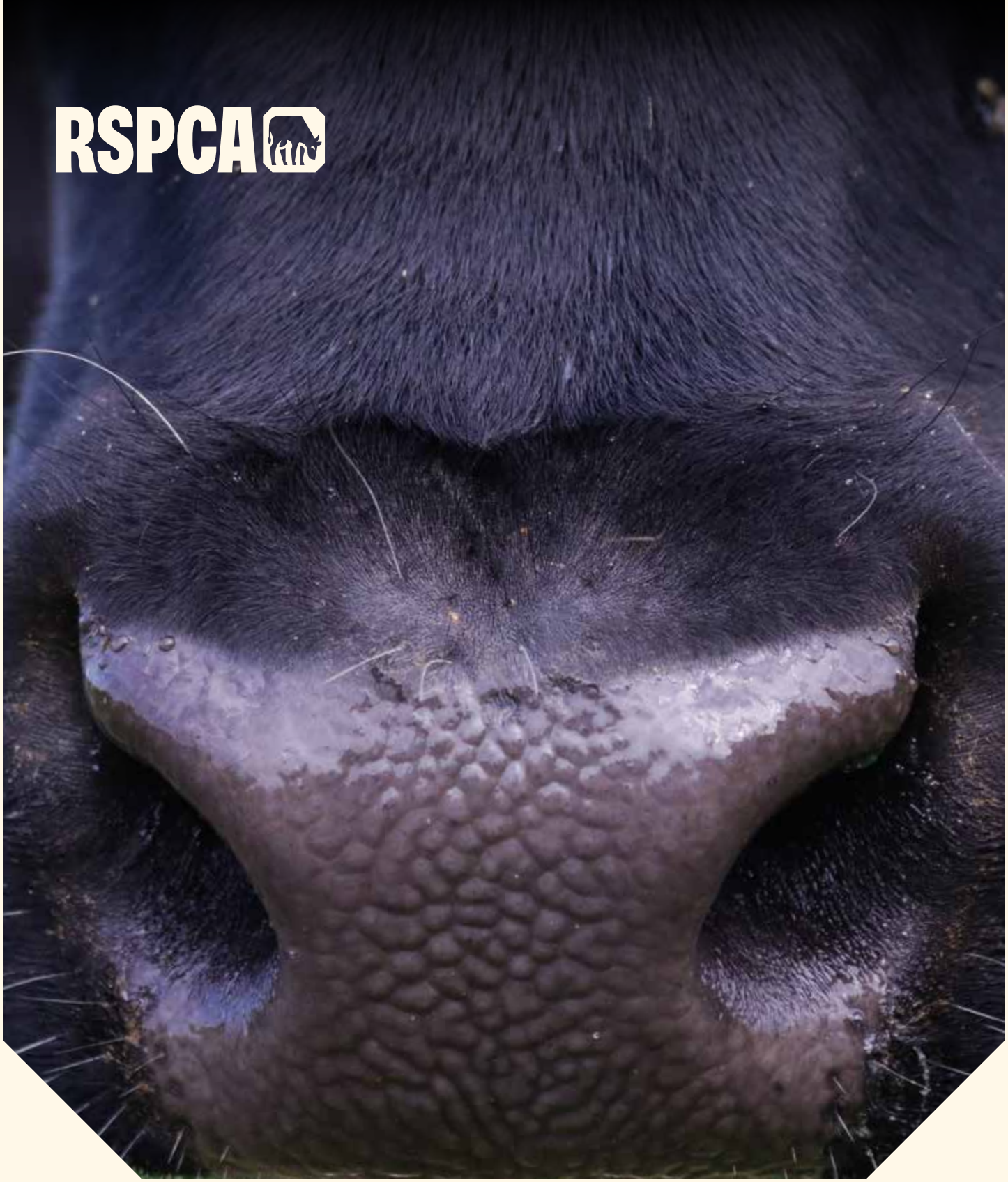
RSPCA



RSPCA standards justification

Dairy cattle

Contents

Introduction

This document provides the rationale underpinning the setting of certain, key standards within the 2026 RSPCA Welfare Standards for dairy cattle. As such, this document provides the justification behind the setting of such standards.

Not all standards are covered within this document, as either further explanation is not required, e.g. the justification is clear within the standard itself, or the standard is based on a legal requirement. However, those standards that go above legal minimum requirements and could be set at a range of levels are generally included.

Justifications are not exhaustive, but are typically representative of the evidence base (where this exists) for that issue.

In some cases, a summary of the full standard wording has been provided. Therefore, please refer to the RSPCA Welfare Standards for dairy cattle for the full standard wording.

References to legal requirements relate to domestic legislation.

Food and Water

Food

- **Feeder space: Feeding space allowance is 600mm/head for buildings installed before July 2020, 750mm/head for buildings installed after July 2020.**

  The initial publication of the standards in 1996 included a provision for ad libitum feeding with a lower space allowance. However, this lower allowance was removed in 2018 following a unanimous decision by the Standards Technical Advisory Group that the reduced space was insufficient to prevent competition at the feed face. Research by DeVries et al. (2005) indicates that cattle do not feed ad libitum even when food is continuously available; instead, they tend to consume most feed when it is freshly presented and after milking. Consequently, the "ad lib" allowance was deemed irrelevant.

  Further revisions were made in 2021, removing the space allowance based on breed specifications in favour of cow size, which is more pertinent. This revision also acknowledged the challenges producers face when attempting to increase feeding space in existing structures. In 2026, a new standard was introduced to permit partitioned feed-faces, allowing for 5% more feeding spaces than cows, as these have been shown to help prevent competition.

- **Feed availability: Fresh food must be within reach of cattle at all times**

  Introduced in the 2018 standards, this measure addresses the observational evidence that housed cattle, when fed via a barrier system, can push food away during foraging. This standard ensures that food is regularly "pushed up" throughout the day, guaranteeing constant access for cattle. Maximising dry matter intake by ensuring food is always available is crucial for reducing the risk of metabolic diseases.

- **Feed quality: Uneaten food must be removed prior to the next feed delivery being presented.**

  This was introduced in the 2018 version of the standards. Cattle will not eat feed salivated on by other cattle and prefer to eat fresh food (NADIS Bulletin, Maximising Dry Matter Intake). The removal of stale food prior to presenting fresh food was raised as a requirement at the Standards Technical Advisory Group meeting in 2017. This helps maximise dry matter intake which is important in maintaining the health of the cattle.

Water

- **Drinking space: provide at least two drinking sites per group of animals. If using individual drinkers/bowls, one drinker/bowl is needed for every 10 animals.**

  A requirement specifying the number of cattle per drinker/bowl has been in the standards since they were first issued in 1996. The current requirement was introduced in the 2018 edition. Dairy cattle, especially lactating cows, require large volumes of water. Water availability has been identified as a source of competition in dairy cattle, which can lead to aggressive interactions and high stress levels. Low water intake can also result in a reduction in dry matter intake which is linked to increased risk of metabolic diseases. Water is often, therefore, described as the first limiting nutrient i.e. insufficient water will reduce milk production (Beede, 2005).

- **Delivery rate: When housed, the flow rate of water must allow 10% of the herd to drink at any one time.**

  This requirement was present in the first edition of the standards (1996) and is included in Defra's Code of Recommendations for cattle (2003). Water availability has been identified as a possible cause of low dry matter intake. Housed lactating dairy cows often feed immediately after milking, and a short time later will drink. This often results in large numbers of animals trying to access the drinking spaces. If the flow rate of water is too slow then the cow's water intake may be limited and competition for water will increase.

Environment

Lying area/space allowance

- **Straw yard accommodation: Floor space allowances are as follows:**

Weight of animal (kg)	Minimum bedded lying area (m^2)	Minimum non-bedded/loafing area (m^2)	Minimum total area per animal (m^2)
< 100	1.5	1.8	3.3
101 to 199	2.5	2.5	5.0
200 to 299	3.5	2.5	6.0
300 to 399	4.5	2.5	7.0
400 to 499	5.5	2.5	8.0
500 to 599	6.0	2.5	8.5
600 to 699	6.5	2.5	9.0
700 to 799	7.0	3.0	10.0
> 800	8.0	3.0	11.0

A standard regarding space allowance has been present in the standards since the first edition, in 1996. The space allowance standard took its current form in 2000. The weight groupings and allowances for cattle over 400kg comply with British Standard BS5502:2005. For animals less than 400kg our space allowances exceed those of many other assurance schemes and ensure that no animals are kept on fully slatted systems. Space allowances give cattle room to move freely, and perform behaviours like self grooming. We keep space standards under review as evidence and research develops.

Cubicle Housing

- **Cubicle bedding: Beds must be clean, dry and comfortable with fouled bedding removed at least twice a day. Fully slatted systems are not permitted.**

The standards covering cubicle bedding have been present in the standards since the first edition. It has long been acknowledged that poorly designed and managed cubicle housing can be a source of many welfare problems, including lameness, thus ensuring cow comfort through good cubicle design and management is very important (Potterton et al, 2011).

- **Cubicle design: Animals must be able to stand with all four feet in the cubicle. Cubicles must be constructed so animals do not lie so far forward that the back of the bed gets consistently soiled. Divisions must allow cows to align themselves properly in the cubicle, prevent interference from neighbours and prevent injury. There must be at least 0.7m forward lunge space or cows must be seen to be able to rise without difficulty.**

These standards were in the first edition of the standards, with a specific length for lunge space being brought into the 2008 edition, and updated in the 2018 version to bring in a protocol for scoring cattle rising behaviour if 0.7m cannot be met. Good cubicle design is essential to ensure cattle are encouraged to lie down for sufficient periods of time. Poor design can result in reduced lying times, increased lameness, increased injuries such as hock lesions and neck lesions and may negatively impact the welfare of the animals (Potterton et al, 2011). Cubicle systems are already a compromise as cattle naturally lie in the orientation of their choice, at a distance to other cattle of their choosing when loose housed or at pasture.

Ensuring cattle can stand with all 4 feet in the cubicle is important to reduce cattle standing with two feet in and two feet out of the cubicle. The two feet outside the cubicle are likely to have increased contact with slurry which softens and irritates the feet which can predispose to foot conditions such as digital dermatitis, they are also put under more pressure which can result in sole ulcers. If cattle have insufficient lunge space then they tend to lie in the cubicles incorrectly, for example diagonally, which is less comfortable and increases risk of injuries from the cubicle divisions. It can also result in diagonal or side lunging which makes it harder for the cattle to rise. Currently the standards require 0.7m, this is sufficient for many dairy cattle, but may not be enough for particularly large cows, such as some of the pure-bred Holsteins seen in the current UK dairy industry. 1.0m seems to be a more appropriate figure for these animals (AHDB Dairy, "Dairy Housing" booklet, 2012). One challenge facing producers wanting to update their cubicles to meet the 0.7m standard is that it requires a large investment, thus it is not possible at this time to update the lunge distance to 1.0m. A detailed review of this standard was undertaken with the Standards Technical Advisory Group in 2018 and concluded that 0.7m should be kept as a minimum with another standard allowing a smaller, unspecified distance if the producer can clearly demonstrate that the largest animals in the herd can rise without risk of injury and in a normal manner.

- **Cubicle availability: At least 5% more usable cubicles than cows must be provided..**

The requirement for 1 cubicle per cow has been in the standards since the beginning (1996). The current requirement was introduced in the 2018 version. Evidence shows that giving cows plenty of cubicle choice leads to longer lying times, thus reducing lameness and other associated problems (Wang et al, 2016, Fregenosi et al, 2007). Cows have their own sense of personal space, which for some animals is larger than others; therefore they might not want to lie directly next to another cow. Certain cubicles are less sought after and sub-dominant cows often choose to stand elsewhere over lying in these while dominant cows get the best cubicles. 5% extra is advised by AHDB Dairy's Housing booklet, 2012, and in Defra's Code of Recommendations for cattle 2003. We included the term "usable" to ensure all cubicles meet the necessary standards.

Pasture

- **Access to pasture: Cattle must have access to pasture for at least four hours a day, 120 days a year**

Since 1996, the RSPCA standards for dairy cattle have evolved to increasingly emphasise pasture access. The first edition (1996) required cattle to gain most of their nutrition from grass during the grazing season.. In 1997, this was updated to a general requirement for pasture access during the grass-growing season. A significant change in 2018 introduced a tailored minimum number of grazing days for each farm, a first for an assurance scheme. The 2026 standard further strengthens this commitment, mandating a minimum of 120 days of pasture access per year, with allowances for adverse weather and cattle health. This figure aligns with current grazing practices among RSPCA members and other groups. While high-yielding dairy cows may find it challenging to meet this grazing target due to their greater nutritional needs, the RSPCA believes that breeding cows for moderate milk yields which do not prohibit them from the ability to graze is crucial for good welfare. Additionally, the 2026 standards now explicitly require heifers to have pasture access before their first calving.

Research indicates that cows value access to pasture, and even high-yielding dairy cows, when given 24-hour free choice, often choose to rest outdoors at night, even if they stay inside during the day (Charlton et al. 2011, 2013). Beyond behavioral preferences, access to pasture offers significant health benefits for cattle, including reduced lameness, mastitis, and mortality (Arnott et al. 2016). Contrary to some concerns and mixed evidence, there are studies which show that pasture access does not necessarily reduce food ration intake or negatively impact milk production, provided there is good management, and cattle have sufficient time and access to their required ration (Chapinal et al. 2010).

The RSPCA considers 120 days of grazing per year achievable for the average UK farm. The standards do not mandate a specific nutritional intake from grass, as some animals may prefer to lie down and rest rather than graze. However adult cattle must be turned out onto pastures with grass of a sufficient height to allow for grazing behavior.

Environmental enrichment

- **Cow brushes: one brush must be installed per 60 cows in cattle housing and at least one per group of animals**

  Environmental enrichment is important to offer cattle the opportunity for a positive experience, namely to groom. This has been shown to release endorphins and cows seek out the ability to groom, indicating that it is perceived as a pleasurable experience. The requirement for cow brushes in housing was first introduced in the 2011 version of the standards and was updated in 2021. Cow brushes are frequently used by the cattle and it is important to ensure this resource does not become a source of competition. Mandel et al, 2016 is a thorough review looking at a variety of enrichment opportunities, including the benefits of tactile enrichment for adult cattle and calves.

Transition/Freshly calved cows

Introduction

A section addressing the environment of transition/freshly calved cows was introduced in 2018 and was the first of any assurance scheme. It reflects many years of the RSPCA Farm Animals Department raising concerns that the management of transition cows was poor. There is a need to acknowledge that these animals are particularly vulnerable and that if the care of a transition/freshly calved cow isn't optimised then her health for the duration of her lactation cycle can be negatively affected and this can determine her future prospects.

- **Nutrition requirements: Feeding space is increased to 100cm per cow with changes in nutrition being introduced gradually and transition cows having a specific section in the nutrition plan.**

  Transition/freshly calved cows are those undergoing most physiological and management changes and are under the most stress. They have specific management needs and a need for closer observation. Poor transition management can lead to production diseases, like left displaced abomasum (a displaced chamber of the stomach), ketosis (where the cow has too much acid in her blood) among many others. These have the potential to be seriously detrimental to her health. Increased feeding space to 100cm reduces competition and aggressive interactions at the feed face, thus encouraging feeding and increasing dry matter intake (DeVries et al, 2004). Low dry matter intake has been linked to many of the production diseases seen in transition/freshly calved cows.

- **Space allowance: These are increased to 15% more cubicles than expected number of transition/freshly calved cows, and a similar increase in straw yard space allowances on top of those already stated in the Lying Area/Space Allowance section.**

  Lower stocking density improves cow comfort and reduces social stress, thus improving lying times, cow immunity and dry matter intake which are all factors in reducing the risk of developing production diseases. 15% more cubicles than cows is advised (Bell, 2016) to give cows plenty of opportunity to lie down comfortably.

Health

Bovine TB

- **Bovine TB Management: A plan must be included in the VHWP regardless of the farm's bTB history and risk. This must cover biosecurity, biocontainment, enhanced testing and a contingency plan for movement restrictions**

Standards have always existed surrounding bovine TB in the VHWP where the farm has the disease or has a high likelihood of contracting the disease. In 2021 this was enhanced to include a bovine TB specific section to reflect the importance of this area to the cattle industry. The measures laid out were those indicated by Defra as being most likely to gain those that implement them on farm some sort of earned recognition, they are also likely to meet the CHeCS TB entry level membership.

Downer cattle

- **Treating animals: Animals must be treated without delay and early intervention by humane destruction must be undertaken if prognosis is poor. Downer cattle must be treated with pain relief..**

Standards surrounding the treatment of down cows were first introduced in the 1998 edition of the standards. Recumbent cattle are often seen as a result of slipping in the yard, during bulling activity or after a traumatic calving. Once an animal is down they are often reluctant to make attempts to stand, perhaps due to pain or fear of slipping. A vet should be consulted immediately to check there is no treatable cause of the recumbency (e.g. calcium deficiency or acute toxic mastitis), it is also important to check the animal has no untreatable injuries (e.g. a broken leg) that would require euthanasia. A humane end-point must be decided upon, as some downer cows never rise again and cannot be left indefinitely. The longer a downer cow is recumbent, the lower its chances of recovery. Due to their weight, regular turning has to occur, ideally every 4 hours, to prevent damage to the muscles bearing the weight of the animal. This is a stressful procedure for the cow and is time-consuming for the stocksman. Sometimes recumbent cattle are left in a "hoist", effectively supported with their feet just touching the ground, to encourage standing. This is not a preferred method and should be used for the shortest possible time. Alternatives include full body harnesses and inflatable mattresses or cushions among others. In the 2026 standards update, down cows must now be given pain relief if they are likely to be in pain, while awaiting veterinary care or further treatment, as the act of falling is likely to be painful.

- **Moving animals: Animals must only be lifted with full body support, animals must not be dragged.**

Standards requiring animals to be lifted without causing fear or distress were introduced in 1998. Lifting gear is often used to move the animal to a safer, more comfortable environment, e.g. a deep straw bed. After rest, food and water the animal may then feel confident enough to attempt to rise. Due to the weight of adult cattle it is essential that lifting gear is used properly and that adequate support is provided to the whole body to prevent fear and distress and to reduce the risk of injuries such as broken ribs.

Transport

Livestock markets

- **Sales: Cattle must not be presented for sale at livestock markets or collection centres.**

  Livestock markets and collection centres can be stressful for cattle, and are an unnecessary part of the “farm to fork” chain. Standards prohibiting the use of livestock markets and collection centres were in the first edition of the standards in 1996. Sales should be done directly between farms, thus reducing the number of journeys an animal requires and avoiding livestock markets all together. Livestock markets can represent a significant disease risk, both through the mixing of a large number of animals from a wide spread of geographical locations and through stress-induced immunosuppression of the animals presented for sale. The exemption of specialist pedigree and maiden heifer sales was removed in 2021 since their time in market would not be able to be monitored due to our lack of standards.

- **Live export: Animals must not be exported live, either directly or indirectly.**

  Live export is an unnecessary part of the “farm to fork" chain, and export of cattle for fattening and slaughter was legally banned in the UK in 2024, with export for breeding continuing to be legal. Live export of cattle or calves for any reason was specifically prohibited by the RSPCA standards in 2008, but since the first edition of the standards (1996) time limits to journeys were such that live export would not be possible in most circumstances. Journey times can be extremely long for animals being exported and the method of transport (often by sea) may be alien to them. This can result in fatigued and stressed animals which are at increased risk of injury and disease. Live export may result in these animals being kept and slaughtered in a manner which would be illegal in the UK – this represents serious potential for negative welfare experiences for these animals and must be avoided.

Transport

- **Space allowance: The following space allowances must be provided during transport:**

	Weight (kg)	**Area per head (m^2)**
Small calves	50	0.3 to 0.4
Medium calves	110	0.4 to 0.7
Heavy calves	200	0.7 to 0.95
Medium cattle	325	0.95 to 1.29
Heavy cattle	550	1.30 to 1.59
Very heavy cattle	> 700	> 1.60

  Space allowances are those required under Council Regulation (EC) No 1/2005 on the protection of animals during transport but were introduced to the standards in 1996 before the law set out specific space allowances. Although in general more space is better, when transporting animals too much space can be problematic. If there is too much space this can allow too much movement of the animals when vehicles are accelerating, decelerating and cornering and increase the risk of falls and injuries. However, too little space can be an issue by reducing ventilation, increasing stress and increasing the temperature of the animals. Currently research does not suggest that space allowances larger than those stated are beneficial.

- **Time: Transport times must not exceed 8 hours – calculated from the loading of the first animal to the unloading of the last animal.**

  The 8 hour time limit has been in the standards since the first edition in 1996. It ensures animals do not go for excessively long periods without food and water, and are not subjected to the motion of a vehicle for longer than 8 hours. Currently EU law states that adult cattle can travel for 14 hours, and then another 14 hours after an hour’s break on the vehicle, before a rest period of 24 hours is required off the vehicle.

Unweaned calves (commercially calves up to 5 weeks old, calves on our standards are weaned at 8 weeks) can be transported for 9 hours and then, after an hour's break on the vehicle, another 9 hours before a rest period of 24 hours off the vehicle. These times result in animals arriving at their destination exhausted, dehydrated, hungry and stressed. Animals' ability to cope with transport stress decreases as the duration of transport increases, as does mortality (see Schuetze et al, 2017 for a review). Animals become weaker, more likely to fall and to be trodden on and excreted on by others. Once down they will struggle to get the space required to rise again. Cattle may not sustain injuries during the journey, but the effects of stress on the immune system can result in illness post-travel; for example respiratory disease (Earley et al, 2017).

In the 2026 standards, a requirement for all end-of-life cattle to be transported direct to an abattoir was introduced; this acknowledges the likely increased risk and stress of transport with cull dairy cows, who may be exiting the herd for health issues, or advanced age.

The 8 hour time limit is sufficient to ensure RSPCA Assured animals can reach an RSPCA Assured slaughterhouse without becoming too exhausted and stressed. There is not sufficient evidence to reduce journey times at present, but this is something we are monitoring, especially for calves.

Slaughter / killing

Stunning

- **Pre-slaughter stunning: All animals must be stunned prior to slaughter using a permitted method.**

The standard has been present since the first edition of the standards in 1996. Stunning prior to slaughter is essential to ensure the animal does not feel pain or suffer in the moments prior to death. Cattle have a unique anatomical feature (the vertebral artery) which means they can take up to 2 minutes to die by bleeding out from a neck cut. Bleeding out is most rapid when the animal is suspended upside-down, this cannot occur when an animal is unstunned which increases the time taken to bleed out, thus prolonging the time taken to reach unconsciousness, resulting in unnecessary suffering. The restraint used for cattle when being slaughtered without stunning is called an 'active head restraint' (rather than a passive head restraint). This type of restraint causes most aversive behaviours and stress in cattle and our standards advise against using it (Humane Slaughter Association – Head Restraint Equipment). Stunning can be achieved using passive head restraint.

Slaughter of pregnant cattle

- **Pregnant cattle at slaughter: Animals in their last third of pregnancy must not be sent for slaughter unless for disease control or emergency/casualty slaughter purposes. Foetuses in the last third of gestation must not be removed from the uterus until 20 minutes after the death of the dam.**

These standards were introduced in the 2018 version of the standards. Evidence obtained from research carried out on foetal responses show that there are several mechanisms that prevent foetal consciousness prior to birth. This is important to prevent foetal suffering when the dam is slaughtered. Suffering can only occur when an animal is both sentient (i.e. neurologically mature) and conscious. Sentience is only possible once the foetus has completed about 75% gestational time (i.e. 30 weeks gestation) prior to which the neurological connections are not sufficient for sentience. Consciousness occurs at the onset of birth or removal from the uterus, after 30 weeks gestation (Mellor 2010). Without consciousness evidence shows that the foetus cannot experience pain or breathlessness and thus cannot suffer.

The RSPCA welfare standards for dairy cattle do not allow transport to slaughter of any animal in the last trimester of pregnancy, except for disease control purposes. This is due to the unnecessary stress to the dam that would be incurred through loading and unloading and the transport at such a late stage of gestation, but also ensures that most foetuses seen in the slaughterhouse won't be capable of sentience (being two thirds or less through gestation).

Calves: Food and water

Food

- **Colostrum management: All newborn calves must receive three litres of adequate colostrum as soon as possible and within the first six hours of life.**

  Colostrum (first milk produced after a cow has calved) is vital to ensure the health of a calf not just at the start of life but also into adulthood. This standard has been present in the first version of the standards (1996) and was updated in 2018 to include the volume required. This amount of colostrum doesn't have to be suckled by the calf from a cow as calves left to suckle often do not consume the volume of high quality colostrum required. Newborns have an immature immune system and do not get antibodies from the mother whilst in utero, so the first milk (which contains high levels of antibodies) is essential to equip them with antibodies for the first couple of months until they can produce their own in sufficient quantities.

  Evidence suggests that calves left to get colostrum solely from suckling their dams are more likely to experience failure of passive transfer (FPT) which is when the calf does not get enough antibodies to ensure a good immune system. This is particularly seen in dairy calves suckling dairy cows since the large volume of milk they produce dilutes the antibodies and so calves cannot stomach the volume of milk necessary to take on sufficient antibodies.

  Passive transfer of antibodies is affected by many things, such as:

  1. Colostrum quality (what concentration of antibodies is in the milk) which is affected by the volume produced by the cow, and parity - older cows produce colostrum of higher antibody concentrations,
  2. Timing of colostrum intake - in this instance the earlier the better, ideally giving the first colostrum feed within 2 hours, although within 6 hours is sufficient. As time goes on the calf's digestive system starts to digest, rather than absorb the antibodies with a rapid reduction of antibody absorption after 24 hours of life.
  3. Volume of colostrum fed - sufficient volume ensures that a good number of antibodies are available in the calf's digestive system to be absorbed,
  4. Method of feeding has been suggested to affect intake, with higher antibody absorption in calves which are tube fed rather than bottle fed,
  5. The calf being in the presence of the dam may improve absorption, hence leaving the calf with the dam for 24 hours may help reduce FPT (Weaver et al. 2000).

  FPT results in increased mortality and increased levels of calf disease, such as diarrhoea ("scours") and pneumonia (Conneely et al. 2014).

  The requirements in our standards are also recommended in AHDB Dairy's leaflet: "The 3Q's of Feeding Colostrum", published in 2015.

- **Age at weaning: calves must not be weaned until they are eight weeks old and eating at least 1.5kg of dry matter per day of calf starter ration.**

  The original standard from 1996 allowed weaning to occur at 5 weeks. This was increased to 8 weeks in 2018. A smooth transition at weaning from liquid to solid food is essential to reduce stress in calves and prevent any check in growth rates. The increase in weaning age to 8 weeks, followed by the prohibiting of abrupt weaning in the 2026 dairy standards along with an increase from 1kg to 1.5kg dry matter intake requirement, facilitates a gradual weaning period.

  Calf mortality is highest pre-weaning, this is largely thought to be due to poor colostrum management, but is also suggested to be due to nutrient restriction through insufficient milk provision which occurs prior to weaning to encourage solid "starter ration" uptake, thus allowing early weaning. Starter ration uptake helps mature the rumen, which promotes digestion of solid feed and thus reduces the reliance on milk for nutrition. However, if this occurs too early it is thought that rumen maturation is not optimal as milk is thought to also play a role in maturing the digestive system (through ruminal flora development, growth factors and other hormones found in milk and other factors) and thus post-weaning performance is affected. Calves also have an inherent drive to suckle, early weaning may result in cross-sucking behaviour as the calves still seek to relieve the need to suckle.

Weaning methods can vary, but the majority of conventional farms wean gradually over a few days by slowly reducing the volume of milk available to calves. For calves with foster cows or with their dams two-step weaning can occur through using anti-suckling devices or by placing calves behind a sturdy fence where they can have tactile contact with their mothers but cannot suckle.

Snatch calving is permitted under the scheme due to its necessity in certain circumstances, for example disease prevention, especially Johnes disease, but also due to weakness of the calf or mother, rejection by the mother or abnormal udder conformation meaning that the calf cannot easily find and maintain a latch.

- **Feeding unweaned calves: calves under 28 days must be fed eight litres of milk over two feeds per day, via teats. From eight days of age they must have unlimited access to roughage and when over 14 days old they must have access to feed or forage with sufficient digestible fibre. Iron content in the diet must maintain blood haemoglobin at 9g/dl.**

  Roughage is an important part of an unweaned calf's diet because it promotes maturation of the rumen which ensures suitable digestion of solid food once weaned. Naturally calves start to graze from about two weeks of age, thus provision of fibrous material is important to encourage this behaviour in conventionally reared calves from a similarly early age. Roughage quality and quantity is important to help rumen development, thus we have standards laying out what is necessary.

  The required milk volume to offer calves increased in the 2026 standards to 8 litres, from 6 litres, a day. This is in line with research suggesting calves are routinely under-fed milk, and 8 litres is a minimum for adequate nutrition to promote good health (Trouw Nutrition). Under 28 days it is important that calves are fed a sufficient volume of milk as milk is still their main source of nutrition. It is also necessary to feed at least twice a day since once-a-day feeding often results in cross-sucking (sucking the navel, ear etc of other calves), which indicates that the calf's need to suckle has not been satisfied. Once-a-day feeding calves also show signs of chronic hunger which has huge negative welfare implications (de Paula Vieira et al 2008). Calves naturally tend to suckle for 10 minute bouts up to 10 times a day in the first week of life, by one month old this is reduced to 4 bouts of 10 minutes.

  A requirement for teat feeding, in a natural position, was introduced in the 2026 standards. Teat feeding fulfils the behavioural motivation to suckle, and reduces cross-sucking (Salter et al 2021). There are other advantages of teat feeding over feeding milk from a bucket, as it activates a groove in the calves' throat (oesophageal groove) to direct milk to the right section of their stomach, preventing health issues.

Calves: Environment

Environment

- **Enrichment: Calves must have environmental enrichment from three weeks of age onwards.**

  This standard was first included in 2013 requiring enrichment from six weeks of age, and reduced to three weeks in the 2026 standards, as calves will interact with enrichment at this age. Calves are particularly precocious, and tend to explore their environment using their tongues. Addition of hanging objects is a successful and low cost form of enrichment for the animals; the calves have been found to use them very frequently. Allowing the calves to express exploratory behaviour can have health and welfare benefits, potentially improving growth rates and reducing undesirable behaviours (Zhang et al, 2021). The EFSA welfare of calves review in 2023 also lays out the benefits and scientific evidence supporting the provision of enrichment to calves.

- **Flooring: Slatted floors are not permitted.**

  This standard was first seen in the first edition of the standards in 1996. Slatted floors do not give calves the comfort required to ensure the ability to rest properly by lying down, which results in poor growth, but can also increase the susceptibility to infection due to lack of rest and stress. Slatted floors do not give calves the confidence to show play behaviours. Slatted floors can also result in a draught at calf level which can result in thermo-discomfort. This can also increase susceptibility to infection, particularly pneumonia.

- **Space allowance: specific space allowances for bull calves where the animals are fully housed without hard standing exist. Heifer calves being reared for dairy replacements do not fall under this remit and have different space allowances laid out in E4.2 (seen in the environment section above).**

Liveweight (kgs)	Minimum bedded area (m^2)
<100	2.0
101-200	3.5
201-250	4.0
251-300	4.5
301-350	5.5

Space allowances were in the 1996 first edition of the standards. These specific allowances for bull calves were first introduced in 2013. Providing calves with a minimum space allowance ensures they have room to lie down and rise unhindered. They have space to turn around and express normal behaviours. Since calf size varies depending on breed and age, it is important that pen space accommodates that to ensure regardless of breed or age calves are provided with pens that give them plenty of space and are not reminiscent of the (now illegal) veal crates once used commercially.

Calf hutches

- **Individual hutches: Calves are permitted to be individually housed up to three weeks of age so long as they are able to see, hear and touch other calves. Hutches must provide a dry bedded area which meets the space requirements laid out in E4.2.**

  Removing calves from individual hutches at eight weeks, or earlier, was brought into the standards in 1998. Social housing is important to ensure social development of calves, including play behaviours, and is now a legal requirement. The 2021 update of cattle standards banned individual housing of calves from three

weeks of age, and the 2026 standards strongly recommend grouping from one week of age. Evidence shows that there are no significant health or productivity drawbacks from pair-housing calves from birth to weaning. In fact, calves which are pair-housed adapt to weaning better, are more active, and develop social skills (Bolt et al. 2017; Costa et al. 2016; Jensen et al. 2015; De Paula Vieira et al. 2010; Mahendran et al., 2023). However it is accepted that close monitoring of calves in groups is hindered and so individual housing does allow for close monitoring in the crucial early weeks. This position is kept under review as automated monitoring systems are developing which will assist farm staff in closely observing individual calves.

The standard specifying dry bedded area space requirements was introduced in 2018 to prevent a “twin hutch buddy system”. This involves two calves being penned together but being provided with two hutches big enough for one calf in each. The calves tend to prefer to lie together and so squeeze into one hutch, thus are limited in their sheltered, bedded lying area space allowance. Although a system like this does provide calves with social interaction there are hutches which are made big enough for multiple calves and so these should be used. There is a financial implication to farmers moving to this system and so this has to be taken into consideration.

Potentially injurious husbandry procedures

- **Castration: Castration is permitted up to two months of age as a routine procedure. Rubber rings can be used after the first 24 hours of life and up to seven days of age. Burdizzo clamp is permitted after 24 hours and up to two months of age. Surgical castration is permitted when carried out by a veterinary surgeon with pain relief from 24 hours of age up to two months of age.**

  This standard was included in the first edition of the standards in 1996. Castration produces steers, rather than bulls, which are generally calmer and easier to handle. They can also be mixed with females and other unfamiliar steers with minimal trouble. Castration is not necessary in bull calves being reared for veal as they are slaughtered before sexual maturity. In fact, not castrating bull calves results in a faster growing, leaner animal, which is preferable in commercial terms, however, if bulls are stressed, especially during transport to slaughter and whilst waiting to be slaughtered, then they can cause bruising to one another (described as “dark cutting” meat – also associated with stressed animals) which must be trimmed off and removed. Unfamiliar bulls cannot be mixed, they must be kept in the groups they were reared in, and they cannot be mixed with females once sexual maturity is reached. This results in management challenges if space is not plentiful on farm. Bulls also require slaughtering immediately upon arrival at the slaughterhouse which results in management challenges at that stage. Surgical castration was added in 2021 after unintended exclusion prior to this.

- **Disbudding: Disbudding is permitted in the first 5 weeks of life using a hot iron under local anaesthesia.**

  The standard addressing disbudding has been in the standards since the first edition in 1996. Disbudding instead of dehorning is necessary because dehorning is a much more stressful, longer procedure done on an adult animal which is harder to restrain properly. Disbudding is not necessary in calves being reared for veal as they are slaughtered prior to any significant horn growth. Removing horn buds at an early age under local anaesthetic is minimally stressful and ensures cattle are safer to handle when older. Cattle with horns will use those horns when threatened or in asserting social dominance which can result in injury to stocksmen and other cattle. However, there could be the potential to breed polled cattle (ie cattle which naturally do not grow horns). Most cattle, especially in the dairy industry, are not naturally polled, thus disbudding is required.

- **Pain relief: A long acting pain relieving drug must be used in all animals undergoing a potentially injurious husbandry procedure laid out in the standards.**

  The standard requiring long acting pain relief was introduced to the standards in 2018 after consensus that the ready availability of pain relieving drugs and their low cost was such that it was no longer prohibitive to use them in a commercial setting. Long acting pain relief has been shown to improve the calves’ recovery from husbandry procedures such as castration. It reduces inflammation, disrupts pain signalling pathways and increases comfort so the animals are more rested and eat and drink more.

  Local anaesthetic is not currently a legal requirement when castrating, and we do not require it in our standards except for surgical castration, however this is an area we are looking to progress. Long term pain relief is now required as evidence suggests that castrated calves show signs of pain for several days after castration and disbudding, which can be alleviated with appropriate administration of longer-acting pain relief drugs (Olson et al. 2016, Heinrich et al. 2010).

Calves: Transport

- **Space allowance: The following space allowances must be provided during transport:**

	Weight (kg)	Area per head (m^2)
Small calves	**50**	**0.3 to 0.4**
Medium calves	**110**	**0.4 to 0.7**
Heavy calves	**200**	**0.7 to 0.95**

Space allowances, first introduced in the 1996 edition of the standards, are a legal requirement under Council Regulation (EC) No 1/2005. During transport, calves must have sufficient space to move around and lie down if desired, but not so much that it leads to loss of balance and falls. Generally, cattle do not wish to lie down during transport, partly because the maximum transport duration under RSPCA Standards is 8 hours, which is typically not long enough to induce fatigue requiring rest. Additionally, cattle tend to prefer remaining standing during transport, although very young calves (under 1 month old) often prefer to lie down (Cockram and Spence, 2012).

Calves: Slaughter/killing

Male dairy calves

- **Shooting on farm: The routine shooting of healthy, unmarketable calves is no longer permitted. Producers must have a plan in place to lay out how they are going to breed marketable calves. However, there is not an outright ban and where calves do have to be shot they must be kept to the same standard as those due to be sold or kept on farm for rearing; the RSPCA standards for calves must be met for all calves on site.**

  The issue of bull calves, initially raised in the 2011 standards, was re-evaluated in the 2018 and 2021 editions. The RSPCA is committed to fostering an industry where male dairy calves are not culled on farms. Significant strides have been made in recent years, largely due to the increased use of "sexed" semen, which allows farmers to choose to breed female (heifer) calves. Additionally, there has been a notable rise in the use of beef semen, producing offspring not intended to remain in the milking herd, and instead being reared for beef. These advancements provide the necessary tools to drastically reduce the number of unmarketable male dairy calves born.

  Failure to rear male calves to the same standard as heifer calves may be an infringement of the Animal Welfare Act 2006 and the requirement for producers to do so is a unique requirement among assurance schemes to date.

References

AHDB Dairy. 2012. “Dairy Housing” booklet, Chapter 7, “Cubicles”.

AHDB Dairy. 2014. PD+ Factsheet 8: “Transition Cow Management”.

AHDB Dairy. 2015. “3 Q’s of Colostrum Feeding”

AHDB Dairy. 2018. “Calf Management” booklet.

Arnott G., Ferris C.P., & O'Connell N.E. Review: welfare of dairy cows in continuously housed and pasture-based production systems. 2017 Animal.,11(2), pp.261-273.

Beede D.K., 2005. The Most Essential Nutrient: Water. Proceedings of the 7th Western Dairy Management Conference

Bell, N. B., 2016 Cubicle Comfort. Available from https://www.nadis.org.uk/disease-a-z/cattle/lameness-control-in-dairy-herds/part-7-cubicle-comfort/

Bolt S.L., Boyland N.K., Mlynski D.T., James R., & Croft D.P., (2017) Pair Housing of Dairy Calves and Age at Pairing: Effects on Weaning Stress, Health, Production and Social Networks. PLoS ONE, 12(1)

British Standard BS5502:40 2005. Buildings and structures for Agriculture – Code of Practice for design and construction of cattle buildings.

BVA, BCVA. 2017. Analgesia in calves.

Chapinal N., Goldhawk C., de Passillé A.M., von Keyserlingk M.A.C., Weary D.M., & Rushen J,. 2010. Overnight access to pasture does not reduce milk production or feed intake in dairy cattle. Livestock Science 129 (1-3), pp.104-110

Charlton G.L., Rutter S.M., East M., & Sinclair L.A., 2011 Effects of providing total mixed rations indoors and on pasture on the behavior of lactating dairy cattle and their preference to be indoors or on pasture. Journal of Dairy Science. 94(8), pp.3875-84.

Charlton G.L., Rutter S.M., East M., & Sinclair L.A., 2013 The motivation of dairy cows for access to pasture. Journal of Dairy Science. 96(7), pp.4387-96

Cockram, M.S., & Spence J.Y., 2012. The effects of driving events on the stability and resting behaviour of cattle, young calves and pigs. Animal Welfare, 21(3), pp. 403-417

Conneely, M., Berry D.P., Murphy J.P., Lorenz I., Doherty M.L., & Kennedy E., 2014. Effect of feeding colostrum at different volumes and subsequent number of transition milk feeds on the serum immunoglobulin G concentration and health status of dairy calves. Journal of Dairy Science, 97(11), pp.6991 – 7000

Cook N.B., & Nordlund K.V., 2004. Behavioural needs of the transition cow and considerations for special needs facility design. Veterinary Clinics of North America: Food Animal Practice. 20 pp.495–520

Costa, J.H.C., von Keyserlingk M.A,, Weary D.M., 2016. Invited review: Effects of group housing of dairy calves on behavior, cognition, performance, and health. Journal of Dairy Science, 99(4), pp.2453 - 246

Defra Code of Recommendations for the Welfare of Livestock: Cattle. 2003

De Paula Vieira A., Guesdon V., de Passillé A.M., von Keyserlingk M.A., & Weary D.M. 2008. Behavioural indicators of hunger in dairy calves. Applied Animal Behaviour Science, 109(2), pp.180 – 189

De Paula Vieira, A., von Keyserlingk A.M., & Weary D.M., 2010. Effects of pair versus single housing

on performance and behavior of dairy calves before and after weaning from milk. Journal of Dairy Science, 93(7), pp.3079 – 3085.

DeVries, T.J., Von Keyserlingk, M.A.G. and Weary, D.M., 2004. Effect of feeding space on the inter-cow distance, aggression, and feeding behavior of free-stall housed lactating dairy cows. Journal of dairy science, 87(5), pp.1432-1438.

DeVries T.J., von Keyserlingk M.A., & Beauchemin K.A., 2005 Frequency of feed delivery affects the behaviour of lactating dairy cows. Journal of Dairy Science. 88(10), pp.3553-62.

Earley, B., Sporer, K.B. and Gupta, S., 2017. Invited review: Relationship between cattle transport, immunity and respiratory disease. Animal, 11(3), pp.486-492.

EFSA AHAW Panel (EFSA Panel on Animal Health and Animal Welfare), 2023. Scientific Opinion on the welfare of calves. EFSA Journal 2023;21(3):7896, pp.197

Fregonesi J.A., Tucker C.B., & Weary D.M. 2007 Overstocking reduces lying time in dairy cows. Journal of Dairy Science. 90(7), pp.3349-54

Heinrich A., Duffield T.F., Lissemore K.D., & Millman S.T. 2010. The effect of meloxicam on behavior and pain sensitivity of dairy calves following cautery dehorning with a local anesthetic. Journal of Dairy Science. 93, pp.2450–2457.

Humane Slaughter Association. 2006. Head Restraint Equipment. https://www.hsa.org.uk/downloads/technical-notes/TN3-head-restrant-equiptment.pdf

Jensen, M.B., Duve L.R., & Weary D.M. 2015. Pair housing and enhanced milk allowance increase play behavior and improve performance in dairy calves. Journal of Dairy Science, 98(4), pp.2568 – 2575

Khan, M.A., Weary D.M., & von Keyserlingk M.A.. 2011. Invited review: Effects of milk ration on solid feed intake, weaning, and performance in dairy heifers. Journal of Dairy Science, 94(3), pp.1071 – 1081

Mahendran, S.A., Wathes, D.C., Booth, R.E., Baker, N. and Blackie, N., 2023. Effects of individual and pair housing of calves on short-term health and behaviour on a UK commercial dairy farm. Animals, 13(13), p.2140.

Mellor D.J. 2003. Guidelines for the humane slaughter of the fetuses of pregnant ruminants. Surveillance 30(3) pp.26-28

Mellor D.J. 2010. Galloping colts, fetal feelings, and reassuring regulations: putting animal-welfare science into practice. Journal of Veterinary Medical Education. 37(1) pp.94-100.

NADIS Bulletin: Maximising Dry Matter Intake. http://www.nadis.org.uk/bulletins/nutrition-of-dairy-herds/part-1-maximising-dry-matter-intake.aspx

Nordlund K., 2014 “Five Key Factors for Transition Cow Success” Minnesota Dairy Health Conference.

Olson M.E., Ralston B., Burwash L., Matheson-Bird H., Allan N.D. 2016. Efficacy of oral meloxicam suspension for prevention of pain and inflammation following band and surgical castration in calves. BMC Veterinary Research. 12(1), pp.102-113

de Passillé A.M., Sweeney B., & Rushen J. 2010. Cross-sucking and gradual weaning of dairy calves. Applied Animal Behaviour Science. 124. pp.11–15

Potterton S.L., Green M.J., Harris J., Millar K.M., Whay H.R., & Huxley J.N. 2011. Risk factors associated with hair loss, ulceration, and swelling at the hock in freestall-housed UK dairy herds. Journal of Dairy Science. 94(6), pp.2952-63.

Salter, R.S., Reuscher, K.J. and Van Os, J.M., 2021. Milk-and starter-feeding strategies to reduce cross sucking in pair-housed calves in outdoor hutches. Journal of Dairy Science, 104(5),

pp.6096-6112.

Schuetze, S.J., Schwandt, E.F., Maghirang, R.G. and Thomson, D.U., 2017. Transportation of commercial finished cattle and animal welfare considerations. The Professional Animal Scientist, 33(5), pp.509-519.

Wang F.X., Shao D.F., Li S.L., Wang Y.J., Azarfar A., & Cao Z.J. 2016. Effects of stocking density on behaviour, productivity, and comfort indices of lactating dairy cows. Journal of Dairy Science. 99(5), pp.3709-3717.

Weary D.M., Jasper J., & Hötzel M.J. 2008. Understanding weaning distress. Applied Animal Behaviour Science, 110(1), pp. 24 - 41

Weaver D.M., Tyler J.W., VanMetre D.C., Hostetler D.E., & Barrington G.M. 2000. Passive transfer of colostral immunoglobulins in calves. Journal of Veterinary Internal Medicine.14(6), pp.569-577

Zhang, C., Juniper, D.T. and Meagher, R.K., 2021. Effects of physical enrichment items and social housing on calves' growth, behaviour and response to novelty. Applied Animal Behaviour Science, 237, p.105295.

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