashing the milk surface or excessive speed.
- Poor machine function on cows causing clusters to fall. Badly designed milking machine, unnecessary bends and joints.
- Milkline too high; restrictions to milk flow excessive.

### **Causes by the Milker**

- Poor cluster changing which allows excessive amounts of air to enter the milking system.
- Over milking. During this period air is being drawn continually through milk remaining in the long milk tubes.
- Poor water supply for cooling.
- Undersized cooler.
- Cooler water temperature too high.



Article end.