Supporting the land-based industries for over a century

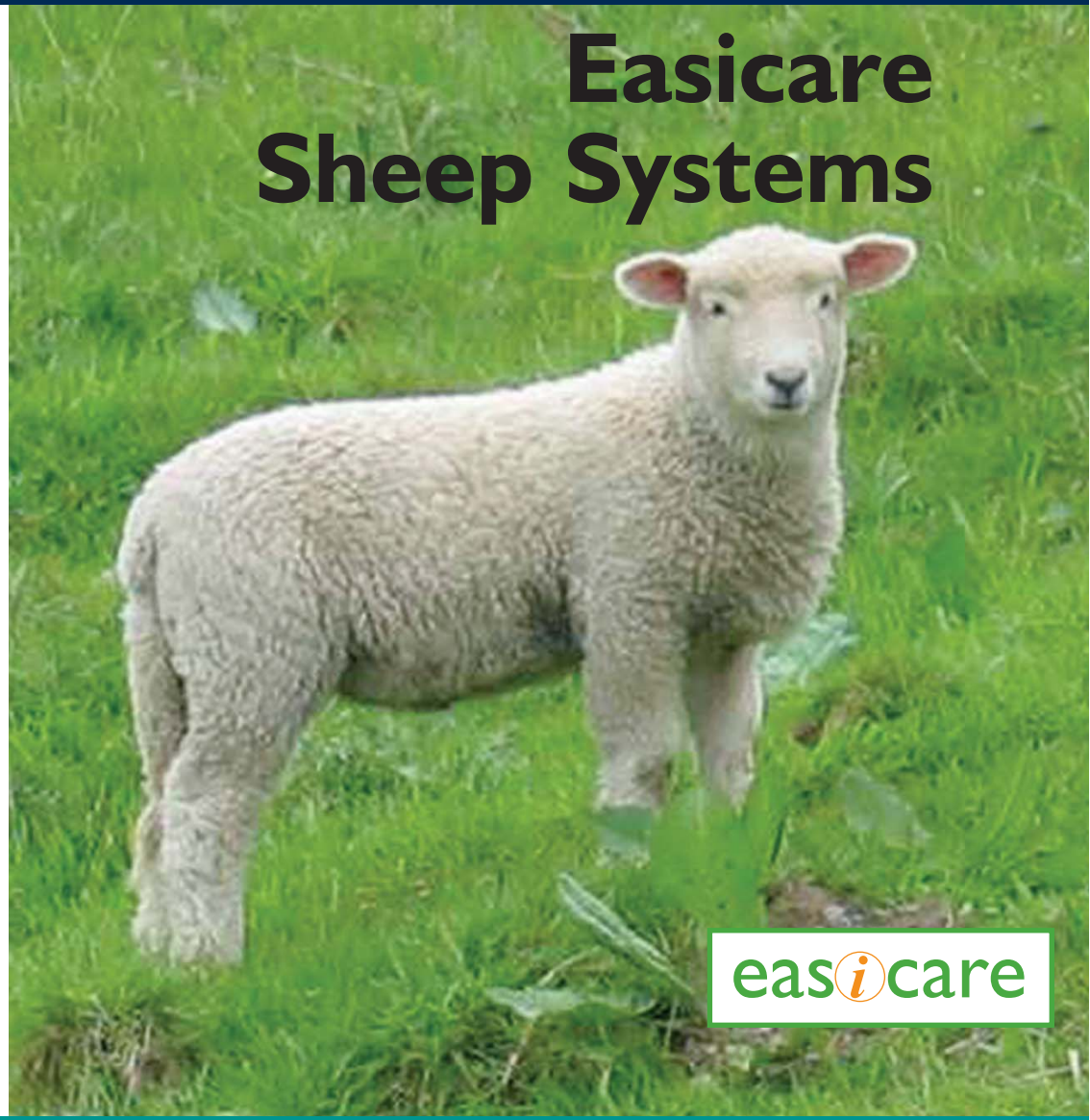
SAC

The Lowland Crossbred Flock – Choice of Breed

If you want to go for a purebred lowland flock with heavy culling for passenger ewes think of where you might be in 5 years time. You may have access to cheap rented grass, but it may be away from home so ewes will get less attention, and jobs like shearing or dipping may be more expensive. Would a larger flock of Easycare ewes that will not require shearing be easier to manage than your current flock? Or perhaps you are well set up for shearing but want lots of lambs so that you can progress quickly down the easy care route – in which case the Lleyn would be an obvious choice. If you are keen on getting a real return from wool the NZ Romney ewes are the ready made Easicare choice.

Remember the important thing is to produce the weight and grade of lamb the market is looking and paying for – a good target is to produce two 19kg R3L carcasses off nothing but grass. The ideal ewe weight for this is 65kg, when crossed to a terminal sire. If the breed is reasonably prolific say 140 – 160% reared then to get 25 replacements per 100 ewes (allowing for 10% ewe lamb culling) about 30 – 40% of the flock would need to be bred pure and the rest could be crossed to a terminal sire. This allows you to use a smaller ewe and cuts feed costs. Some potential breeds are shown below, figures refer to likely performance under an easy care sheep system, lambing outside with lambs sold off grass /conc./brassicas by December.

Breed	Ewe Weight (Kg)	Pure-bred Lamb Carcass Weight	Crossbred Lamb Carcass Weight	Lambing Percentage Reared	Comment
Lleyn	60	17 kg @R3L	19 kg @R3L	180	prolific
Easycare	65	18 kg @R3L	20Kg @R3L	160	No shearing
New Zealand Romney	70	19 kg @R3L	21 kg @R3L	150	5Kg Wool worth £3.50-£4.00



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Easicare Sheep Systems

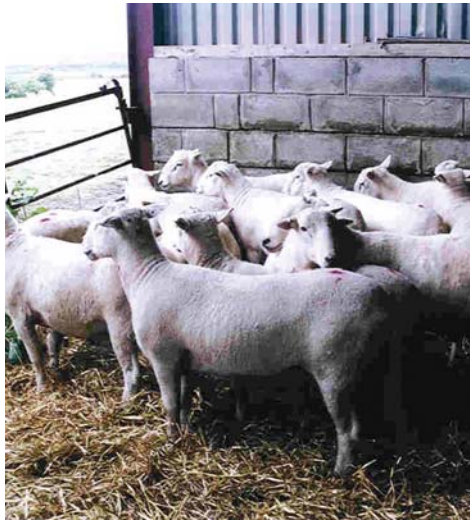
Introduction

This booklet provides information for farmers changing to Easicare Sheep Systems. Many farmers are already keeping sheep on systems with some components of easy care such as lambing outside on grass. They want to further reduce labour inputs to levels seen on cattle systems whilst retaining profitability. Sheep producers are increasingly price sensitive in the goods and services they buy and are more market-orientated in the products they sell, many being no longer content to produce products like wool at a loss. This booklet based on farmer experience of easycare systems and sound scientific principles will help guide you to more profitable and sustainable sheep production with more time for management thinking and lifestyle.

Easicare Systems have these features:

- Sound nutrition based on low cost grazed forages with minimum supplementation.
- Less human intervention particularly at lambing.
- Selection of replacements using performance figures for economic and easy care traits.
- Heavy culling pressure on problems and diseases.
- Sheep bred with enough wool to leave a return, or bred for wool shedding where wool is a problem.
- Use of labour saving feeding methods and mechanical aids.
- High delivery of public goods such as welfare and environmental benefits.

Easicare Systems are not no care, in fact they are extremely caring and depend on sound grassland management, a sheep health and biosecurity plan and using breeds and crosses with easycare traits.



Management Systems

Grassland management and winter feeding

Relative to grazed grass, concentrates and silage are expensive so maximise the production and use of grazed grass and grazed forages.

Lambing outside on grass later in the year when it is growing saves concentrates, labour and veterinary inputs. The wintering system needs to set up pastures to lamb on. Typically at turnout ewes are set stocked on lowland farms at around 17 ewes/ha for twins and around 27ewes/ha for singles (half this on upland (600-1000') farms. There should be 10-14cm grass in front of the sheep at turnout as a target (but 6cm will do in a good spring or on good lowland farms). This will avoid the need for feeding supplements. Turnout date should be 10-14 days before lambing. This means pasture for lambing on should have been rested for at least 2 or 3 months in most areas.

Sward height targets of 4-6cm. must be achieved in May to stop seedhead formation and ensure high quality pasture in summer.

Clover based swards are preferable because they reduce the cost and labour of regular fertiliser applications. Long-term slow release phosphatic fertilisers like superphoshate can be applied every 3-4 years to provide 30kg. P annually, sources of phosphate such as Fibrephos are alternatives liked by producers of sheep in trace element deficient areas.

Target growth rates on grass based swards are 250 -280g/day to weaning at 16 weeks or 300-320g/day on clover dominant swards. After weaning growth rates are 100 and 180g/day respectively.

Forage brassicas can provide high quality grazing at the shoulder of the grazing season to extend growth into Mid Dec for rape and stubble turnips or Jan- Feb for Kale and Swedes

Target a third of the lambs finished off grass, a third off grass + 5-10Kg conc. and a third sold store or finished off forage brassicas.

Supplementary feeding and reduced labour

Objectives – cutting labour and feed costs

On more extensive hill and upland farms (stocked on a year round basis of around 5 ewes/ha) it pays to replace hay and silage with grass set aside over the summer for deferred grazing in the winter. This means supplementing with low cost cereals and protein supplements such as beans or barley+pot ale syrup fed via a snacker. Alternatively on intensive drier farms forage brassicas enable sheep to walk to the feed rather than wheeling feed to the sheep, systems are under development.

Wintering can be inside, ewes are preferably winter shorn – shear ewes and rams before tupping if tupping inside. The decision to house adds cost and is made depending on soil type, stocking rate and where there is considerable winter damage to pasture by sheep. Ewes should be in condition score 3-3.5 at tupping and 2-2.25 at turnout. As winter feeding does not include the last 3-5 weeks of gestation, when demands are highest, low quality feeds can be fed and supplementation minimised. This cuts feed costs and trough requirements.

Many existing sheep house layouts can carry up to 30% more ewes on easy care systems. Pregnant ewes lambing inside need 1.2 m 2/ewe and, with concentrate feeding, need 0.45m. trough space/ewe. Sheep pens with feeding down one side only are optimised at 2.6 m.deep, thus with mechanised feeding around half the shed ends up as tractor passes. Unrolling big bales of straw down these narrow pens is too labour intensive.

Trough space requirement can be reduced by on-floor feeding on straw-based systems. Removing all passageways and feeding a TMR through the outside walls of the shed is possible where there is access around the sides. By feeding a TMR the feed space per ewe can be restricted to 20 – 30 cm. and pens can be 10 – 12 m. deep. This significantly increases the carrying capacity but will also increase straw requirements. Mechanical strawing of pens makes less of a chore of this. TMR's work best with twin and triplet-bearing ewes that benefit most from the high quality diet.

Feeding systems using good silage can be simple with no need for concentrate supplementation in troughs by using feedblocks/buckets. In a trial SAC looked at the use of Rumenco Lifeline buckets as a sole supplement to a good silage (10.3 ME) in a flock of 300 prolific Lleyn ewes run by a part–time farmer. To reduce time spent feeding sheep concentrates were replaced by access from five weeks pre-lambing to Lifeline buckets. These were offered at 1 per 25 ewes resulting in daily intakes of 200g/day in the house for 15 days and, for 18 days at grass when intake was 80g/day giving a total intake of 4.4Kg at a cost of £2.50/ewe. Analysis of colostrum from ewes lambing showed a significant 25% increase in gammaglobulin content between Lifeline and conventional licks. The increase was attributed to higher yields of microbial protein from lactose sugars in the licks. Higher levels are associated with better protection from diseases and improved lamb survival. Ewes lambed and reared lambs as successfully as previous years when extra time was spent feeding concentrates. Although feed buckets cost more per tonne than compounds the total cost of winter feed and labour was small and feed buckets suited the system.

Biosecurity and health issues

Objectives include cutting out the fire brigade approach to problems by effective quarantine measures, closed flocks, health planning and helping animals become more resistant.

Avoiding worm challenge in the first place by using clean grazing systems. This is far more effective than repeated anthelmintic treatment that leads to resistance.

Nematodirus is less of a problem in ewes lambing at grass as the eggs hatch before lamb grass intake is high. Typically long lasting action wormers given to ewes at turnout offer protection to lambs which should be monitored and dosed when rising FEC's are detected and lambs show signs of worm infection. Reduce weaning stress by removing ewes, not lambs from the summer grazed paddocks.

Culling serial offenders in the footrot parade and effective footbathing following accurate diagnosis of the problem can control foot problems. The problems of flystrike can be attacked by reducing worm challenge, selecting against dags or by using hair breeds of sheep that do not require shearing and do not get so daggy.

Closing the flock apart from buying of rams cuts out the risk of buying in diseases like EAE and Jaagsiekte.

Handling systems

Many easy care flocks are large and require specialist handling set–ups to maximise use of labour. Fixed yards are best situated where at least part of the work can be done indoors. Good hard standing areas so that sheep can allow feet to dry following footbathing are key to footrot control. Portable handling systems such as the Prattley aluminium handling systems are well worthwhile where facilities need to cover a wide area. The latest NZ handling systems such as the Racewell which grips sheep using pneumatics and has automated recording and drafting gates can be justified in saving of time and effort and will lead the way in integrated recording and management systems for sheep breeding in the future.

Management at lambing: working with the ewe's natural behaviour

Objective: working with the natural behaviour of the ewe at lambing rather than being interventionist and creating problems in the first place.

You either have intensive or minimal shepherding – a compromise does not work. As no concentrates are fed, one man can expect to look after 600 conventional ewes or up to 1000 ewes selected for easy care traits when lambing outside compared to 250 inside. It is important to avoid disturbing ewes unless absolutely necessary. Ewes and lambs are left to bond on the birth spot and are not moved or mixed. A big effort has to be made to provide shelter in exposed fields, although there is always a risk of deaths through extreme weather conditions. It is important to choose sires that have natural 'get up and go' so that new-born lambs are delivered quickly and suck quickly thus avoiding the problems of hypothermia

SAC researchers have determined average values for time taken for lambs to stand up, attempt to find the udder and to suck successfully.

	Lowland breeds	Hill breeds	Easicare target
Time to stand(mins)	25	10-15	5-10
Time to reach udder and attempt to suck	45	30	20
Time to suck successfully (mins)	100	50	30

Time to standing is not influenced by the ewe but sucking is. A lamb that stands quickly but then is slow to suck could have poor co-ordination after a difficult birth or the ewe may refuse to stand still or have udder problems. Lambs born to first parity ewes take up to a third longer than these figures to reach the udder and attempt to suck due to ewes moving away as lamb approaches udder.

Easicare Systems: Breeding and Genetics

Triplet lambs will take on average 20% longer to perform these behaviours than singles or twins.

Reasons for slow lambs :

- Bred out of sires that produce lambs that are slow to stand and suck
- Ewe and lamb had a long labour and difficult delivery
- Ewes underfed, especially protein
- Low iodine, selenium /Vit E
- Toxoplasmosis, EAE.

The practice of valuing stock on their appearance rather than performance damages their health and your wealth.

Selection on seemingly innocuous visual characteristics such as ewe face colour markedly reduces the ability of breeders to select for important easy care traits. Buyers not only pay for looks but also for larger animals, encouraging them to be fed concentrates at grass which masks inadequate grazing ability and parasite resistance and producing larger ewes with higher maintenance costs.

Subsidised animals are the root of the problem, these were paid for on the basis of 'being there' rather than performing well at low cost. It is time to ditch selection on looks and reap the benefits of the rapid progress made by modern genetic improvement schemes and selection for Easicare traits.

Selection based on information not imagination

Many of the important traits that relate to the health of stock and the attention they need are subjective and thus not easy to record and therefore have not been included in breed improvement programmes.
The birth process should be a natural process, not one requiring human intervention and assistance at every turn.
We do not currently have EBVs for lambing ease although early research results suggest that CT scanning for pelvic volume may have much to offer. Lamb survival is very much a trait influenced by the sire. Lambs from sires that themselves were born without assistance, stand quickly and suck as the heritability of these traits is high – but far too many terminal sires are assisted at birth.

Other important traits such as mothering ability, clean backsides, footrot and worm resistance, can be quickly improved by vigorous culling of offenders and soon genetic tools accessed using blood samples will soon be available to help with disease resistance.

The Easicare Selection Tool Box

The Easicare selection tool box has been prepared to help breeders who want to reduce problems either in their own commercial flocks or pedigree flocks. It has been developed from an analysis of the practices of leading proponents of easy care systems, taking consideration of the scientific principles and research findings in the inheritance of economically important traits. Selection for easy care is simple and involves a minimum of record keeping. Basically if you intervene and save a life mark the animal and do not keep its progeny. Interventions that occur outside of normal gatherings are recorded and include:

- Assistance of ewe at lambing
- Assistance to suckle – either because the ewe is at fault due to poor mothering ability or the lamb is weak and lacks vigour
- Repeated treatment for footrot
- Excessive dags
- Prolapse
- Backing (ewe stuck on back - often fatal!)

Permanently mark the ewe by ear notching or notching of flag type tags or putting an elastrator ring around a pin type tag.
Use your own system and depending on how fast you want to go cull as hard as necessary - from 1-3 strikes and you are out.
Mate young culls to a terminal sire, do not keep the progeny.

Simple recording at lambing

Most farmers would never contemplate recording at lambing but a simple system pays massive dividends if you want to breed from your rams or sell some to others. In large flocks go through all the sheep and pick 400 to record from the very best concentrating on sheep that have lasted and left good lambs. Sheep bred from this nucleus can be used on the rest.

Objective – identify replacement sheep that will not require intervention at lambing in your future easy care system

A sensible approach is to recognise that an unassisted lambing has components from both the ewe and the lamb so record lambing ease, mothering ability and lamb vigour eg.

Score	-1	0	+1
Lambing Ease	Assisted	Very Minor Help	No assistance
Mothering Ability	Leaves lambs	Stands Well Back	Follows Whatever
Lamb Vigour	Has to be Sucked	Slow to suck	Up and Sucked

Lambs are tagged as the ewe and lamb are moved out of the lambing field / house and scores written in the diary. To score mothering ability note how close the ewe stays to her lamb when it is tagged. Basically no sheep should be retained with a minus mark, thus if castration is normal practice all ram lambs assisted, from poor mothers or that had to be sucked are castrated. Records look like this :

Ewe Tag	Lamb tag	Lamb tag	Lambing Ease	Mothering Ability	Lamb Vigour
R211	101(m)	102(m)	-1	0	1
R533	103(m)	104(f)	+1	+1	+1
R425	106(f)	107(m)	-1	+1	+1

Ram lambs 101 ,102 and 107 would not be kept as replacements. An additional cull of ram lambs at 4-6 weeks (marking gather) would be made for any lambs not having had sufficient milk to present as full bellied and thriving. Selection of female replacements would include their score together with considerations of size quality and any notches acquired since birth.

Ram to ewe ratios

Selection on visual characteristics of terminal sires has resulted in the production of extreme animals, unfit for purpose with high labour and feed inputs. Overfed rams find it hard to mate and results in current UK ram to ewe ratios of around 1:40. Where rams are not overfed concentrates, rams to ewe ratios of 1:100 are possible.

Wool - making the decision on profit from shearing or wool shedding breeds

Wool is largely responsible for tiresome shepherding tasks that include shearing, dagging, and checking sheep for being backed. It contributes to flystrike and sheep getting trapped in undergrowth by their wool. Sheep have more wool than they need as they need very little depth for insulation. Inwintered ewes are heat stressed, winter shearing reduces respiration rate and increases gestation length of ewes by 1.5 days, resulting in heavier lambs at birth. Ewe lambs shorn before mating produce 15% more lambs. Prior to summer shearing ewes are slow to move and graze less actively.

Being made of protein it takes away nutrients from other body functions like growth and the immune response to worms. The extra fixed costs due to wool probably range up to £2/ewe/year.

The Easycare breed developed by Iolo Owen was derived from the Nelson Welsh Mountain (Welsh Mountain X Cheviot) which were crossed twice to the Wiltshire Horn (wool shedding breed) and selected for wool shedding, no horns and easy care traits. Typically they are not housed and fed minimum amounts of concentrates. Where there is no threat from sheep scab no dipping is required as there are no incidences of blowfly on non-soiled parts of the wool. These sheep can be backed, but much less often than in sheep with wool. Easycare Ewes carry a reasonable fleece of up to 2.5-5 cm in length through the winter, this they cast in the spring, from the end of March for rams through until mid-May for ewes with twins. Easycare sheep weigh around 55 kg as gimmers and 65 kg as mature sheep. Lambing in April to a Texel, singles have carcass wts. of 17-18 in July/August, with twins at around 16 kg at the same time.

The breed appears to have good conformation and genuine Easicare features, the variable pattern of wool shedding make the animals look scruffy at some times of the year but pasture littering with wool is not a problem. One potential downside is that sheep in poor condition are more readily spotted by the casual passer-by, which together with no fleece may prompt an accusation of underfeeding. Lambs at birth appear to have sufficient wool and, being a leggy breed, are easily born quickly to their feet and sucking. The breed has the potential to significantly reduce labour input and is recommended where shearing is expensive and difficult to organise. Other hair breeds like the Dorper could make good terminal