

Experiences of small dairy production & processing

Background
Production & Processing Logistics
Costings
Conclusions

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Abbey Home Farm

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650ha comprising the following organic enterprises:

- Dairy - 30 cows, principally Dairy Shorthorns, and their youngstock, 55,000 litres processed on farm, the balance is sold to OMSCo.
- Beef - 40 cows, comprising a commercial herd of South Devon cattle and a small pedigree herd of Gloucesters, both herds crossed with an Aberdeen Angus bull.
- Sheep - closed flock of 650 Lleyn ewes, producing lamb and breeding replacements.
- Cereals – 275-300ha – milling and feed wheat, oats, barley and spelt wheat.
- Vegetable Production - 15ha.
- Pigs – 8 Cross bred sows, 1 Duroc x Pietrain boar & their progeny
- Poultry - egg production (350 hens) and meat birds (4 flocks of 225 birds)
- Grassland – clover leys, species rich grassland, herbal mixes
- On Farm Processing – dairy, poultry and butchery
- The Organic Farm Shop



ABBEY HOME FARM 2014

Herd History

- Founder member of OMSCo 20 years ago.
- Friesian cows –small amount of Holstien blood in the herd lines.
- 6700 litres per lactation, 950kg concentrate per cow.
- Herd reduction in June 2006 from over 100 down to 12 cows.
- Switch to a forage based system.
- Tried milking Gloucester cows.
- Settled on Shorthorns in 2007.
- Increased to 18 cows then to 30 cows in June 2014 and re-joined OMSCo on a producer/processor agreement.

Small Dairy Herd Management Challenges

- Balancing supply with one outlet is challenging – to avoid shortages and surpluses needs careful management and weekend processing and holiday cover is not popular.
- Maximum volumes per day dictated by processing capacity – personnel and equipment.
- The big costs – labour, forage, concentrates, dairy costs & repairs must be kept under control.
- Equipment efficiency – from field to yard to parlour.
- Cost effective milking of a small herd requires efficient time management.
- Animal behaviour and breed choice.
- Animal health and fertility.

Dairy Processing History

- Desire to supply The Organic Farm Shop with own milk and dairy produce as well as options to use the cows and milking as an educational resource.
- First delivery to the shop November 2006.
- Added value, shelf life and cash flow.
- Employed a full time experienced dairy processing manager to supply a range of products.
- Liquid, yoghurt, butter & 5 cheeses.

Creamery Set Up Costs

- Building conversion – initially old dairy bulk tank room and office now 2 processing rooms, entrance hall, 4 cold stores, and a store room – used farm labour where possible – circa £70,000.00.
- Equipment – Pasteuriser, separator, bulk tanks, bottler, yog vat, cheese vat, cheese press, butter churn – much second hand/reconditioned equipment – circa £45,000.00.





Creamery Running Costs

- Dairy processing manager & relief cover – circa £25k (+) pa depending on experience
- Consumables – electricity, water, chemicals, packaging, labelling, PPE, etc. – approx. £7.5K pa
- Administration – HACCPs, environmental health, testing, training, etc – approx. £1.5K pa.

Processing Costs Per Litre

Production run of whole, semi-skim, skim milk and cream.
 The equipment runs at approx. 450-500 litres per hour,
 the costing is based on the time to do a 150 - 200 litre run
 3.5hrs/run (a large proportion of this time is set up and cleaning)

Item		£ per run	£/litre 150 l run	£/litre 200 l run
Chemicals	CIP, utensils & routine de-scale.	8.08		
Electricity	Pasteuriser, separator, pumps, cold rooms, tanks etc	8.25		
Consumables	Paper towels/hand cleaner/pasteuriser chart/diluent for butterfat tester/dishwasher powder	0.30 (estimated)		
Total		£16.63	£0.11	£0.08

Labour costs depend on hourly rate and volume processed – time taken is not proportionate to volume processed

Small Dairy Herd Production Costs

- The relationship of costs per cow and cost per litre is key.
- Yield per cow and concentrate rate per cow is critical to costings. Other costs do not need to increase pro rata, e.g. recording, livestock expenses & dairy costs.
- A 30 cow herd does not need to cost twice as much to run as a 15 cow herd e.g. running costs per milking of electricity and chemicals do not double with doubling herd size.
- Extra litreage does not need to equal extra cost.

2013-14 Herd Costs

		18 cows in the herd, average of 10 cows in milk, producing 54,162 litres	Projected 30 cows in the herd, average of 24 in milk, producing 90,270 litres
Variable Costs			
	Vet and Med	485.86	809.77
0.28kg/lit	Concentrates - 15.28t purchased@ £394.04/t	6020.93	10034.88
	Livestock expenses – Tags, insemination etc	604.33	913.36
	Dairy Costs - Chemicals/wipes/gloves	1655.93	2025.52
	Recording (NMR) fees	940.57	1093.56
	Total	£9,707.62	£14,877.09
Variable cost/litre		0.18	0.16
Variable Cost Per Cow In Milk		£970.76	£619.88
Variable Cost Per Cow In Herd		£539.31	£495.90

Conclusions

- Starting with a small herd and one outlet/market is a challenging route into processing.
- This necessitated developing a range of products to get the best out of the milk supply and relied on an experienced dairy processing manager.
- Adding an extra outlet through a producer/processor agreement allows greater flexibility.
- Our focus is on utilising ALL litres efficiently and spreading costs.