

## Our milk processing

Written by Mike Cox

Thursday, 05 February 2009 13:04 - Last Updated Tuesday, 10 February 2009 09:05

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Our whole dairy was fitted out by P O'Connel of Dairy 2000 Engineering. Peter used to service the same equipment for the States of Alderney when they ran the dairy so he understood Alderney's geographic location and the situation of not being able to get a dairy engineer to the Island without some time delays.

◆The whole process had been planned around minimal mechanical operation and therefore cheap to run but labour intensive. The first ever processing started at 6am and I finally finished scrubbing down at 9pm! That evening we were wondering what we had let ourselves in for. However practise makes perfect and with fine tuning we have now got it down to about 4 hours all depending on the amount of milk needed.

### MILK PROCESSING

We have a small continuous flow pasteuriser called an MR900 made by David Mallinson, who designed the machine specifically for small producer processors many years ago. It is very compact and has been extremely reliable and as the name suggests has the capability to pasteurise 900 litres an hour.

Before running milk through the machine a sterilising/warm up is carried out where we switch on and circulate water through the plates which takes the temperature up to 85°C and holds it there for 15 minutes to sterilise the machine. Before pasteurising takes place, the safety divert which should click in if the temperature drops below 72°C at any point is checked and if when milk flows, this is activated the milk is diverted back to the holding tank at the start of the process. This whole process takes 40 to 45 minutes before any milk can be processed.

&captionText:'Pasteuriser and bottling area'

Our raw milk tanks are housed separately to the processing dairy under the same roof but in a different room, a pipe leads from the raw tank directly to the pasteuriser and the milk flows by gravity in to a small holding tank at the front and the flow is regulated by a ball cock. Once the machine is ready the water is released and the raw milk allowed in, the milk then runs again by gravity to a milk lift pump which pushes it through the heat exchange plates, boiling water flows on the opposite side of the cold milk plates gradually warming it up to at least 72°C where it flows through a holding tube as it passes through this tube pasteurisation takes place, holding the milk above 72°C for at least 15 seconds. The pasteurised milk then returns back through the plates helping warm the cold incoming milk (but not mixing with each other) Before leaving the pasteuriser the milk can be diverted to the separator, (Seital SE 05) should we need skimmed milk or cream.

The milk then returns to the plates to be finally cooled down and exits into either the whole milk tank or the skimmed milk tank for bottling.

&captionText:'Work in motion'

Once the desired amount of whole milk has been done any excess to demand is put through the separator and the cream is skimmed off and saved for butter, ice cream etc, water is then introduced to the holding tank and milk flushed out. The pasteuriser running temperature is once again turned up to 85+ and circulated for half an hour at this level with a strong caustic detergent and rinsed clean with cold water, the washing routine can take 45 mins. A draw back of any system is the time and cost taken to start up and then clean at the end whether we do 200 litres or 2000 litres although you can be doing other jobs while you wait.

The pasteurised milk is drawn off and pumped to a manual bottler that has a holding reservoir from one of the small bulk tanks and each bottle placed on individually, filled and then lid screwed on by hand. This is the most time consuming operation and the bottle filler can hold the job up depending on the speed of the operator, but if you can get Clare on a mission she can bang out 9 litres (bottles) every minute thats 540 litres an hour. The bottled

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milk is then crated up as you go and placed in the fridge ready for next day delivery.</p><p align="center">{highslide}clare.jpg&captionText:'Clare on a mission'{/highslide}</p><font face="Times New Roman" size="3" color="#000000">◆</font> <p> </p>