

# Achieving good lamb growth rates on artificial milk rearing machines

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**Artificial milk replacement machines are becoming increasingly popular amongst our clients. As pressure to reduce labour on farms increases and the value of finished lamb continues to remain relatively high, alternative options for rearing lambs are being investigated.**

The system can suit both extensive low input systems, during years of high lamb crops, and the more intensive indoor commercial system with a high number of triplets. For the extensive outdoor system, the artificial feeding machine allows losses that may occur due to a high twinning or triplet rate to be greatly reduced. This can be achieved at no great cost, without a large building space requirement. On a lowland indoor lambing farm, the system reduces the labour demand and allows time to be better spent elsewhere in the shed. We also utilise the system at home on the family farm – Goitre Fach – with our own pedigree Berrichon flock.

## Disease risk

There are some important health risks to consider when rearing lambs on a machine, including clostridial diseases. Vaccinating ewes against clostridial disease and pasteurising milk for up to four weeks before lambing will provide lambs with passive immunity for up to four weeks against pasteurisation and 12 weeks for clostridial disease, assuming adequate colostrum intake. But remember that some lambs may not receive enough colostrum and artificially reared lambs will need to start a vaccination programme at three weeks of age, with a second booster four to six weeks later.

Avoiding joint and navel ill is important for all lambs, so dip navels with 10% iodine at birth and repeat when lambs dry. To avoid 'watery mouth' (*E.coli enterotoxaemia*) ensure all bedding and the environment is kept as clean as possible, in both lambing pens and mothering pens. An antibiotic oral product may be administered at birth if hygiene is not at its best, or for lambs that

## Artificial rearing

- Ensure lambs suckle for the first 24 hours
- Offer creep ad-lib from less than week old
- Wean at five weeks of age
- Ensure machine and teats are thoroughly cleaned each day



Rhys Beynon-Thomas and Sarah-Jane Redman.

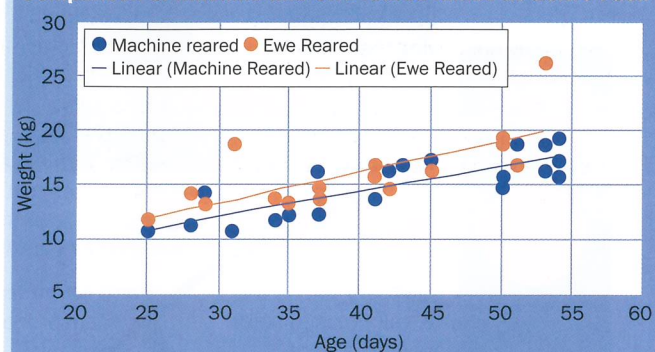
## Personal experience

Rhys and Sarah-Jane both work at Prostock vets in Carmarthen. They returned recently to the area, to live on the family farm, and enjoy helping out in any spare time.

At Goitre Fach, Rhys's parents and brother run a high-yielding 210-cow Holstein herd, as well as 200 pedigree Berrichon ewes lambed in January. The Goitre Berrichon flock has been exhibited successfully at the Royal Welsh Show, with pedigree rams sold annually at the NSA Wales and Border Ram Sale and other sales locally.

Around 50 ram lambs and 50 ewe lambs are kept yearly, with the remaining lambs sold to slaughter at Easter time. Selection is based on high growth rates and mothering ability of ewe. An automated milk powder machine is used to reduce labour demands at lambing.

Comparison of machine and ewe-reared lambs at Goitre Fach



The graph shows the liveweight of machine-reared lambs at Goitre Fach compared with those of siblings reared by the ewe. Ewe-reared lambs had higher overall growth rates at 2.1kg per week compared to machine reared lambs at 1.7kg per week, but the growth on the milk machine, although slower, was more consistent.

According to industry standards, growth rates of up to 2kg per week can be achieved up until weaning. The calculated growth rates in the graph will not be representative of the entire lamb crop, due to the lamb selection criteria for the study i.e. all twins or triplets, but despite this both groups achieve good growth rate. The study concludes that rearing lambs on an

artificial feeding machine produces lambs of suitable weight for weaning at five weeks of age.

may not have received adequate colostrum.

Coccidiosis is common in all indoor-reared lambs. Ewes are the initial source, but it rapidly multiplies in lambs resulting in a high challenge for later born lambs. Clinical signs vary from 'poor-doing' lambs to lambs with blood and mucus scours, but remember that all result in delayed growth rates. Use faecal egg counts to diagnose; drenching products can be used as treatment. A prevention option is using decoquinate additive in creep feed at an inclusion rate of 1.67 kg/tonne. Creep feed should be made available to artificially-reared lambs from one week old.

continued on page 47

# Top tips for shearing preparation

Bob Blanden, NSA South East Regional Manager and sheep shearer, draws on his years of experience in shearing sheds around the UK and the world to provide these tips for making the most of the coming wool harvest.

- Make sure you have sufficient wool sheets ready before shearing.
- Do not try to shear sheep too early in the season, even if they are getting caste; the wool will lift when the grease has risen.
- Do not treat your sheep against blowfly or lice immediately before shearing, as this risks the shearers' health and leaves residues in the wool.
- Ensure sheep are fully dry before shearing; if it is possible, keep some or all of the sheep indoors overnight for an early start before the dew will have lifted. Do not pack any damp fleeces into wool sheets.
- Avoid staining the wool when handling the sheep by not having them coming straight in off grazing and not being given time to empty their guts, something that requires a number of hours. Grass stains need extra scouring and reduce wool value.



A level, clean area is essential to set up shearing stands.

- Emptied sheep are easier to handle, leave less muck in the pens and on shearing boards, making the working safer for shearers and wool winders.
- Avoid dags contaminating your wool, as contaminated wool is devalued and dags blunt shears' combs and cutters. The easy solution is to make sure ewes are crutched out beforehand.
- Contractors need a flat, level and clean area to set up and work on, regardless of whether they are using a shearing trailer or not. Provide shade whenever possible, as shearers are known to suffer sunstroke and risk skin cancer.
- Make certain there are enough people

► Orf is commonly found through the UK and can survive in dry buildings for many years. It can form painful lesions around lambs' mouths and noses and on the teats of ewes. We recommend annual vaccination of ewes, preferably seven weeks prior to lambing. The spread may be greater in machine-reared lambs, due to the teat-sharing nature of the feeding system, so you can consider vaccination of lambs at an early age.

When we are lambing at Goitre Fach, all dams' udders are checked for signs of mastitis or blind quarters. Lambs born to problem ewes or multiple births are closely monitored and bottle-fed their dams' colostrum where possible for two to three days. If the dam is short of colostrum, the lamb is fed another ewe's excess colostrum as replacement.

## Swift movement

After two to three days, lambs are removed from the ewe and started on the automatic machine feeder. The swift movement of lambs onto the machine greatly reduces the labour involved in managing both ewes and lambs in individual mothering pens. When selecting a lamb out of multiple births, the largest lamb would be placed on the feeder, meaning the smallest lambs have less competition suckling the ewe.

The Volac automatic ad-lib milk feeding machine we use provides four teats for the lambs. Teats are split between a nursery pen, where the lambs are first placed until suckling independently, and a larger pen with the existing older artificially reared lambs. This set up provides less competition for lambs while learning to use the machine and increased ease of observations by the stockperson. Within 24 hours the lambs generally will have taken to the feeder and are moved into the larger pen.

We use approximately 8kg of milk powder per lamb up to weaning. It is possible to rent a machine with capacity for up to 40 lambs at a cost of approximately £300 for six months.



Rhys and Sara-Jane have collected data on the family farm, comparing machine and ewe-reared lambs.

Whilst eliminating the labour involved with feeding lambs, it does require a keen stockperson to observe the health of the lambs, and a thorough daily clean of the machine to minimise disease transmission.

A high protein creep feed (18%) is offered ad-lib from the first week of age to promote growth. It is high in starch for rumen papillae development, while barley straw is used as bedding and provides a source of fibre.

Weaning is carried out when the machine-reared lambs reach five weeks of age. By this point, lambs should be consuming adequate amounts of fibre and concentrates to aid with good rumen development. We see losses due to twisted gut more commonly beyond this age. The expense of milk replacer is also a major consideration past this point. Weaning should be carried out abruptly, but try to keep lambs away from the ewes and lambs for a further four to five days to avoid any risk of cross-suckling.

to help, so catching pens are kept full of only sheep that are to be shorn. Lambs should be drafted out and not penned with ewes. (It has been known for shearers to shear a lamb or two to confirm the point!) It also avoids lambs being squashed and injured in the catching pen.

- Bringing in disease problems with shearing equipment should be considered; if you are concerned, discuss this with your contractor. If you are aware of any problems within your own flock, such as scab, lice, CLA, orf and others, please make your contractor aware so appropriate action can be taken to avoid spreading disease and (where there is a risk) protect shearers from zoonotic diseases. Shearing trailers and boards should be clean when they arrive on farm, but some flock owners also supply moccasins for the shearers to avoid any chance of cross-contamination.
- Store your full, evenly packed wool sheets in a dry situation, possibly up on pallets to avoid absorption of damp from the floor.