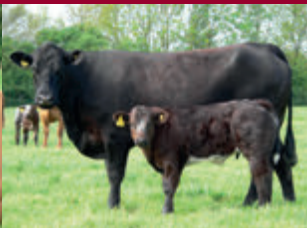




**Better Returns  
Programme**

**BEEF BRP MANUAL 5**

# Feeding suckler cows and calves for Better Returns



**The information in this booklet was compiled by Dr Colin Morgan, SAC Consulting and Dr Mary Vickers, AHDB Beef & Lamb.**

**AHDB Beef & Lamb is grateful to all those who have commented and contributed to this publication.**

**Illustrations: Tebbit Design**

**Photography: David Black, Mil Bosley, Neil Rowe**

While the Agriculture and Horticulture Development Board seeks to ensure that the information contained within this document is accurate at the time of printing, no warranty is given in respect thereof and, to the maximum extent permitted by law, the Agriculture and Horticulture Development Board accepts no liability for loss, damage or injury howsoever caused (including that caused by negligence) or suffered directly or indirectly in relation to information and opinions contained in or omitted from this document.

The text of this document (this excludes, where present, any logos) may be reproduced free of charge in any format or medium providing that it is reproduced accurately and not in a misleading context.

The material must be acknowledged as Agriculture and Horticulture Development Board copyright and the document title specified. Where third party material has been identified, permission from the respective copyright holder must be sought.

This publication is available from our website at [beefandlamb.ahdb.org.uk](http://beefandlamb.ahdb.org.uk).

Any enquiries related to this publication should be sent to us at AHDB Beef & Lamb, Stoneleigh Park, Kenilworth, Warwickshire CV8 2TL.

For more information contact:

**Better Returns Programme  
AHDB Beef & Lamb  
Stoneleigh Park  
Kenilworth  
Warwickshire  
CV8 2TL**

**Tel: 024 7647 8834  
Email: [brp@ahdb.org.uk](mailto:brp@ahdb.org.uk)  
[beefandlamb.ahdb.org.uk](http://beefandlamb.ahdb.org.uk)**

AHDB Beef & Lamb is a division of the Agriculture and Horticulture Development Board (AHDB).

©Agriculture and Horticulture Development Board 2016.



# Contents



## 2 Fertility

## 4 Heifers from service to calving

## 5 First calvers



## 6 From calving to conception

## 7 Pregnancy Diagnosis (PD)

## 8 Feeding the suckled calf

## 9 Creep feeding



## 10 Weaning

## 12 Dry cows

## 14 The bull

## 15 Bull MOT

## 16 Grazing Management

## 17 Finishing cull cows

Achieving better returns from a suckler herd depends on increasing the number of calves weaned from the cows and heifers that are mated.

Nutrition, health and good management drive fertility. Feeding makes a particularly important contribution to fertility, calving ease and calf performance.

Feed is a major cost of keeping a suckler cow. Careful management of body condition is vital to allow cows to utilise cheaper, grazed grass and other home-grown feeds when available, without compromising performance during the rest of the season.

This revised version of Beef BRP Manual 5 takes a look at all the production stages of suckled calf production; from managing heifers and first calvers, to mature cows and the bull, up to weaning the calf and finishing cull animals.

There are many different suckler cow systems in England and Wales, not least whether the herd calves in the spring or autumn. But, by following the principles set out in this manual, beef farmers following any system can feed their animals in a way that will produce better returns.



Dr Mary Vickers  
AHDB Beef Senior Scientist

# Fertility – the key to profitable suckler herds

Profitability of suckler production revolves around every cow producing a calf during a compact calving period every year. Nutrition plays a pivotal role in achieving this, influencing health, fertility, calf output and production costs.

Optimising cow nutrition leads to:

- Increased number and weight of calves weaned
- Increased age at weaning leading to increased herd output
- Reduced calving period
- Reduced time between calving and conception
- Fewer empty cows
- Reduced calf mortality and production losses from infectious diseases



This is achieved by:

- Careful management of body condition throughout the year
- Understanding the nutritional requirements of the cow at different times in her production cycle
- Feeding a balanced diet based on the nutritional composition of the component feeds and forages

## Target body condition score (BCS)

Assessing body condition score (BCS) is an important tool for suckler producers to help optimise health, welfare and fertility, while minimising calving difficulties and production costs.

Body Condition Score should be monitored throughout the year and particularly during the last three to four months of pregnancy. Rations should be adjusted to meet the BCS targets shown in Table 1.

Table 1: Target BCS for cows and heifers

	Spring-calving herds	Autumn-calving herds
Calving	2.5 (3 for first and second calvers)	3
Service	2.5	2.5
Housing/weaning	3-3.5	2.5-3

For more detail, see **Better returns from Body Condition Scoring (BCS) beef cows and heifers** at [beefandlamb.ahdb.org.uk](http://beefandlamb.ahdb.org.uk).

## Managing BCS through the production cycle

At housing, cows should be grouped by BCS and fed accordingly. So, fat cows (more than BCS 3) are grouped separately from thinner cows (less than BCS 2.5) and first calvers.

It is critical cows calve in good body condition, around BCS 2.5, as this will help optimise fertility in the subsequent breeding season. It will help avoid long anoestrous periods when the cow is not cycling after calving. This in turn will help maintain a compact calving period and avoid extended calving intervals. Any cows calving at less than BCS 2.5 should be fed to increase their condition from calving.

**Table 2: Effect of BCS at calving on calving interval in suckler cows**

BCS at calving	Calving interval
1-1.5	418 days
2	382 days
2.5-3	364 days

Source: Dreenan and Berry 2006

If calving date is known accurately, rations can be increased slightly during the four to six weeks before calving to minimise any BCS loss during this time in cows that are not over fat.

It is important to avoid BCS loss during the breeding period and for at least six weeks after the bull is removed, to encourage oestrus activity and avoid early embryonic loss.

Spring-calving cows can store excess energy consumed during grazing for mobilisation later in the year, when the winter ration comprises more expensive feeds. If cows do not gain sufficient condition while grazing, options include early weaning, forward-creep grazing of the calves or supplementation of the cows with extra feed.

For most suckler cows, one BCS unit relates to approximately 13% of liveweight. For a 650kg cow, one BCS would be 84kg liveweight and 1kg of body condition loss supplies the cow with about 30-35MJ ME. The energy required to gain 1kg of liveweight in the pregnant cow is 35-40MJ ME.

A spring-calving cow, weaned with a BCS 3 or more five months before calving, can mobilise 0.5kg/day of body reserves over three months. This saves three-quarters of a big bale of good quality silage (145kg DM) from the feed budget for each cow.

Regardless of whether cows are calving in spring or autumn, avoid major changes in the ration between six weeks before and after the service period.



# Heifers from service to calving

Well-managed heifers calving down at two years of age will produce more calves and be more profitable than heifers calving for the first time at three years old.

The key to calving heifers successfully at two years of age is ensuring they meet the target liveweights for service at 15 months and thereafter. Steady growth rates during the rearing phase are important to avoid the heifers becoming over fat and to ensure sufficient frame growth.

Table 3: Example growth rates and liveweight targets for replacement heifers aiming to calve at 24 months of age

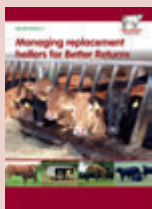
Mature cow weight	Growth rate from birth to first service (kg/day)	First service (15 months of age)	Start of second breeding season	Start of third breeding season
% of mature weight		65	85	95
		Target liveweights for replacement heifers (kg)		
600kg	0.80	390	510	570
650kg	0.85	423	553	618
700kg	0.90	455	595	665

The weight gain targets are expressed relative to mature cow weight, so it is important that recorded mature cow weights are used to calculate the target heifer liveweight. A good indication of this can be gained from sale weights of cull cows, provided they are sold in reasonable body condition.

Assuming heifer calves grow at around 1kg/day while suckling their dam, subsequent growth rates to bulling need to be approximately 0.7-0.8kg/day until the last two months of pregnancy, depending on breed type.

Regular weighing is essential to keep them on track, as liveweight is a more important determinant of the onset of puberty than age.

The growth rates required are achievable in most systems. Ideally, breeding heifers need to be managed as a separate group, given access to good quality grazing and supplemented during the winter according to silage quality.



Heifers are more prone to calving difficulties than cows, so select an easy-calving sire to mate them with EBVs for:

- Calving ease - Direct
- Short gestation length
- Low birthweight

More details in **Beef BRP Manual 11 Managing replacement heifers for Better Returns** at [beefandlamb.ahdb.org.uk](http://beefandlamb.ahdb.org.uk).

# First calvers

The nutrient demands of first calvers after giving birth are greater than those of a mature cow. This is because they are still growing, as well as maintaining themselves and lactating.

At the start of their second breeding season, cows should be at least 85% of their mature liveweight. This requires an average liveweight gain of 0.5kg/day while pregnant and lactating.

This is best achieved by separating first calvers from the main herd so they can be given better quality grazing and avoid competition for feed with mature cows.



**Table 4: Typical rations for mature suckler cows and first calf heifers in the first three months of lactation**

Cow type	Liveweight	Liveweight change	(kg/day)		
			Milk yield	Grass silage	Barley
Mature cow	650kg	-0.25	10	44	0.8
First calver	580kg	+0.5	8	38	2.8

Feed heifers as well as possible post-calving to minimise any body condition loss and encourage oestrus cycling before the breeding season.

First calvers are prone to significant BCS loss during their first lactation. Early weaning is useful for any cows that are in poor condition in the later part of lactation.

**Table 5: Target liveweights for breeding cows (example of 650kg cow mature liveweight)**

			650kg cow mature weight		
	Interval (days)	Mature weight (%)	Target weight (kg)	Gain (kg)	Gain (kg/d)
Birth		6	38		
	450			385	0.86
Mating		65	423		
	285			130	0.46
Post-first calving		85	553		
	365			65	0.18
Post-second calving		95	618		

# From calving to conception

Cows have around 80 days to recover from calving and conceive their next pregnancy if they are to maintain a 365-day calving interval.

A freshly calved cow has to:

- Recover from calving
- Produce increasing amounts of milk
- Re-start oestrus cycling
- Increase body condition score, if necessary

Spring-calving breeding herds should have priority access to the best grazing at turnout.



Milk yield peaks around six to eight weeks after calving, coinciding with the breeding season. When feed supply or quality is limited, milk production is the cow's highest priority. Increasing body condition, uterine repair and ovulation will only take place if nutrient supply is in excess of that needed for maintenance and milk production.

Research shows that cows calving in moderate body condition start cycling one to two weeks sooner than thin cows. For cows calving at a BCS less than 2.5, fertility can be improved by providing high feeding levels immediately after giving birth.

Putting the bull in early with cows in poor condition will have limited effect on tightening the calving pattern. Instead, it is better to gain control of the feeding and then sell late calving cows so they do not enter the herd again.

Energy requirements of a freshly calved cow are approximately double those of a dry cow. Planning to calve when there is cheaper feed available, eg grazed grass, can help control feed costs.

The hormones that control fertility are closely linked to nutritional status. Egg viability and embryo survival can be effected by excessive loss of body condition. Every effort should be made to avoid body condition loss between cows calving and getting back in calf. Changes in the diet around mating can result in early embryonic loss. Avoid any major ration changes between six weeks before and after the service period.

**Table 6: Nutrient guidelines for a mature 650kg suckler cow**

	<b>Dry Matter Intake (kg/day)</b>	<b>Energy (ME MJ/day)</b>	<b>Crude Protein (CP % in dry matter)</b>
Early lactation	12-14	120-130	11-12
Late lactation	9-11	85-95	11
Dry	10	75-80	9

Table 6 above provides a general guide only and the exact diet specification required will depend on many factors such as cow condition, weight loss allowed, date of turnout in relation to bulling, etc.



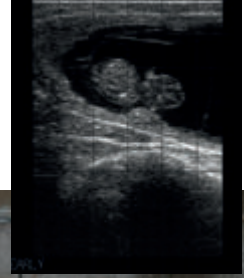
# Pregnancy diagnosis (PD)

Pregnancy scanning cows and heifers from six weeks after the end of the service period will identify empty females.

If carried out early enough (up to around three months pregnant), PD can predict calving date for those in-calf. This means rations can be planned accordingly and animals grouped by calving date so that supervision can be targeted.

Late-calving females, which will fall outside the target calving period, can be identified for sale pre- or post-calving.

All empty cows should be sold, as serving them again only encourages the inclusion of less fertile females into the herd.



## Vitamin and mineral supplementation of suckler cows

Vitamin and mineral supplementation is important when formulating cattle rations, however too much can be as problematic as too little, so take advice about the levels required. The vet can also take blood samples to help identify any deficiencies.

Usually, a mineral and vitamin supplement is not required when cows are grazing, apart from supplying extra magnesium to avoid hypomagnesaemia or where there are known deficiencies in certain parts of the country.

Winter rations should always contain a mineral and vitamin supplement to cover any possible deficiencies. Straw-based rations in particular require careful supplementation. Where cows are out-wintered on brassicas, attention should be paid to the supply of iodine, copper and selenium in the diet.

When dry cows are fed silage rations, then usually 100-120g/head/day of a standard dry cow mineral is sufficient, but this needs to be changed to a higher specification mineral four to six weeks before calving, eg 10% magnesium, high vitamin E.

## Magnesium deficiency

Suckler cows are at risk of hypomagnesaemia (grass staggers) when grazing lush grass (particularly if rich in nitrogen and potassium) in cold, wet conditions. It is caused by low blood magnesium concentrations and is most common in cows that have been calved one to three months.

There are numerous options to supplement magnesium, including boluses, licks, magnesium salts added to the drinking water, mineral buckets, high magnesium nuts and applying calcined magnesite to the pasture in periods of high risk. Supplementation with hay, straw or silage while at grass can also help.

# Feeding the suckled calf

Making sure all calves have consumed sufficient colostrum as soon as possible after birth is vital, as it provides both protective antibodies and high-quality nutrition. These help the calf fight disease and deliver high levels of performance.

Suckled calves should have drunk three litres of colostrum within two hours of birth. If not, they should be given some via a nipple bottle or stomach tube.

The calf's ability to absorb the immunoglobulins in colostrum reduces significantly from about six hours after birth and has gone completely by 24 hours.

Colostrum quality depends on the cow's body condition at calving and her pre-calving diet. First calvers tend to have poorer quality colostrum than older cows. Particular attention should be paid to trace elements and vitamins in the dry cow ration.

By the time the calf is four months old, half its feed requirement should be met by grass, silage and/or creep feed rather than milk. At this stage, the calf will convert feed to bodyweight more efficiently than at any other time in its life.



## Deciding if and when to creep feed

Creep feeding has many benefits making it cost-effective for many herds.

- Increased weaning weights by around 25kg
- Reduced weaning check through less stress from weaning – familiarise the calves to a different feed
- Reduced pneumonia after housing (biggest advantage)
- Efficient feed conversion – 4kg creep can provide 1kg gain

While creep feeding is important for calves moving onto intensive finishing systems, even cattle kept for later finishing or as replacements will benefit from a reduced weaning check and lowered risk of pneumonia after housing. Replacement heifers due to calve down at two years old also benefit, because they are more likely to meet the growth targets required.

## When to start creep feeding

Timing will depend on calf age, growth potential and grass availability. Normally, creep feeding would start six to ten weeks prior to weaning. Bulls to be finished on *ad-lib* cereal diets should start being creep fed earlier, at around 12 weeks before weaning. With very milky cows or in situations where it is tricky to creep feed, starting four to six weeks before weaning will still help reduce the weaning check.

If suckler cows are in poorer condition than normal, this may limit milk production so creep feeding will improve calf performance and take pressure off the cows. If grass supplies are limited, creep feeding will also improve the performance of the calves.

# Creep feeding

Creep feed can be introduced to calves any time after calving, but should be fed for at least four to six weeks before weaning to reduce stress, minimise any drop in performance and reduce pneumonia risk.



Creep feeds should be palatable and kept fresh. Composition should be around 14-16% crude protein (CP, as fed) and 12.5MJ ME/kg DM. As creep feed is usually made available from a feeder with a hopper, it is effectively available *ad-lib*, so care is required to prevent rumen acidosis. Initially, the creep feed should contain digestible fibre sources such as sugar beet pulp, citrus pulp, wheatfeed or soya hulls, which can be gradually replaced by sources of energy with higher starch contents.

Molasses can also help bind the feed and make it more palatable. Creep feed should either be fed *ad-lib* or at no more than 1-1.5kg/head per feed to avoid digestive upset. The creep feeders should be kept topped up to avoid the calves overeating in one session if the feeder is allowed to become empty. To maximise intake feed, check the trough and clean it out if necessary each time the hopper is filled.

## Spring-calving herds

Creep feeding calves born in spring provides a means of acclimatising the calves to their winter ration. This is particularly useful when weaned calves are going on to *ad-lib* concentrates for finishing.

## Autumn-calving herds

For autumn-born calves a separate, well-bedded creep area should be provided as soon as calving starts. This provides a clean, safe place for the calves to lie and eat away from their dams.

# Weaning

**When to wean the suckled calf is a decision based on feed supply and cow condition.**

Once the calf is six and a half months (200 days) old, 75% of its nutrient requirement will be from feeds other than milk. Feeding the calf directly will be more efficient than feeding the cow to produce decreasing amounts of milk at the risk of her losing body condition as well.

If suckling calves are causing excessive loss of body condition from the cow, they should be weaned immediately. Conversely, if the cows are fat, delaying weaning can help reduce body condition.

After weaning, feed calves 1-2kg of creep ration with the new grower ration for a few days, to maximise intake and avoid a check in growth rate. If creep fed calves are being sold at weaning, it is useful to tell the buyers what they have been fed on so they can feed a similar concentrate post-sale.

Be sure to remove the bull to avoid unwanted pregnancies in the female calves.

## Spring-calving herds

Calves should be at least five months of age at weaning.

In spring-calving herds, the grazing season provides an opportunity for cows to store excess energy in the form of body reserves, which can be mobilised during the winter. Usually, cows are managed to gain between 0.5-1 BCS over the grazing season.

## Autumn-calving herds

Calves should be weaned at least one month before their dams next calving.

Delaying weaning up to 11 months of age can avoid cows putting on excess condition in mid to late pregnancy. However it can make providing for the differing nutritional needs of the cow and the calf difficult.

Alternatively, calves can be weaned earlier and the feed supply to the cow controlled. This then allows the calves to be grazed on high-quality grazing to promote fast growth rates.



## Autumn-calvers

It is important to feed autumn-calving suckler cows well during the post-calving period to enable them to lactate and become pregnant again. Exact feeding rates will depend on the condition of the cows, the quality of the forage and the predicted turnout date. The target is to maintain a constant feeding rate during the mating period and for six weeks afterwards to promote fertility and minimise embryo loss. Six weeks after mating has ended, rations for cows in good condition (BCS 3 or greater) can be reduced slightly to allow them to gradually lose condition before turnout.

The target BCS for turnout of autumn-calvers is 2-2.5, depending on the quality and quantity of the forage that will be available post-turnout.

Table 7: Example diets for a 650kg autumn-calving suckler cow with a milk yield of 8-10kg/day

Grass silage quality	Feed level	Concentrates (kg/head)
Good (10.5-11MJ/kg DM)	<i>Ad-lib</i>	1-3
Poor (10-9MJ/kg DM)	<i>Ad-lib</i>	3-5

The overall ration nutrient density in early lactation should be around 12% CP in the DM and 11MJ ME/kg DM, so concentrates should complement the quality of the forage available.

The challenge with autumn-calvers is to avoid them becoming over-fat.

Early calving autumn herds can wean the calves around turnout and the cows can be put on poorer quality grazing, while the calves graze on better quality pasture.

For cows weaned during summer, controlling the condition of the cows while still providing good quality grazing/feed for the calves can be achieved by:

- Creep feeding the calf
- Forward creep grazing the calf
- Wean earlier and put the cows on poorer quality or restricted grazing and the calves on the better, ideally aftermath, grazing

Weaning autumn-calvers early allows farmers to meet the nutrient requirements of:

- Growing calves with good quality grazing. Supplementary feed can be easily introduced if grazing quality or quantity declines. This can also accustom calves to the winter ration
- Dry cows to control their body condition to meet the target for calving. They are well suited to the poorer grazing on the farm or pasture can be restricted and straw provided to satisfy appetite



# Dry cows

The focus of feeding dry cows should be to enable them to be at the correct body condition score at calving. Ideally, that means knowing calving date and being able to group cows by body condition score and feed them accordingly.

During the dry period, rations should:

- Satisfy the cow's appetite – 1.5-2% of liveweight
- Provide sufficient trace elements and minerals
- Manage cows to reach target BCS for calving

Over-fat and too thin cows risk having problems at calving.

Cows that are too fat in late pregnancy will have difficulties due to deposition of fat narrowing the birth canal. Thin cows can lack the strength for calving and produce weak calves and poor quality colostrum.

Body condition tends to vary throughout the year with feed supply, but it is best to avoid extreme and rapid changes.

Cows should be dry for at least five weeks before calving to ensure there is enough colostrum for the new calf.

## Managing BCS during the dry period

A cow weaned at BCS 3 and on target to achieve a calving BCS of 2.5, will need to lose about 0.5 BCS. This, over five to six months of winter feeding, is a liveweight loss of 0.25kg/day.

Although nutrient requirements increase through pregnancy, gradually at first and then at an ever-increasing rate, research has shown that feeding can be simplified by adopting a flat-rate regime.

The cow is rationed according to her liveweight and the required liveweight change at a point eight weeks before calving. So the cow will be slightly over-fed at the beginning of the winter and under-fed at the very end of pregnancy.

However, in systems where accurate calving dates are known, there can be merit in increasing the feeding rate slightly, or including proportionally more silage in a grass silage/straw mix, in the four to six weeks pre-calving, to minimise body condition loss and promote colostrum production. Limiting feed to reduce calf weight during the last month of pregnancy can do more harm than good. It can reduce cow fertility and colostrum quality, cause problems for the calf and reduce cow stamina at calving.

If cows are too thin at weaning, eg less than BCS 2, they need to be fed to increase condition. For example, a thin cow needing to gain 0.5kg/day over three months would need access to either good quality (10.5MJ ME/kg DM) grass silage *ad-lib*, or poor silage supplemented with 1-2kg of high energy concentrates.

## Out-wintering

Out-wintering is a low-cost option for dry cows if suitable land and/or forage crops are available.

Hardy native breeds suit this system well. Continental-bred cows can be out-wintered, but care needs to be taken to avoid excessive body condition loss.

Out-wintering can add up to 15% to energy requirements, depending on weather conditions. Careful consideration of mineral and vitamin supplementation is required for certain crops, eg brassicas.

More at **Beef and Sheep BRP Manual 6: Using brassicas for Better Returns** at [beefandlamb.ahdb.org.uk](http://beefandlamb.ahdb.org.uk)

## Winter rations for dry cows

Feeding dry cows *ad-lib* silage can result in them becoming over-fat during the dry period. Incorporating straw or poor quality forage into the diet can provide a means of filling up the rumen without gaining condition.

Table 8 sets out some example dry cow diets, based on silage (30% DM/kg, 10.6MJ ME/kg DM), straw (6.3MJ ME/kg DM) or hay (8.5MJ ME/kg DM), fed to a 650kg spring-calving suckler cow, eight weeks from calving and losing 0.25kg/day.

Table 8: Example dry cow diets

Diet	Silage (kg)	Straw (kg)	Hay (kg)	Barley (kg)	Rapeseed meal (kg)
1	17 (restricted)	4.5	-	-	-
2	-	9.5 (to appetite)	-	1.0	1.5
3	-	-	9.5 (to appetite)	-	0.5

Minerals are essential in the pre-calving period with specific requirements depending on diet. In particular, magnesium, selenium, vitamin E and iodine are needed to promote cow and calf health and vigour.

### Straw-based diets for dry cows

Straw is low in energy and protein and very deficient in minerals. It has around 6MJ ME/kg DM and 3.5% CP in the DM.

Ensuring there is sufficient effective rumen degradable protein (ERDP) is vital, so the cows can degrade the straw fully, produce sufficient rumen microbial protein and avoid rumen health problems.

Supplement straw-based diets for spring-calvers with a high protein feed. If the cows are fat, the protein content of the additional feed needs to be higher, so that less is offered in total.

Rules of thumb for straw-based diets

- Protein supply is essential. Rumen microbes require at least 9% CP in DM
- Make sure straw is clean and palatable
- Offer a plentiful supply of clean water
- Ensure all cows have good access to the supplement and straw
- Feed adequate mineral supplementation (approximately 120-150g/head/day)
- Consider adding silage with the straw as calving approaches, to ensure a smooth transition if the cows are to be on silage post-calving



# The bull

Bulls should be body condition scored around eight weeks before the breeding season, to ensure they are fit and not fat, ideal is BCS 3.

Avoid feeding high levels of concentrates to breeding bulls, as this can lead to problems with locomotion, reduced semen quality and diminished libido.

**Table 9: Example mature bull diets to gain 0.75 of a condition score over a 180-day winter to serve spring-calving cows**

Liveweight (kg)	Daily gain (kg LW)	Grass silage (kg)	Concentrates (kg)
700	0.40	30	1.5
800	0.45	35	1.8
900	0.50	40	1.8
1000	0.55	40	2.3

Liveweight (kg)	Daily gain (kg LW)	Hay (kg)	Concentrates (kg)
700	0.40	10	2.3
800	0.45	11.5	2.5
900	0.50	13	2.8
1000	0.55	14	3.0

**Assumptions:**

DMI is 1.5% liveweight

Hay: DM 85%, ME 8.6MJ/kg DM, CP 8.5%

Silage: DM 30%, ME 10.2MJ/kg DM, CP 11%

Beef nuts: DM 87%, ME 12MJ/kg DM, CP 18.5%

Start feeding bulls that have lost a lot of condition, eg more than 0.75 BCS early, so they have longer to regain the weight at a moderate rate of gain, without excessive feeding of concentrates.

For large bulls that have lost a lot of weight, a standard 12MJ ME/kg beef nut will not suffice. They require a higher energy nut (12.5-13MJ ME). Where large amounts need to be fed, they should be spread over two meals during the day. In autumn-calving herds, bulls may need supplementation during the breeding season if cows are on a restricted diet.

A fit and healthy bull should be able to serve two cows daily for six weeks or more.

Eight weeks before joining the cows, bulls need to:

- Be fit, but not fat – BCS 3
- Be acclimatised to the work environment
- Have had their semen tested
- Have had a full physical examination
- Be active and mobile
- Be fully vaccinated



# Bull MOT

Stock bulls should be given a full physical examination and have their semen tested around two months before the breeding season starts. This will provide an assessment of breeding soundness and allow time for any treatments to be administered, or another bull found if a problem is identified.

## Young breeding bulls

Regardless of health status, young bulls should be quarantined for at least four weeks. To prevent boredom, pen two finishing cattle alongside the bull. These can be finished after quarantine.

Before being sold, the bull will probably have been fed concentrates two or more times per day. Continue feeding concentrates after purchase, with a maximum of 2kg fed at each meal.

Also ensure the bull has *ad-lib* access to good quality roughage and receives 100-150g per day of a well-balanced mineral mix. After a week, the levels of concentrates can be gradually reduced to achieve a liveweight gain of between 0.8-1.0kg per day.



Ensure the bull is fully up to date with vaccinations normally given to the herd and has been treated for parasites.

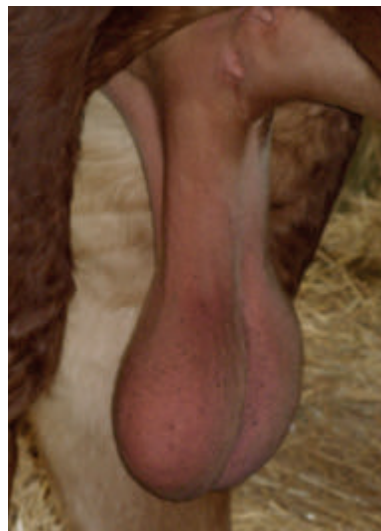
Always purchase young bulls two to three months before they are to be used. This will allow them time to acclimatise to the farm and recover from any stress which may impact on semen production which is produced 60 days before service.

## Post-mating

In autumn at the end of mating, treat young bulls for worms/ fluke, as many will have little or no immunity.

It is vital to feed young bulls correctly after mating. House early and put them on a good quality ration. Target a growth rate of 0.7-0.9kg per day, to allow continued growth and to regain any condition lost over the summer.

Carry out a breeding soundness examination each year, two months before mating is due to start.



# Grazing management

Grazed grass accounts for over 50% of the total feed intake of autumn-calving cows and more than 65% of spring-calving cows. Therefore, grazing management has a big impact on the efficiency of suckled calf production.

When the herd is turned out in spring, there is rapid grass growth and understocking at this time will allow grasses to flower, which reduces its feed quality.

Aim to stock fields more heavily during the spring, then reduce stocking rate in autumn to keep a tight control of sward height and grass quality. Electric fences can be used to shut off areas not required immediately, which can be grazed later in the season or cut for silage or hay.

The recommended grazing heights for a range of cattle either rotationally grazed or set-stocked is shown in Table 10.



Sward heights are allowed to increase as the season progresses, to allow for the increasing proportion of poor quality forage at the base of the sward. Later in the season, a slightly higher sward height is required to maintain intakes and performance.

**Table 10: Target sward heights for cattle**

Type of stock	Period	Rotational pre-grazing height (cm)	Rotational post-grazing height (cm)	Set-stocked (cm)
Lactating suckler cows	Turnout-May	10-14	5-6	5-6
	June-July	12-15	7-8	7-8
	August-November	12-15	8-9	7-9
Dry cows				4
Growing/finishing cattle	Turnout- May	10-12	5-6	5-6
	June-July	10-14	6-7	6-7
	August-September	10-15	7-8	7-8

# Finishing cull cows

Before weaning, identify empty cows for culling, so they can be fed to gain weight if required, either in late lactation or immediately after weaning. The advantage of extra feeding in late lactation is that the cow has a greater appetite than when dry.

By late lactation, milk production could be as low as 4l/day, depending on the cow type. However, suckling will maintain the cow’s appetite at a DMI of around 2.3% of liveweight.

Cull cow finishing diets should be high in energy at around 11.8MJ ME/kg DM and contain around 11-12% CP in the DM. Increase concentrate levels gradually to avoid digestive upsets.

Table 11: Energy requirements of a 650kg cow

	Maintenance	Milk production of 4l/day (MJ/day)	Weight gain of 1.5kg/day (MJ/day)	Energy requirement (MJ/day)	Dry matter intake (kg/day)	Ration density required (MJ/kg DM)
Late lactation	67	25	71	163	14	11.6
Dry	67	-	98	165	14	11.8

Weaning reduces a cow’s appetite, so achieving weight gain requires a high-energy density diet. At some times of the year, this will be more expensive. Summer and early autumn-calvers may be cheaper to finish while still suckling.

Providing a plentiful supply of palatable creep feed for the calf is essential to achieve best results from feeding late lactation cows targeted for culling.



# Other BRP publications available

## Joint Beef and Sheep BRP

- Manual 1 – Improving pasture for Better Returns
- Manual 2 – Assessing the business for Better Returns
- Manual 3 – Improving soils for Better Returns
- Manual 4 – Managing clover for Better Returns
- Manual 5 – Making grass silage for Better Returns
- Manual 6 – Using brassicas for Better Returns
- Manual 7 – Managing nutrients for Better Returns
- Manual 8 – Planning grazing strategies for Better Returns
- Manual 9 – Minimising carcass losses for Better Returns
- Manual 10 – Growing and feeding maize for Better Returns

See the AHDB Beef and Lamb website [beefandlamb.ahdb.org.uk](http://beefandlamb.ahdb.org.uk) for the full list of Better Returns Programme publications for beef and sheep producers.

## For more information contact: Better Returns Programme

AHDB Beef & Lamb  
Stoneleigh Park  
Kenilworth  
Warwickshire  
CV8 2TL

Tel: 024 7647 8834  
Email: [brp@ahdb.org.uk](mailto:brp@ahdb.org.uk)  
[beefandlamb.ahdb.org.uk](http://beefandlamb.ahdb.org.uk)

*AHDB Beef & Lamb is a division of the Agriculture and Horticulture Development Board (AHDB)*

*© Agriculture and Horticulture Development Board 2016*

