Section 2

Choosing and **Sourcing your Calves**

Introduction

The profitability of the dairy beef enterprise depends largely on the quality of calf that is purchased. Poor calves lead to poor feed efficiencies, weight gains and thrive, and potentially high mortalities. High mortality within the first four weeks of arrival on the new farm is significantly associated with both the calf supplier and the calf bodyweight on arrival. Purchasing from reliable suppliers and ensuring to purchase calves that are good weight for age is crucial to limiting calf mortality.

1. **Why is calf arrival weight important?**
2. **What is the impact of calf source or supplier?**
3. **What information should a producer look for when purchasing calves?**
4. **How important is the 'sire effect' when choosing a calf?**
5. **What visual calf characteristics should you look for when selecting calves?**
6. **What age should calves be when transported from the farm of origin?**

chapter 4

Choosing and **Sourcing your Calves**

1 Why is calf arrival weight important?

For the first three weeks on the new farm, lower weight calves have a higher risk of dying. 'Weight for age', i.e. liveweight divided by age in days, has a significant positive correlation to both lifetime daily live weight gain and carcass weight.

Table 1. Minimum target weight for Holstein and early maturing crossbred calves.

	AA/ Hereford	Holstein	
Age (weeks)	**Target Liveweight (kg)**	**Target Liveweight (kg)**	**Liveweight gain (kg/ day)**
1	45	48	
6	70	73	0.7
12	100	102	0.7
15	117	119	0.8

2 What is the impact of calf source or supplier?

The source of the calves greatly influences the disease risks on the rearing farm. Some sources provide calves at higher risk of disease than others. This will depend on:

I. Health and feeding management on the farm of origin, especially the provision of adequate high quality colostrum shortly after birth.
II. Distance and mode of transport to the rearing farm.
III. Whether the calves were purchased directly from the farm or through an agent.
IV. The amount/level of mixing of stock from different farms.

Calves purchased directly from a dairy farm are often healthier than those purchased through marts. They will have had reduced exposure to pathogens, less co-mingling, they are delivered directly and often they will have had better nutrition.

Preferably buy calves from farms which have control programmes in place against diseases such as calf scours, BVD, and IBR.

The table below outlines the different options:

	Advantages	Disadvantages
Mart	• Convenient. • You are paying market value for calves.	• Unknown disease status. • Calves have to be transported to and from the mart.
Agent	• Convenient. • No need to go to mart yourself. • Can set criteria regarding cost of calf/type of calf.	• Unknown disease status. • Calves may spend considerable time in transit. • Need a good relationship with agent.
Direct from farm	• Can attain disease status including feeding of colostrum. • Can plan for when calves are coming onto your farm. • No need for you, or calves, to travel to and from the mart.	• Requires planning and having agreement in place with dairy farmer.

3 What information should a producer look for when purchasing calves?

The producer should seek as much information as possible on the health status of the origin herd. Such information should include:

I. Vaccination policy.
II. Sire identity.
III. Genetic merit of the calf.
IV. Previous and current disease problems, i.e. coccidiosis, cryptosporidiosis, Johne's Disease.

Often it is easier to obtain such information when purchasing directly from the farm of birth. In addition, it may be beneficial to visit the farm of birth as this can be a good indicator of the potential health and quality of the calf.
When purchasing from agents, specify what information you would like to know about the dairy herd if unsure of the reliability of their calf sources.

Preferably, calves should be purchased in batches of the same age from one source. Purchasing from the same supplier each year can reduce the likelihood of disease problems and poor quality calves.

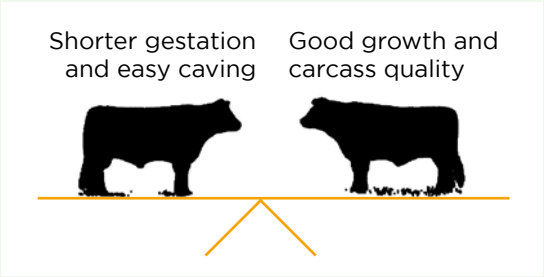
4 How important is the 'sire effect' when choosing a calf?

There is evidence that the sire has a huge impact on the performance of the calf, and subsequently on the profitability of the dairy beef enterprise. Calves should be chosen based on their genetic merit and sire rather than just their appearance as a two to three week old animal.

The results from the ABP/Teagasc dairy beef programme show that choosing between calves sired by two different Angus bulls that are both easy calving and short gestation, with one being poorer for terminal traits, can potentially lead to a difference of up to €6,000 in profit for a farmer slaughtering 50 animals.

KEY POINT:

Good breeding decisions in the dairy herd are based on balancing the need for calving ease with good beef qualities. Calf rearers should look for calves from dairy herds whose bull was chosen for both easy calving and calf conformation and growth rates.



5 What visual calf characteristics should you look for when selecting calves?

Not all calves are viable to rear for beef. A trained eye in the factors and qualities to look for in a calf can greatly improve the productivity of your dairy beef enterprise.

In general terms, calves must be in good health, have good conformation for beef, and be a good size. Weight for age is a prime indicator of future growth potential.

Purchased calves should be inspected thoroughly. Try to choose non-induced calves and avoid calves that are twins.

KEY TIPS:

Failure of passive transfer must be assumed for all calves arriving onto the farm. A blood test to measure blood immunoglobulin levels can be carried out in the first seven days of life to check for adequate colostrum intake.

Choosing and **Sourcing your Calves**

HOW TO:

Choose the ideal calf

1. Should be at least seven days of age, 10 days if travelling >100km.
2. Calves must have received sufficient colostrum.
3. Hooves firm and worn flat, not bulbous or round with soft unworn tissue.
4. Dry, wrinkled, withered and shrivelled umbilical cords, not pink/red, raw or fleshy.

5. Alert with a clean damp nose and bright eyes.
6. Supple skin and shiny coat.
7. No visible signs of disease, diarrhoea, discharge (mouth/nose/eyes), deformity, disability, injury or blindness.
8. Calves must not be lame and must be able to bear weight on all four limbs.

6 What age should calves be when transported from the farm of origin?

The age that a calf should be before it is transferred is determined by the distance it is being transported. If the distance is greater than 100km, calves must be at least **10 days of age.** If being transported less than 100km calves should be **at least seven days of age.**

KEY TIPS:

In all cases it is preferable not to transport calves until they are three weeks of age. This will reduce the high risk of scours and stress which are commonly seen in calves that are transported at less than three weeks of age.

Section 2

Transporting the Calf
From the farm of Origin

Introduction

Calves are commonly transferred from the farm of origin to the beef rearing farm within the first three weeks of life. The aim is to limit the impact of the transfer process on the young calf. Paying attention to the transportation environment such as temperature, stocking density, distance and the type of road travelled can help to reduce the level of stress incurred.

1. **The stress of calf transportation.**
2. **What are the potential impacts of transport stress on calves?**
3. **Planning the journey.**
4. **How far can calves be transported?**
5. **Are there regulations surrounding journey time for young calves?**
6. **What are the space requirements?**
7. **Calves fit for transport.**
8. **What are the general requirements of calf transport vehicles/trailers?**

Transporting the Calf
From the farm of Origin

1 The stress of calf transportation.

The transport and transfer of calves can be extremely stressful, even over short journeys. This stress can be measured through elevated serum cortisol concentrations (stress hormone). If calves are properly managed pre- and post-transport, cortisol levels should decline within 12 hours of transport. However, cortisol levels can remain high for up to nine days after transportation, suggesting that animals can have a long adaptation period to their new environment. This emphasizes the importance of limiting any further stress during this post transport period.

2 What are the potential impacts of transport stress on calves?

Increases in oxidative stress biomarkers and stress hormones are related to episodes of Bovine Respiratory Disease (BRD) and mortality in calves. In addition, the stress induced by the transport of calves of less than one month of age can lead to dehydration and body weight loss.

3 Planning the journey.

Adequate planning is key to protecting the welfare of animals during a journey. Before the journey starts consider:

- Preparation of animals for the journey.
- Nature and duration of the journey.
- Vehicle design and maintenance, including roll-on roll-off vessels.
- Necessary documentation.
- Space allowance.
- Rest, water and feed.
- Observation of animals en route.
- Control of disease.

4 How far can calves be transported?

According to EU Regulations, calves of less than 10 days of age may travel for a maximum of 100km (approximately 62 miles). You are not allowed to transport calves of less than 14 days of age on journeys exceeding eight hours unless they are accompanied by their mother.
Calves should always be transported by the shortest route possible.

5 Are there regulations surrounding journey time for young calves?

The length of time travelled is more important than the distance in terms of stress.
On 5 January 2007, a new EU rule on the protection of animals during transport came into operation (Council Regulation (EC) 1 of 2005 on the protection of animals during transport and related operations). The Council Regulation has been given legal effect in Ireland by the European Communities (Animal Transport and Control Post) Regulations 2006 (S.I. No. 675 of 2006). The maximum journey time for unweaned calves in a basic standard vehicle should not exceed eight hours. This length of journey does not negatively impact on animal welfare, even without access to feed for eight hours prior to transport. (http://www.agriculture.gov.ie/animaltransport/).

6 What are the space requirements?

Young calves require enough space to be able to lie down during transit. In general, small calves (50kg) require 0.3-0.4m^2/animal. Medium sized calves (110kg) require 0.6-0.7m^2/animal.

7 Calves fit for transport:

- Received adequate colostrum from birth.
- Ears up, clear nose and eyes bright.
- At least 10 days old.
- No scours.
- Standing and walking.
- Dry hair and navel.
- Firm, worn hooves.
- Correctly ear tagged.
- Good weight for age.

Before departure:

- Check navel and spray navel with 7% iodine solution before transporting and again in the shed upon arrival.
- Ensure calves are in separate compartments from other classes of stock. Compatible groups should be selected to avoid adverse animal welfare consequences i.e. young separated from older/larger animals.

This calf meets the criteria and is fit for transport.

8 What are the general requirements of calf transport vehicles/trailers?

The transport vehicle should be in good repair to ensure that calves arrive at their destination with no injury and minimal bruising.

Do	Don't
• Feed three litres of milk or milk replacer on the morning of transport, ideally as near as possible to the time of departure. • Place calves gently in the calf trailer. • Drive slowly. • Provide some bedding on floor, especially for long journeys. • Check calves on-route.	• Overfeed calves before transport. • Force calves into the trailer. • Place too many calves in the trailer. • Transport calves in the trunk of a car, sealed container, or anything that restricts airflow. • Tie the calves' legs in order to restrain them.

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Section 2

Habituation
To a new Environment

Introduction

When calves arrive at the new farm it is important to make sure there are adequate facilities to unload them safely and efficiently. In addition, correct calf facilities must be in place prior to their arrival so that calves can be unloaded without delay and begin acclimatising to their new environment.

1. **Unloading calves.**
2. **Disease risk of bought-in calves.**
3. **Electrolyte provision upon arrival.**

Habituation
To a new Environment

① Unloading calves

Calves should be unloaded from the vehicle into appropriate facilities as soon as possible after arrival at their destination. Sufficient time should be allowed for unloading to proceed quietly and without unnecessary noise, harassment or force. For this task, a loading ramp with solid sides is best.

A non-slip unloading ramp will help prevent calf injury.

The facilities on arrival should provide all animals with appropriate care and comfort, adequate space and ventilation, access to water and shelter from extreme weather conditions. An animal that has become sick, injured or disabled during a journey should be appropriately treated. The calf should be unloaded in a way that causes the least amount of suffering. It should then be placed in a separate pen with the appropriate facilities made available i.e. water, clean bedding etc.

Enough time should be allocated to allow calves to be unloaded calmly and efficiently.

2 Disease risk of bought-in calves.

Buying calves always carries the risk of introducing infectious agents, the worst case being infections that have not been on the farm before. An example is *Mycoplasma bovis*, which is a widespread problem with bought-in calves and can cause a form of pneumonia that is very severe and difficult to treat.

HOW TO:

Avoid disease introduction

- Buy calves directly from producers. Buy from as few different sources as possible.
- Ideally buy from producers you know and trust.
- Always keep bought-in animals separate from your own stock in a quarantine area for at least a week. A small pen is required for this confinement.
- Observe calves carefully twice a day while they are in quarantine and carry out any assessments and/or testing recommended by your vet. The most important things to look for are:
    - Injuries that might have occurred during transport.
    - Lameness or uneven gait.
    - Evidence that the calf is sick; lethargic, sunken eyes, drooped ears, panting.
    - Evidence of diarrhoea and/or blood in the faeces.
    - Check rectal temperature of calves 1-2 hours after the calves arrive - if you detect fever (over 39.5°C or 103.1°F, contact your vet for advice and treatment).
- Bought-in calves released from quarantine should preferably be introduced to home-reared calves after turn out to pasture.

Calves will rapidly adapt to their new environment if conditions are appropriate.

3 Electrolyte provision upon arrival.

During transport it is common for calves to lose weight due to lack of food and water. This can lead to dehydration, loss of electrolytes and low blood sugar. To help counteract this, two litres of electrolytes should be given after resting for two to three hours. This will help reduce dehydration and increase appetite or food interest. A multi-vitamin injection can also be administered within two days of arrival and again 10 days later.

Feeding schedule for the first four days:

Day	Time	Feeding Schedules	Concentrates
1	PM	Provide *ad lib* access to warm electrolyte solution and allow the calf to rest overnight	----
2	AM PM	2L of milk replacer (38°C) 2L of electrolyte solution (38°C)	----
3	AM PM	2L of milk replacer (38°C) 2L of electrolyte solution (38°C)	Handful
4		Normal feeding schedule	*Ad lib*

KEY TIPS:

Feed electrolytes for the first 12 hours after delivery.

300
240
180