



GROWTH, WEANING AND SALE

This phase of the management cycle comprises two important areas. It's vital that the lambs grow as efficiently as possible, but it's also important to ensure that this does not occur at the expense of the ewe. Looking after the breeding ewes is just as important as monitoring weight gain and performance of the lambs in this period of intense growth.

MONITORING LAMB GROWTH

Putting a figure on what lambs should be gaining per day isn't always practical, as different management systems (lowland, upland and hill) will have different expectations, and industry guidelines for targeted daily live weight gain (DLWG) in hill systems are lacking.

KEY PERFORMANCE INDICATOR (KPI)	INDUSTRY TARGETS (EXCLUDING HILL SYSTEMS)
Average weight of lamb at 8 weeks (kg)	>20 kg
Average age at weaning	<100 days
Average expected DLWG to weaning	>250 g/day
Average weight at weaning	>30 kg
Average 90-day lamb weight (kg)	>30 kg

Table from ADHB Better Returns from Lamb Weaning¹

Weighing lambs regularly throughout the grazing period is a very useful indicator for assessing growth, identifying poor performers and to get an early indication of detrimental parasite burdens. Parasite (worm and coccidial) burdens influence growth and performance of lambs: being able to calculate DLWG and knowing what's expected for a farm, allows follow-up testing on lambs underperforming or that have had a check in growth rate.

A basic faecal egg count (FEC) analysis on bulk dung samples provides information on the potential worm burden in a lamb group. The results can be interpreted by a vet to enable farmers to understand whether to treat and which product to use. A combination of weighing and / or FEC should ideally be performed at least monthly. When taking FEC samples, if there's a wide range of weights within a group, make sure that the poorer animals are sampled separately from the rest to ensure the sample accurately reflects the animals tested. This will avoid blanket dosing / misuse of doses, while ensuring animals aren't missed.

WEANING¹

Assessing ewes and weighing lambs around 8 weeks of age (from midpoint of lambing) gives an indication of the ewe's milk supply, the health status of the group and forage supply. It also allows a weaning date to be decided, as ewe condition and lamb performance can be assessed. Aim to have 90% of the ewes at the target Body Condition Score (BCS). If ewes at 8 weeks post-lambing are falling below the weaning BCS targets, the lambs may need to be taken away earlier to allow enough time for the ewes to regain condition and reach the target BCS by breeding. Ewes in the right condition at breeding will have more lambs the following year. It takes 6-8 weeks for a ewe to gain one BCS on unrestricted good-quality grazing. If the grass is growing well and ewes are in good condition, weaning can be delayed without reducing lamb liveweight gain. However, if forage availability is low, lamb growth rates will suffer, as ewes and lambs compete for the same grass.

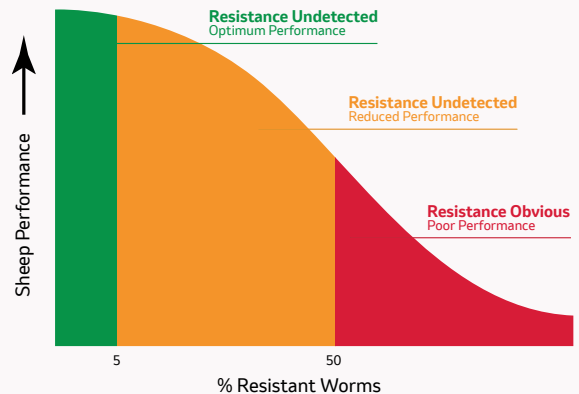
ANTHELMINTIC RESISTANCE

Resistance is the heritable (and therefore genetic) ability of the worm to survive treatment with an anthelmintic. A population of worms is defined as having some level of resistance if more than 5% of the population can survive treatment.

Resistance develops in two main ways:

- **Over-use** - using the same product on the same population of worms over a sustained period of time.
- **Under-dosing** - using a product at a lower dose than the recommended dose, usually due to under-weighing animals or dosing for the average weight of a group.

This graph from SCOPS² demonstrates that resistance on-farm doesn't always become apparent until there's an established problem.



The level of resistance to the three main classes of anthelmintic is probably grossly under-estimated in the UK due to lack of accurate data. The table below lists the levels of resistance to classes of drenches found in various UK studies³⁻⁹.

This highlights the need to perform drench resistance testing on farm, as well as the need to adhere to correct dosing protocols. Drench resistance testing involves assessing the efficacy of drenches to establish whether there's a 95% reduction in treated worm population. Resistance is diagnosed if more than 5% of the population survive despite treatment. As well as adhering to responsible use of anthelmintics, it's now also recommended to use a purple or orange class of wormer as a break dose. The aim of this is to try to reduce both the animal and refugia (on pasture, etc.) population of resistant worms. It's advised to give a break dose from mid-grazing season onwards, and only if there's a proven worm burden before treating to avoid further selection for resistance in the refugia population¹⁰.

LOCATION	PERCENTAGE OF FARMS WITH ANTHELMINTIC RESISTANCE				YEAR	STUDY
	WHITE	YELLOW	CLEAR	'TRIPLE'		
SW England	44%	NT	NT	NT	1992	Hong <i>et al.</i> 1996
Scotland	64%	0%	0%	NT	2003	Bartley <i>et al.</i> 2003
Wales	77%	36%	NT	NT	2005	Mitchell <i>et al.</i> 2010
England & Wales	83%	67%	83%	33%	2009	Taylor <i>et al.</i> 2009
Northern Ireland	81%	14%	50%	NT	2011	McMahon <i>et al.</i> 2013
SW England	96%	60%	67%	NT	2013	Glover <i>et al.</i> 2017
Wales	89%	68%	25%	NT	2014	Thomas <i>et al.</i> 2013
Wales	100%	73%	70%	NT	2015	Thomas <i>et al.</i> 2013

INVESTIGATING POOR WEIGHT GAIN

There are many different factors that can influence weight gain in a lamb group, so when investigating the source of the problem, consider the following areas:

- **Nutrition** – remember this predominantly comes from ewe milk in the first 8 weeks
- **Parasite burden**
- **Trace element deficiencies**
- **Disease or infections**

NUTRITION

The quality and quantity of milk, grass, +/- supplementary feed, as well as its availability will play a major role in lamb weight gain. Lambs reared as twins will naturally receive less milk compared to singles, which may affect their growth rates, especially if the quality of the grass is suboptimal. Equally, lambs need to have access to their diet, so factors such as ewe udder condition and conformation, and sufficient access to feed space, come into play.

Consideration of the quality of milk once a lamb reaches 12 weeks is widely referred to as an important indicator of when to wean. The table below from AHDB's *Better Returns*¹ shows that if lambs are struggling to gain weight from 12 weeks onwards and other causes of poor weight gain have been ruled out, the lambs should be weaned and moved to better-quality pasture.

FACTORS TO CONSIDER	WEAN	DON'T WEAN
Ewe BCS	2	3+
Grass availability	Poor	Good
Lamb growth (g/day)	<200 g/day	>200 g/day
Lamb age	>12 weeks	<10 weeks

AHDB *Better Returns* from growing and finishing lambs

EWES MASTITIS

Mastitis is a common condition which peaks 2-4 weeks post-lambing and can affect lamb growth rates as well as ewe welfare. Risk factors for this condition are poor nutrition in ewes (especially low energy and protein), multiple lambs, poor udder conformation, previous mastitis, housing (longer increases risk), and being over 4 years old¹¹. It's also been demonstrated that the mother of a lamb with Orf has an 82% chance of having the disease on her udder or teats, which can cause serious mastitis issues¹². Ewes with mastitis will be painful and therefore the lamb will not be able to suck as much as it needs and is likely to need supplementary feeding.

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PARASITE BURDENS

As well as the obvious worm burdens that can cause weight loss and clinical disease, it's also important to consider coccidiosis as a cause for weight loss, particularly if there's a previous historical issue diagnosed on-farm, or the lambs have been stressed. See the SCOPS website² for detailed information on sheep parasites and sustainable control.

TRACE ELEMENT DEFICIENCIES

As well as considering land and historic grazing deficiencies on farm, it's also important to remember that if lambs have had an untreated or heavy worm burden, this will affect the ability of the gut to absorb cobalt from the diet. This usually results in a secondary deficiency which will need to be addressed to prevent further weight loss. Trace element testing can be performed on blood samples, although it's now becoming more popular to use liver biopsies, especially when trying to analyse copper levels. Liver biopsies can be taken by the vet either from live animals if the equipment and experience is available, or from animals that have died or been slaughtered in an abattoir.

DISEASE AND INFECTIONS

Concurrent infections such as pneumonia or footrot will have a significant impact on growth rates. Anything putting additional strain on the body will use up energy reserves that should be used for growth. It's important to identify these issues, address them and, where appropriate, use vaccines to prevent disease. External stresses such as prolonged bad weather, sudden dietary changes, handling and regrouping can also cause a reduction in growth rates.

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