Hybu Cig Cymru
Meat Promotion Wales

Fit, fertile and profitable

The year round approach to ram management

Llywodraeth Cymru
Welsh Government

www.hccmpw.org.uk

Contents

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Hybu Cig Cymru – Meat Promotion Wales | **Fit, fertile and profitable**

Foreword

Rams represent only a small percentage of the breeding flock but contribute half of the genetics, so their performance has a significant impact on the overall productivity and profitability of flocks in Wales. Despite this, when compared to the time and effort that goes into the selection and management of breeding ewes, ram management and performance rarely gets the same attention. This was borne out by the results of the survey of ram management undertaken by HCC in 2009 which showed that many aspects of ram husbandry are frequently overlooked.

Whilst the breeding period on many sheep enterprises extends to around five - six weeks, the effective management of rams needs attention all year round and will ensure that he is fit enough to serve more ewes in a season and live a longer breeding life.

This booklet aims to provide a practical guide to the key areas of ram management and to demonstrate the impact that these have on the overall performance of the ram throughout his lifetime. In this way, breeders in Wales will be able to harness the financial, physical and health benefits across the whole flock.

“**effective management** of rams needs attention all year round”

Making the right choice for your flock – selecting and purchasing rams

Rams are a capital investment for any commercial sheep farm and the choice of ram is the first step to improving flock returns. When selecting sheep for an enterprise, it is important to focus attention on what you are trying to achieve for your flock and to buy a ram that is fit for that purpose.

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Fit for purpose

Factors such as growth rate can increase lamb weights and reduce the number of days to slaughter whilst prolificacy and maternal ability are key factors for those breeding their own female replacements. These factors are influenced by the genetic makeup of the ram and are reflected in the Estimated Breeding Values (EBVs). These factors cannot be judged simply by looks and size.

A good terminal sire, selected on performance can be worth an extra £2-3.50 per lamb/year.

The biggest rams may make the biggest prices but overfeeding not only reduces the ram's ability to work in his first year, it can reduce his working life.

Many rams bought at sale have often been fed considerable amounts of concentrates. Not only do these overfed rams "melt away" soon after purchase, they are also prone to a number of conditions as a direct consequence of high concentrate feeding ahead of sale. Provided that you are aware of the ram's feeding regime, these conditions can be prevented. Sudden changes in diet or an interruption in feeding following sale affect the rumen micro organisms and can cause acidosis.

EBVs are the only way to determine a ram's genetic credentials and to benchmark his strengths and weaknesses before purchase. More information on selecting rams can be found in the HCC "Ram Buyer's Guide".

Buying rams from a sale

Livestock sales are the most common source of replacement rams. More than 80% of commercial farms in Wales purchase their rams from autumn sales. Sales offer breeders:

- **Choice of breeds**
- **Choice of rams within each breed**
- **Choice of vendors**

Buying rams direct from farm

Buying rams direct from the source farm has a number of advantages and enables you to:

- **Take the time to match the rams to your requirements**
- **Reduce the biosecurity risk**
- **Consider the topography and management of the farm**
- **Discuss the flock breeding and feeding regime**
- **Discuss health and treatment regimes**

Unseen hazards

Always check the health status of the ram and the flock that he has come from so that you can avoid buying in disease. Symptoms of disease are often not evident for weeks or even months after purchase so careful sourcing of rams is essential.

Whether buying rams from an auction or direct from farm, make sure that you check:

- His performance records – will he do the right job for you?
- The flock health status of the source farm – is it compatible with your own?
- How the ram has been managed – you can't expect a ram to perform well off grass if he's been fed on cabbages and concentrates. Consider the type of feed the ram is used to so that you can avoid problems caused by a sudden change in diet.
- His fertility – an infertile ram is not only a wasted investment, it will cost you financially in lost production.
- His physical attributes – pay close attention to feet, locomotion and testicles – remember that the bigger the testicles, the more sperm produced.
- Consider his condition - rams that have been prepared for shows and sales may be over fat, carry excessive wool and have had insufficient exercise. All of these are ingredients for poor fertility.

Introducing rams – reducing the risks to your flock

Disease represents one of the biggest single hazards to any flock and the signs of disease may not be evident until the damage has been done. And yet ...

- Less than 50% of commercial flock owners consider the health status of the flocks from which they purchased rams.
- 30% of commercial rams bought from livestock sales are introduced to the flock within three weeks of purchase.
- Despite isolating purchased rams when they are brought onto the farm, the majority of rams are isolated for less than the recommended three weeks.
- Whilst most farms drench rams on arrival, only 9% use the recommended procedure to prevent the introduction of drench resistant worms.
- Only 17% of commercial flock owners vaccinated newly purchased rams.

Source: HCC Ram survey 2009

The impact of disease through reduced performance and increased treatment costs can be considerable.

The cost of treating animals on arrival is many times less than treating the flock as a whole.

For a breeding flock the cost of introducing diseases is even greater.

Disease risks from bought-in rams

- Parasitic gastroenteritis (PGE)
- Ectoparasites - Sheep scab and lice
- Liver fluke
- Footrot and contagious ovine digital dermatitis (CODD)
- Orf
- Caseous lymphadenitis (CLA)
- Sheep pulmonary adenomatosis (SPA), ovine pulmonary adenocarcinoma (OPA), Jaagsiekte
- Paratuberculosis, Johne's disease
- Maedi visna (MV)

Louse infestation in a ram that was only detected after turnout.

More information on these diseases and general sheep health is available on the HCC website, www.hccmpw.org.uk

Quarantine recommendations

All incoming sheep – including rams should be quarantined. This includes rams which may have been grazing on other farms (or common grazing).

- Isolate rams for at least 3 weeks before introducing them to the rest of the flock.
- Quarantine treat incoming rams with monepantel (eg Zolvix) to prevent resistant worms coming on to the farm.
- Treat with closantel (eg Flukiver) to prevent fluke.
- Use an OP dip or inject with moxidectin (eg Cydectin) or doramectin (eg Dectomax) to deal with the threat of sheep scab.
- Footbath all incomers with formalin or zinc sulphate 3 times over the 21 day period to prevent footrot and CODD.
- Keep rams on a yard for 24 - 48 hrs after treatment then turn out onto pasture that has carried sheep during the current season and that is well away from the rest of the flock.
- Check regularly for lameness, itching etc., and take immediate action.
- Treat incomers with the same vaccines that are used in the resident flock to bring them all up to the same status.
- Introduce new rams slowly to the group to prevent fighting.

REMEMBER – PREVENTION IS FAR CHEAPER THAN CURE

More information is available on quarantine issues from SCOPS, **www.scops.org.uk**

Fit for the job – the all year round approach to ram management

Main sheep activities tend to focus on the ewes and their lambs and, since rams are often kept separately, they are often overlooked.

The breeding period on many sheep enterprises in Wales extends to around five - six weeks and during that time rams can lose up to 15% of their body weight. However, rams that are over fat going into tupping, carry excessive wool and have had insufficient exercise are likely to have poor fertility.

Effective ram management needs attention ***all year round*** so that your rams are fit, healthy and ready for breeding. In this way they should be fit enough to serve more ewes in a season and live a longer breeding life.

Out of sight out of mind?

Regular checks mean that any problem animals can be identified and removed from the flock. This should include rams that did not perform well during breeding.

Lame rams cannot move around to serve a group of ewes effectively, particularly in extensive systems.

Fit and fertile – getting rams ready for work

The semen production process in the ram takes 6 weeks to complete so ideally you should begin to prepare the ram for the breeding season at least 10 weeks before tupping.

Any stresses due to changes in management, nutrition, infections or reactions to drugs/chemicals can all affect semen quality so rams should be checked carefully.

Fit, healthy rams should be able to work well in commercial flocks for at least 4 seasons. Tooth loss and poor condition are common reasons for culling rams – both of which are signs of old age.

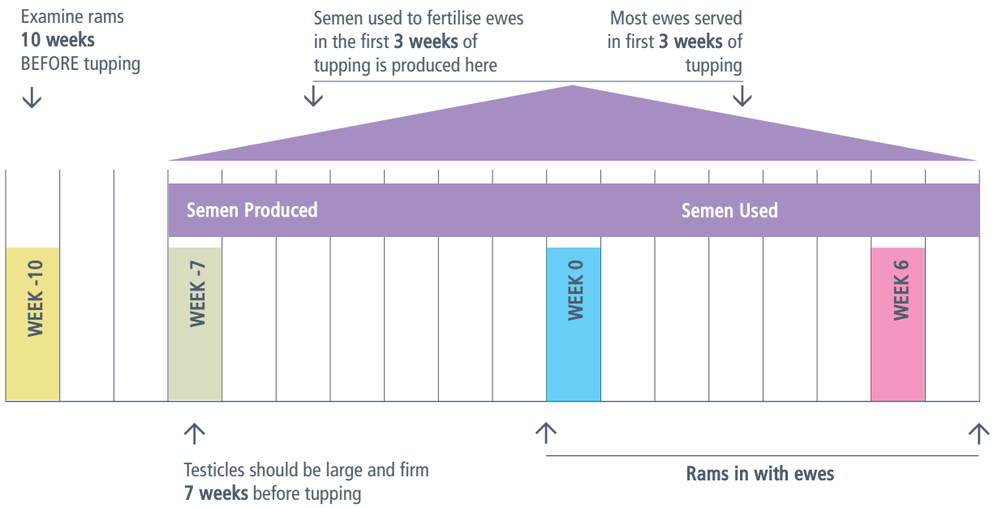
Most flocks in Wales currently use rams at a ratio of 1 ram: 40-50 ewes.

A fit, healthy ram should be able to serve 80-100 ewes within a 3 week period each year for at least 4-5 years.

Overfed and unfit rams usually only survive in commercial flocks for 1-2 seasons before dying or being culled. This reduces his potential contribution to the flock by up to 360 lambs over 3 years[1]!

Improving fitness and fertility of rams so that they can work at a ratio of 1:60 ewes can improve the number of lambs each ram produces by up to **90 lambs** over three years[2].

[1] based on serving 80 ewes@150% lambing
[2] based on serving 60 ewes@150% lambing



Rams need to be fit to work well

Body condition

Visual assessments can be very misleading. The fleece can often mask the true weight and condition so body condition scoring is important.

Rams should be in good body condition (3.5 on a scale of 1-5) before tupping since they can often lose up to two units of condition score during the mating period. Rams that lose significant amounts of weight during tupping, and especially during bad weather, will be more prone to respiratory disease and other infections. On the other hand, rams that are over fat, carry excessive wool and have had insufficient exercise are more prone to problems with libido and fertility.

It is difficult to manipulate ram nutrition during tupping. Once the rams are out with the ewes they should be spending most of their time seeking out ewes that are in heat so it is important to have the rams in good condition before mating.

Feeding rams before and after tupping

Grass supplemented with minerals is by far the best feed for producing rams which are fertile, active, long-lasting and capable of serving more ewes in a season.

Overfeeding concentrates causes a variety of detrimental effects which affect rumen function, increase body and liver fat, impair skeletal development and reduce sperm quality. This can have a long term affect on ram longevity and performance.

Before tupping

- If rams do need supplements, begin feeding at least 6 weeks before tupping.
- Vitamin E, selenium and zinc are particularly important for semen production - a good commercial mineral lick will satisfy this requirement for rams.
- Good quality sources of protein, particularly lupins, can increase both testicular size and the number of cells in the germinal layers of the testicle, resulting in increased sperm production.
- Avoid salt mineral mixtures containing large amounts of calcium and magnesium - these are designed for ewes, not rams and can cause urinary blockages which could result in death.

After tupping

- Ensure that rams regain condition soon after mating so that they can cope with winter conditions.
- Overwinter rams on high quality forage or grazing.
- Consider grass quality as the season progresses and aim to keep rams at condition score (CS 3.5) before the next tupping.

It is much easier to retain the ram's condition throughout the year than to try to address problems just before the next breeding season.

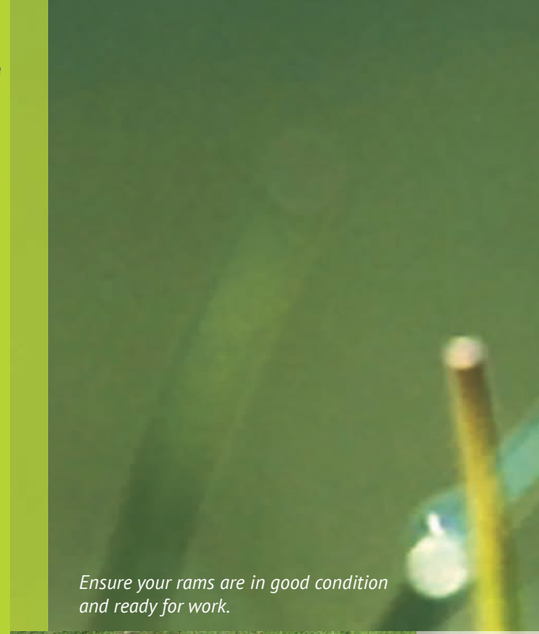
Fit not fat

Rams too fat ... ?

- Avoid overfeeding. If rams are above condition score 3.5, reduce / limit feed gradually over a 6-8 week period until body condition is close to 3.5.
- Keep rams on grass – walking whilst grazing ensures that their heart, lungs and limbs are in much better condition. Housed rams get very little exercise.
- Exercise rams – gentle exercise has been shown to improve fitness and increase lambing percentages. Use a dog to gently move a group of rams around the field each day. If providing supplementary feed, place it in a different part of the field each day.
- Overfat rams are susceptible to heat stress. Make sure that rams are shorn 10 weeks before tupping and give them access to shade and to the "coolest" site on the farm.

Rams too thin ... ?

- If rams have a condition score below 3 they will need to increase condition score before tupping. Use a high quality protein feed to ensure maximum testes size and sperm output.
- Don't forget to introduce new feed / concentrate gradually so that rumen function isn't disrupted.
- Check the teeth and mouth closely to make sure that there isn't a physical problem causing the lack of condition.



Ensure your rams are in good condition and ready for work.

Top tips for checking that your ram is fit for work

10 weeks before use:

- Make sure rams are in CS 3.5, and if necessary, adjust the feeding strategy to achieve this. Continue to monitor condition score to ensure that rams reach / remain at CS 3.5.
- Examine the testicles, epididymi and spermatic cord – use one hand to stabilise the testicle within the scrotum and the other to carefully examine / feel it.
  - Begin at the tail of the epididymis (bottom of the testicles) and work all the way up to the top of the scrotum where the spermatic cords enter the body.
  - Palpate testicles for tone; they should be firm and springy not soft or spongy. The epididymis should be very firm. The tail of the epididymis (at the bottom of the testicle) should be prominent.
  - Testicles should be even in size – if there are any irregularities or lumps contact your veterinary surgeon.

Testicles should be firm and springy. The larger the testicles the more sperm produced.

The prepuce should be free from sores.

Conduct a thorough physical examination:

- Check for lesions to the scrotum (the testicles should slide freely within the scrotum).
- Check the prepuce for any signs of sores/ulcers or lesions.
- Treat feet if required.
- Check the brisket for sores.
- Check teeth.

- Shear rams - this will help reduce heat stress. Avoid housing in warm weather unless the buildings are well ventilated. Bedding can create enormous heat, "cooking" the testicles when the ram is lying down.
- Ensure that all rams have access to shade and water during the summer months. Rams that have suffered moderate heat stress may produce semen that looks normal when viewed under a microscope, but is incapable of fertilising eggs properly, resulting in poor conception rates.
- Take into account the time of year and seasonality of mating on ram behaviour – late maturing rams may not be sexually active for early tupping so consider using melatonin implants to bring the season forward.

1-2 weeks before use:

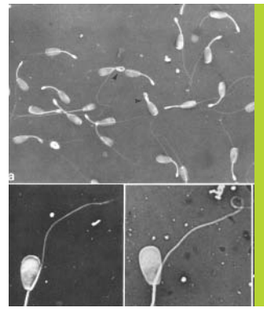
- Repeat the physical examination.
- If rams are being used as part of artificial breeding programmes expose them to ewes that are on heat to ensure they are keen to "work" on the day that semen is collected for artificial insemination.

Avoiding nasty surprises – do a fertility check beforehand

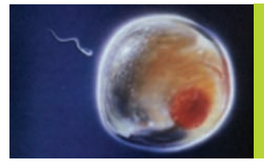
Sterile rams are rare but it is estimated that **1 in 5 rams** have fertility problems. A sub-fertile ram will get some ewes pregnant, but it will take more time and several services, so the problem is much harder to identify. In the 2009 survey, only 3% of commercial flock owners checked the fertility of their rams before tupping.

Semen quality can be affected by condition, illness, temperature and whilst pre-tupping checks can identify physical problems, only a sperm count and microscopic assessment can determine the viability and motility of the sperm and whether any abnormal sperm are being produced. So screening of potential sires is important, particularly in single-sire mating systems.

Fertility tests should be done 6-8 weeks before mating to allow management changes to the ram team or for the purchase of replacements for defective rams. Consult your veterinary surgeon.



Defective sperm will significantly reduce conception rates.



Normal healthy and motile sperm are needed for fertilisation.

A defective ram can cost far more in lost production than the cost of a fertility test

Managing breeding groups

Some flocks are now able to push ewe to ram ratios towards 80-100:1 but most commercial flocks in Wales still use a ewe:ram ratio of 40-50:1 or less. More rams are often used as an "insurance" to cover for problems but infertile rams can actually prevent the fertile ones from mating. This may be particularly evident when infertile rams are the older and more dominant ones.

Low ewe:ram ratios should only be necessary for breeders farming commercially in extensive upland situations or when rams are being used outside of the main breeding season.

- Where possible use higher ewe:ram ratios. Ratios of 60:1 or higher can be achieved if rams are fit and fertile.
- Use rams at ratios of 1 ram:at least 40 maiden ewes and 1:at least 30 ewe lambs.
- Avoid putting an inexperienced ram with maiden ewes. Younger ewes have a shorter, less intense oestrous period and so they are better mated with experienced rams.
- Rotate ram gangs at the end of each 17 days cycle.
- Always use sweeper rams if using single sire mating groups.
- Consider the impact of synchronization of oestrous on ewe:ram ratios. The ewe response to sponging means that one ram can only successfully mate 8-10 ewes so a much lower ewe:ram ratio is needed for synchronized ewes.
- Consider splitting your flock into two lambing periods (early and late) to increase ram capacity.

Improving ram fitness and fertility so that they can effectively service more ewes means that less rams are needed to produce the same outputs.

This reduces both purchase and maintenance costs.

Managing ram lambs

The proper management of young rams has a considerable impact on their lifetime performance. Fit, well grown ram lambs should be able to serve at least 30 and up to 50 ewes in their first season.

Most ram lambs reach puberty between 5 and 7 months of age, at 50-60% of their mature weight. Whilst the onset of puberty is affected by breed and genetics, nutrition also plays an important role. Ram lambs on a low plane of nutrition may not reach puberty until they are 12 months of age or older, this means that his first season may be lost.

Before tupping

- Keep ram lambs separately from mature rams and feed them for growth. Older rams are more dominant and can injure the lighter, younger ram lambs.
- Shear ram lambs before the breeding season. Ram lambs are more likely to become exhausted especially on extremely warm days.
- Monitor growth and condition – ram lambs should go into their first breeding season at a body condition score of 3.5-4 and have a scrotal circumference of at least 34cm.
- Monitor the breeding behaviour and libido of young rams. Around 8% of rams may exhibit homosexual behaviour and these can be very disruptive to the breeding activity of other males. Identifying problems early on will enable you to remove any problem individuals.
- Plan breeding groups so that ram lambs and mature rams don't run together in breeding groups.

After tupping

- Ensure that ram lambs recover their weight loss so that they can reach their full mature size.
- Bring ram lambs into the main flock health and management programme so that they are fit and healthy for the following season.

A fit ram lamb can produce up to 60 lambs in his first season - adding £4,500 to your flock outputs!

Monitoring ram performance

Monitoring ram performance is the only way to determine which rams are working well. It also helps to avoid any nasty surprises at pregnancy scanning.

Mating activity can be monitored by using a breeding harness on the rams and changing the crayon colour every 14-17 days.

- Make sure that the harness is correctly fitted and does not prevent the ram from doing his job properly.
- Harnesses may need to be adjusted as the ram loses weight during tupping. Check the harness after a few days and tighten if needed. Monitor this throughout tupping.
- Use crayons that are a suitable texture for the weather conditions.
- Start with bright colours and finish with darker colours so that marks can be more easily identified.
- Remember to note down what colours are used at what times!

Fewer ewes marked than expected can suggest poor ram libido, a high ewe: ram ratio, or that the ewes were not in season.

If a large number of ewes are returning after 17 days, you should consider the preparation of ewes for breeding as well as evaluating the ram. If it wasn't done before tupping, undertake a semen assessment. Semen assessments before breeding season will eliminate this problem.

Ewes that are serially marked with different colours suggests that the ewes are failing to conceive or that early embryonic death may be occurring. Seek advice from your vet or sheep adviser.

The bottom line
How ram fertility and longevity impacts on flock performance

Good ram management should not be costly or labour intensive and should be considered on the basis of lambs conceived per ram per year. This can then be projected forward and looked at in the light of future income gained or lost.

A £600 shearling ram which works for two seasons and serves **40 ewes/year**, producing an average of one-and-half lambs costs around £5.00/lamb.

A £600 shearling ram that works for 2 seasons and serves **60 ewes/year**, producing an average of one-and-half lambs costs around £3.33/lamb.

A £600 shearling ram that is fit and fertile and works for 4 seasons and serves **80 ewes/year**, producing an average of one-and-half lambs costs only £1.25/lamb.

Improving the health and fertility of a ram can reduce ram costs by at least £3.75/lamb.

Ram costs based on the number of lambs sired per lifetime.

Cost of ram	£400	£600	£800
150 lambs sired	£2.67	£4.00	£5.34
300 lambs sired	£1.34	£2.00	£2.67
600 lambs sired	£0.67	£1.00	£1.34

Since a good terminal sire, selected on performance can also be worth an extra £2-3.50 per lamb/year, a high index, fit and fertile ram can generate up to £7/lamb in additional income compared to a similar poorer performing ram.

Managing rams for a lifetime of performance

Rams that have good fertility and performance directly:

- **£ Increase the number of lambs born**
- **£ Increase the number of lambs to sell**
- **£ Increase income**
- **£ Reduce the length of the lambing period and so reduce lambing costs**
- **£ Reduce labour costs**
- **£ Reduce feed costs**

So good all-year round ram management and some simple checks can have a significant impact on flock productivity and profitability.

- Select rams carefully before purchase and buy early enough.
- Buy rams from reputable breeders, build trust with the breeder and give feedback on ram performance.
- Quarantine treat all incoming and returning rams to avoid bringing in disease.
- Get rams fit for work – monitor condition score and feed accordingly.
- Avoid overfeeding – remember that fat rams are lazy and tend to have poor fertility.
- Carry out an MOT on all rams at least 10 weeks before tupping and address any issues arising.
- Do fertility checks on any suspect rams or rams to be used in single sire mating groups.
- Manage ram lambs separately to mature rams.
- Monitor ram performance and cull any problem rams.
- Monitor productivity and the financial benefit of fit and fertile rams to your flock.

Further information on HCC's activities and other relevant publications can be found at **www.hccmpw.org.uk**