CalfCare leaflet series

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Contributing to a profitable and sustainable farming and agri-food sector through improved animal health

Management of the Suckler Calf at Weaning to Prevent Pneumonia

For Irish Farmers, Advisors and Vets

CalfCare Leaflet Series Vol.5, Ver. 1, Sept 2012

CALF HEALTH PROGRAMME

CalfCare
Animal Health Ireland.ie

Animal Health Ireland, 4-5 The Archways, Carrick-on-Shannon, Co. Leitrim, N41 WN27

THIS GUIDE IS PART OF A SERIES OF LEAFLETS ON VARIOUS IMPORTANT ASPECTS OF CALF HEALTH

1. Calving and Care of the Newborn Calf
2. Colostrum Management
3. Management of the Scouring Calf
4. Early Nutrition and Weaning of the Dairy Calf
5. Management of the Suckler Calf at Weaning to Prevent Pneumonia

AHI gratefully acknowledges the financial and other contributions of our stakeholders.

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Why is it essential to reduce stress at weaning?

Weaning stress has an adverse effect on the immune system, making calves more susceptible to disease, particularly pneumonia. Therefore, it is essential for the health and performance of the calves to minimise stress around weaning by using proper weaning procedures.

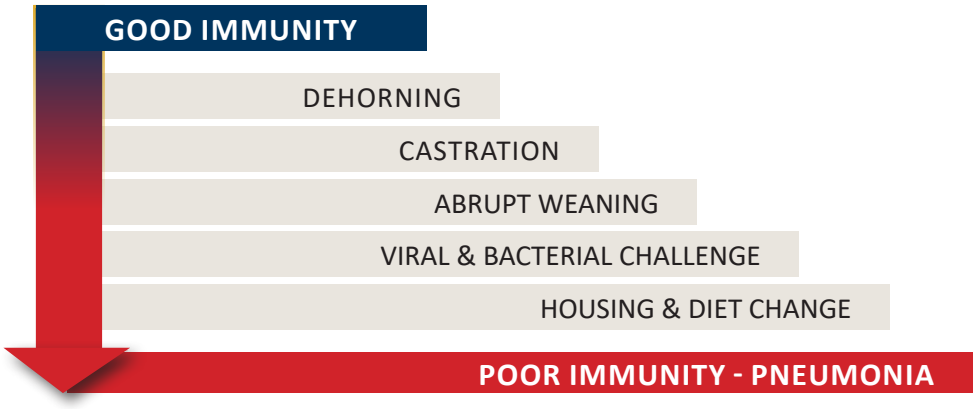


Figure 1: How stressors can lower immunity and may lead to pneumonia

Why is weaning stressful for the suckler calf?

Weaning breaks the maternal-offspring bond and removes milk from the calf's diet. In a natural environment the cow would initiate weaning gradually by refusing the calf access to suckle at a later time than that which is generally practised by suckler farmers. Weaning stress is often compounded by other husbandry practices occurring at the same time, e.g. change of environment (outdoors to indoors), change of forage diet (from grazing grass to eating silage usually with concentrate supplementation), and transport/selling etc. See footnote for details of AWRBS Scheme for suckler herds.

Avoid additional stressors at weaning

Animal handling facilities

Good handling facilities are essential to allow safe, easy and rapid handling of excitable calves at weaning time. Properly constructed handling facilities confine cattle safely and efficiently with minimal animal stress and risk of injury to both cattle and stockpersons.

Good handling facilities lessen stress on cattle and stockpersons

[The Animal Welfare, Recording and Breeding Scheme for Suckler Herds (Suckler Welfare Scheme) was introduced in 2008 in order to improve the standards of animal welfare and the breeding quality of animals in suckler herds. Central to this scheme is the requirement for adherence to "Appropriate Weaning Procedures", based around feeding meal/concentrates to the calf pre-weaning (and post-weaning), graduated weaning and, in situations where farmers sell weanlings, a time delay before calf sale. Refer to terms and conditions of the scheme at http://www.agriculture.gov.ie/farmerschemespayments/sucklerherdswelfarescheme2008-2012/awrbs2010/]

How can you minimise stress at weaning?

1 Vaccination

See section on Weanling Pneumonia for details on vaccination procedures.

2 Parasite treatment

All parasites have a negative effect on the immune system of calves. In particular, lungworm infestation can damage the lungs and increase the risk and the severity of pneumonia. A good de-worming programme prior to the weaning period is essential for health and performance. (See the Parasite Control leaflet series on the AHI website www.animalhealthireland.ie for further details).

3 Pre-weaning nutritional management

Ideally, plan to wean calves outdoors where possible. Prepare the calves gradually for the change in diet and make sure that they have a good nutritional status at weaning. Introduce concentrates to the calves at least one month prior to weaning and gradually increase the allowance with the intention of having the calves consuming at least 1 kg/day at weaning time. This can be done by providing concentrates outdoors. In addition, using a creep gate or raised electric fencing allows the calves to select better grass by grazing ahead of the cows. Continue to feed the concentrates after weaning.

4 Recommended weaning procedure

Wean calves in the best possible weather.

Don't wean by taking away the calves – take the cows from the group. Up to a third of cows should be removed each time. Cows should be removed at a minimum interval of five days apart. Removed cows should be moved out of sight and sound from the remaining group. The same principle applies if weaning has to take place indoors due to adverse weather conditions.

Do not sell calves immediately after weaning - wait at least two weeks

5 Avoid additional stressors at weaning

- Calves should be disbudded at an early age rather than de-horned around weaning. If calves have not been disbudded early do not dehorn until at least four weeks after weaning.
- Calves should be castrated less than six months of age. If that is not possible, castrate them at least one month prior to weaning, or at the earliest two weeks after the calf has been weaned. If calves are castrated over 6 months they must be treated with local anaesthetic.
- In any case, appropriate pain management during these procedures will reduce stress and thus reduce the risk of pneumonia.
- Avoid doing both of these procedures together because it will increase stress and the risk of pneumonia.
- Delay the housing of recently weaned calves for at least three weeks (weather permitting).
- Don't treat for lungworms around weaning - do so at least two weeks prior to planned start of weaning.
- Do not sell calves immediately after weaning - wait at least two weeks.

The purchase of suckler weanlings

It is important to have a system in place which minimizes stress around purchase in order to minimize the associated risk of pneumonia.

Avoid purchasing weanlings of unknown disease history

What are the high risk factors when purchasing weanlings?

- Purchase of weanlings of unknown disease history.
- Mixing of weanling groups and transport to a new farm where feeding, management and environment may be alien to the animal.

What are the high risk factors post purchase?

- Housing at a high stocking density.
- Introduction of new animals to established groups (risk of bullying and contact with unknown infectious agents).

How can you reduce the risk?

Where possible, purchase weanlings which have been managed prior to sale in accordance to the recommendations in this leaflet

- Where possible, purchase weanlings which have been managed prior to sale in according to the recommendations in this leaflet.
- The newly purchased weanlings should, where possible, have a similar diet and environment to that on the farm where they were weaned.
- Ideally, allow the newly arrived weanlings access to a sheltered outdoor area where water and feed are freely available.
- Observe the new arrivals 2 to 3 times daily for signs of weanling pneumonia (See section on Weanling Pneumonia). Veterinary intervention at the first signs of pneumonia is essential as the onset and progression of the disease can be very rapid.

Ideally, purchasers should liaise with sellers (through the marts) to discuss weaning management practices. Then the purchaser can ensure that their system aims to reduce weanling stress. Plan a programme for purchasing weanlings where stress is minimised and where purchased groups are acclimatised outdoors or in open buildings before winter housing.

Weanling pneumonia

1 Clinical signs

Early diagnosis is essential for treatment success and frequent observation is recommended post-weaning and after housing. Initial signs of pneumonia can be non-specific for respiratory disease such as being 'off form', dullness, reduced feed intake and lack of gut-fill. Other signs may include fever (over 39.5 degrees C), increased respiratory rate, watery discharge from the nose and eyes. Later signs include pus like nasal discharge, and severe respiratory distress. By the time these are noted the disease is advanced. If you suspect weanling pneumonia consult your own veterinary practitioner for advice on diagnosis and treatment.

2 Causes

Common infectious agents causing weanling pneumonia are viruses like Bovine Herpesvirus 1 (the virus that causes IBR), Bovine Respiratory Syncytial Virus (BRSV), and Parainfluenza Virus 3 (PI3), and bacteria *(Mannheimia haemolytica, Pasteurella multocida, Histophilus somni, Mycoplasma bovis).*

However, pneumonia is a classic multi-factorial disease, and it is the combination of these infectious agents with inappropriate management and husbandry factors that causes outbreaks of the disease. In fact, healthy cows and calves may carry these pathogens without showing any signs of clinical disease. In addition, BVD virus can suppress the immune system and lead to pneumonia. Calves with pre-damaged lungs from lungworm infestation also have a higher risk of developing pneumonia.

Unfavourable environmental conditions and stress usually lead to viral infection of the lungs which is then followed by bacterial infection. Bacterial infection causes the main damage to the lungs which can be irreversible and lead to ill-thrift or death if treatment is too late or not continued for long enough.

3 Treatment

Preventing pneumonia by managing animals correctly, as detailed above, is preferable to treating outbreaks. Antibiotics are ineffective against viral infections. However, where bacterial involvement is suspected, antibiotic treatment is required. Anti-inflammatory drugs may also be useful. In any case of weanling pneumonia it is essential that you get advice from your vet on what drugs to use, and how to use them. If antibiotics are not used appropriately (the correct drug for the disease, long enough and in the correct dosage), there is an increased risk of creating bacteria that are resistant to further treatment. Your own veterinary practitioner can also advise on the need to treat all animals within the group.

No matter what antibiotic is used, the most important factor for treatment success is to start treatment very early in the course of the disease and to treat for long enough (at least for another two days after the signs of disease have disappeared).

If you suspect weanling pneumonia consult your own veterinary practitioner for advice on diagnosis and treatment

4 Treatment failure

If a calf already has severe trouble breathing, or pus running from their nose before treatment is started, it may not be possible to cure it. If weanlings are not treated early enough and for long enough at the first signs of pneumonia, the surviving harmful bacteria may start growing again and the calf may relapse with recurrent bouts of pneumonia after a short while. Calves that suffer repeated and/or severe bouts of pneumonia may end up stunted for life. Such calves appear healthy after the signs resolve but do not achieve compensatory growth in their second season at grass. The cause of this stunting is permanent lung damage and pleurisy.

If treatment fails, it was usually started too late or not given for long enough

5 Vaccination

Vaccination may be helpful in the prevention of weanling pneumonia. Vaccines are available against the most commonly involved viral and bacterial agents (ask your own veterinary practitioner for advice). Vaccines need time to build up protection. Ideally, vaccination programmes in weanling calves need to be completed before the time of weaning and housing to have the best effect. For most vaccines that means that vaccination has to start at least six weeks before the planned date of weaning. Ensure the number of vaccine doses administered conforms to manufacturers' recommendations.

In certain situations, vaccination may be used in the face of a viral respiratory disease outbreak – consult with your own veterinary practitioner.

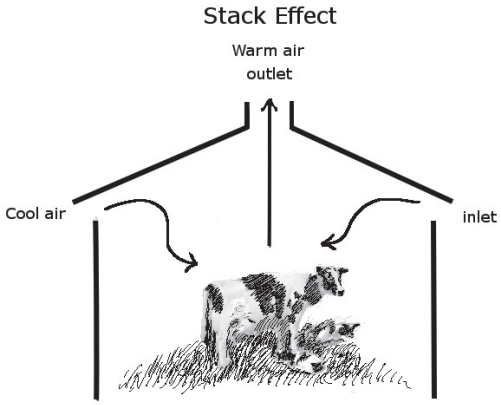
6 Other considerations

- A review of current housing and ventilation is recommended if there is a pneumonia outbreak.
- Isolation of individual sick animals is recommended.

How to reduce the risk of pneumonia in recently weaned and housed calves

Good housing and ventilation can, together with the management factors above, markedly decrease the risk of weanling pneumonia. Contaminated air (dust, humidity and noxious gases) is detrimental to calf health.

Proper consideration of shed location is essential to ensure good ventilation.



In naturally ventilated sheds adequate air change should be provided by a combination of wind force and stack effect.

If your shed is smelling of ammonia – it's definitely not adequately ventilated

Consider mechanical ventilation if natural shed ventilation is inadequate.

Good ventilation has to be provided without creating draughts. Have your ventilation checked if you are worried. If your shed smells of ammonia - it's definitely not adequately ventilated.

Table 1: Suggestions for building specifications*
Height difference between inlet and outlet should be at least 1.5 m and ideally 2.5 m
Height of the eaves should be at least 4 m
Inlet area below the eaves should be twice the outlet (ridge opening) area
Outlet area should be at least 8 m^2 per 100 weanlings
Width of the outlet area should be about 5 cm for every 3 m width of the building

- A high stocking density increases the risk of pneumonia and has an adverse effect on growth rate and feed efficiency.
- There should be sufficient space for all animals to feed comfortably at the same time to reduce stress, which may contribute to the risk of pneumonia.
- Housed calves may initially have problems learning to use certain types of water drinkers. Therefore access to water from troughs should be provided. Clean fresh water is essential to prevent dehydration which will increase the risk of pneumonia.
- Ideally, calves should not initially share airspace with adult animals.

* Information in part from: EBLEX BEEF BRP MANUAL 6; Improve beef Housing for Better Returns. For more information on housing, see: http://www.eblex.org.uk/documents/content/returns/brp_b_beefbrpmanual6-improvedbeefhousing.pdf

For minimum requirements on calf housing and ventilation, see:
http://www.agriculture.gov.ie/media/migration/farmingschemesandpayments/farmbuildings/farmbuildingspecifications/pdfversions/S101.pdf
http://www.agriculture.gov.ie/media/migration/farmingschemesandpayments/farmbuildings/farmbuildingspecifications/pdfversions/S123.pdf

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HOUSING DETAILS: The TWG thanks **Tom Ryan**, Teagasc Kildalton for his input in the housing section.

The contents of this leaflet are based on the following peer-reviewed review article compiled by the AHI TWG on Calf Health:
Lorenz I, Earley B, Fallon R, Gilmore J, Hogan I, Kennedy E, More SJ: Calf health from birth to weaning. III. Disease prevention and management with particular reference to calf pneumonia. Irish Veterinary Journal 2011; 64, 14. http://www.irishvetjournal.org/content/64/1/14.

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