

Product Name: Horseshoe Gammons

Name of Person Completing the Specification: Naomi Fisher

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Slaughterhouse(s) used:

Site Name	EC Code	GRMS Accreditation
DC Horsens	DK320	See: www.grms.org for current audit certs
DC Blans	DK14	See: www.grms.org for current audit certs
DC Ringsted	DK25	See: www.grms.org for current audit certs
DC Herning	DK31	See: www.grms.org for current audit certs
DC Saeby	DK71	See: www.grms.org for current audit certs

Manufacturing site(s) used :

Site Name	EC Code	GRMS Accreditation
Faaborg	DK45	See: www.grms.org for current audit certs

Specification Approval

(Supplier)

Name: Naomi Fisher

Position: Technical Manager – Danish Crown UK

Sign:

Date: 08.11.2013

Version: 5

LEGAL COMPLIANCE AND FOOD SAFETY CONTROL

Ingredient (State E number and description when applicable)	% Breakdown By Weight	Country Of Origin
Pork	88.00	Denmark
Water	Maximum added 10%	Denmark
Salt	3	Holland
E250	132 ppm	Germany
E252	113 ppm	Poland

Brine Ingredient Breakdown:

Ingredient (State E number and description when applicable)	%Breakdown By Weight	Country Of Origin
Water	83,00	Denmark
Curing Salt	17,00	Holland
E 250	0,071	Germany
E252	0,061	Poland

E250 Maximum: 150ppm

E252 Maximum: 150ppm

Salt: 2,5 % to 3.5%

Nutritional Information:

	As per 100g supplied
Energy	724kJ / 173kcal
Fat	11g
Of which	
- Saturates	4.4g
- Monounsaturates	5.3g
- Polyunsaturates	1.3g
Carbohydrate	1g
Of which	
- Sugars	1g
Fibre	0g
Protein	17.5g
Salt	3g

LEGAL COMPLIANCE AND FOOD SAFETY CONTROL

Microbiological Standards
 (C.F.U per gram unless stated)

	Target	Unacceptable	Frequency
Aerobic Plate Count	$<1 \times 10^5$	$>5 \times 10^6$	Weekly
Enterobacteriaceae (coliforms)	<10	$>5 \times 10^3$	Weekly
Staphylococcus aureus	<20	$>5 \times 10^3$	Weekly

Analytical Controls:

Type Of Analysis	Frequency
Injected Brine Analysis (State type(s) e.g. specific gravity/ Nitrate-Nitrite) Total Count	Per batch weekly
Cover Brine Analysis if applicable (state type(s) e.g. specific gravity Nitrate-Nitrite)	Per batch
Microbiological Analysis Day One	To sampling plan weekly
Nutritional	To sampling plan weekly

FOR MEAT CONTENT /ADDED WATER A NITROGEN FACTOR OF 3.45 MUST BE USED.

LEGAL COMPLIANCE AND FOOD SAFETY CONTROL

Allergens			
Allergen	1. Within Product (Yes/No)	2. Used On Processing Site (Yes/ No)	3. If 'yes' to question 2 what is the risk of contamination
Celery	NO	NO	
Egg	NO	NO	
Lupin	NO	NO	
Molluscs	NO	NO	
Fish	NO	NO	
Gluten	NO	NO	
Milk	NO	NO	
Mustard	NO	NO	
Nuts	NO	NO	
Peanuts	NO	NO	
Sesame Seed	NO	NO	
Shellfish	NO	NO	
Soya	NO	NO	
Sulphite/Sulphur Dioxide	NO	NO	
Comments:			

IS THE PRODUCT FREE FROM	YES / NO	INGREDIENT PRESENT WITHIN
Maize and maize derivatives	Yes	
Fruit and fruit derivatives	Yes	
Yeast and yeast derivatives	Yes	
Vegetables and vegetable derivatives	Yes	
Garlic	Yes	
Coconut and coconut derivatives	Yes	
TVP / HVP	Yes	
GM materials / ingredients	Yes	See statement
Monosodium Glutamate	Yes	
BHA / BHT	Yes	
Aspartame	Yes	
Beef and derivatives	Yes	
Pork and derivatives	No	
Lamb/Mutton and derivatives	Yes	
MRM / MSM	Yes	
Free from Hydrogenated Fats	Yes	
Omega 3	Yes	
Additives	No	E250 & E252
Preservatives	No	E250 & E252
Azo Colours and Coal Tar Dyes	Yes	
Glutamates	Yes	
Benzoates	Yes	
Antioxidants	Yes	
Colour	Yes	
Artificial Colour	Yes	
Flavouring	Yes	
Artificial Flavouring	Yes	

LEGAL COMPLIANCE AND FOOD SAFETY CONTROL

RESIDUES	Present?	INGREDIENT PRESENT WITHIN
Irradiated Ingredients	No	
Growth Hormones	No	
Pesticide Residues	No	
Veterinary Residues	No	

Genetically Modified Organisms (GMOs)

In common with other European countries, Denmark and Germany import significant quantities of soya and soya based products, some of which are used in the production of animal feedstuffs including pig feeds. Most major exporting countries do not segregate GM and non-GM soya and thus it is impossible to establish the exact proportion of GM soya used in feedstuffs used by Danish Crown suppliers. It is also not possible, therefore, to give an overall guarantee that Danish Crown pigs may not have been fed rations including GM ingredients, apart from those raised under organic conditions and in other special contracts.

Animal Welfare

We hereby warrant that this product will meet all EU legislation with regards to Animal Welfare. All our pig suppliers are approved to the DANISH product standard which lays down the minimum standards required, these include EU legislation, Danish legislation and addition good practise requirements. In addition all our slaughterhouses are approved to the Global Red Meat Standard which lays down minimum standards for both Food Safety and Animal Welfare.

Species Control & DNA Testing

The Danish Crown Pork division consists of 8 single species slaughterhouses. We slaughter nothing but pigs sourced from approved farms, transported directly to our slaughterhouses and inspected by both in-house staff and Veterinary authorities on intake and through the slaughtering process.

The primal cuts are transported either direct to the customer or to one of the four single species Danish Crown owned processing plants by approved, accredited hauliers. The primal cuts are cured at one of these processing plants. The sites produce whole, recognisable cured products for the food industry. Our sites do not produce products such as sausages, burger or other products that could become adulterated with meat of non porcine origin.

Due to the nature of the products and the knowledge that we only use Danish Crown owned single species production sites, Danish Crown is confident that there is no gain in DNA testing its own products to assure origin of species. The company therefore does not routinely DNA test any of its product lines.

Residue Monitoring

Danish Authorities have established a surveillance programme for residues of antibiotics/chemotherapeutics, hormones, pesticides and heavy metals in animals and fresh meat. The programme is in accordance with current EU legislation on measures to monitor certain substances and residues thereof in live animals and animal products.

Furthermore the Danish authorities have prescribed statutory maximum residue levels of veterinary medicinal products and pesticides in animal products. Maximum residue levels are laid down in accordance with current EU legislation.

Random sampling and analytical work is scheduled by the Danish Veterinary and Food administration and carried out in collaboration with authorised laboratories.

LEGAL COMPLIANCE AND FOOD SAFETY CONTROL

HACCP SUMMARY:

CCP	Risk	Target	Critical Limit	Monitoring	Verification
Visual control of intestinal content contamination *	Contamination of product by faecal matter	Absent	Present	The surveillance is carried out daily. 22 half carcasses are controlled per kill line, per shift. The half carcasses are selected randomly, the selection is, if possible, carried out over the entire kill date/ shift.	All trained operators will be observed to ensure conformance to the written procedure and ability to perform satisfactorily.
Temperature Control of product **	Growth of Microorganisms due to high temperatures	5°C	>7°C	Continuous temperature monitoring achieved by means of alarmed wireless system.	Visual checks of results carried out daily. Annual calibration of monitors

* Part of Slaughterhouse HACCP Plan

** Part of Processing site HACCP Plan

Full HACCP Study available on request

% Added Water Calculation:

All cured product is controlled to ensure the % of Added water falls within the legal limits.

The following is recorded per batch:

FW = Fresh cut weight
PW = Packaged weight
CL = %Salt in Brine

The formula for calculating % Added Water is:

$$(100-cl)/100 \times (PW-FW) / FW \times 100 = \% \text{ Added water}$$

The amount of added water must be less than 10% for the single batch. If amount exceeds 10%, the product must be further processed to reduce the % by draining, smoking etc, or by using the batch in question in an alternative manner

Any loss, which occurs as a result of transport, storage, processing, etc. after the bacon has been despatched from the production company will not be included in the control.

PRODUCT STANDARDS AND PROCESS CONTROLS

RAW MATERIAL

Boneless leg, without slipper and oyster piece

NETTING

The gammons are packed into red and white nets 20 x 30mm. The cut surfaces towards the ends. The muscles must not be displaced in relation to one another.

CUTTING SPECIFICATION

Deboned without loosening the topside from the silverside.

The rind on the topside is removed so that the entire cap is derinded. Fat on the derinded part of the topside is cut off at the membrane.

The slipper is cut off at the membrane.

The oyster piece: the front tip of the topside is pushed up against the oyster piece before cutting off with a straight and vertical cut.

The rind slip is cut off along the silver sinew.

The shank end – the false shank is cut through with a straight and vertical cut, parallel to the cut in the oyster and where the silver sinew on the silverside stops.

Lymph gland is removed.

The topside is opened approx 2 – 3 cm. All fat down the membrane on the silverside as well as all spider fat must be removed without loosening the false shank.

No unnecessary cuts in the muscles.

CURING SPECIFICATION

Brine:	Water	83,0%
	Curing Mix	17,0%
	Curing mix containing	Sodium Nitrite

Bacon curing salt:

Potassium nitrate: 0.34% **E252**

Sodium nitrite: 0.42% **E250**

Brine concentration: 16,5° BE +/- 0.2° BE

Brine temperature: 3° - 5.5°C

The BE content of the injection brine must be controlled each time a new mixture is produced. A densimeter is used to measure the brine concentration.

Multi Needle Injection

The gammons are injected on an approved multi-needle injector.

The gammons are placed in pairs on a feeding device with the topside turned upwards.

Gain: 15% +/- 1.4% after 5 minutes draining (average of 5 weights)

Upper control limit – R – max. 5.2%

The multi-needle injector is run in and the gain is controlled at regular intervals according to the special instructions.

The gammons are vacuum packed into food grade wrapping material with the cut surface of the oyster piece turned towards the bottom of the bag.

The vacuum bags are marked according to the veterinary stipulations.

PACKAGING & SHELF LIFE

Shelf life information (in days):

Kill to Curing : 5 days
(where kill date is day 0)

Maximum life 8 week (56 days)

Packing Format:

Vacuum packed with no leakers.

Each outer is to be identified with a label stating product name & kill date

Secondary packing format dependant on customer requirements

DISPATCH

In refrigerated vehicles set between 0° and +5°C

Shelf life maximum of 8 weeks from production at 0-5°C

Temperature on delivery <5°C

FINISHED GOODS

<u>Analyses requirements</u>	<u>Target</u>	<u>Min.</u>	<u>Max.</u>
Salt	3.00	2.50	3.50
Nitrate	120	100	150
Nitrite	60	30	150
Added Water			10%
TVC			100.000/gr

VISUAL AND ORGANOLEPTIC REQUIREMENTS:

No visible muscle bleeding. Black and blue discoloured spots on the rind must not exceed 4 square cm/100 square cm.

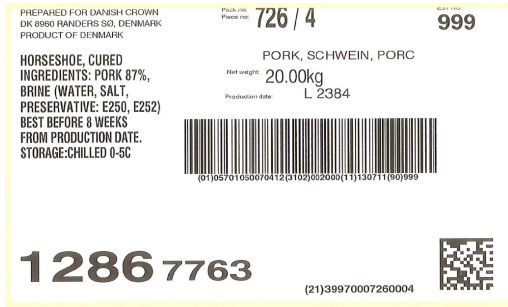
The product must be free from bone and cartilage residues.

No loose meat or fat pieces.

The product must have a fresh smell and appearance and be without discolouring and foreign bodies.

Excess brine in vacuum bag should be no more than 1%.

LABELLING EXAMPLE:



****Please note in order to ensure efficiency when requesting traceability studies, we advise recording the trade document number as printed on all delivery notes****

QUALITY ATTRIBUTES

Attribute	Acceptable Standard	Unacceptable Standard
Fat coverage	Max 13 mm	>13mm
Muscle cut	See page 6	
Butchery spec	See page 6	
Liquid in bag	<1% (visual)	>1% (visual)
Bone chips / cartilage	Absent	Present
Rind / hair	Absent	Present
Bruising / bloodspots	Absent	Present
Extraneous matter	Absent	Present
Butchery slash marks	Absent	Present
PSE	Absent	Present
Leakers	Maximum 1% per delivery	>1% per delivery
Packaging format	Vacuum pack	Any other packing format other than vacuum.
Labelling	Labels to be clear and firmly attached to outer case with information appropriate to the customer	Labels, loose, damaged or missing. Labels with incorrect information
Palletisation	Pallets to be securely stacked and stretch wrapped.	Badly stacked / no stretch wrap.
Pallet condition	Clean, sound pallet.	Dirty, damaged pallet.

FOOD CONTACT PACKAGING REQUIREMENTS

Packaging (essential requirements) Regulations 1998

Is the primary/transit packaging volume and weight limited to maintain the necessary level of safety, hygiene and acceptance for the pack product and for the consumer? Yes

Comment:

Can any material/component be reused?

Yes

Comment: as energy

Are all materials/components recoverable by either material recycling, energy recovery, composting or biodegradation?

Yes

Comment:

Is the presence of noxious/hazardous constituent substances/materials minimised with regard to presence in emissions, ash or leachate when materials/components are incinerated or landfilled? Yes

Comments:

Do all materials/components comply with the limit of sum of lead, cadmium, mercury and hexavalent chromium concentration levels set for 30 June 2001 at 100ppm? Yes

Comment:

held by the supplier and available on request. No change should be made to any specification detail without any agreement with Danish Crown.