



Microbiological Quality of Bakery Products

A survey to investigate the relationship between the microbiological quality of bakery products and the food safety practice of New Zealand's bakeries

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1 Executive summary

From January to August 2007, Food Act Officers visited a total of 69 bakeries from Auckland, Hamilton, Wellington, Christchurch and Dunedin and collected samples of bakery products for microbiological analysis and conducted a questionnaire based on food hygiene, handling and manufacturing practice. A total of 250 bakery products (126 in summer and 124 in winter) were submitted to Environmental Science & Research (ESR) where microbiological quality was assessed and measured against limits listed in 'Guidelines for the Microbiological Examination of Ready-to-Eat Foods' (Food standards Australia New Zealand, 2001). All samples were analysed for faecal coliforms, *Escherichia coli*, *Bacillus cereus*, coagulase-positive staphylococci and *Salmonella*.

When compared to Food Standards Australia New Zealand guidelines (see appendix 1) 217 of 250 samples (86.8%) were considered to be of good microbiological quality with acceptable levels of *E. coli*, *B. cereus*, coagulase-positive staphylococci and *Salmonella* spp. Of the remaining 33 samples, 24 (9.6%) were of marginal quality, 6 (2.4%) were unsatisfactory and 3 (1.2%) were potentially hazardous. One cream-filled product and two custard-filled products had a potentially hazardous level of *Bacillus cereus* ($>10^4$ CFU/g). There was no significant difference between the summer and winter results for most analytes.

The questionnaire identified some food hygiene, handling and manufacturing practices that might lead to food safety problems. These included inadequate storage conditions, improper use of equipment and inappropriate actions regarding left over high risk product at closing time. On the other hand good food safety practices in areas such as control of pests, staff training and clean processing environment were common in most bakeries.

Three samples that were analysed were considered to be potentially hazardous due to the level of *Bacillus cereus* detected. For these samples and for all results that were deemed to be a potential risk to Public Health the relevant Public Health Unit was notified, and follow-up action was undertaken in accordance of Section 12 of the Food Administration Manual (operational procedures developed by NZFSA for Public Health Unit contracted service requirements).

2 Introduction

In 2003 a strategy for Consistent Implementation of Food Regulation in Australia was adopted to guide work in implementing food regulation consistently across all portfolios and levels of government involved in food regulation. New Zealand supports this Strategy and agreed to participate in joint Australian and New Zealand standards, where appropriate.

A key component of the consistent implementation strategy is the Co-ordinated Food Survey Plan. Since the plan was developed, New Zealand Food Safety Authority (NZFSA) has been involved in the planning process.

At the Implementation Sub-Committee (ISC) meeting held on 16 November 2005, a paper 'Food borne illness associated with bakeries' was presented. The ISC noted that:

- food borne disease outbreaks associated with bakeries have caused problems in Australia for several years;
- linkages to risk profiling of bakeries and the need for all bakeries to have a food safety program in place;
- work on this issue was underway, or had been undertaken, in South Australia (SA), New South Wales (NSW), Victoria (VIC) and Western Australia (WA);
- NZFSA was also proposing to do some work in this area and was interested in collaborating with other jurisdictions;
- there was some support for a national survey on this issue.

This commitment was made after consideration of the following information:

- The NZFSA through internal sources has identified the following:
 - a. the bakery sector was determined to be a 'high-risk' sector following a risk-ranking exercise,
 - b. the bakery and manufactured/fermented RTE meat sectors have the highest proportion of complaints (13.57% each) registered on FoodNet.
- Feedback from Environmental Health Officers in New Zealand suggests that:
 - a. bakeries often have inadequate surface areas for food preparation,

- b. ventilation is often poor resulting in elevated ambient temperatures (particularly during summer) from oven/equipment use,
- c. facilities for personal hygiene are either inaccessible or used for other purposes, and
- d. the general understanding of food safety by staff and management is often low.

In addition bakery products, specifically those with high moisture content (high water activity) are most likely to present food safety concerns as they support the growth of a wide range of bacteria, yeasts and moulds. There are a number of inherent factors and practices in bakeries that increase the potential for these products to be considered as potentially hazardous. These include frequent handling of food, use of perishable ingredients, and use of raw foods which might contain pathogens and the potential of cross contamination through the re-use of equipment such as piping bags. Finally, there are many small independent operators involved in the bakery industry and knowledge of hygienic practices may not always be adequate.

For these reasons NZFSA is currently considering, in conjunction with the Domestic Food Review (DFR) project, the types of standards and regulatory interventions that may be required to increase food safety in bakeries. Although anecdotal evidence would suggest that adherence to good operating practice in bakeries is poor, there is currently no scientifically robust data linking poor practices with unsafe bakery products. Therefore, to inform standards development work it is important to obtain a baseline analysis of the current New Zealand bakery environment and actual food safety risks associated with bakeries, against which implemented DFR outcomes may be measured.

2.1 Regulation

The regulatory environment in New Zealand requires that all businesses selling food are registered. There are two ways to achieve this:

1. The first is to operate from premises that meet the registration requirements of the Food Hygiene Regulations 1974; and which are inspected by the local council (Territorial Authority) for the area
2. The alternative is to develop a Food Safety Programme (FSP) that is registered with NZFSA and which is audited by an independent NZFSA approved auditor.

In addition, all food sold in New Zealand must comply with the Australia New Zealand Food Standard Code (the Code) irrespective of where that food was produced and the size of the business producing the food.

The Food Hygiene Regulations 1974 set out the hygiene standards that food premises must adhere to, including;

- Supply and maintenance of wash-hand basins;
- Vermin control;
- Refrigeration of perishable foods;
- Storage of food; and
- Cleaning of premises and equipment

Food Safety Programmes (FSP) are designed on the principles of Hazard Analysis Critical Control Points or HACCP. A FSP examines all of the steps involved in producing food (from ingredient purchase through to final sale), identifying hazards with the potential to cause harm to the consumer, and implementing controls to eliminate or control such hazards. The Bakery Industry has a Baking Code of Practice that was approved by NZFSA. This is available to members of the Baking Industry Association of NZ for use as guide to developing a Food Safety Programme.

Most businesses in the retail sector, including bakeries, operate under the Food Hygiene Regulations 1974. These premises are inspected by the local council at least annually.

2.2 Objectives

The objectives of this survey were to:

- determine the microbiological quality of high risk bakery products sold in bakeries from Auckland, Hamilton, Wellington, Christchurch and Dunedin; and
- determine if there was any difference in the microbiological quality of high risk products sold in the summer and winter months; and
- observe food handling, hygiene and manufacturing practices across this industry.

3 Methods

A total of 69 bakeries from the five main centres (Auckland, Hamilton, Wellington, Christchurch and Dunedin) were visited from January 2007. Food Act Officers (FAO's) were instructed to collect two samples, one cream filled product and one custard filled product. A questionnaire based on food handling, hygiene and manufacturing practice was also conducted at this time. The FAO's then re-visited the bakeries in the winter months (June/July 2007) to take another two samples.

3.1 Sample analysis

The microbiological methods of analysis used were based on the Australian Standards AS 1766.2.3-1992 (faecal coliforms and *Escherichia coli*), AS 1766.2.4-1994 (coagulase-positive staphylococci), AS 1766.2.5-1995 (*Salmonella*) and AS 1766.2.6-1991 (*Bacillus cereus*). The fillings were analysed for pH and water activity using methods based on Kirk and Sawyer (1991), and Vos and Labuza (1994), Labuza (1976) and the AquaLab Water Activity Meter Operator's Manual respectively.

All analyses were carried out by the Institute of Environmental Science & Research Limited (ESR, 2007).

3.2 Statistical analysis

Samples were divided into categories, cream-filled, custard-filled and custard and cream filled bakery products. Results were compared to the guidelines for microbiological examination of Ready-to-eat foods (Food Standards Australia New Zealand, 2001).

4 Results

4.1 Microbiological quality of bakery products

4.1.1 Overall

Of the 250 samples tested 126 were cream filled, 120 were custard filled and 4 contained both cream and custard. The microbiological results are categorised in Table 1 according to the Guidelines for the Microbiological Examination of Ready-to-eat Foods (Food Standards Australia New Zealand 2001[See Section 7.1]). Overall 217 (87%) had satisfactory levels of all four micro-organisms. Custard and cream-filled bakery products had similar rates of results that were marginal, unsatisfactory or potentially hazardous for at least one micro-organism with 13% and 14% respectively. All four samples containing both cream and custard had satisfactory levels of all four micro-organisms.

Table 1: Microbiological Quality of Bakery Products by Filling Type

| Filling | Satisfactory | Marginal | Unsatisfactory | Potentially Hazardous | Total |
|-----------------|--------------------|------------------|-----------------|-----------------------|------------|
| Cream | 110 (87.3%) | 12 (9.5%) | 3 (2.4%) | 1(0.8%) | 126 |
| Custard | 103 (85.8%) | 12 (10%) | 3 (2.5%) | 2 (1.6%) | 120 |
| Cream & Custard | 4 (100%) | 0 | 0 | 0 | 4 |
| Total | 217 (86.8%) | 24 (9.6%) | 6 (2.4%) | 3 (1.2%) | 250 |

4.1.2 Cream-filled products

A total of 126 cream-filled bakery products were examined (Table 2). Unsatisfactory levels of *Escherichia coli* were detected in 2 (1.6%) samples. One (0.8%) sample had a potentially hazardous level of *Bacillus cereus* and another had an unsatisfactory level. No samples contained *Salmonella* spp. or coagulase-positive staphylococci at unsatisfactory levels.

Table 2: Microbiological results for cream-filled bakery products (n=126)

| | Not Detected | <10 ² | 10 ² -10 ³ | 10 ³ -10 ⁴ | 10 ⁴ -10 ⁵ |
|----------------------------------|------------------|------------------|----------------------------------|----------------------------------|----------------------------------|
| Faecal coliforms | 97 ^a | 21 | 7 | 1 | |
| <i>E.coli</i> | 117 ^a | 7 | 2 | | |
| Coagulase-positive staphylococci | 124 ^b | | 2 | | |
| <i>Bacillus cereus</i> | 118 ^b | | 6 | 1 | 1 |
| <i>Salmonella</i> spp. | 126 ^c | | | | |

* not detected; ^a lower limit of detection 3 MPN/g; ^b lower limit of detection 100 CFU/g; ^c per 25 g sample

4.1.3 Custard-filled products

A total of 120 custard-filled bakery products were examined (Table 3). Two (1.7%) samples had potentially hazardous levels of *Bacillus cereus* and another three (2.6%) had unsatisfactory levels. No samples contained *Salmonella* spp., or unsatisfactory levels of coagulase-positive staphylococci or *E. coli*.

Table 3: Microbiological results for custard-filled bakery products (n=120)

| | Not Detected | <10 ² | 10 ² -10 ³ | 10 ³ -10 ⁴ | 10 ⁴ -10 ⁵ |
|----------------------------------|------------------|------------------|----------------------------------|----------------------------------|----------------------------------|
| Faecal coliforms | 108 ^a | 11 | 1 | | |
| <i>E.coli</i> | 118 ^a | 2 | | | |
| Coagulase-positive staphylococci | 119 ^b | | 1 | | |
| <i>Bacillus cereus</i> | 105 ^b | | 10 | 3 | 2 |
| <i>Salmonella</i> spp. | 120 ^c | | | | |

* not detected; ^a lower limit of detection 3 MPN/g; ^b lower limit of detection 100 CFU/g; ^c per 25 g sample

4.1.4 Cream and custard filled products

No samples of bakery products containing both cream and custard (n=4) contained *Salmonella* spp., or unsatisfactory levels of *E.coli*, coagulase-positive staphylococci or *B.cereus*.

4.1.5 Geographical difference

Table 4 below summarises the microbiological quality results by location. Dunedin had the highest rate of satisfactory samples with 94%.

Table 4: Microbiological quality of bakery products by location

| Location | Satisfactory | Marginal | Unsatisfactory | Potentially Hazardous | Total |
|--------------|--------------|----------|----------------|-----------------------|-----------|
| Auckland | 45 (90%) | 5 (10%) | | | 50 |
| Hamilton | 41(85%) | 3 (6%) | 2 (4%) | 2 (4%) | 48 |
| Wellington | 45 (87%) | 7 (13%) | | | 52 |
| Christchurch | 41 (79%) | 6 (11%) | 4 (8%) | 1 (2%) | 52 |
| Dunedin | 45 (94%) | 3 (6%) | | | 48 |

4.1.6 Seasonal difference

In order to identify if there was any seasonal difference in the microbiological quality, samples where microbiological analytes were not detected were given the value of half the lower limit of detection and then all results were converted to log₁₀ values. Students' t-tests of the cream-filled bakery products found no significant difference between summer and winter for *E. coli*, *B. cereus* and coagulase-positive staphylococci and a significant difference at the 95% level for faecal coliforms. Furthermore, Students' t-tests of the custard-filled bakery products found no significant difference between summer and winter for faecal coliforms, *E. coli* and coagulase-positive staphylococci and a significant difference at the 95% level for *B. cereus*.

4.2 Food handling and hygiene practice

Questionnaires were conducted by Food Act Officers (see section 7.2). The key results of the questionnaire are presented below.

The majority of bakeries made both cream and custard filled products on site, 91% and 84% respectively (see table 4). Less than half of the bakeries had an approved suppliers programme (see Fig. 1). Five bakeries (7%) used unpasteurised egg pulp in bakery products they produced, whilst four bakeries said they used cracked eggs. Only 38% of bakeries said they used disposable piping bags, whilst 70% of bakeries used separate piping bags for each product (see table 5). All cream-filled products were stored in a chilled display whereas three bakeries (4%) stored custard-filled products at room temperature. Sixty-one bakeries (88%) discarded their cream-filled products at the end of the business day whereas only 60% of bakeries discarded custard-filled products with 19 bakeries (28%) choosing to store the custard-filled products for the next business day (see table 6). FAO's observed that 82% of bakeries had appropriate pest-control measures in place and that over 97% of bakeries had appropriate personal hygiene facilities.

Table 4: Production source of high risk bakery product

| Where do you get the following products? | Made on site | Bought pre-made | Do not sell product |
|--|--------------|-----------------|---------------------|
| Cream filled products | 63 (91.3%) | 5 (7.2%) | 1(1.5%) |
| Custard filled products | 58 (84%) | 10 (14.5%) | 1 (1.5%) |

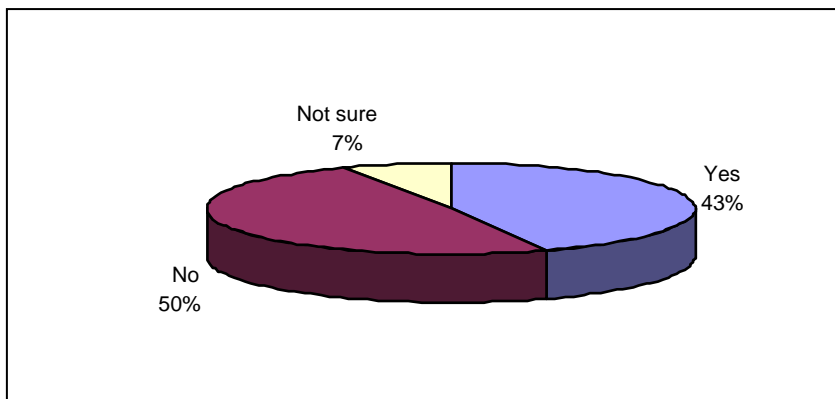


Figure 1: Bakeries with an approved suppliers programme

Table 5: Use of piping bags

| | Yes | No |
|---|----------|----------|
| Do you use disposable piping bags? | 26 (38%) | 43 (63%) |
| Do you use separate piping bags for each product? | 48 (70%) | 21 (30%) |

Table 6: Disposal actions at closing time

| What happens to products at closing time? | Discarded | Given away | Stored for the next day |
|---|-----------|------------|-------------------------|
| Cream-filled products | 61 (88%) | 4 (6%) | 3 (4%) |
| Custard-filled products | 42 (60%) | 6 (9%) | 19 (28%) |

Food Act Officer's were also instructed to record the temperature of the display cabinets where samples were stored. Table 7 shows that there was a wide range of temperatures recorded. The average temperature for all bakeries was 8°C.

Table 7: Temperature of Display Cabinets

| | |
|-----------------------------------|--------|
| Minimum | 1.0°C |
| Maximum | 25.0°C |
| Mean | 8.0°C |
| Median | 7.1°C |
| 10th Percentile | 3.3°C |
| 90th Percentile | 14.0°C |

5 Discussion

5.1 Microbiological Quality

The survey showed that the microbiological status of 86.8% of bakery products sampled were satisfactory according to the Guidelines for the Microbiological Examination of Ready-to-eat Foods (Food Standards Australia New Zealand 2001). In addition, 9.6% of samples were within the marginal range giving a total of 96.4% of samples with microbiologically acceptable limits. A total of 6 (2.4%) samples were of unsatisfactory microbiological quality and 3 (1.2%) samples were potentially hazardous due to high levels of the spore-forming organism *Bacillus cereus*, two were custard-filled products and one was a cream-filled product.

The results of the microbiological quality of bakery products were comparable to those reported in a similar survey conducted by the New South Wales Food Authority (NSW Food Authority, 2008) which found 97.8% of samples had acceptable microbiological limits. Only one sample, a custard-filled product, had a potentially hazardous level of *Bacillus cereus*. In contrast, a survey by the Department of Health South Australia (DoHSA, 2007) reported 25% of custard samples and 21% of cream samples were unsatisfactory based on their total bacteria count.

E.coli was detected in 1.6% of cream filled products at levels greater than 100cfu/g. These results are consistent with the South Australian study which reported that 1% of cream products had similar levels of *E.coli* (DoHSA, 2007).

5.2 Geographical location

All products from Dunedin, Wellington and Auckland were found to be within microbiologically acceptable limits, that is to say all samples were of at least marginal quality. Christchurch had the highest rate of unacceptable microbiological quality with 8% of samples unsatisfactory and 2% potentially hazardous. Similar results were observed in Hamilton bakeries where 4% of samples were unsatisfactory and 4% were potentially hazardous. For the 3 samples that were deemed to be a potential risk to Public Health, because of potentially hazardous levels of *Bacillus cereus*, the relevant Public Health Unit was notified and follow-up action was undertaken in accordance with Section 12 of the Food Administration Manual (NZFSA publication containing the operational procedures for Public Health Unit contracted service requirements).

It is apparent that food handling and hygiene practices throughout New Zealand are consistent. However, it is of some concern that Christchurch and Hamilton were the only two regions that had unacceptable results. This suggests that there is potential for some form of intervention, for example education and/or training, to ensure these regions align with the rest of the country.

5.3 Seasonal difference

Bakery products covered by the scope of this survey, namely cream-filled and custard-filled products, are most likely to be of food safety concern as they support the growth of a wide range of bacteria, yeasts and moulds. The growth and proliferation of bacteria present in these products is enhanced in warmer temperatures. The survey was divided into two phases to account for any differences that may be observed between the warmer summer months and the cooler winter months. Results showed that there was no significant difference in the levels of faecal coliforms, *E. coli* and coagulase-positive staphylococci during the different seasons. However, a significant difference between the levels of *B.cereus* was observed between summer and winter. This observation would not generally be expected as *Bacillus cereus* tends to have a large range of temperatures where growth is observed, anywhere from as low as 4°C to 37°C (NZFSA, 2008).

5.4 Food handling and hygiene practice

The questionnaire conducted by Food Act Officers showed that, in general, most bakeries throughout the country used good food safety practice. Almost all had appropriate personal hygiene facilities (e.g. wash-hand basins with soap available). Over 80% of bakeries had effective pest-control measures in place and the majority of bakeries had used appropriate storage facilities for cream and custard-filled bakery products. Adequate cleaning facilities and staff training programmes were observed in the majority of bakeries.

Unacceptable levels of bacteria are likely to occur if appropriate food handling and hygiene practices are not in place. The questionnaire identified several areas of concern, including the following;

- average temperature of display cabinets was 8°C
- 4% of bakeries stored cream-filled products for the next day and 28% bakeries stored custard-filled products for the next day
- 63% of bakeries didn't use disposable piping bags and only 70% of bakeries used separate piping bags for each product

- Half of the bakeries do not use an approved supplier programme

There are limitations to each of these findings, for example the accuracy of recording temperatures, but it does portray a clear picture that in some bakeries there are facets of food safety practice that are ineffective at reducing or controlling risk. The NSW study observed similar results in a related questionnaire (NSW Food Authority, 2008)

6 Conclusion

Overall the microbiological quality of cream and custard-filled bakery products was good with 96% of samples meeting the requirements for acceptable microbiological criteria as outlined in the Guidelines for the Microbiological Examination of Ready-to-eat Foods (Food Standards Australia New Zealand 2001). In addition, it appears that there is little seasonal difference in the levels of bacteria between summer and winter.

On the whole it is apparent that the majority of bakeries follow good food safety practice, including control of pests, staff training and having a clean processing environment. But despite these findings, some results of the questionnaire do imply that a few bakeries may not have reliable food safety practices in place. To improve these results some industry sector education may be required. This could be in the form of a fact sheet based on the Baking Industry's Code of Practice. Further communication and continued support with this sector will assist in improving food safety practice in bakeries.

7 Appendices

7.1 Appendix 1 - Guidelines for the Microbiological Examination of Ready-to-Eat Foods

Table 1. Guideline levels for determining the microbiological quality of ready-to-eat foods

| Test | Microbiological Quality (CFU per gram) | | | |
|---|--|----------------------------------|----------------------------------|-----------------------------|
| | Satisfactory | Marginal | Unsatisfactory | Potentially Hazardous |
| Standard Plate Count | | | | |
| Level 1. | <10 ⁴ | <10 ⁵ | ≥10 ⁵ | |
| Level 2. | <10 ⁶ | <10 ⁷ | ≥10 ⁷ | |
| Level 3. | N/A | N/A | N/A | |
| Indicators | | | | |
| <i>Enterobacteriaceae</i> * | <10 ² | 10 ² -10 ⁴ | ≥10 ⁴ | |
| <i>Escherichia coli</i> | <3 | 3-100 | ≥100 | ** |
| Pathogens | | | | |
| Coagulase +ve staphylococci | <10 ² | 10 ² -10 ³ | 10 ³ -10 ⁴ | ≥10 ⁴ SET +ve |
| <i>Clostridium perfringens</i> | <10 ² | 10 ² -10 ³ | 10 ³ -10 ⁴ | ≥10 ⁴ |
| <i>Bacillus cereus</i> and other pathogenic <i>Bacillus</i> spp | <10 ² | 10 ² -10 ³ | 10 ³ -10 ⁴ | ≥10 ⁴ |
| <i>Vibrio parahaemolyticus</i> † | <3 | <3 -10 ² | 10 ² -10 ⁴ | ≥10 ⁴ |
| <i>Campylobacter</i> spp | not detected in 25g | | | detected |
| <i>Salmonella</i> spp | not detected in 25g | | | detected |
| <i>Listeria monocytogenes</i> | not detected in 25g | detected but <10 ² ‡ | | ≥10 ² †† |

* *Enterobacteriaceae* testing is not applicable to fresh fruits and vegetables or foods containing these.

**Pathogenic strains of *E. coli* should be absent.

† *V. parahaemolyticus* should not be present in seafoods that have been cooked. For ready-to-eat seafoods that are raw, a higher satisfactory level may be applied (<10² cfu/g). The potentially hazardous level of *V. parahaemolyticus* relates to Kanagawa-positive strains.

‡ Foods with a long shelf life stored under refrigeration should have no *L. monocytogenes* detected in 25g.

†† The detection of *L. monocytogenes* in ready-to-eat foods prepared specifically for "at risk" population groups (the elderly, immunocompromised and infants) should also be considered as potentially hazardous.

7.2 Appendix 2 - Questionnaire

Food Officer Details

Name:

Local council represented:

Date of survey:

Time:

Food Business Surveyed:

Trading name of business:

Address:

Suburb:

Describe location (e.g inside shopping centre, outside etc):

Contact Person:

Identification Number:

Questions to businesses-- Please tick/circle the appropriate answer

| Q1 Where do you get the following products from? | | Made on site | bought pre-made | do not sell product | |
|---|--|---------------------------|----------------------------|------------------------------|------------------------|
| custard tarts | | [] | [] | [] | |
| fresh cream filled pastries/cakes | | [] | [] | [] | |
| Q2 Where do you get/prepare the following ingredients? | | cooked / prepared on site | cooked / prepared off site | bought pre-cooked / pre-made | do not use ingredients |
| cooked chicken | | [] | [] | [] | [] |
| cooked meat | | [] | [] | [] | [] |
| deli products (ham, salami) | | [] | [] | [] | [] |
| raw vegetables(shredded/cut vegetables e.g lettuce, carrot) | | [] | [] | [] | [] |
| cream | | [] | [] | [] | [] |

| | | | | |
|--|---------------------------------|--------------------------------|--------------------------------------|--------------------------------|
| custard | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| eggs | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Q3 Do you have approved suppliers program for your ingredients? | Yes <input type="checkbox"/> | No <input type="checkbox"/> | Not sure <input type="checkbox"/> | |
| Notes – | | | | |
| Q4 Eggs: | | | | |
| Do you use unpasteurised egg pulp? | | | Yes <input type="checkbox"/> | No <input type="checkbox"/> |
| Name products in which unpasturised egg pulp used: | | | | |
| Do you use unpasteurised egg pulp? | | | Yes <input type="checkbox"/> | No <input type="checkbox"/> |
| Do you ever receive cracked eggs? | | | Yes <input type="checkbox"/> | No <input type="checkbox"/> |
| Do you use cracked eggs? | | | Yes <input type="checkbox"/> | No <input type="checkbox"/> |
| Name products in which cracked eggs used: | | | | |
| Q5 How many of the following products do you produce each day? | The number of products | | Do not make products | |
| custard tarts | <input type="checkbox"/> | | <input type="checkbox"/> | |
| fresh cream filled pastries/ cakes | <input type="checkbox"/> | | <input type="checkbox"/> | |
| Q6 Do you use disposable piping bags? | Yes <input type="checkbox"/> | No <input type="checkbox"/> | Not sure <input type="checkbox"/> | |
| Q7 Do you use separate piping bags for each product? | Yes <input type="checkbox"/> | No <input type="checkbox"/> | Not sure <input type="checkbox"/> | |

| | | | | | |
|------------|--|-----------------|---------------------|------------------------|------------------------|
| Q8 | How are products displayed? | Chilled cabinet | Room temperature | Hot display | Temperature of cabinet |
| | Custard tarts | [] | [] | [] | [] |
| | Fresh cream filled pastries/cakes | [] | [] | [] | [] |
| Q9 | Do you know how long products have been displayed for? | | Yes | No | Not sure |
| | | | [] | [] | [] |
| Q10 | What happen to products at closing time? | discarded | stored for next day | Used in other products | given away |
| | Custard tarts | [] | [] | [] | [] |
| | Fresh cream filled pastries/cakes | [] | [] | [] | [] |
| Q11 | Describe the custard and/or cream preparation process (take notes on process/general hygiene) | | | | |
| | Notes- | | | | |
| Q12 | Are there appropriate pest control measures in place? (Take brief notes on type of pest control measures) | | Yes | No | Not sure |
| | | | [] | [] | [] |
| | Notes- | | | | |
| Q13 | Describe the general bakery environment e.g. cleanliness, hygiene, ventilation, equipment etc? | | | | |
| | Notes- | | | | |
| Q14 | Are there appropriate facilities for personal hygiene? (Take brief notes if relevant) | | Yes | No | Not sure |
| | | | [] | [] | [] |
| | Notes- | | | | |
| Q15 | Are these facilities easily accessible? | | Yes | No | Not sure |
| | | | [] | [] | [] |

| | | | |
|---|------------|-----------|-----------------|
| Notes- | | | |
| Q16 Are there facilities being appropriately used? | Yes [] | No [] | Not sure [] |
| Notes- | | | |
| Q17 Do employees demonstrate knowledge of good food hygiene practices? (General observations and notes) | | | |
| Notes- | | | |
| Q18 Are employees aware of food safety (General notes on any staff with formal training e.g. unit standards) | Yes [] | No [] | Not sure [] |
| Notes- | | | |
| Q19 How do you wash/sanitise equipment used to produce custard and cream products e.g. piping bags etc? (General observations and notes) | | | |
| Notes- | | | |
| Q20 Where do you prepare products? (General observations and notes on area/physical conditions or prep area etc) | | | |
| Notes- | | | |
| Q21 Other general observations | | | |
| Notes- | | | |

8 References

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