

Food Safety Info-Sheet

Mould on Carcasses

What you need to know

Where is mould found?

Mould is a type of fungi that is naturally occurring organism found in air, water and soil. Mould grows best in damp and poorly ventilated areas and reproduces through the production of spores. Moulds are widely distributed within the environments of all livestock and the varieties and quantities both change throughout the seasons. Controls in meat processing and storage are crucial to prevent the growth of moulds. They can grow on meat products which affects food safety, shelf life and causes waste of product. Since moulds grow slowly, they are most often associated with aged product.

Why do I have it in my facility?

Generally, proper carcass dressing procedures are designed to reduce or eliminate bacteria on the meat and this includes microorganisms such as yeasts and moulds. In other words, if a carcass is properly processed, it should not have any mould contamination on its surface after dressing.

Therefore, if you are having issues with mould on your product, one of these situations is likely occurring:

- Mould coming into your facility on wild game or live animals is not being sufficiently removed through dressing procedures,
- Effectively cleaned carcasses are being re-contaminated with mould that is present in the air or growing in your facility environment on floors, walls and/or equipment.

Myths about mould on meat

Myth: Mould cannot grow in cold storage

False. It can grow at temperatures near freezing.

Myth: Mould is visually identified

False. Two samples of the same species can visually differ at different points of mould growth, so it is difficult to identify mould with the eye alone.

Myth: Mould is not dangerous to health

False. It can produce mycotoxins that can be dangerous to human health with repeated exposure.

Myth: Mould produces favourable flavours on meat

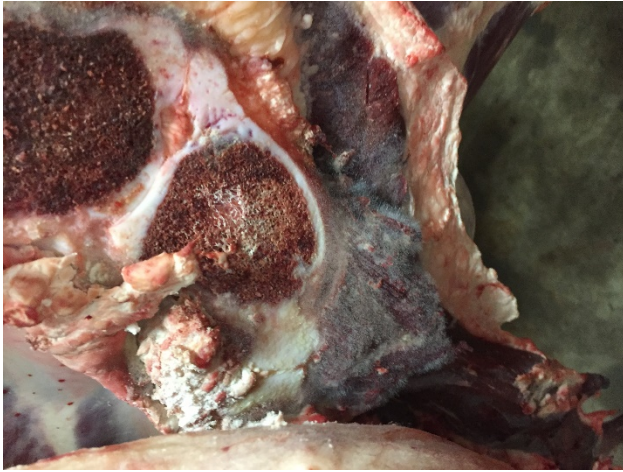
True but false. While it is true certain types of mould can produce desirable flavours, most mould produces very undesirable flavours.

Why is this important to meat production?

Mycotoxins are toxins that are produced by some mould types, and they are the biggest food safety concern caused by moulds. However, the effects of toxins are not immediate—they show up over time with repeated consumption. Some of the serious effects of ingesting these toxins include damage to nerve tissue, malformation of embryos, kidney damage, liver damage, suppressed immune system functions and cancer.

Mycotoxins are of particular concern to processors because they are very stable. In fact, they remain after cooking, even if the mould itself is destroyed.

Once the mould is established and it begins to grow, it must be trimmed from the carcass or meat, which can result in substantial waste and loss of meat (i.e., money) for the processor/owner. Therefore, controlling recontamination of a clean carcass is the best approach to controlling it in the food system.



How can I avoid mould in my facility or on my product?

The following actions together will help you control mould growth:

Sanitation – keep your facility very clean, particularly food contact surfaces. Don't overlook the floors and walls as mould can grow there and be easily transferred to the meat. Remember that you cannot see the microscopic organisms before they begin to grow into the characteristic fuzzy growth that we associate with mould.

Storage temperature – Many moulds are known to grow at near freezing temperatures and above. Limiting the amount of time

that the temperature rises during defrost cycles is a good practice.

Aerosol creation – avoid spraying with high-pressure hoses as these can give the microscopic mould “wings” to fly through the facility. Properly dressed carcasses can become contaminated when the droplets of aerosols settle on the meat surface as it is put in storage for the aging process.

Relative Humidity – the typical recommendation for an aging cooler is 57–80% humidity, as relative humidity higher than this encourages mould growth.

Airflow - control airflow from slaughter floor through storage and processing. Air should flow from clean to dirty areas; keep doors closed where possible and minimize employee flow from dirty to clean.

Air circulation - maintain constant air circulation to avoid dead spots or excessive flow around the carcasses. Recommended airflow ranges from 0.5 to 2.0 m/s but keep that air clean! Ultraviolet lights and air filters have been shown to be successful in controlling or eliminating mould in the air.

Cooler load - do not overload your coolers as this can lead to improper control of air flow, temperature, relative humidity or temperature. There should be enough room to walk between rows of carcasses with minimal carcass to carcass touching.

Wild game/Uninspected - avoid bringing mouldy carcasses and wild game into your facility. Wild game may be heavily contaminated with mould before you even notice any growth on the carcass.

Glossary

Aerosols: a suspension of small particles (water droplets) in the atmosphere (air).

Air circulation: the movement of air around the carcasses.

Air flow: the direction the air moves in a facility.

Mycotoxins: any toxic substance produced by a fungus or mould.

For more information

If you would like more information on mould, or want to receive related info sheets, contact af.foodsafety@gov.ab.ca.

alberta.ca/food-safety.aspx

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