



Young suckled calves have developing immune and digestive systems and are wholly dependent on the dam's milk for nutritional requirements and growth.

As they are still developing they are susceptible to disease, therefore maximising disease resistance through vaccination and minimising infectious pressure of disease pathogens through environmental management should be prioritised.

Disease in young calves affects their future growth potential, which in turn impacts on finishing times and also productivity for future breeding animals.

INFECTIOUS PRESSURE

Pathogens (bacteria, viruses and parasites) which cause disease vary from farm to farm; diagnostics should be carried out regularly on farm to understand which pathogens are present – this will guide appropriate control programmes. Factors which can contribute to the infectious pressure a calf is exposed to include:

Fresh air – Good ventilation is important in calf housing to ensure removal of pathogens. Ventilation is an essential component of shed design, and comprises:

- Inlets – allows fresh air into the shed; they should also be designed to minimise draughts at calf level. Draughts create wind chill which makes calves cold and is stressful.
- Outlet – allows stale air to escape from the shed, warmed by the body heat of housed animals.

When young calves are housed with their dams, the **stack effect** (Figure 1) will work if adequate inlets, outlets and stocking density are considered.

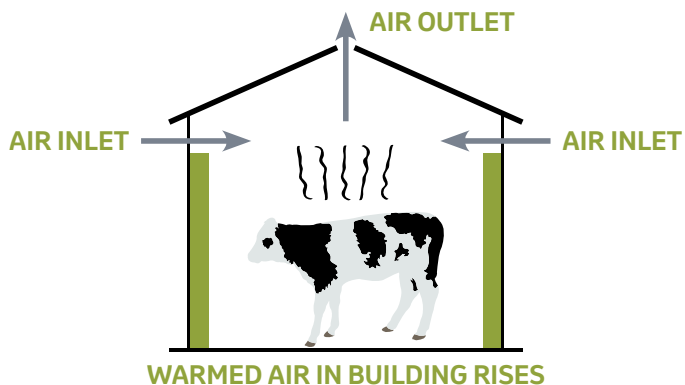


Figure 1: Stack effect. Stale air is warmed by body heat and leaves through the roof outlet, drawing in an equal volume of fresh air through the inlets.

Moisture – Damp bedding and lying areas promote survival of pathogens and lead to heat loss from the calf.

Stocking density – Avoid overstocking of sheds, as this can compromise the effectiveness of ventilation, adequacy of bedding and result in calves being exposed to an increased pathogen load.

Isolate sick calves – Sick calves should be isolated with their dams to minimise excretion of pathogens into the group environment and to facilitate appropriate nursing care and monitoring.

Biosecurity – Do not buy in young calves from other farms. However healthy they may appear they could bring with them numerous pathogens which are not present on your farm, presenting a significant risk to the rest of your calf group.

Recording and analysing the incidence of diseases such as scour, pneumonia and navel or joint ill is important to identify areas where improvement is required. Records of treatments used, response to treatment and any relapses of disease are also an important component of health planning on farm.

AIM: Minimise the infectious disease pressure a calf is exposed to by being aware of disease rates on farm and the pathogens present, isolating sick animals, avoiding introduction of disease and optimising environment.

Further information: AHDB BRP+ Improve beef housing for better returns.



MSD

Animal Health

DISEASE RESISTANCE

Factors which can support calves' developing immune systems include:

Colostrum

Antibodies from the dam can be absorbed within the first 24 hours (see Calving and Neonatal Management sheet), but in the suckler calf continued ingestion of dam's colostrum and milk provides an ongoing supply of antibodies which can combat scour pathogens in the gut.

Vaccination

Vaccines increase immunity against a variety of pathogens. They can either be administered to the calf prior to the risk period for disease, or to the dam prior to calving so she produces increased antibodies in her colostrum.

Nutrition

Calves of this age rely almost entirely on their mother's milk to meet their nutritional needs, providing energy for growth but also important immune factors. Getting maternal nutrition right for lactation is essential (see Nutrition sheet).

Temperature

Very young calves can be susceptible to the cold, and this is worsened by moisture and particularly by draughts. Prolonged wind chill at calf height will cause stress, as well as reducing the insulating properties of the calf's coat. Appropriate shelter must be provided to avoid draughts at calf level both indoors and outdoors, and bedding must be plentiful, clean and dry.

Exposure to prolonged severe weather will be stressful for young calves and can reduce their resistance to disease. If calves are chilled they must use energy to keep warm rather than grow, which impacts on growth rates whilst also reducing their resistance to disease.

Moisture

Moisture contributes to heat loss from young calves. Sheds should be designed and maintained to minimise moisture ingress (leaks fixed, appropriate drainage etc.). In an indoor environment calves should have well bedded lying areas with their legs at least partially covered by bedding when lying down. Outdoors, fields should be well drained with adequate shelter from the elements.



Disease

Some diseases (e.g. BVD) lower the ability of the immune system to fight off other disease. Control of BVD is essential on farm to reduce the incidence of calf diseases such as scour and pneumonia. Where more than one disease occurs at the same time (e.g. scour and pneumonia) it is an even greater challenge to the calf's immunity and will increase the severity and long-term effects on growth rates.

Stress

Factors such as overcrowding, inadequate nutrition, unsuitable environment, mixing of groups, severe weather and rough handling all contribute to stress in calves, which reduces their ability to resist disease. These factors should be avoided where possible.

AIM: Maximise calf resistance to disease with appropriate vaccination programmes, ensuring an appropriate environment and maternal nutrition, whilst minimising stress and concurrent disease.

Further information: *AHDB BRP+ Better management of bovine respiratory disease.*