

INTRODUCTION

Although sheep in Wales are primarily kept for meat production, there is a growing demand for sheeps' milk for processing and consumption. In continental Europe there is a strong tradition of dairy sheep production and many well known cheeses are made from ewes milk, for instance feta, pecorino and Roquefort. Given the great tradition of sheep rearing in Wales, it is perhaps surprising that there has been little development in the sheep dairying here. Although experience of rearing sheep for meat production will provide a helpful background, it is important to appreciate that dairying is a completely different venture which requires far more inputs (in terms of time and equipment) than meat production.



Lleyn Sheep Society

Lleyn ewe and twins

Horned Dorsets

Friesland ewe and triplets

BREEDS

Any milky ewe is capable of being a dairy sheep, but there are some breeds which are more commonly used. In the UK, the Friesland, British Milkshope and Dorsets (poll or horned) are the three breeds most frequently encountered in dairy sheep herds. Of particular interest in Wales may be the Lleyn which is renowned for its ability to carry and rear multiple lambs.

Reported yield figures for the various breeds vary hugely, a rough average value per lactation is 350kg, with yields of up to 1,000kg having been recorded for some Friesland ewes. The disadvantage of the Friesland is that, from the meat industry's perspective, its lambs have poor conformation. Although the British Milkshope has lower milk yields per lactation, it produces lambs more acceptable to the meat market. It is essential to purchase stock from a reputable breeder who can substantiate claims about yields.

SHEEPS' MILK

Sheep milk has a higher solid content than cow or goat milk. This means that it is particularly suited to processing into cheese. The yield of cheese from goat or cow milk is usually around 1:10, whereas from sheep milk it is closer to 1:5 (meaning you get twice as much cheese per litre of liquid milk). The fat globules in sheep milk are also smaller than those in cow milk, making it more easily digestible. It also means that full fat sheep milk is suitable for freezing.

When compared to cows' milk, sheeps' milk has higher levels of Vitamins A and E, and the minerals calcium, phosphorous, potassium, magnesium and zinc. Table 1 summarises and compares some of the characteristics of sheeps', cows' and goats' milk. However, it should be noted that milk is a natural product and its composition will vary from animal to animal, with the seasons and with different feeding regimes.

The market for sheeps' milk and sheeps' milk products appears to be growing. Producers have a choice of either selling their milk to a processor (the opportunities for this are very dependent on location) or establishing their own processing facilities to add value to the product, by producing products such as cheese.

Table 1. Selected lactation data for cows, goats and sheep

	Cow	Goat	Sheep
Av lactation length (days)	305	280	245
Av yield / lactation (kg)	8,500	1,100	350
Av total solids (g / kg)	12.1	11.2	18.3
Av fat content (g / kg)	3.5	3.9	6.7
Av protein content (g / kg)	3.4	2.9	5.6

Source: British Dairy Sheep Association and UWB

BREEDING STRATEGIES

Production of lambs with a conformation acceptable to the meat trade will be an important consideration for any dairy sheep farmer. As with dairy cattle, it is common to cross a proportion of the flock with a meat breed sire (e.g. Sussex) to improve carcass characteristics. If replacement ewes are being home bred, record keeping is important to ensure that the ewes with the best characteristics are selected for breeding replacement stock from. Semen for artificial insemination is available from rams with progeny records.

MANAGEMENT OF LAMBS

Once a ewe has lambed, a range of management options are open to the producer.

- Lambs can be kept on the ewe for the first 24hrs to 96hrs (to ensure adequate intake of colostrum) and then fed artificially, with all the ewe's milk being collected for sale / processing;
- Lambs can be left on the ewe for the first month with no milking being carried out until the lambs are weaned;
- Lambs can be given controlled access to the ewe during the first month (after 24hrs). For instance, the lambs can be kept with the ewe through the night, but be fed artificially during the day, allowing one milking per day (in the afternoon) from the ewe.

If lambs are not removed from their dam during the first four days of life, they should be left with her for at least a month to avoid inducing undue stress.

PRODUCTS

The majority of sheep's milk is processed into cheese, with smaller quantities being used in yoghurt and ice cream production. Sheep's milk butter is rarely seen and is considered by many to offer a potentially rich diversification opportunity. There is also a small market for liquid (or frozen milk) and for milk powder.

PRICES

Because sheep's milk products are non-commodity, niche items, it is difficult to provide representative values for them. Much will depend upon the entrepreneurial abilities of the producers or marketer. A survey of supermarkets and local food stores at the time of writing found the following products widely available:

Natural yoghurt, 250g	£0.90 - £1.15
Natural yoghurt, organic, 450g	£1.95 - £2.07
Cheese, 1kg	£12.25
Milk, 568ml (sold frozen)	£1.45 - £1.75

FEED and WATER

The nutritional demands of any lactating animal are substantial. Veterinary advice should always be sought to ensure that the ration provided is adequate for the animal's needs. Adequate water intake is of critical importance for all lactating animals if optimal milk yields are to be achieved.

HOUSING and BUILDINGS

The breeds of sheep used for dairying are not as hardy as some of the more traditional meat breeds. To ensure continuity of supply of milk, it is important to ensure that the animals are not subjected to any environmental stresses – this usually means providing access to housing or shelter throughout the year.

Suitable buildings are also necessary to house the parlour and, if processing is to be carried out on site, accommodation will be needed for that. If cheese is to be made, sufficient environmentally controlled space will be needed to allow the cheeses to mature. Advice should be sought from your local Environmental Health Officer regarding food production premises.

HEALTH

Maintenance of animal health is of primary importance from both a welfare and a production perspective. Issues of particular importance in a dairy sheep flock include: foot rot, worms and mastitis. A herd health plan should be drawn up in conjunction with your veterinarian. Particular attention will need to be paid to legislative requirements for withdrawal periods after treatment with drugs.

LEGISLATION

Potential producers must give careful consideration to the legislative requirements, both for agricultural record keeping and for food producing. It is recommended that advice is sought from your local Environmental Health Officer on the legislative requirements for food production. Of particular importance are the Dairy Products (Hygiene) Regulations of 1995. It is illegal to sell milk for human consumption if you do not have a licence to do so. All land where sheep are kept (even if it is only a couple of animals) must be registered. All sheep must be ear tagged (or tattooed) to show the flock mark and the animal's unique individual number. There are no quotas governing sheep milk production.

SOURCES OF FURTHER INFORMATION

British Dairy Sheep Association – www.sheepdairying.com

National Sheep Association – www.nationalsheep.org.uk

Fullwood (milking equipment) – www.fullwood.com