

Sous Vide – the new cooking technique????

Regulation, Health Protection and Regions

Health Protection Branch

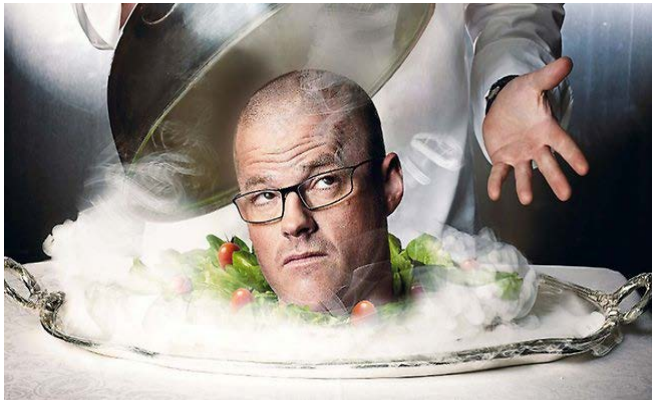


1. Introduction

Workshop format

1. Workshop Introduction
2. What is Sous Vide?
3. History of Sous Vide
4. The Science and Issues related to Sous Vide
5. Sous Vide Supplement Process
6. Key Issues
7. Questions

History of Sous Vide?



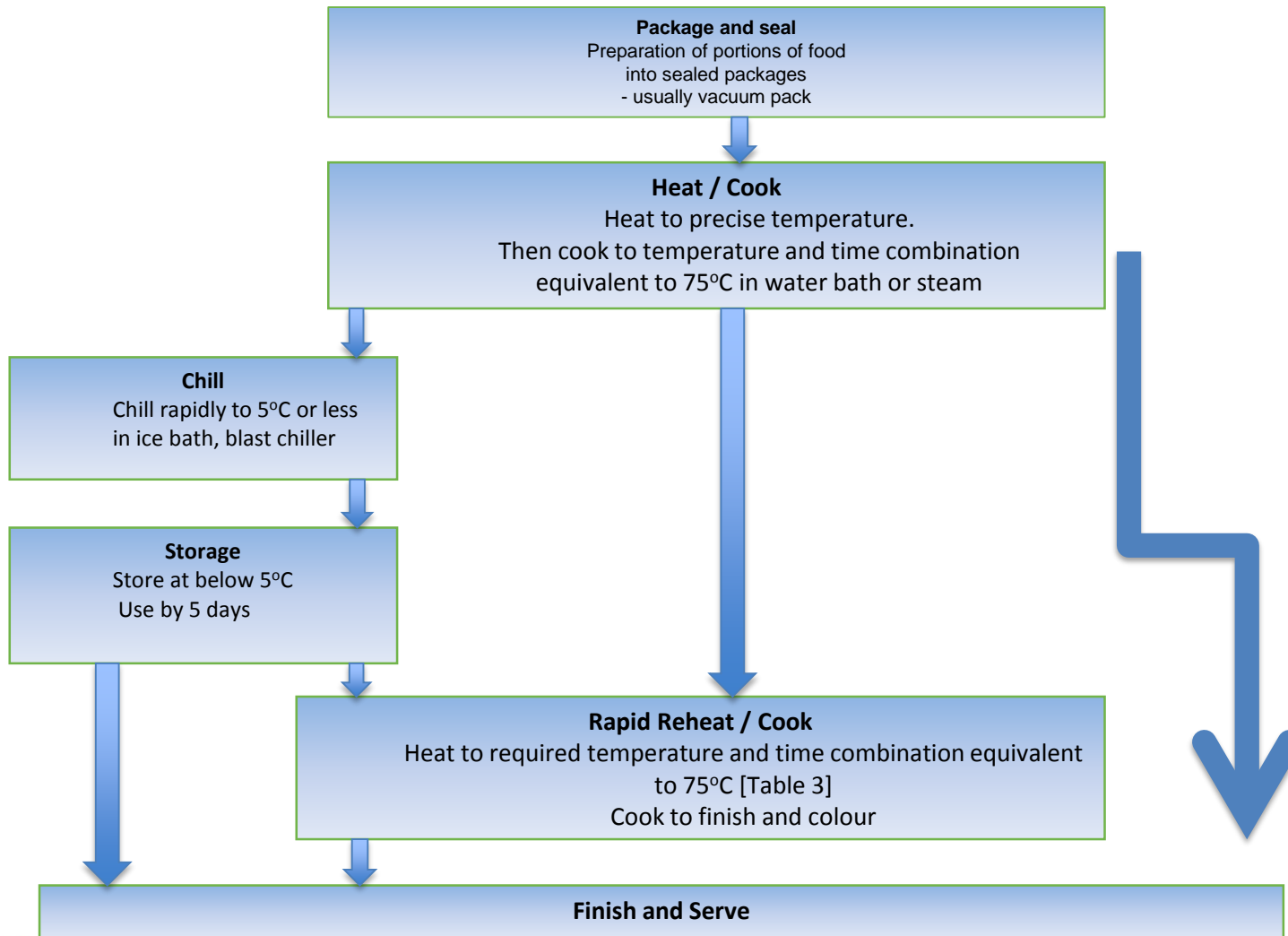
What is Sous Vide?



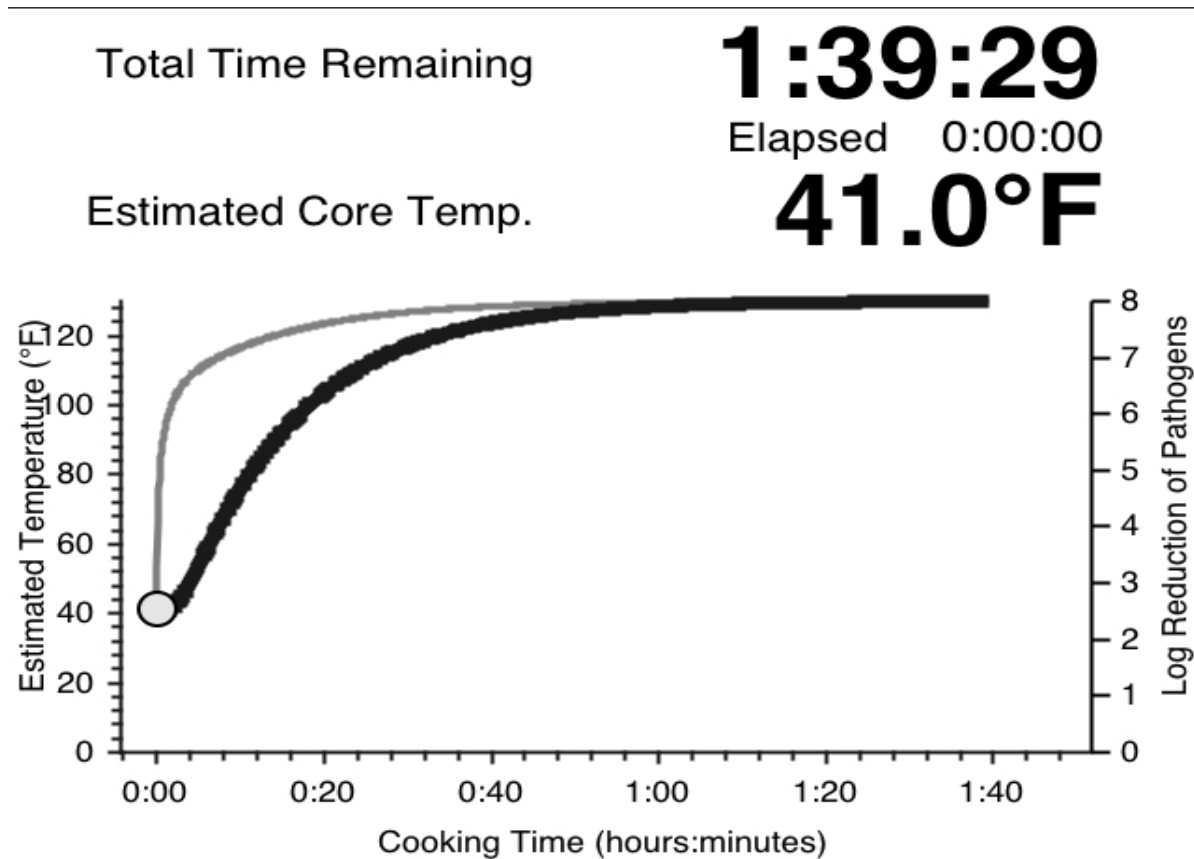
Sous Vide Cooking Equipment



What is Sous Vide? - The Process



The Science and Issues related to Sous Vide



The Science and Issues related to Sous Vide

Cook temperature ° C	Minimum Time [Minutes]
55	200
56	147
57	109
58	80
59	59
60	44
61	32
62	24
63	18
64	13
65	10
66	7
67	6
68	4
69	3
70	2
71	1:29
72	1:05
73	0:48
74	0:36
75	0:26

Minimum cooking times for sous vide food to be held after the food reaches the required water temperature for destruction of *Listeria monocytogenes* [Adapted from Warne 2011]



The Science and Issues related to Sous Vide

Other pathogens

- Clostridium perfringens
- Bacillus cereus
- Staphylococcus aureus

Long Shelf Life

- Less than five days
- 10 days or more

The Science and Issues related to Sous Vide

The Food



The Properties

- Thickness
- PH
- Water Activity

The Science and Issues related to Sous Vide

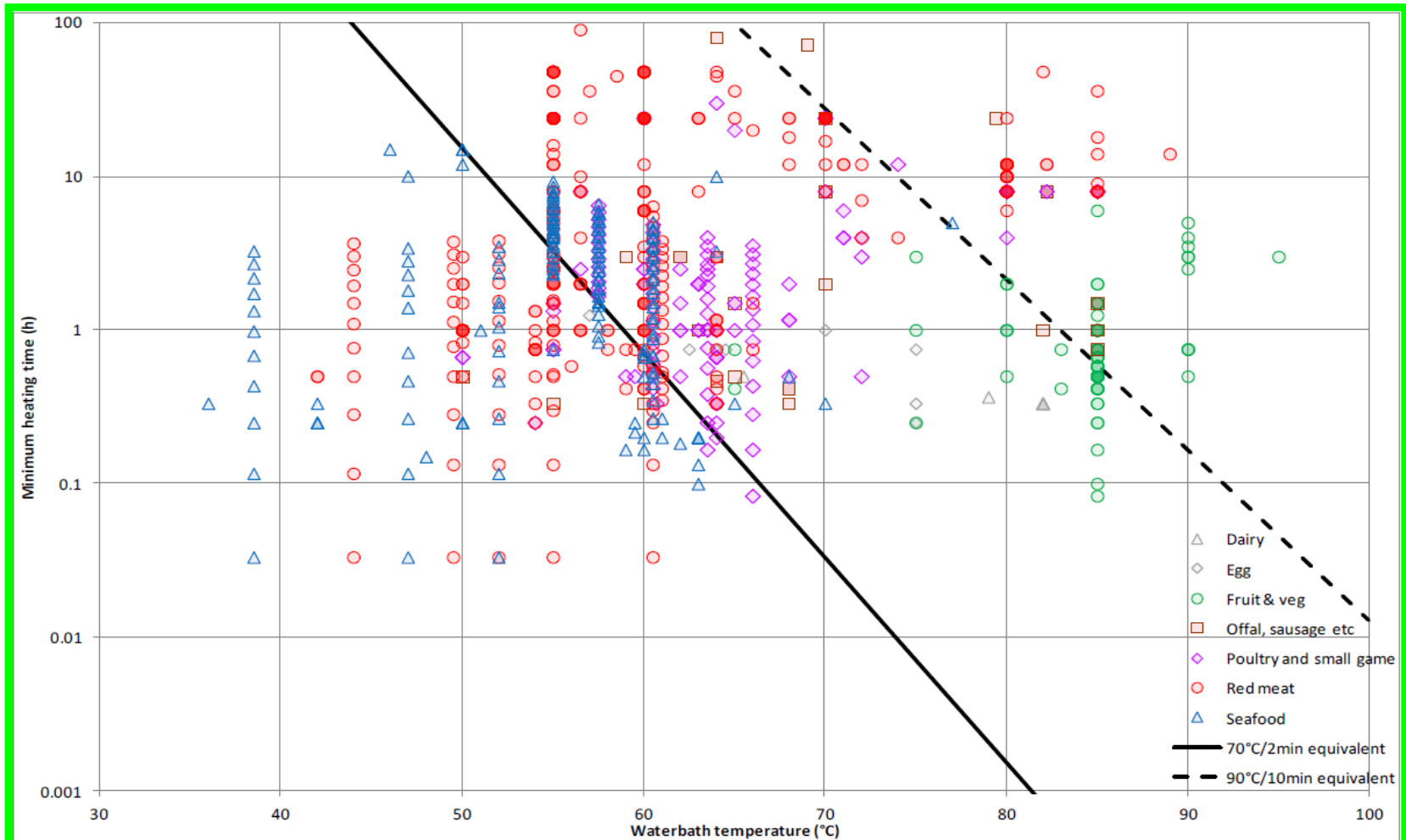


Figure 2. Shortest cooking time against water bath temperature for sous - vide recipes data from cook books [14, 16], guides to sous vide cooking [11, 15] and processes observed by Environmental Health Officers. The Solid line represents a heat treatment equivalent to 70°C for 2 min at the water bath temperature (i.e. sufficient to reduce contamination by *L. monocytogenes* by 6 log units). The dashed line represents heat treatment equivalent to 90°C for 10 min at the water bath temperature (i.e. sufficient to reduce contamination by non proteolytic *C. botulinum* by 6 log units).



Sous vide Supplement development

- Survey of councils in Feb 2014
- Contracted supplier to develop a sous vide supplement
- Challenges faced in sous vide cooking



Survey results from Victorian councils

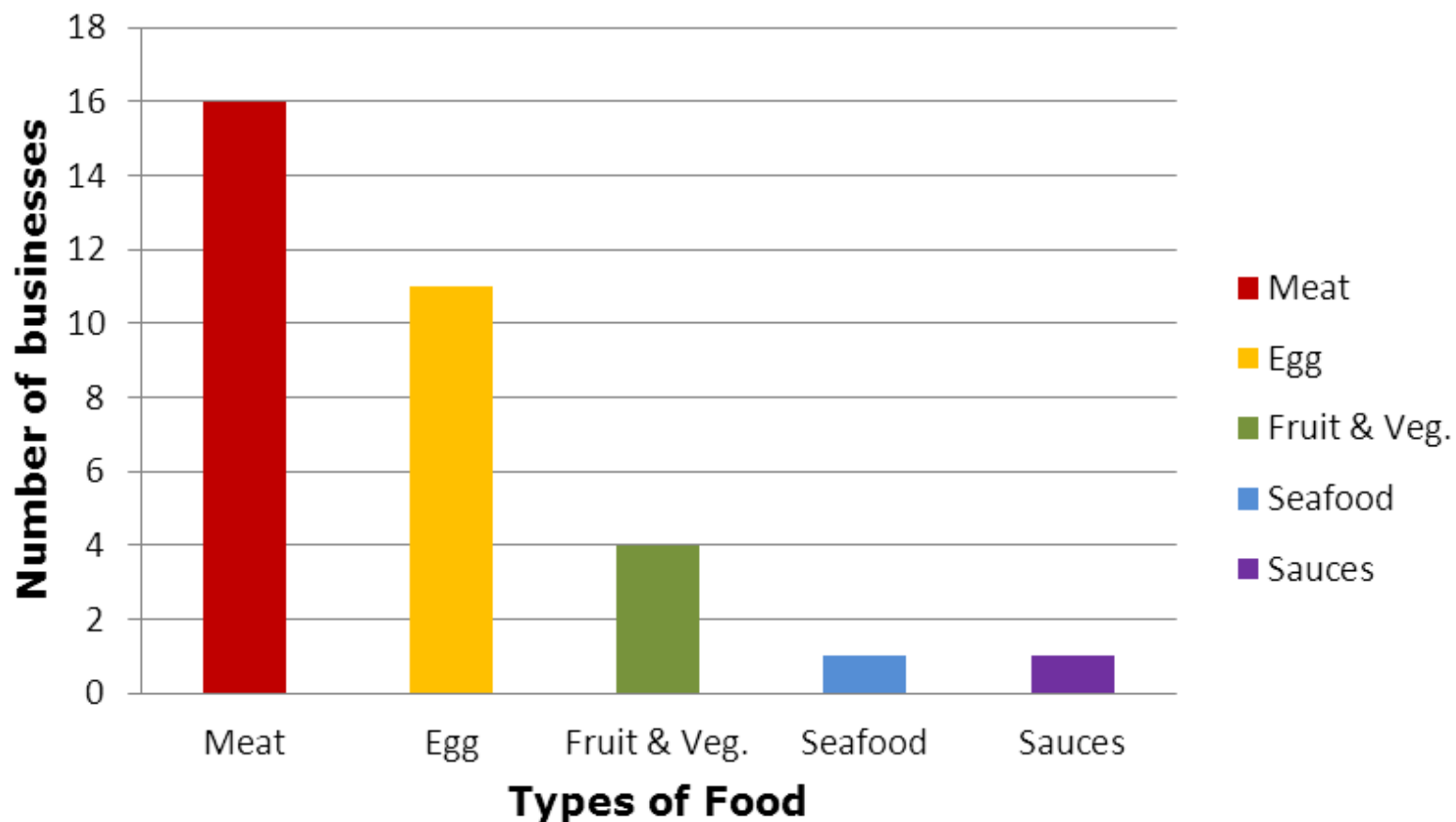
- 36 council responses – thank you!
- Most food premises are reported to be using the DH *‘Food Safety Program Template for class 2 retail and food services businesses’*
- Working group formed to advise the scope and development of the sous vide supplement



Food types cooked using the sous vide method as reported by councils

health

Figure 1: Food Types cooked via *sous vide*



Develop a Sous vide supplement

Brief:

For safe production of foods using the *sous vide* method, address the following:

- the types of foods
- the hazards associated
- equipment capabilities necessary
- materials
- time and temperature combinations to produce safe food starting from 55°C as a minimum (there may be evidence to indicate it should start from a higher temperature than 55°C)
- records to be kept to monitor food safety.

Consulted with:

- The EHO reference group
- Class 2 food businesses using SV cooking (7)



Sous Vide Supplement – key issues

The DH FSP is used in conjunction with the supplement. The FSP says:

- **Temperature danger zone 5° C - 60°C**
- Hot hold food *safely* above 60°C
- 2hr/4hr rule
- Must have a probe thermometer accurate to +/-1°C



Sous vide uses low temperature cooking that does not fit with the usual ‘safe food’ temperature rules

....but it ***must be accurate*** or bacteria will grow and some will form toxins

Consider:

Will businesses apply this information appropriately – what about the FSP rules?

Will a consistent message facilitate safe food being produced using sous vide?

Sous Vide Supplement – key issues

Question: Should cooking start from 60°C ???

Why?

- Because cooking between 55°C and 60°C must be limited to a maximum 6 hours heating, cooking and reheating time due to the risk of *Clostridium perfringens* growth
- High risk for inaccurate temperatures not achieving pasteurisation at lowest cooking temperatures
- Help mitigate risk of poor performing but widely used equipment
- Keep food safety messages more consistent
- But....will it hinder supplement uptake by businesses if the 'industry standard' of cooking is from 55°C?

Sous Vide Supplement – key issues

Question: Should cooking start from 55°C ???

- What equipment is suitable?
 - Steam combi ovens are not accurate, use only from 60°C or at all?
 - If cooking from 55°C, is suitable equipment a water bath only?
 - Is +/-1°C thermometer accuracy sufficient?
- Will people grasp the concept of restricting food cooked from 55°C to 60°C to 6 hours or less (including heating up and reheating time to control growth of pathogens), but then...
- Food can be cooked from 60°C for longer than 6 hours (including heating up time)
- More complex instructions for food businesses to follow
- Fits with industry practice in current use

Sous Vide Supplement – key issues

What are your thoughts?

Please jot down three items you would like taken into account when the supplement is rolled out....such as training, parameters of cooking, selling the safe food message, support materials, etc.

Question Time?

