



Making biltong

K

Know

Useful things to know

- If you make other ready-to-eat dried meat products, such as droëwors, that won't be cooked, there will be processing steps that are not covered by this card. You will need a 'custom' food control plan for these products www.mpi.govt.nz/food-business/running-a-food-business/food-control-plans/custom-food-control-plans/create-custom-food-control-plan. 
- You can only use this card if you are making biltong from **Red Meat** (beef, lamb and venison).
- Meat must have originated from a registered premises operating under a Risk Management Programme, and subject to national microbial monitoring. This excludes micro abattoirs (who are not subject to national microbial monitoring). Registered premises can be found here: Register of Risk Management Programmes mpi.my.site.com/publicregister/s/RiskMeasureSearch. 
- Scraps and trimmings left over from other processes in your business may be contaminated and are not suitable for making biltong using this card.
- The quantities of vinegar and salt in the marinade act as [hurdles](#) to prevent microbes growing on cut meat surfaces.

- Biltong needs to be dried to a level of water activity (a_w) of less than 0.85. This helps to ensure harmful [bugs](#) won't grow or produce toxins in the dried biltong.
- Because biltong isn't cooked, it is particularly important to make sure your processing environment and equipment is clean and you are washing your hands as required.
- Your process needs to operate hygienically and consider factors that may affect the rate of drying including:
 - **thickness of the slices** – the thicker the slices, the longer the centre of the meat will take to dry.
 - **hanging and arranging slices** – making sure slices don't touch each other helps ensure even drying through the slice. Where slices touch, bugs can grow.
 - **air movement across meat surfaces** – the faster the air speed, the quicker moisture is removed from the surface of the meat.
 - **humidity** – high air movement can cause case hardening. You can increase humidity to prevent case hardening.
 - **surface fat** – can act as a water barrier slowing the rate at which the meat under it dries.
 - differences in **seasonal temperatures and conditions** – you should consider the environmental conditions you are making biltong in. Seasonal temperatures differ between countries and regions. You may choose to make biltong at dryer times of the year, or you might want to control drying conditions using different equipment and/or settings.
- You need to know food additives you use in your biltong are permitted under [the Code](#). Follow the rules in the '[Allergens and knowing what is in your food](#)' [orange] card for more information.

Rules you must follow

- You must carry out checks each time you make biltong and **record** the results to show how you know a batch of biltong has dried to below a_w 0.85.
- You can check the water activity of each batch of biltong using one of the three methods below. Tick which one you will use:

send biltong samples to a laboratory to test for a_w , or

use a water activity meter (used according to manufacturers' instructions), or

use percentage (%) weight loss to calculate water activity. If you choose this option you must use this procedure: www.mpi.govt.nz/dmsdocument/70155.



- Information in this card marked with the pencil icon identifies:
 - the checks you must do at each step in the process; and
 - the information you will need to provide (refer to the record blank here: www.mpi.govt.nz/dmsdocument/70156).

- The record blank (www.mpi.govt.nz/dmsdocument/70156) is a way to show how your biltong meets the requirements of your plan. You don't have to use this specific record blank, but you must keep **records** of the information indicated in this card.



Sourcing

- You must follow the '[Sourcing and receiving your food and drink](#)' and '[Tracing your food and drink](#)' [orange] cards.

- You must also only use:
 - meat from a registered NZ meat processor (Register of Risk Management Programmes), other than a micro-abattoir.
 - fresh hindquarter meat, or hindquarter meat that was frozen when fresh.
 - herbs, spices and other ingredients that have been hygienically produced.
 - meat kept chilled at or below 5°C until it is used.
-  **Record** confirmation from your meat supplier that meat ordered for making biltong comes from an authorised abattoir in New Zealand with Establishment Number(s) on the box or carcass.

Preparing

- Slice meat to the same, or very similar, thickness. You may use tempered meat (thawing meat that is still partially frozen) for slicing.
- As well as following requirements in your plan for '[Allergens and knowing what is in your food and drink](#)' [orange] card, you must prepare the marinade and accurately measure ingredients so that:
 - salt and vinegar are present in the minimum quantities per kg of meat as identified in the following table, including when you use a commercial biltong pre-mix.
 - biltong must only contain food additives that are allowed by [the Code](#), in a quantity permitted to be in the finished food product. See example in the table below.

- Ensure all meat surfaces are covered with the marinade, then marinate at or below 5°C for at least 10 hours.

Ingredient	Quantity per kg of meat
Meat	1 kg
Vinegar	Minimum weight 30 grams
Salt	Minimum weight 30 grams
Preservative (for example Potassium Nitrite (249))	50mg/kg (maximum permitted by the Code 125mg/kg in finished product)



• **Record** this:

- the weight of meat used in the batch,
- the weight and thickness of a representative sample (10 or more) of raw meat slices from each batch of biltong. Number each slice before starting the drying process (only if you use the % weight loss method),
- your calculation for ensuring the levels of sodium or potassium nitrite added (or any other permitted food additive) does not exceed levels permitted in the dried biltong,
- the amount of salt and vinegar (calculated using the total weight of meat).



Note: If you use the same weight and thickness of meat, amounts of salt, vinegar, and permitted additives each time, you do not need to write them down each time.

Drying, Storing and Handling

- Dry meat slices in a dedicated space such as a drying room or cabinet ensuring they are protected from contamination.
- Hang marinated slices of meat using clean and sanitised hooks.
- Hang slices in the drying space so they do not touch other pieces of meat, walls, or equipment; and so air can circulate around each slice during drying.
- Make sure that equipment used in the dedicated drying space:
 - is operated to dry meat evenly to prevent 'case hardening' (crusty outer, wet centre),
 - is monitored throughout the drying time to ensure it operates as you intend it to for drying the meat,
 - does not contaminate meat while drying,
 - is thoroughly cleaned between batches (for example, from meat 'drip').
- At the end of the drying process biltong must have a water activity of below a_w 0.85. Check water activity using your chosen method.



- **Record** this:
 - the air temperature for drying and any other settings of equipment you use that are necessary for the process (that is settings you rely on each time you make biltong,
 - the date and time the batch of marinated meat was hung in the dryer,
 - the date and time the batch of biltong finished drying.
- If results from checking a_w show the biltong is not below a_w 0.85, you:
 - must dry the biltong for longer and retest until the batch is below a_w 0.85,

D

Do



- must write down the actions you took with the batch of biltong until you confirmed the a_w was below a_w 0.85 (for example, using the 'Biltong batch **record**'),
- will need to review your drying process to find out why the a_w of biltong did not lower to less than a_w 0.85. Then you will need to adjust your process so it works as intended.

- **You must not sell biltong unless the a_w is below 0.85.**

- You must store and handle dried biltong hygienically under conditions that keep the water activity below a_w 0.85 throughout its shelf-life.

Establishing shelf-life

- To provide accurate information to consumers about how long biltong will be safe to eat once it has finished drying you will need to determine its **shelf-life**. Follow the rules in the 'Packaging and labelling your food or drink' [orange] card to determine this.

S

Show

Things to show your verifier

- You will need to show or describe to your verifier how you:
 - know every batch is safe and suitable with an a_w below 0.85,
 - ensure the process is hygienic and works as intended each time,
 - confirm meat is from NZ and from a registered premises,
 - how meat is sliced to an even thickness,

- ensure the vinegar and salt to meat ratio is at least the minimum amount required,
- thoroughly marinate meat slices before starting the drying process,
- know your drying process will consistently dry each batch of biltong,
- store and display biltong to ensure it won't absorb moisture,
- know product shelf-life is accurate.