Ministry for Primary Industries
Manatū Ahu Matua

Guidance Document

Deer Velvet Processing

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Title

Guidance Document: Deer Velvet Processing

About this document

This guidance document has been developed to provide guidance for Risk Management Programmes (RMP) operators to assist them to meet the requirements under the Animal Products Act 1999 (APA)

Related Requirements

- Animal Products Act 1999
- Animal Products (Exemptions and Inclusions) Order 2000
- Animal Products Notice: Specifications for Products Intended for Human Consumption 2016 amended 2019
- Animal Products Notice: Regulated Control Scheme for Deer Velvet Harvest 2017

Document history

Version Date	Section Changed	Change(s) Description
March 2020	all 3.5.2	Inclusion of IS6 Deer Velvet Processing Inclusion of reference to COP Further Processing

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Disclaimer

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1 Purpose

The purpose of this Guidance Document is to provide guidance for the processing of deer velvet that will undergo further processing prior to human consumption.

2 Background

Industry Standard 6/ Industry Agreed Standard 6 (IS6/IAS6) was replaced with Operational Code: Post Slaughter Activity – Red Meat Code of Practice Chapter 9 (CoP9) in 2018. During the industry standard revision the intention was to incorporate IS6/IAS6: Chapter 14 on deer velvet processing into Code of Practice 11 (CoP11), this code is still in development. The Guidance Document: Deer Velvet Processing has been developed as an interim measure, and details IS6/IAS6: Chapter 14. Once CoP11 is published, the guidance document will be removed.

Definitions

Deterioration includes any biological, chemical or physical contamination, or any degradation or process failure to the extent that the nature and intended quality of the product is affected;

Handling means the movement, holding and conveying of food during processing until the food is preserved. Handling will have an meaning in respect of packaging, chemicals, protective clothing and processing equipment used for or during the production of food;

Water Activity, (a_w) is the ratio of the water vapour pressure of the food (p) to that of pure water (p_o) at the same temperature: $a_w = p/p_o$

Guidance
When a solution becomes more concentrated, the water vapour pressure decreases and the a_w falls from a maximum value of 1 for pure water.

Any term or expression that is defined in the Act or regulations made under the Act and used, but not defined in this Notice, has the same meaning as in the Act or regulations.

3 Deer velvet processing

(1) This section applies to the processing of green velvet into dried stick deer velvet and sliced deer velvet intended to undergo further preparation, for example, into a tonic or broth, by the consumer prior to consumption. This section does not cover the processing of deer velvet for direct human consumption, for example, deer velvet capsules.

3.1 Outcome

(1) Deer velvet must be processed in such a manner that the reduced water activity and drying process results in a shelf stable product.

3.2 General principles

(1) Where velvet is imported into NZ for further processing, the conditions relating to the processing of imported materials general export requirements also apply.

(2) Upon arrival at the premises, green velvet is to be subjected to incoming product checks to ensure fitness for purpose.

(3) Checks should include that the frozen product has no evidence of temperature abuse or spoilage.

(4) Frozen green velvet received is to be held in refrigerated rooms operating at -12°C or colder.

(5) Velvet may be cooked from frozen or thawed prior to cooking. Thawing of velvet is to be carried out in a manner which minimises the potential for the growth of pathogens and spoilage micro-organisms.

Guidance

(a) Where velvet is air thawed in temperature controlled rooms, the thawing process should be operated in accordance with the following parameters:

i) 10°C for a maximum of 48 hours; or
ii) 7°C for a maximum of 72 hours.

(b) Where thawing is conducted at warmer temperatures such as room temperature, should to be managed such that the surface temperature of the velvet is maintained at 10°C or colder during thawing.

(c) Thawed velvet should be further processed without unnecessary delay or it may be kept at 4°C or colder for a period that does not result in deterioration of the velvet prior to further processing.

3.3 Colour preservation and distribution treatments

(1) Green velvet may be:

a) hot water dipped prior to cooking. The dip tank is to be maintained at a temperature that does not facilitate the growth of micro-organisms; or

b) velvet may be preheated in ovens prior to cooking.

Guidance

A dip tank temperature of greater than 59°C has been found to be acceptable in terms of limiting growth of micro-organisms.

(2) Where velvet is cooled prior to further processing, cooling shall be as rapid as practicable to minimise the outgrowth of spore-forming micro-organisms.

(3) Materials used for sealing the ends of velvet are to be an appropriate quality for use in food applications. They are to be managed in a manner that minimises the risk of contamination during storage.

Guidance
Food grade flour, such as that used for baking, is usually used for this purpose.

3.4 Cooking of velvet

(1) Velvet is to be cooked prior to drying in a manner consistent with best industry practice.

Guidance
A minimum of 60°C for 3 hours for D grade velvet and smaller, and 60°C for 5 hours for SAD grade has been found to be acceptable for thawed velvet.

(2) Velvet may be cooled following cooking and prior to drying. Cooling shall be as rapid as practicable to minimise the growth of spore-forming micro-organisms.

(3) Cross contamination between green (raw) and cooked velvet shall be minimised. Where a common facility is used for the cooling of cooked and the storage of green velvet:

a) cooked and green velvet is to be separated by distance; and
b) the refrigeration is to be of sufficient capacity that the cooling of cooked velvet is rapid and does not cause a significant increase in temperature of green velvet; and
c) operators involved in handling green velvet are to undergo appropriate hygiene routines prior to handling cooked velvet.

Guidance
Where possible, velvet should be cooled in a chiller or freezer specifically reserved for the cooling of cooked velvet and with sufficient capacity to cool the velvet quickly.

Where cooked velvet is cooled at ambient temperature, measures such as fans should be employed to improve the cooling rate.

Velvet products should be dried as soon as practicable following cooking if they are not subject to some other means of preservation.

3.5 Drying of velvet

(1) Velvet must be air dried or vacuum dried in a manner that minimises the potential for micro-organism growth during the drying process.

Guidance: velvet drying
Control of the temperature of the dryer and relative humidity in the drying room or vacuum dryer whilst the product is wet enough to support growth has been found to be important in this regard.

Velvet should be dried until it is shelf stable, unless it is subject to additional forms of preservation.

Velvet that is nearly dry may be removed from the dryer to complete drying at ambient temperatures providing it does not result in deterioration of the product. Where velvet is removed from the dryer prior to being fully dry the processor must demonstrate that the moisture content or water activity is below levels that will facilitate bacterial growth.

(2) The effective drying of velvet has been validated by laboratory tests of water activity or moisture content (refer to Further Processing – Chapter 2: Good Operating Practice (3.4)) and may be routinely verified using the "tap test".

Guidance: 'tap test'

The tap test is a traditional and qualitative test designed to demonstrate that the velvet has reached a stage of dryness that equates with shelf stability. The tap test is undertaken by tapping the velvet with a piece of stainless steel or by tapping velvet pieces together. Velvet that is adequately dried gives a medium knock sound with a slight vibration.

Where the qualitative tap test is used, the test is to include testing of the velvet by skilled people, at the slowest drying point in the stick.

The slowest drying point on the stick depends on the placement during drying and usually relates to the thickest point in the stick. A skilled person needs to carry out the test to ensure accuracy and repeatability.

(a) All sticks in a dryer load are to be subjected to the tap test; or

(b) where sampling is undertaken, this is to relate to the worse case, that is, the largest sticks in the slowest drying point in the dryer.

(3) Dried velvet should be stored and handled in a manner which minimises moisture reabsorption and contamination.

3.6 Slicing of velvet

(1) Velvet dried in accordance with the conditions above may be sliced.

(2) Velvet for slicing should be brushed or de-haired prior to slicing.

(3) To facilitate the slicing process, the velvet may be pre-soaked in an ethyl alcohol/water mix.

(4) The ethyl alcohol must be food grade and the water must be potable.

Guidance

A ratio of 50:50 alcohol to water is commonly used for the pre-soaking process. The solutions should be changed regularly to ensure there is no build-up of bacteria. A minimum of once per week would be considered acceptable unless a longer time period was fully validated.

(5) Equipment used for slicing of cooked velvet shall not provide for the transfer of contaminants to the cooked velvet.

Guidance

Separate bandsaws and cutting equipment should be used for cutting of cooked and green velvet. Where common equipment is used, appropriate measures should be undertaken to minimise the risk of cross contamination. For example, processing cooked velvet prior to green velvet or cleaning and sanitising equipment when moving from green to cooked velvet.

(6) Sliced velvet is to be re-dried to achieve a shelf stable product.

Guidance
Some processors may return the sliced product to driers for active drying, whilst others dry it passively in processing rooms, either option is considered acceptable. The very thin and consistent nature of sliced velvet means it is possible to assess dryness by tactile means alone.

(7) Sliced and dried velvet is to be stored and handled in a manner which minimises moisture re-absorption and contamination.

3.7 Documentation

(1) Operators are to document their premises specific procedures in accordance with the processing code described above.

(2) The documented procedures are to provide for the generation of sufficient records to enable verification that they are operating in accordance with this code.

(3) The scope of verification is to include an assessment of conformance with this code.