

External assessment 2021

Stimulus book

Food & Nutrition

General instruction

- Work in this book will not be marked.

Stimulus 1

Test kitchen report

A company that has a sustainable philosophy and specialises in using sustainable food suppliers and processing has researched the emerging consumer market trends for 2021.

The company prefers a ‘nose to tail’ philosophy — preparing, cooking and consuming all parts of the animal — and focuses on reducing food waste and using sustainably sourced and farmed food components.

The company wishes to provide a product suitable for consumers experiencing diet-related conditions or chronic disease.

It has produced three prototypes for pork cheek stew to expand its range of products for this nutrition consumer market (NCM). It has tested each prototype with sensory profilers from the NCM but a suitable prototype has not yet been identified.

2021 food trends

- Eat minimally processed foods.
- Eat a more plant-based diet to prevent diet-related conditions and chronic disease.
- Consume less food by reducing serving sizes.

Parameters

Prototype: Pork cheek stew

Note: The cheek cut of meat is found in the face section of the animal. It contains connective tissue.

Formulation prototype 1: Pork cheek stew

Food components
40 mL sunflower oil
2½ tsp brown sugar
1 kg pork cheek, cut into 2 cm chunks
1 garlic clove, chopped
1 small onion, chopped
1 large carrot, chopped
1 bay leaf
2 tbsp fresh ginger, sliced
1 tsp peppercorns, ground
1 spring onion, chopped and divided into white and green sections
250 mL chicken or beef stock
40 mL molasses
salt and pepper
100 g potatoes, cubed
½ cup parsley, chopped

Procedure

1. Heat oil and sugar in a pan.
2. Add pork cheek, garlic, onion, carrot, bay leaf, ginger, peppercorns and white part of spring onion. Sauté until vegetables soften.
3. Pour in enough stock to cover pork cheek.
4. Add molasses and season with salt and pepper.
5. Reduce heat and simmer for 30 minutes.
6. Add the potatoes and stir well. Simmer until potatoes are cooked.
7. Stir through parsley and green part of spring onion.

Nutrition information

Servings per package: 4

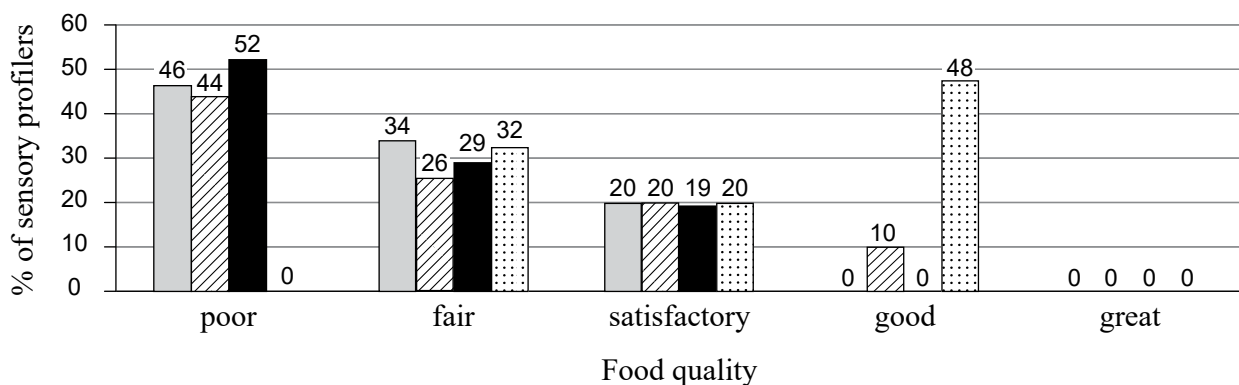
Serving size: 400 g

	Average quantity per serving	Average quantity per 100 g
Energy	1572 kJ	393 kJ
Protein	46.4 g	11.6 g
Fat, total	14 g	3.5 g
– saturated	2.8 g	0.7 g
Carbohydrate	14.0 g	3.5 g
– sugars	11.2 g	2.8 g
Sodium	492 mg	123 mg

Sensory profiler feedback

- meat is tough
- flavour is not well developed — too salty, no real other flavour
- too much meat, not enough vegetables
- serving size is too big
- stew is very watery

Formulation prototype 1



Key appearance taste texture aroma

Formulation prototype 2: Pork cheek stew

Food components

Stew

1 kg pork cheek, cut into 2 cm chunks
20 g lard
1 tsp brown sugar
20 mL Worcestershire sauce
4 garlic cloves, crushed
2 onions, diced
2 ripe tomatoes, diced
2 carrots, diced
4 spring onions, chopped and divided into white and green sections
250 mL water
1 cinnamon stick
1 tsp fresh nutmeg, grated
1 star anise
1 cardamom pod, ground
2 tbsp fresh ginger, sliced
1 bay leaf
2½ tsp thyme leaves, chopped
1 tsp peppercorns, ground
500 mL beef stock
40 mL molasses
salt and pepper
4 large potatoes, cubed
½ cup parsley, chopped

Marinade

2 garlic cloves, crushed
pinch of ground cumin
20 mL white wine vinegar
20 mL sunflower oil
pepper

Procedure

1. Place pork cheek into a bowl. Add marinade ingredients and knead into the pork cheek. Marinate overnight.
2. Heat half the lard and sugar in a heavy-based saucepan. When the sugar has caramelised, add the pork cheek and Worcestershire sauce. Cook gently for 5 minutes until pork is browned then transfer to a plate and set aside.
3. Heat more lard in the pan then gently cook garlic, onions, tomatoes and carrots until softened. Add the white part of spring onion, cinnamon stick, nutmeg, star anise, cardamom, ginger, bay leaf, thyme and ground peppercorns.
4. Return pork to saucepan and pour in enough stock and water to cover.
5. Add the molasses and season with salt and pepper.
6. Reduce heat and simmer for 40 minutes.
7. Add the potatoes and stir well. Simmer for a further 40 minutes.
8. Stir through parsley and green part of spring onion.

Nutrition information

Servings per package: 6

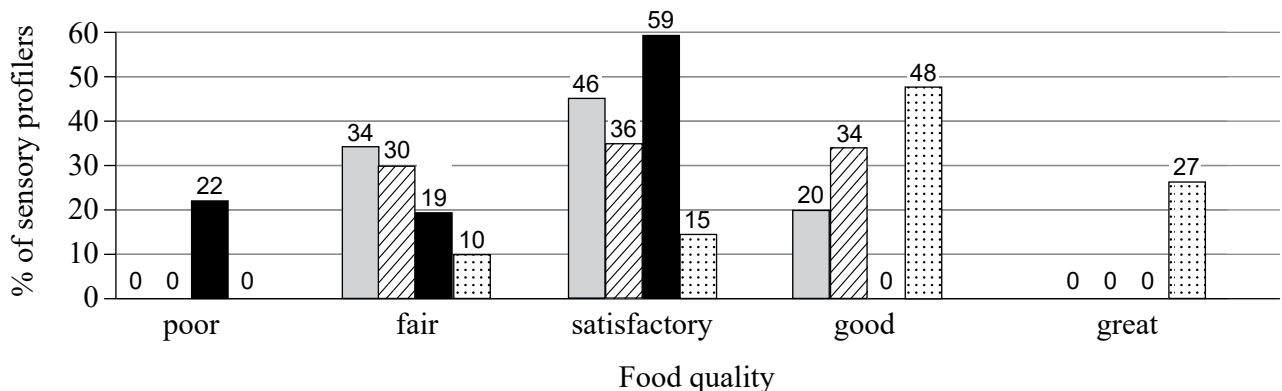
Serving size: 400 g

	Average quantity per serving	Average quantity per 100 g
Energy	1404 kJ	351 kJ
Protein	31.2 g	7.8 g
Fat, total	13.2 g	3.3 g
– saturated	3.6 g	0.9 g
Carbohydrate	19.6 g	4.9 g
– sugars	11.2 g	2.8 g
Sodium	336 mg	84 mg

Sensory profiler feedback

- meat is tender
- well-developed flavours, a bit salty
- good balance of meat and vegetables
- vegetables are a bit mushy
- serving size is big
- stew is runny and a bit fatty

Formulation prototype 2



Key appearance taste texture aroma

Formulation prototype 3: Pork cheek stew

Food components

Stew

1 kg pork cheek, cut into 2 cm chunks
40 mL sunflower oil
2½ tsp brown sugar
4 garlic cloves, chopped
2 onions, chopped
2 carrots, chopped
1 bay leaf
1 cinnamon stick
1 star anise
2 whole cloves
1 cardamom pod, ground
1 tsp peppercorns, ground
1 tsp fresh nutmeg, grated
½ cup fresh ginger, sliced
2 tbsp thyme leaves, chopped
1 chilli, finely chopped
4 spring onions, chopped and divided into white and green sections
250 mL beef stock or water
50 mL molasses
salt and pepper
2 potatoes, cubed
½ cup parsley, chopped

Marinade

2 garlic cloves, chopped
pinch ground cumin
20 mL white wine vinegar
40 mL sunflower oil
pepper

Procedure

1. Place pork cheek in a bowl. Add marinade ingredients and knead into the pork cheek. Marinate overnight.
2. Heat oil and sugar in a pan. When the sugar has caramelised, add pork cheek, garlic, onions, carrots, bay leaf, cinnamon stick, star anise, cloves, cardamom, peppercorns, nutmeg, ginger, thyme, chilli and white part of spring onion with a pinch of salt. Cook gently for 5 minutes.
3. Pour in enough stock or water to cover meat and vegetables.
4. Add molasses and season with salt and pepper.
5. Reduce heat and simmer for 30 minutes.
6. Add the potatoes and stir well. Simmer for a further 30 minutes or until potatoes are cooked.
7. Stir through parsley and green part of spring onion.

Nutrition information

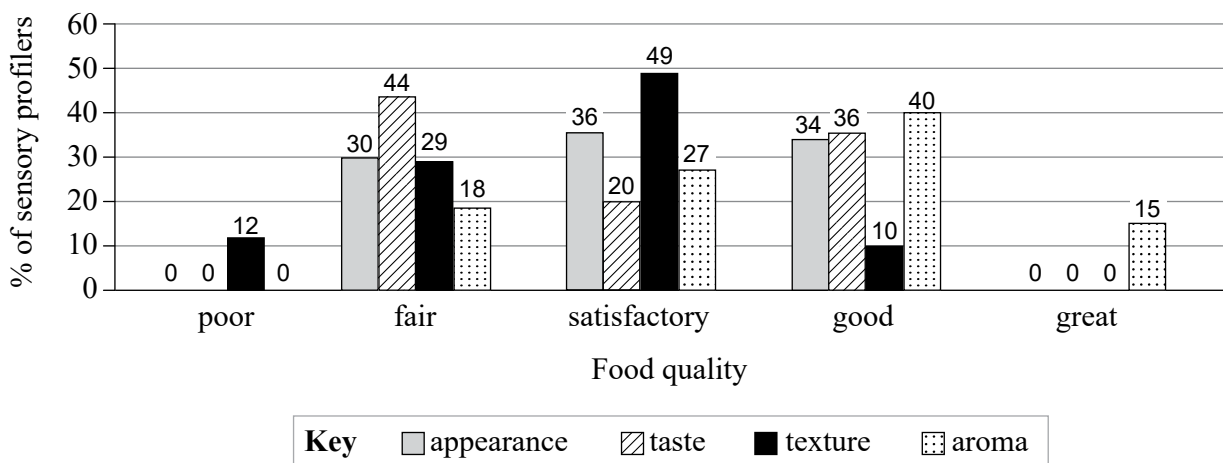
Servings per package: 4
Serving size: 450 g

	Average quantity per serving	Average quantity per 100 g
Energy	1647 kJ	366 kJ
Protein	38.7 g	8.6 g
Fat, total	16.7 g	3.7 g
– saturated	2.7 g	0.6 g
Carbohydrate	18.9 g	4.2 g
– sugars	12.6 g	2.8 g
Sodium	257 mg	57 mg

Sensory profiler feedback

- meat is a little chewy
- very spicy flavour, can't taste the meat
- more vegetables but still a lot of meat
- serving size is too big
- stew is runny and a bit fatty

Formulation prototype 3





© State of Queensland (QCAA) 2021

Licence: <https://creativecommons.org/licenses/by/4.0> | Copyright notice: www.qcaa.qld.edu.au/copyright — lists the full terms and conditions, which specify certain exceptions to the licence.

Attribution: © State of Queensland (QCAA) 2021