



**Survey of the Implementation of HACCP
(Hazard Analysis and Critical Control Point) and
Food Hygiene Training in Irish Food Businesses**

July 2001

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1. EXECUTIVE SUMMARY

This report presents the findings of a survey on the implementation of HACCP (Hazard Analysis and Critical Control Point) and food hygiene training by Irish food businesses. The survey was conducted independently by Research and Evaluation Services (RES) on behalf of the Food Safety Authority of Ireland (FSAI). A total of 1,098 food businesses were contacted by telephone and 710 completed questionnaires were achieved (i.e. response rate of 65%). The fieldwork was conducted in 2000. The following are some of the main findings.

Respondents' Profile

- The survey population was dominated by the service sector (60%), followed by the retailers (27%), with the remaining 12% made up by (a) primary producer (1%); (b) manufacturer/packer (2%); (c) distributor/transporter (3%); and (d) manufacturer - selling primarily to the final consumer (6%).
- The average business size was 22 employees with a range of 1-998. At the specific location where the respondents worked the average size was 13 employees, range 1-300.
- 60% said they had heard of FSAI prior to the survey.

Awareness of HACCP

- 46% of the service sector, 44% of retailers, 62% of the other sectors had heard of the term HACCP. The percentage recognition of the term within the other sectors was as follows - primary producer (56%), manufacturer/packer (79%), distributor/transporter (45%), and manufacturer - selling primarily to the final consumer (63%).
- 73% of managers with responsibility for food safety had heard of the term HACCP, compared with 43% of respondents described as owners and 43% of managers (other than food safety).
- The majority (62%) said that they had heard the term from their environmental health officer (EHO).
- 69% of those who had heard the term said they had a HACCP team. The larger the business the higher the percentage of respondents who said they had a HACCP team.
- Of the 341 who had heard of HACCP, 65% were aware of codes of practice relating to HACCP. 46% quoted the National Standards Authority of Ireland (NSAI) as the source, 17% CERT and 10% IBEC.

Assessment of Food Safety Management System

- 74% claimed they had a food safety management system and 71% of those said that their procedures were written down. 31% said the system was reviewed monthly, 22% said quarterly and 19% said they had no formal review.
- Respondents viewed prevention of food poisoning as one of the most important benefits of a food safety management system (60%). 52% mentioned customer confidence. Only 39% identified compliance with the legislation.
- The majority (88%) thought their business was supportive regarding implementation of food safety management systems.

- Internal training courses were the main (48%) means by which food handlers were made aware of food safety procedures.
- Half of respondents said their business kept monitoring records. This represented 65% of those who said they had a food safety management system.
- Only 38% felt they should be responsible for developing their food safety management system. 42% thought it was the responsibility of the EHO/health board and 9% said FSAI.

Barriers to Implementing a Food Safety Management System / HACCP

- A lack of understanding of HACCP was identified as one of the main barriers to its implementation - 46% said they didn't really know what HACCP was while 14% said it was too complicated.
- A minority of respondents identified time (6%), language (4%) and cost (6%) as barriers.
- A small number of respondents mentioned other barriers including - consultants' charges, the need for simple guidelines and the volume of paper work.
- Only 12% thought that their food safety procedures/system could be more effective, however when asked how the procedures/system could be improved half of respondents made suggestions including - being aware of new improvements, implementing HACCP principles and training staff.
- A quarter of respondents said that FSAI could help businesses improve food safety by supplying them with information.
- 41% called for more food safety checks by the authorities.

Food Hygiene Training

- 84% (of the 65% who answered this question) said that all their food handlers had been trained or instructed. 5% admitted that none of their food handlers had been trained or instructed.
- On the job instruction was the most common form of training received. 30% said that none of their food handlers had received more formal training.
- Basic food hygiene training was the training needed by the majority of food businesses (61%). It was also identified as the main training priority, followed by HACCP training.

Table 3.1: General findings (n=710)

Question	%
HACCP/Food Safety Management System	
Have a written hygiene statement	53
Heard of HACCP (see below)	48
Have a food safety management system (see below)	74
Aware of legal requirement for a food safety management system based on the principles of HACCP	54
If not law would you put in a food safety management system	81
Keep records of monitoring data	51
Training	
All food handlers either instructed or trained	84*
Training records on file	50
Miscellaneous	
Heard of FSAI prior to survey	60

* A high percentage of respondents (35%) did not answer this question

Table 3.2: Specific to those who said they had heard of HACCP (n=341)

Question	%
Have a HACCP team	69
Handle food according to the principles of HACCP	92
Are aware of codes of practice	65

Table 3.3: Specific to those who said they had a food safety management system (n=516)

Question	%
The food safety management system procedures are written down	71
Keep records of monitoring data	65

2. INTRODUCTION

Since 1998 food businesses have been legally required to implement a food safety management system based on the principles of HACCP (Hazard Analysis Critical Control Point) and to ensure that their food handlers are trained and or supervised in a manner appropriate to their duties. HACCP is an internationally recognised tool, which enables a food business to identify what can go wrong with regard to producing safe food and then to decide how it can be prevented. The implementation of a food safety management system based on the principles of HACCP and the provision of food hygiene training are recognised as fundamental steps towards assured food safety. Two years after the introduction of these legislative requirements the Food Safety Authority of Ireland (FSAI) commissioned a survey to establish the level of compliance and to identify the barriers or problems food businesses have encountered.

3. OBJECTIVES

The specific objectives of the survey were:

- To quantify the extent of compliance with regard to implementation of HACCP and food hygiene training throughout the Irish food industry, covered by the Hygiene of Foodstuffs Regulations, using a methodology that is statistically robust and reproducible.
- To examine the barriers to implementation of these aspects of food safety and to invite food businesses to propose solutions.
- To establish a quantitative baseline on which the effectiveness of the activities of the FSAI in this sector could be measured.
- To provide the FSAI with a means to focus its resources.

4. METHODOLOGY

The survey was a collaborative project between the FSAI and Research & Evaluation Services (RES) which involved consultation with environmental health officers (EHOs) and representatives of different sectors of the food industry.

Survey design

The survey was conducted in three of the Irish health board regions, i.e. the Western, Southern and former Eastern¹ Health Boards. These health boards were chosen as consisting of a range of different business types and sizes. A sample size of 700 was chosen to facilitate adequate sub-analysis of the data and the survey was administered by telephone.

Sample design and selection

During the survey design period, a number of areas within the three health boards were reviewing their premises' records. The total number of premises per health board was therefore recognised to be an estimate. In addition, a significant proportion of premises did not have a contact telephone number.

¹ The survey sample was drawn prior to the establishment of the three area health boards, which replaced the Eastern Health Board.

Some health board areas were able to provide this subsequently. The remainder of the premises (approximately 60%) were batched and sent to British Telecom's Batch Numbering Service.

In order to achieve 700 completed interviews, an initial sample of 1,050 premises was drawn (assuming an overall response rate of between 65% - 70%). Of the 1,050 initial addresses, 650 were successfully matched with telephone numbers (Table 4.1). These 650 cases produced 385 successful interviews. In stage 2 of the sampling procedure a further 700 premises were selected using the same approach as used for stage 1. Of the 700 premises 448 produced a successful telephone number match from which 325 interviews were completed. Therefore, from an overall sample of 1,750 premises, 1,098 (62.3%) were successfully matched with a telephone number. Finally, 710 successful interviews were achieved representing a response rate of 64.6%.

Table 4.1: Sampling procedure and total achieved interviews

	Stage 1	Stage 2	Total
Initial sample	1,050	700	1,750
Successful telephone matches	650	448	1098
% correct match	61.9%	64%	62.3%
Total achieved interviews	385	325	710
Response Rate	59.2%	72.5%	64.6%

Table 4.2 presents a breakdown of the 1,098 cases used in the survey. Given the total sample of 710, the confidence intervals for sample estimates is $\pm 3.7\%$.

Table 4.2: Breakdown of cases used in the survey

Sample	Full interviews	Response Rate	Refusal	No reply	Number unobtainable	No Food	Other
1,098	710	64.6%	6.8%	11%	9.93%	2.9%	4.4%

The number of premises to be sampled within each health board was proportional to the number of premises in all three boards. Table 4.3 gives a breakdown of the sample by health board and shows that the final sample is similar to the overall geographical profile of premises. In addition, within each sub-area, the number of premises selected was directly proportional to the number of premises that each sub-area made up of the total number of premises across the whole health board.

Table 4.3: Sample profile by health board

Health Board	Estimated No. of Food Premises*	%	Anticipated No. of Cases	Actual No. of Cases
Eastern	7,637	44	309	305
Southern	5,739	33	232	247
Western	3,904	23	158	158
Total	1,7280	100	700	710

* Estimated at time of survey design.

Questionnaire Design

RES and the FSAI designed a first draft of the questionnaire. It was modified following a meeting with a group of EHOs and a second meeting with representatives of different sectors of the food industry. The redrafted questionnaire was tested in a pilot survey of 20 premises. This produced 10 completed interviews and highlighted some ambiguities in question wording and interpretation.

Main survey

Before fieldwork commenced (for both the pilot and main survey) a letter of introduction was sent to each of the listed food premises. This outlined the survey rationale, explained that respondents would be contacted by RES and gave contact numbers for both RES and the FSAI should respondents require any additional information. Stage 1 of the fieldwork for the main survey commenced on 8 May 2000 and was completed by 31 May 2000. RES' telephone interviewers were briefed before interviewing commenced. The second stage of the fieldwork commenced on 9 June 2000 and was completed by the 30 June 2000.

Data Handling and Analysis

All completed questionnaires were manually edited before the data was entered onto the SPSS[®] software. Following data entry, the data file was subject to a number of data validation procedures, including both inter and intra variable validation checks. In addition to simple frequencies RES applied appropriate bi-variate statistical tests to identify significant variations in response by key background variables.

5. RESULTS

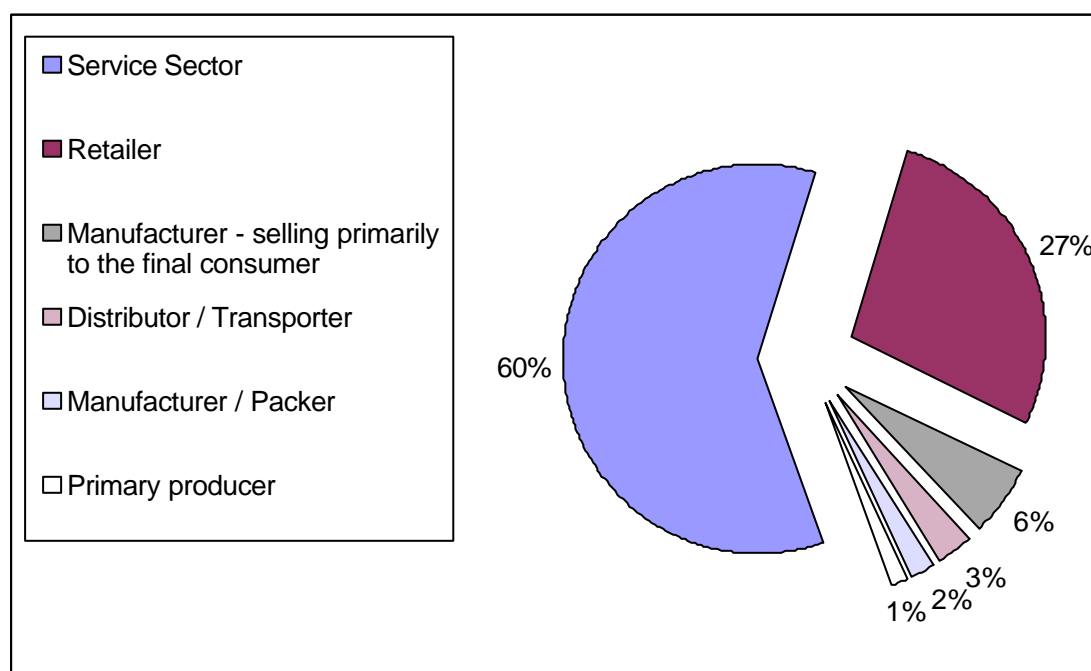
5.1 Respondents' profile

Respondents' reaction was generally positive, according to the interviewers, and of those who refused to participate the main reason offered was lack of time. It was noted that prior to this survey 60% of respondents said they had heard of the Food Safety Authority of Ireland.

Just under half (49%) of respondents were owners, 19% were managers with responsibility for food safety and 15% were managers with other responsibilities or other job titles. Of the remaining 17% the majority described themselves as staff or workers and as commis chefs or cooks.

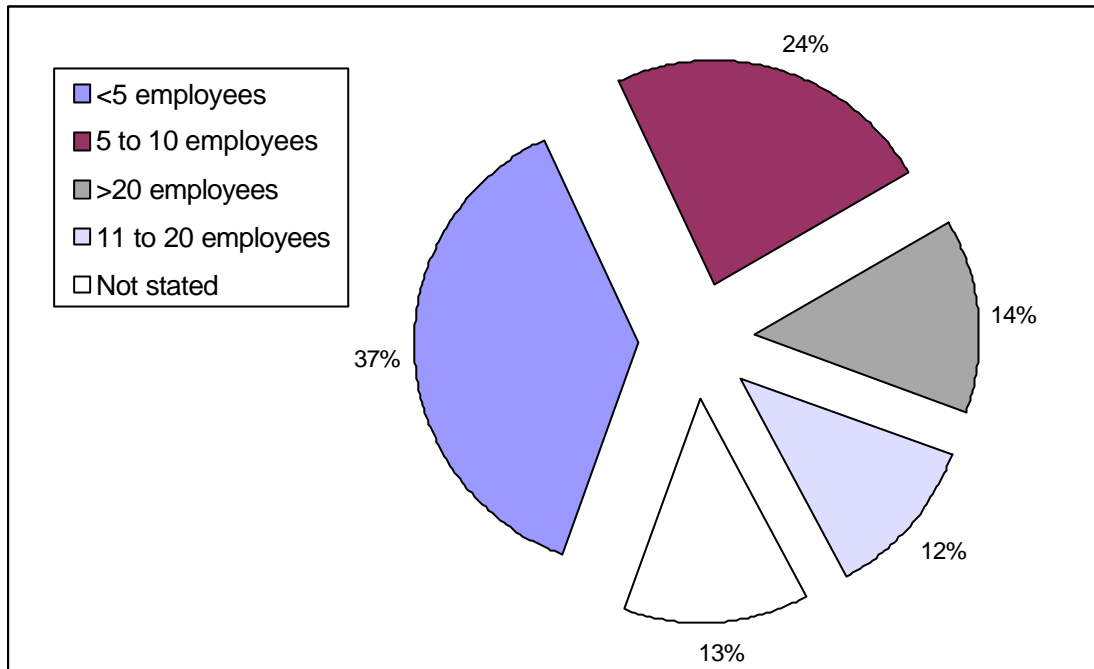
The service sector (i.e. restaurants, take-aways, canteens, caterers and public houses) was the largest business sector surveyed (60%), followed by the retail sector (27%) (Figure 5.1). The remaining 12% of businesses were in the primary producers, manufacturer/packer, distributor/transporter, or manufacturers selling direct to final consumer. Based on respondents' descriptions of their business the following were the main types surveyed - farm (1%); wholesale (3%) bakery (2%); butcher shop/counter (7%); shop/delicatessen (18%); café or restaurant (37%); hospital/crèche/nursing home (2%) guest house (3%); and public house (18%).

Figure 5.1: Distribution of food business sectors surveyed



The average business size was 22 employees with a range of 1 to 998 (Figure 5.2). At the specific location where the respondent worked, the average size was 13 with a range of 1 to 300 employees.

Figure 5.2: Distribution of business size surveyed



5.2 Awareness of HACCP

General

Respondents were asked what they understood to be their main food safety responsibilities. This question was interpreted in one of two ways; (i) some respondents described what their work involved, e.g. selling, serving, storage etc; (ii) while others mentioned the processes they use to ensure they produce safe food. The most frequent response was "cleaning" (18%) and unprompted 3% mentioned "HACCP procedures".

When asked to describe the specific procedures they carry out to avoid food safety problems, 6% stated that they "followed HACCP procedures". The two most frequent answers to this open-ended question were "temperature checks" (32%) and "cleaning" (32%) (Table 5.1).

Table 5.1: Procedures respondents said they used to avoid food safety problems*

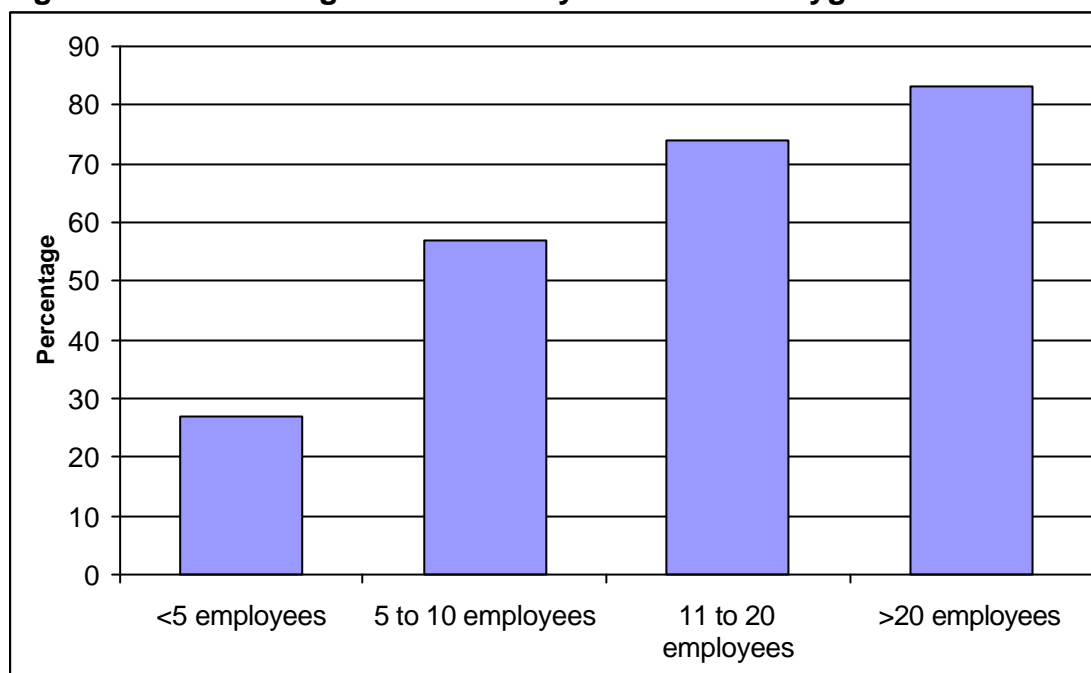
Procedures	%
Temperature checks	32
Cleaning	32
Personal hygiene	16
Keep raw and cooked food separate	13
Hygienically kept premises	10
Prevent food from becoming contamination	7
Disinfecting utensils	7
Checking dates	7
Follow HACCP procedures	6
Follow all hygiene procedures	6
Check stock and deliveries for damage or contamination	4
Cook food thoroughly	4
Keep up to date with new findings and regulations	2
Staff trained in hygiene and safety	2
Keep training updated	1

* A respondent may have indicated more than one procedure.

53% of respondents said they had a written hygiene statement. The retail sector had the smallest percentage of respondents with a written statement (42%), followed by the service sector (53%), primary producer (56%), distributor/transporter (60%), manufacturer - selling primarily to the final consumer (76%), manufacturer/packer (85%). The number of respondents in 3 of the 6 sectors was too small to allow analysis of statistical differences (Figure 5.1). The sector categories were therefore re-coded into three categories, namely retail, service sector and other (where 'other' included (a) primary producer; (b) manufacturer/packer; (c) distributor/transporter; and (d) manufacturer - selling primarily to the final consumer). Analysis of this parameter by the three sector categories revealed a statistically significant difference ($\chi^2_{df=2} = 22; p < 0.01$) with 42% of retailers, 53% of service sector and 70% of the other sectors having a written hygiene statement.

The survey found that the larger the business the higher the percentage of respondents who said they had a written statement (Figure 5.3).

Figure 5.3: Percentage who said they had a written hygiene statement*



* $\chi^2_{df=3} = 119; p < 0.01$

When the 371 respondents, who said they had a statement, were asked to outline its key points, 13% admitted to not knowing what the key points were. 4% specifically mentioned the term "HACCP", 3% mentioned "monitoring systems" and 1% spoke of "critical control points". 4% mentioned "training in food handling". The most frequent comment regarding the key points of the company hygiene statement was "personal hygiene" (28%).

Awareness of HACCP

48% of the 710 respondents said they had heard of the term HACCP. The manufacturer/packer was the business sector with the highest recognition of the term, however this represented 11 of 14 businesses surveyed (Table 5.2). Analysis of the three sector categories revealed a statistically significant difference ($\chi^2_{df=2} = 11; p < 0.01$), with 44% of retailers, 46% of service sector and 62% of the other sectors, having heard of HACCP.

Table 5.2: Percentage within each business sector who had heard of the term HACCP

Business sector	%	Number who heard of term / total number within business sector
Manufacturer/Packer	79	11 / 14
Manufacturer - selling primarily to the final consumer	63	26 / 41
Primary Producer	56	5 / 9
Service Sector	46	189 / 408
Distributor/Transporter	45	9 / 20
Retailer	44	81 / 185

A higher percentage (73%) of respondents who were managers with responsibility for food safety had heard of the term HACCP ($\chi^2_{df=3} = 40; p < 0.01$). Approximately 40% within each of the other job types had heard of the term; (a) owners (43%); (b) managers (other than food safety) (43%); and (c) respondents with other job descriptions (41%). The survey also found that the larger the business the higher the percentage of respondents who had heard of the term ($\chi^2_{df=3} = 85; p < 0.01$).

The remainder of the questions in this section 5.2 (Awareness of HACCP) was directed at the 341 respondents who had heard of the term.

The majority of respondents said they had heard of HACCP from their EHO/health board (Table 5.3). Specifically, 62% quoted their EHO/health board as the source and 23% said it was a seminar hosted by local EHOs. Other sources included the FSAI, trade associations, the press and internal communication within the company.

Table 5.3: Sources of respondents hearing about HACCP (n=341 respondents who said they had heard of HACCP)*

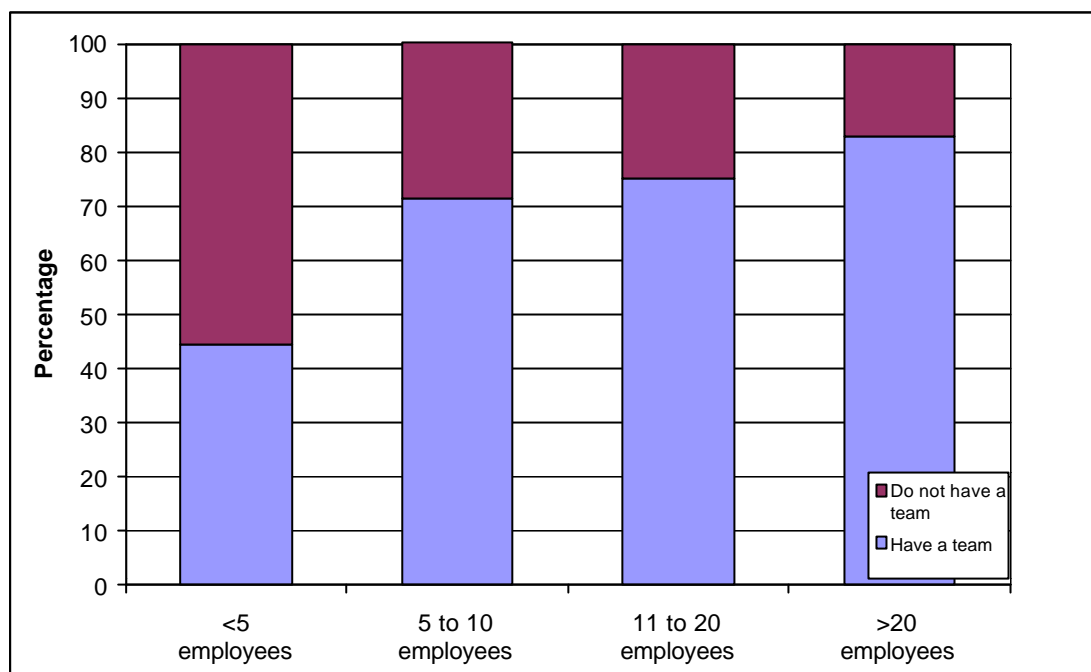
Source	%
EHO/health board	62
Information seminar organised by local EHO	23
FSAI	20
Trade association	17
Other	16
Word of mouth	15
College/education setting	15
Colleagues	13
Industry literature	13
Press	11
Internal communication	9

* A respondent may have indicated more than one source.

When asked what they understood by HACCP, unprompted 2% described it as a "*legally required system to prevent food poisoning*". 4% didn't know what was meant by it even though they had heard the term. 1% responded to this question by giving barriers to implementation of HACCP. When asked to rate their understanding of HACCP, 77% said their understanding was either good or excellent. Only 23% thought that their understanding was fair, poor or very poor.

69% of those who had heard of the term said they had a HACCP team. Unsurprisingly, the larger the business the higher the percentage of respondents who said they had a HACCP team (Figure 5.4).

Figure 5.4: Percentage who had or did not have a designated HACCP team within the four different business size categories (n=341 respondents who said they had heard of HACCP)*



* $\chi^2_{df=3} = 28; p < 0.01$

Of those who had heard of HACCP, the majority (92%) said that food handling was carried out in accordance with the principles of HACCP. Analysis of this question by business sector; business size or position of the respondent (i.e. whether owner, manager or other) revealed no statistical differences.

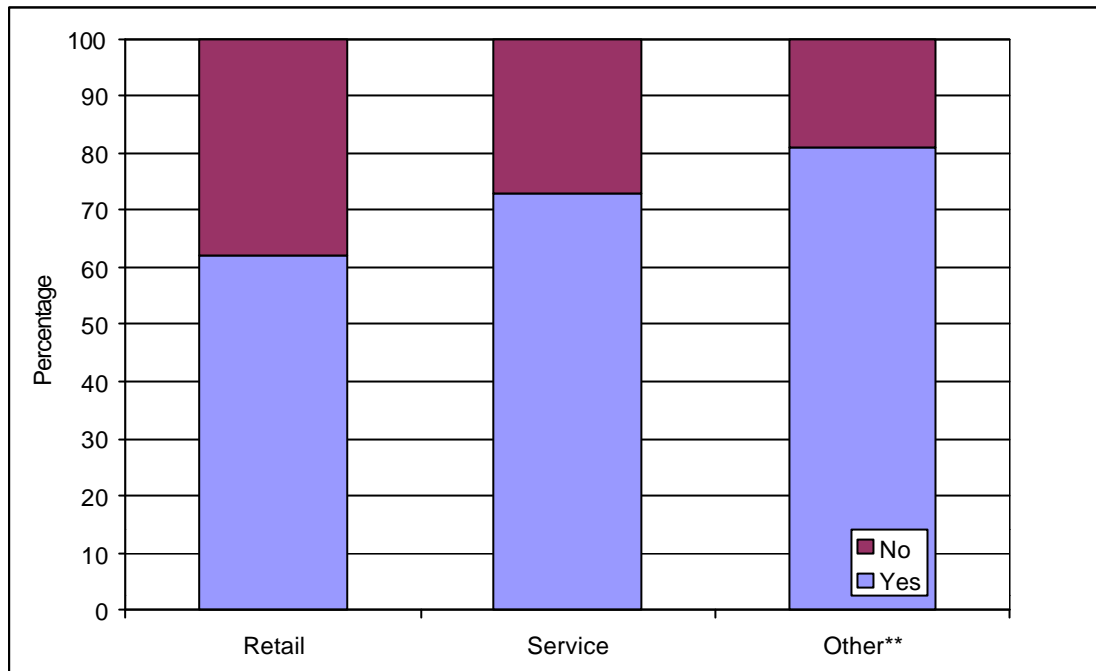
When asked if they were aware of codes of practice (COPs) relating to HACCP, 65% said yes and 46% of those said they were aware of COPs from the NSAI, 17% from CERT and 10% from IBEC. (Note: This survey was conducted before the NSAI had published the specific code of practice on HACCP (I.S. 343:2000)).

5.3 Assessment of Food Safety Management System

The survey found that 74% of all respondents (710) claimed they had a food safety management system. This represented 68% of retailers, 73% of service sector and 86% of the other sectors ($\chi^2_{df=2} = 12; p < 0.01$). In addition, the larger the business the higher the percentage of respondents who had heard of the term ($\chi^2_{df=3} = 63; p < 0.01$).

Approximately three-quarters (71%) of the 516 who had a system said that the procedures/system was written down. Within each of the three main business sectors interviewed, the number who had written procedures was as follows; (a) 62% of retailers; (b) 73% of the service sector; and (c) 81% of the other sectors (Figure 5.5).

Figure 5.5: Percentage who said that their food safety system / food safety procedures were written down (n=516 who said they had a food safety management system)*

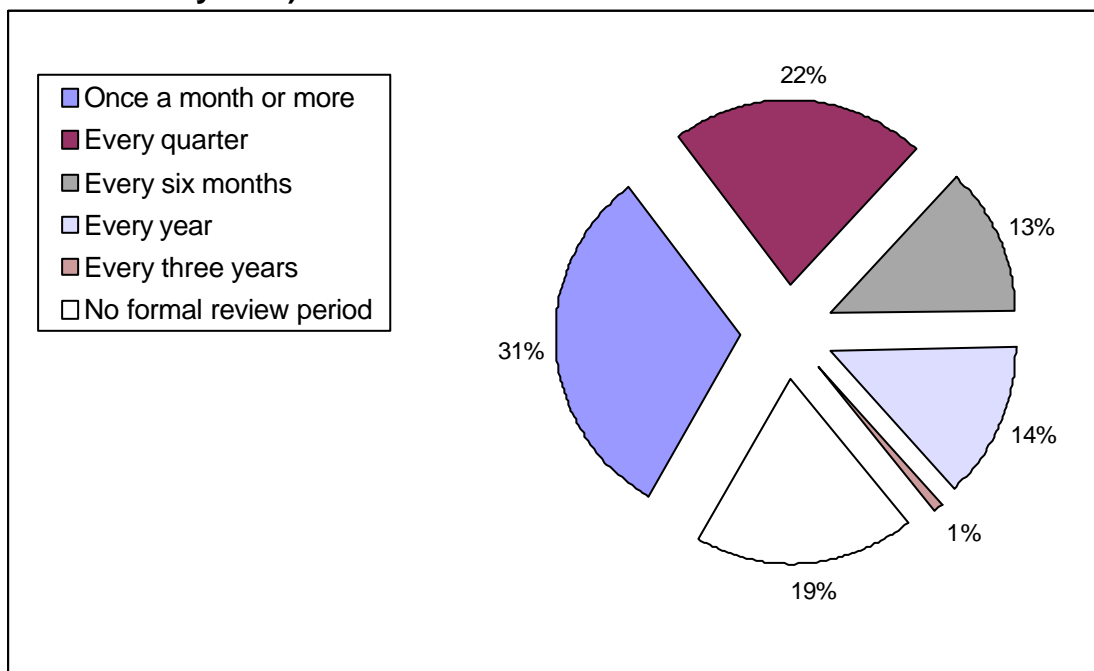


* $\chi^2_{df=2} = 10; p < 0.01$

** Other included (a) primary producer; (b) manufacturer/packer; (c) distributor/transporter; and (d) manufacturer - selling primarily to the final consumer

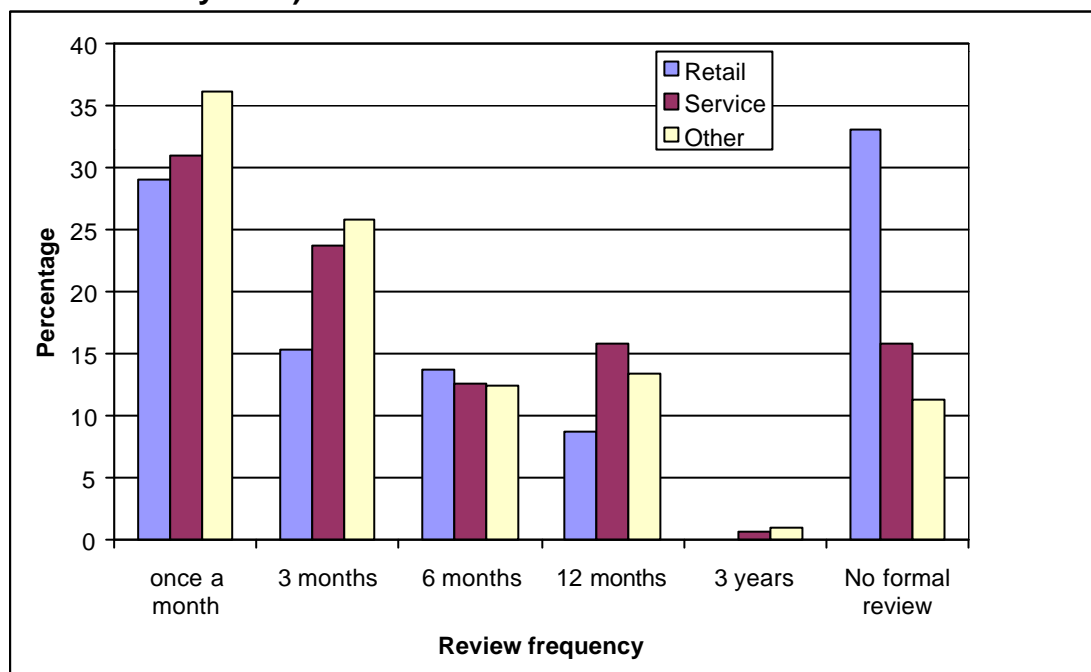
31% stated that they reviewed the systems once a month, while 19% said they had no formal review period (Figure 5.6).

Figure 5.6: Frequency of review of food safety system (n=516 respondents who said they had a food safety management system)



A greater number of retail sector businesses who said they had a food safety management system said they had no formal review of the system (33%) by comparison to the 16% of the service sector and 11% of other sectors (Figure 5.7). The difference between the sectors was not as big when comparing the actually frequencies of reviews, whether once a month, every 3 months and so on.

Figure 5.7: Frequency of review of food safety management system by business category (i.e. retail, service and other) (n=516 respondents who said they had a food safety management system)*



* $\chi^2_{df=10} = 26; p < 0.01$

Benefits of a food safety system

Table 5.4 lists the benefits perceived by respondents to implementation of a food safety management system.

Table 5.4: Benefits of implementing a food safety management system*

Benefits	%*
Prevent food poisoning	60
Improve customer confidence	52
Complies with legislation	39
Useful business management discipline	19
Reduces number of complaints	16
Other	15
Legal defence against complaints	14

* A respondent may have given more than one benefit.

Legal requirement

Over half the respondents (54%) claimed they were aware that they were legally required to ensure that their "food safety procedures / food safety management system were based on the principles of HACCP". By business sector this represented 44% of retailers, 56% of service sector and 66% of other sectors ($\chi^2_{df=2} = 14; p < 0.01$). 81% said they would set up a food safety management system even if it was not a legal requirement.

Priority of food safety system within the business

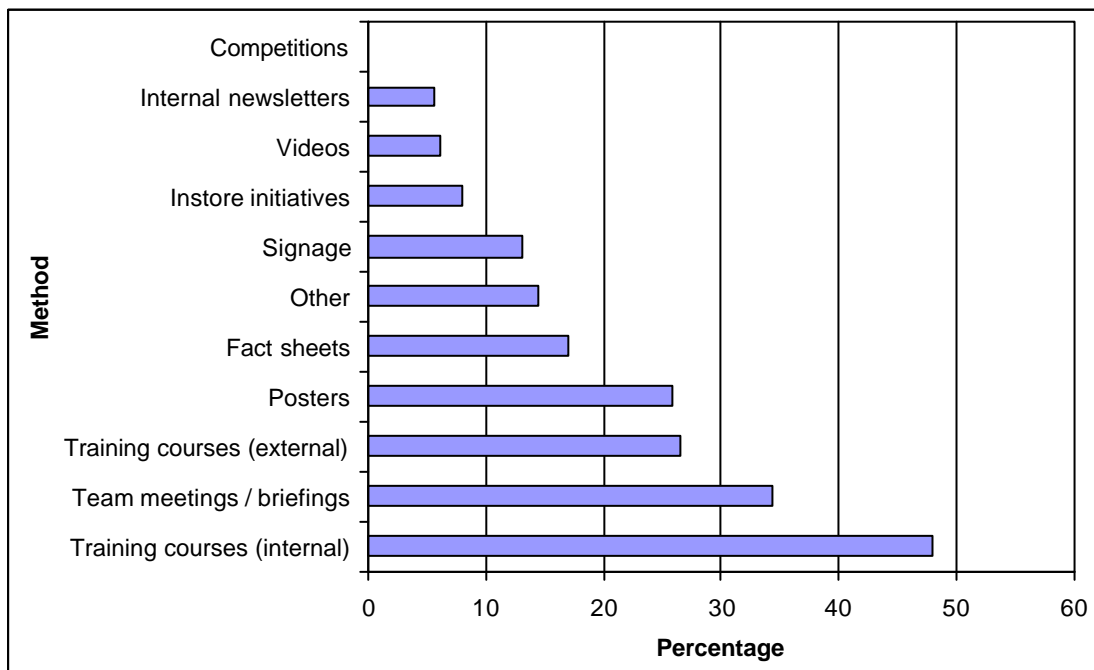
The overwhelming majority of respondents (88%) felt their business was supportive regarding implementation of food safety procedures / food safety system. A little over half of the respondents who described their business as not supportive explained that a food safety system was not necessary for their business. Only one respondent mentioned that implementation involved "too much paper work" as a reason for the lack of support.

76% thought that food safety was a "major priority" for their business.

Details of food safety management system / HACCP

Internal company training courses (48%) or company meetings/briefings (34%) were the main methods by which food handlers were made aware of food safety procedures (Figure 5.8). External training courses was the third most frequent response (27%). 26% of respondents mentioned posters, 17% fact sheets, and 13% signage.

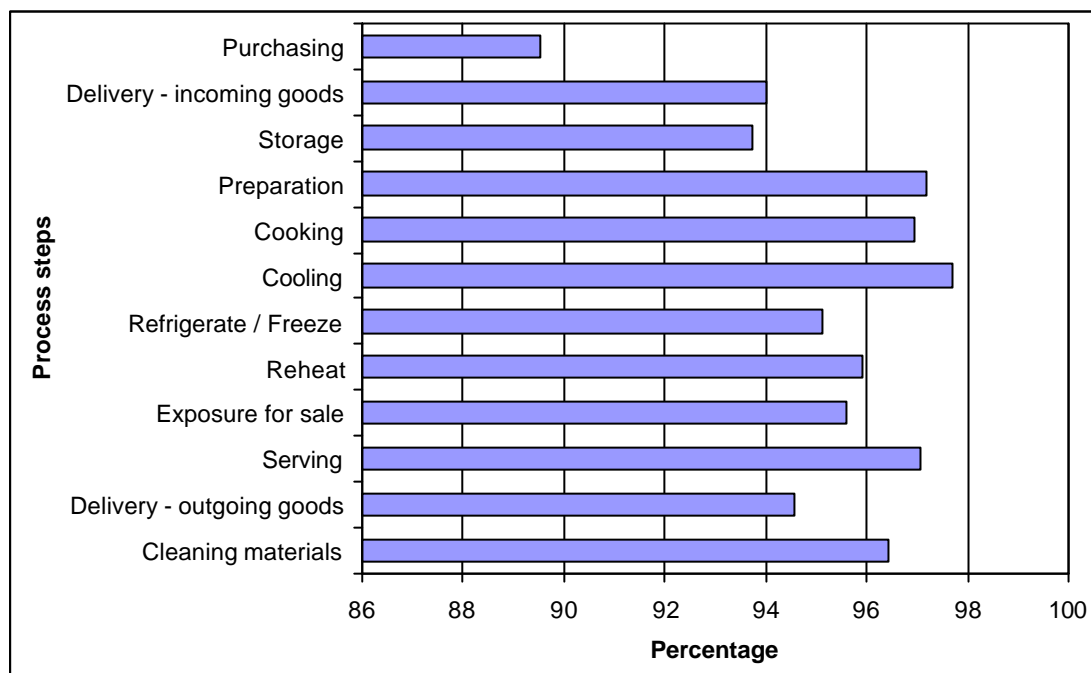
Figure 5.8: Methods by which staff are made aware of food safety procedures*



* A respondent may have indicated more than one method.

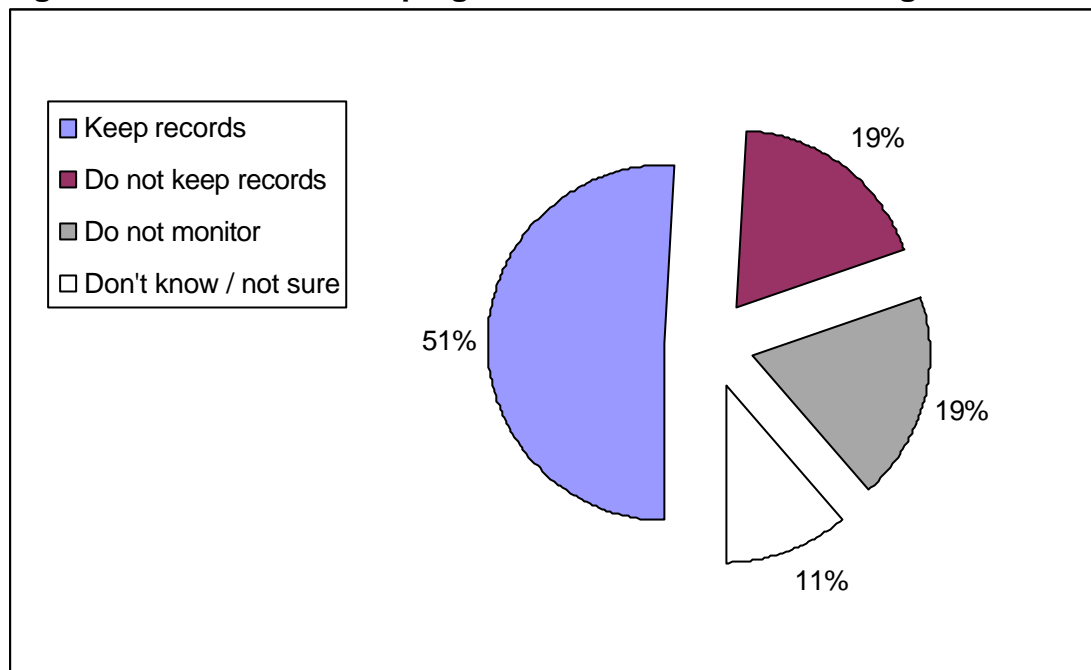
Respondents were asked to identify the process steps which applied to their business and indicate if a food safety procedure applied to that process. 89% and upwards of process steps were said to have a food safety procedure associated with them (Figure 5.9).

Figure 5.9: Percentage respondents who said they had a food safety procedure associated with the process step(s) relevant to their business



Approximately half (51%) said they kept formal records of their monitoring data (Figure 5.10). This represented 65% of those who had previously said they had a food safety management system (n=516).

Figure 5.10: Profile of keeping formal records of monitoring data



Only (38%) thought that they should be responsible for developing their own food safety management system. While 42% thought that it was the responsibility of the EHOs/health board, and 9% said the FSAI was responsible.

The majority of respondents (68%) identified EHOs/health board as the source from which they would most like to receive support. FSAI was mentioned by 20% of respondents. Other organisations suggested by respondents included Food & Drink Federation, Craft Butchers of Ireland, Licence Trade Associations, headquarters of supermarkets chains, CERT, the Tourist Board, and other hospitals. One respondent specifically said "*a person consistent in their information*", indicating a frustration with the inconsistency in the information available on food safety management systems.

5.3 Barriers to Implementing a Food Safety Management System / HACCP

Respondents were asked to agree or disagree with ten different statements relating to the difficulties of implement HACCP / food safety management system (Table 5.5). A lack of understanding of HACCP was identified as the main barrier to its implementation (46%). Within the different business sectors 51% of retailers, 47% of service sector and 31% of the other sectors agreed with the statement relating to lack of understanding of HACCP ($\chi^2_{df=4} = 17; p < 0.01$).

Earlier in the questionnaire it had been established that 52% of respondents had not even heard of the term HACCP prior to the survey. Of those who had

heard the term, 5.6% agreed that they did not really know what HACCP was and 12% agreed that it was too complicated. 2% of those who had not heard the term prior to the survey agreed that it was too complicated.

Table 5.5: Statements relating to barriers to the implementation of HACCP / food safety management systems

Statements	Agree (%)	Disagree (%)	Don't know (%)
I don't really know what HACCP is	46	48	7
There should be more food safety checks by the authorities	41	27	33
HACCP is too complicated	14	41	45
Food safety is not really a business priority	9	79	12
Food safety is not really a major priority	8	80	21
I can't see the benefits of HACCP/food safety system	7	66	27
There is no real incentive for having a HACCP/food safety system	7	65	28
I don't have the time for food safety issues	6	81	13
It costs too much to have a proper food safety system in place	6	72	22
There are language problems in communicating food safety issues to staff	4	78	19

A high percentage (41%) agreed with the statement relating to the need for more checks by the authorities (Table 5.5). This finding was not a surprise in the context of the high percentage of respondents (42%) who had previously said they thought that the EHOs/health board should be responsible for developing their food safety management system.

Of all those surveyed, only a small percentage (i.e. ranging from 4 to 9%) agreed with the statements relating to the following barriers; (i) food safety not being a priority; (ii) no obvious benefit; (iii) no real incentive; (iv) insufficient time; (v) cost; and (vi) language difficulties (Table 5.5).

Thirteen percent of respondents, when asked if they could identify other problems either elaborated on the barriers listed in Table 5.5 or identified additional barriers. The three most frequent responses were *"consultants' charges"*, *"need for simple guidelines"* and *"volume of paperwork"* (Table 5.6).

Table 5.6: Barriers, identified by respondents, to implementing food safety systems*

Responses	Number of respondents
Consultants' charges	17
Need for simple guidelines	17
Volume of paperwork	17
Time factor	14
Over the top for small businesses	7
Turn over of staff	5
Shortage of trained staff	4
Cost of training	2
Conflicting advice from EHOs	2
Making sure procedures are followed in practice	2
Complicated terminology	1
Not enough support from the authorities	1
Getting co-operation from employers	1

* A respondent may have indicated more than one barrier.

Only 12% thought that their food safety procedures/systems could be more effective. Apart from more staff, more money, more time and better facilities, respondents thought their procedures/systems could be improved by the following;

- training
- the introduction of HACCP itself
- expert advice
- the need to ensure that procedures are actually carried out
- monitoring
- controls to be set, maintained and reviewed.

When asked how food businesses could help themselves in improving food safety, approximately a quarter (23%) of respondents said there was nothing they could do. Another quarter said they did not know how they could make it better. The remaining 50% gave a range of responses, many of which covered specific improvements in facilities and procedures similar to responses to the previous question on how they could improve their food safety procedures/system. The most frequent and/or relevant comments are listed in (Table 5.7)

Table 5.7: Respondents suggestions of how they could help themselves to improve food safety in their businesses*

Responses	Number of Respondents
Always being aware of new improvements	48
Remember basic hygiene procedures	34
Carrying out routine checks	32
By adhering rigidly to health and safety	30
Give more training to keep everyone aware	24
Follow HACCP	20
Keeping staff informed	17
Make delivery people more aware of food safety measures	14
Provide more leaflets on food safety issues	13
Have seminars and lectures for staff	13
Consistency in standards	13
Having suitable controls in place	12
Keep in touch with EHO	8
More care and attention	6
Be aware of / avoid cross contamination	6
Make sure only good products are bought	5
Basic common sense	5
Controlling temperature	4
Less staff turn over	3
Simple guidelines	2

* A respondent may have made more than one suggestion.

Respondents were asked to suggest how FSAI could be of assistance to food businesses in improving their food safety systems. Again a high percentage of those surveyed either said that they did not know how FSAI could be of assistance (21%) or that there was nothing FSAI could do (33%). The majority of those who made suggestions called for FSAI to supply information (Table 5.8).

Table 5.8: Respondents suggestions of how FSAI could help food businesses to improve food safety*

Responses	Number of respondents
Supply information	172
Hold campaigns	20
More inspections	20
Supply a team of experts to help set system	20
Provide free training	13
Host seminars	13
Supply HACCP information	11
Reduce bureaucracy	10
Reduce cost for small businesses	8
Be realistic during inspections	5
Publicly acknowledge exemplars	5
Appropriate guidelines for small businesses	4
Surprise inspections	2
Literature in different languages	2
Have consistent standards	2
Host training courses in the Winter, when less busy	2
Supply training videos	1

* A respondent may have made more than one suggestion.

5.5 Food Hygiene Training

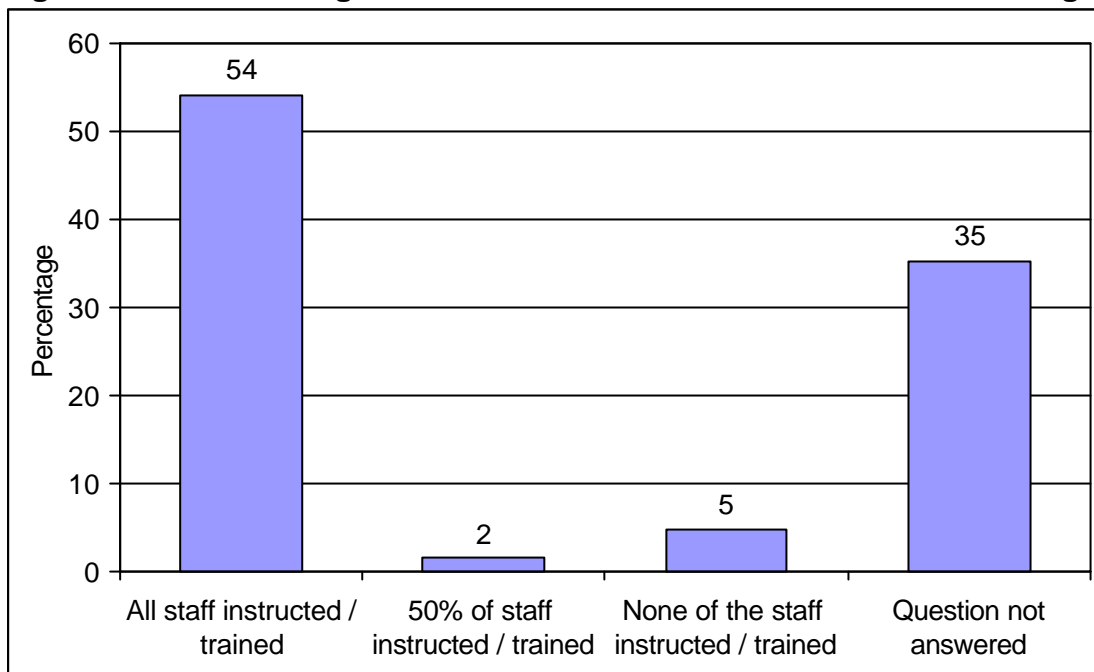
Table 5.9 summarises the number of food handlers in the context of the total number of people employed at the location of the respondent and the total number of company employees. An average of 8 employees was involved in food handling with a range of 1 to 150. The most common number of food handlers at a location was two people.

Table 5.9: Number of people employed by the company, at the location of the respondent and the number of food handlers at that location

	Smallest number	Average number	Most frequent answer	Largest number
In the company	1	22	2	998
At the specific location	1	13	2	300
Food handlers at the specific location	1	8	2	150

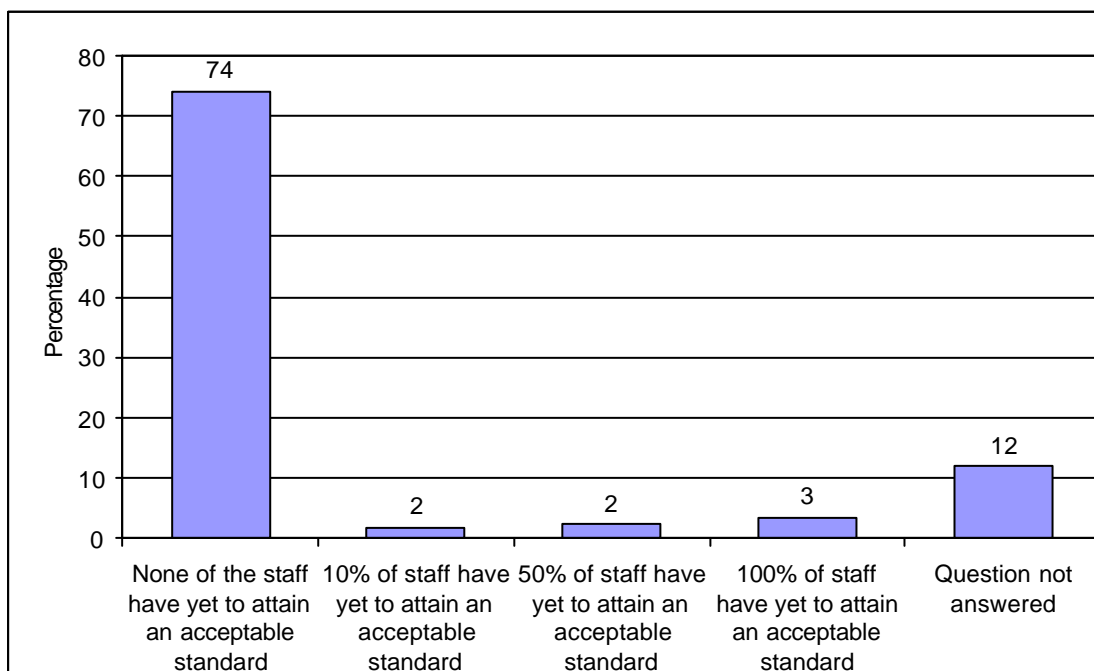
When asked how many of their food handlers had received instruction/training in food safety, only 65% of those questioned responded and of those, 84% (385/460) said that all their food handlers were trained (Figure 5.11). 7% admitted that none of their food handlers had received instruction/training, while 2% indicated that half had received instruction/training.

Figure 5.11: Percentage of staff who have received instruction/training



Respondents were asked to estimate what percentage of food handlers had yet to attain an acceptable standard for their role as food handlers. 3% admitted that all their food handlers had yet to attain an acceptable standard, but the vast majority (74%) said that none had yet to attain an acceptable standard (Figure 5.12).

Figure 5.12: Percentage of staff who have yet to attain an acceptable standard for their role as food handlers



Examining in more detail the type of training received, Figure 5.13 illustrates that the majority (62%) said that all their food handlers had received on the job instruction. A quarter said that all their food handlers had received more formal training (Figure 5.14), while 30% said that none of the food handlers had received more formal training.

Figure 5.13: Percentage of staff who have received on the job instruction

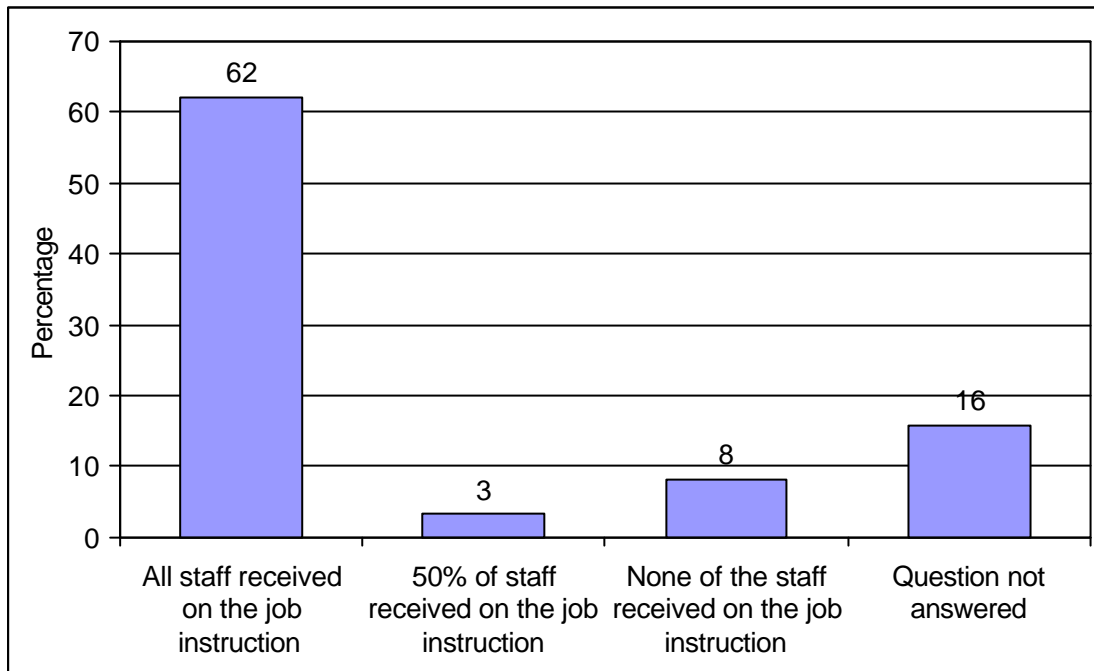
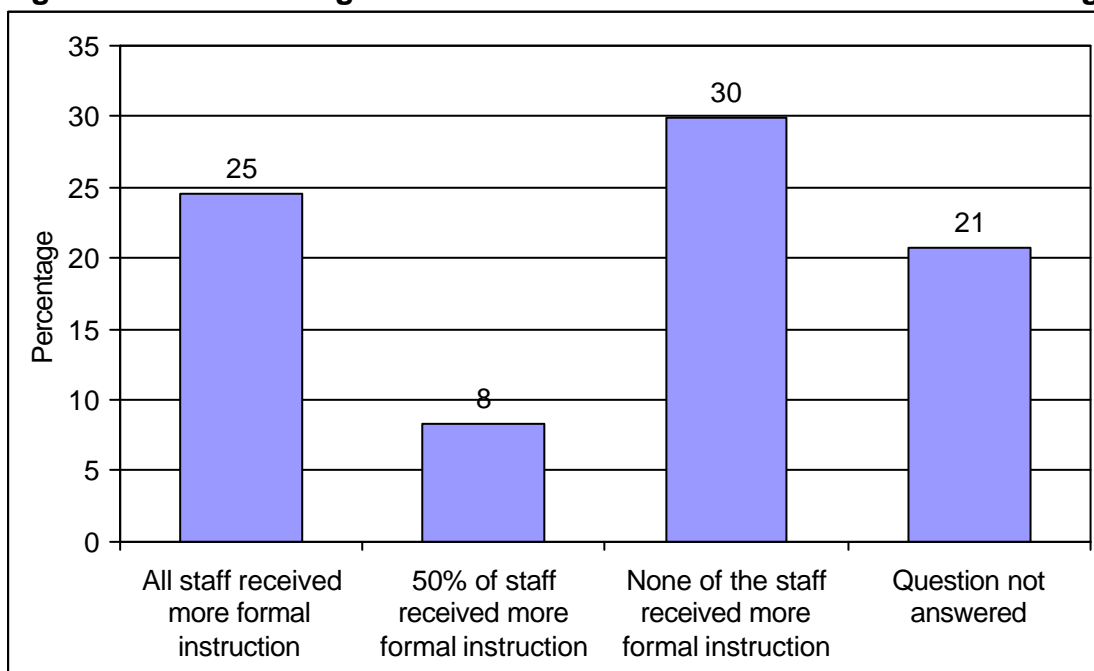


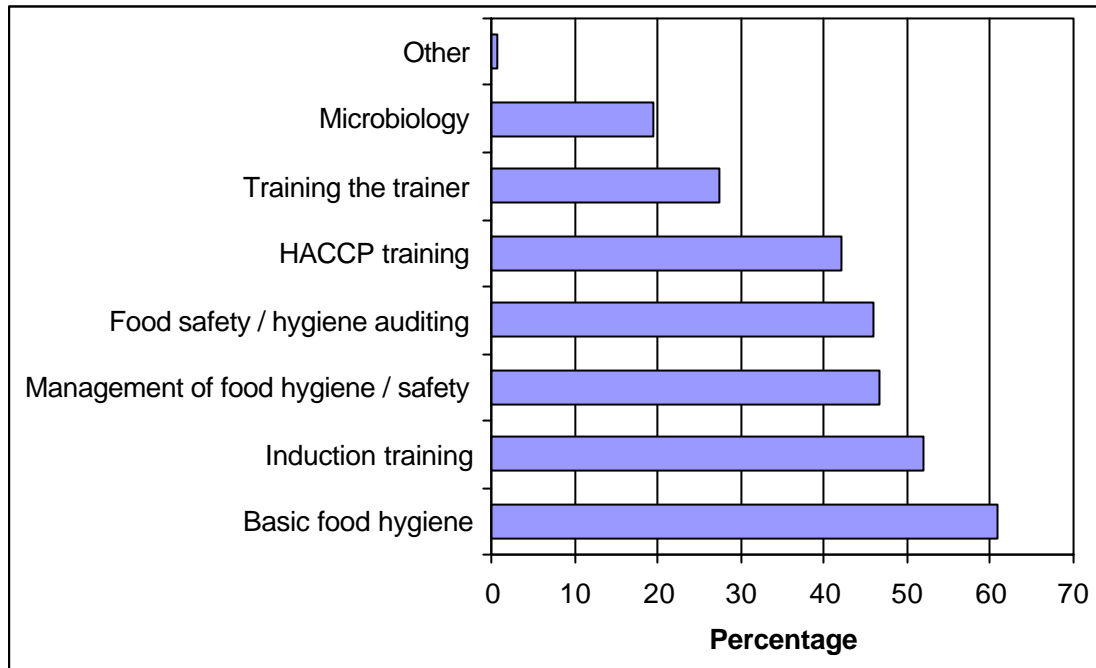
Figure 5.14: Percentage of staff who have received more formal training



Analysis of the level of training by business size or sector revealed no statistically significant differences (Figures 5.11-5.14).

Figure 5.15 lists the different types of training that respondents felt were needed by their company. Basic food hygiene and induction training were the two most frequently mentioned.

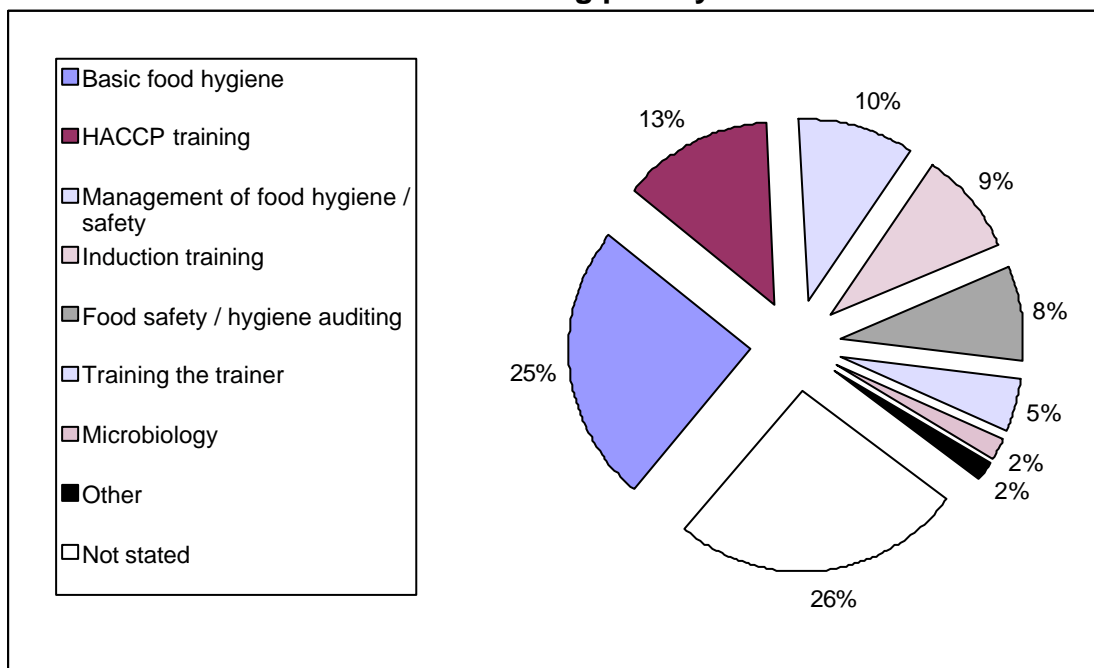
Figure 5.15: Types of training needed by company*



* A respondent may have indicated more than one training need.

When asked which of these training needs was the main priority, 25% said basic food hygiene and 13% said HACCP training (Figure 5.16).

Figure 5.16: Of the training that was needed respondents were asked to indicate the main training priority



Half the respondents said they could produce records of staff training if requested. A higher percentage of the larger businesses said they kept training records ($\chi^2_{df=3} = 9=120; p <0.01$). This response was also influenced by business sector - 42% of retailers; 50% of service sector and 61% of the other sectors kept training records ($\chi^2_{df=2} = 9; p <0.05$).

Only 17% of respondents explained why their food handlers were not trained (Table 5.10). Responses fell into three broad categories - (i) barriers to training staff; (ii) staff not trained yet but would be and; (iii) training was not necessary for the job in question.

Table 5.10: Respondents explanation for why staff were not trained

Response	Number of respondents
Not necessary as the food was pre-packed and sealed	25
Recently employed but will be trained	16
Company is dealing with it at the moment	12
Not necessary for certain jobs (stacking shelves / serving drinks / waiting on tables)	10
We are a very small business	9
They are summer staff/part-time staff/casual workers	7
Staff have a very high standard despite no formal training	3
Don't know	3
Won't pay to send them on a course	3
Some staff near retirement age	2
Have to stagger training	2
Normally don't handle food but would help if extremely busy	1

The vast majority of respondents were satisfied or very satisfied with their companies commitment to training (98%), with the practical training staff had received (99%) with the level of support /advice regarding training provided by local EHOs (87%).

The survey revealed that 93% of respondents were satisfied or very satisfied with their company's understanding of its statutory obligation to food safety (93%). This represented 85% of retailers, 94% of service sector and 99% of the other sectors ($\chi^2_{df=6} = 29; p <0.01$).

5.6 Summary of Key Results by Business Sector

Table 3.1. General findings (n=710)

Question	All (%)	Retail (%)	Service (%)	Other* (%)
HACCP/Food Safety Management System				
Have a written hygiene statement	53	42	53	70
		$\chi^2_{df=2} = 22; p < 0.01$		
Heard of HACCP (see below)	48	44	46	62
		$\chi^2_{df=2} = 11; p < 0.01$		
Have a food safety management system (see below)	74	68	73	86
		$\chi^2_{df=2} = 12; p < 0.01$		
Aware of legal requirement for a food safety management system based on the principles of HACCP	54	44	56	66
		$\chi^2_{df=2} = 14; p < 0.01$		
If not law would you put in a food safety management system	81	75	81	87
		NS**		
Keep records of monitoring data	51	42	52	60
		$\chi^2_{df=6} = 17; p < 0.05$		
Training				
All food handlers either instructed or trained	84***	75	87	90
		NS**		
Training records on file	50	42	50	61
		$\chi^2_{df=2} = 9; p < 0.01$		
Miscellaneous				
Heard of FSAI prior to survey	60	61	56	72
		$\chi^2_{df=2} = 9; p < 0.05$		

* Other included (a) primary producer; (b) manufacturer/packer; (c) distributor/transporter; and (d) manufacturer - selling primarily to the final consumer

** NS = not statistically significant at the 0.05 level

*** A high percentage of respondents (35%) did not answer this question.

Table 3.2: Specific to those who said they had heard of HACCP (n=341)

Question	All (%)	Retail (%)	Service (%)	Other* (%)
Have a HACCP team	69	57	72	76
		$\chi^2_{df=2} = 8; p < 0.05$		
Handle food according to the principles of HACCP	92	93	92	92
		NS**		
Are aware of codes of practice	65	57	66	70
		NS**		

* Other included (a) primary producer; (b) manufacturer/packer; (c) distributor/transporter; and (d) manufacturer - selling primarily to the final consumer

** NS = not statistically significant at the 0.05 level

Table 5.3: Specific to those who said they had a food safety management system (n=516)

Question	All (%)	Retail (%)	Service (%)	Other* (%)
The food safety management system procedures are written down	71	62	73	81
		$\chi^2_{df=2} = 10; p < 0.01$		
Keep records of monitoring data	65	57	67	63
		NS**		

* Other included (a) primary producer; (b) manufacturer/packer; (c) distributor/transporter; and (d) manufacturer - selling primarily to the final consumer

** NS = not statistically significant at the 0.05 level

6. CONCLUSIONS

Less than half of the food businesses surveyed had heard of the term HACCP. More encouragingly three-quarters claimed to have a food safety management system and more than 89% of all process steps were said to have an associated food safety procedure. Examining the food safety management system in more detail only 65% of those who said they had a system kept records of monitoring data.

Of those who had heard of HACCP, 23% admitted that their understanding of HACCP was poor. Worryingly a little over a quarter of respondents who were managers with responsibility for food safety had not heard of the term.

Food businesses rely primarily on their EHO/health board for food safety advice, even to the extent that the majority felt that their local EHO, and not themselves, was responsible for developing their food safety management system. 41% thought there should be more checks by the authorities.

The main barrier to implementing a HACCP based food safety management system was lack of knowledge. Despite the high percentage of small businesses surveyed the barriers typically associated with small or less developed businesses (1) were highlighted by a minority, reflecting the lack of knowledge or understanding of HACCP in this type of business.

Only 39% identified compliance with the legislation as a benefit of implementing a food safety management system. Over half (54%) claimed they were aware that they were legally required to ensure that their *"food safety procedures / food safety management system were based on the principles of HACCP"*. The actual percentage of those aware of this legal requirement was presumably lower prior to the survey, given that in an earlier question in the questionnaire, only 48% said they had even heard of the term HACCP.

It was only possible to make conclusions regarding the retail and service sectors, given the small number of businesses surveyed in the other sectors. In general, the service sector had a better knowledge of HACCP and a greater number of businesses with a food safety management system. Previously a survey by Teagasc (The National Food Centre) of Irish food processors revealed that 71% had a HACCP based food safety management system, with 15% in the process of HACCP development (2). More recently a study in the UK found that a similar percentage (69%) of manufacturing businesses had a full HACCP system (3). The UK study also found that 13% of retailers and 15% of caterers had a HACCP based system.

Regarding training, 85% of the 65% who answered this question, said that all their food handlers had been trained or instructed. The fact that 35% did not answer the question casts some doubt over this finding. 5% admitted that none of their food handlers had been trained or instructed. However since this survey was conducted advances have been made in the area of training. The FSAI has been working with industry and training professionals to improve this situation in the form of the Food Safety Training & Education Council (FSTEC). The aim of the council is to assist in developing, harmonising and co-ordinating food safety and hygiene training throughout the country.

More recently the first national guidelines on food safety training in Ireland applicable to all food related businesses, have been published by the FSAI. *Guide to Food Safety Training - Level One*, outlines the minimum staff training standards at induction level that food businesses must meet in order to comply with the law. This is the first in a series of four planned guides whose purpose is to improve industry standards by providing a consistent approach to training across a wide spectrum of food businesses, for the ultimate benefit of providing safer food for consumers.

In conclusion, Irish food businesses need to be made aware of their legal obligation and to be assisted in overcoming the barriers they encounter. Small businesses in the retail sector possibly need the greatest assistance, however priority may need to be given to the businesses which pose the greatest risk based on epidemiological data (4).

7. REFERENCES

1. Anonymous (1999) Strategies for implementing HACCP in Small and/or less developed businesses. World Health Organisation. Available at <http://www.who.int/fsf>
2. Doye T. (1998) HACCP - present status in food safety control. In Food Safety: the implications of change from producerism to consumerism. Eds. J.J. Sheridan., M. O'Keeffe and M. Rogers. Food and Nutrition Press Inc. 189-196.
3. Mortlock M. P., A.C. Peters and C.J. Griffith (1999) Food hygiene and hazard analysis critical control point in the United Kingdom food industry: practices, perceptions and attitudes. J. Food Protection 62:786-792.
4. Bonner C., B. Foley, P. Wall, and M. Fitzgerald (2001) Analysis of outbreaks of infectious intestinal disease in Ireland: 1998 and 1999. Ir. Med J. 94(5):140, 142-4.

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APPENDIX

**HACCP SURVEY
QUESTIONNAIRE**

June 2000

Health Board: _____

Area within Health Board : _____

Respondent Name: _____

Respondent Telephone No. _____

Name of Establishment: _____

Type of Establishment: _____

Interviewer Name: _____

Date of interview: _____

Time of Interview: _____

RES

SECTION A : GENERAL INFORMATION

A1. What is your position within your organisation? (CIRCLE ONE ONLY)

Owner	1
Manager (with responsibility for food safety)	2
Manager (other)	3
Other (specify)	4

A2. Which ONE of the following categories would describe your establishment? (CIRCLE ONE ONLY)

Primary producer (e.g. fruit and vegetable producer, poultry farmer, cereal producer etc.)	1
Manufacturer/Packer (all manufacturing/processing/packing establishments)	2
Distributor/ Transporter (pre-retail distribution activities, importation, wholesaling, wholesale storage)	3
Retailer (includes all types of retail activity - sales to the final consumer: e.g. supermarkets, vending machines, market stalls etc but excludes take-away market stalls)	4
Service Sector (restaurants, takeaways, canteens in firms/public institutions, caterers and public houses)	5
Manufacturer - selling primarily to the final consumer – (e.g. bakers, butchers, confectioners, ice-cream manufacturers, processing on farms etc.)	6

A3. What general term would you use to describe your organisation or business e.g. a restaurant, takeaway, butcher etc? (WRITE IN)

A4. Approximately how many people does your organisation employ in the Republic of Ireland? (WRITE IN THE NUMBER)

A5. Approximately how many people does your organisation employ at your location? (WRITE IN THE NUMBER)

SECTION B : AWARENESS AND COMPLIANCE

B1. What do you understand to be your main food safety responsibilities? (WRITE IN RESPONSE – BRIEFLY SUMMARISE RESPONSE – PROBE RESPONDENT – ANYTHING ELSE ETC.)

- B2. I'd now like you to think about food safety in your business/organisation. Can you tell me what procedures you carry out to avoid food safety problems arising? (WRITE IN RESPONSE – BRIEFLY SUMMARISE RESPONSE – PROBE RESPONDENT – ANYTHING ELSE ETC.)**

--

- B3. Do you have a WRITTEN hygiene statement? (CIRCLE ONE ONLY)**

Yes	1	-> go to B4
No	2	-> go to B5

- B4. What are the key points contained in your hygiene statement? (NOTE THE KEY POINTS OF THE STATEMENT)**

--

- B5. Have you ever heard of the term “Hazard Analysis and Critical Control Point” system – or HACCP?” (CIRCLE ONE ONLY)**

Yes	1	-> go to B6
No	2	-> go to B12

- B6. What does the term ‘HACCP’ mean to you in practice? (WRITE IN RESPONSE – BRIEFLY– PROBE RESPONDENT – ANYTHING ELSE ETC.)**

--

- B7. How would you rate your understanding of ‘HACCP’? (CIRCLE ONE ONLY)**

excellent	good	fair	poor	very poor
1	2	3	4	5

- B8. Do you have a designated HACCP team, committee or person with overall responsibility for the implementation of HACCP. (CIRCLE ONE ONLY)**

Yes	No
1	2

**B9. From what sources have you heard of 'HACCP'?
(DO NOT PROMPT – ANY OTHER SOURCES - CIRCLE ALL MENTIONED)**

Source	
Food Safety Authority of Ireland	1
Environmental Health Officer / Health Board	1
Information seminar organised by local Environmental Health Officer	1
Industry literature	1
Trade association	1
Press	1
Colleagues	1
Word of mouth	1
Internal communication	1
College/education setting	1
Other, specify...	1

B10: Thinking about your own business sector, are you aware of any guidelines or codes of practice on HACCP? (CIRCLE ONE ONLY)

Yes	1	-> go to B11
No	2	-> go to B12

B11. Can you tell me the source or who wrote the guidelines (WRITE IN RESPONSE)

CERT (State Tourism and Training Agency)	1
NSAI (National Standards Authority of Ireland)	2
IBEC (Irish Business and Employers Federation)	3
Other (specify)	4

ALL TO ANSWER

B12. Does your organisation have set food safety procedures or a food safety system in place? (CIRCLE ONE ONLY)

Yes	1	-> go to B13
No	2	-> go to B14

B13. Are your food safety procedures / food safety system written down?

Yes	1
No	2

B14: Is food handling (at your location?) carried out in accordance with HACCP principles? (CIRCLE ONE ONLY)

Yes	1
No	2
Not aware of HACCP	3

B15. How often is the food safety system formally reviewed and updated? (CIRCLE ONE ONLY)

Once a month or more	Every quarter	Every six months	Every year	Every three years	No formal review period or process
1	2	3	4	5	6

B16. What do you see as the main benefits to your organisation of implementing a food safety system? DO NOT PROMPT – CIRCLE ALL MENTIONED

Improves customer confidence in the safety and quality of our products and hence protects our market share	1
Prevents food poisoning	1
Is a legal defence against complaints	1
Reduces the number of complaints	1
Complies with legislation	1
Useful business management discipline	1
Other (specify) _____	1

B17. Are you aware that you are legally required to make sure that your food safety procedures / food safety system is based on the principles of 'HACCP'? (CIRCLE ONE ONLY)

Yes	1
No	2

B18. If it were not law, would you have put in a food safety system anyway? (CIRCLE ONE ONLY)

Yes	No	Don't know
1	2	3

B19. Generally how supportive or unsupportive is your business regarding the implementation of food safety procedures / system? (CIRCLE ONE ONLY)

very supportive	supportive	not very supportive	not at all supportive
1	2	3	4

B20. Why do you say that? (WRITE IN)

B21. Would you say that food safety is a major priority, a minor priority or not a priority for your business/organisation? (CIRCLE ONE ONLY)

major priority	1
minor priority	2
not a priority	3

**B22. By what methods are staff made aware of food safety procedures?
(DONOT PROMPT - CIRCLE ALL MENTIONED)**

Posters	1
Team meetings / briefings	1
Training courses on food safety - internal	1
Training courses on food safety - external	1
Videos	1
Signage	1
Instore initiatives	1
Internal newsletters	1
Fact sheets	1
Competitions	1
Other, specify...	1

B23. For each of the following, can you tell me...

- (i) if the process applies to your organisation?
- (ii) if it does, do you have food safety procedures for the process?
- (iii) if you don't have food safety procedures for the process, why not?

INTERVIEWER GO THROUGH EACH PROCESS IN ABOVE ORDER

Process	(i) Does process apply?	(ii) Do you have set food safety procedures for this process			(iii) Reason why you don't have set food safety procedures for this process (if applicable)?
	Yes	Yes	No	n / a	
Purchasing	1	1	2	8	
Delivery	1	1	2	8	
Storage	1	1	2	8	
Preparation	1	1	2	8	
Cooking	1	1	2	8	
Cooling	1	1	2	8	
Refrigerate / Freeze	1	1	2	8	
Reheat	1	1	2	8	
Exposure for sale	1	1	2	8	
Serving	1	1	2	8	
Cleaning materials	1	1	2	8	
Delivery – incoming goods	1	1	2	8	
Delivery – outgoing goods	1	1	2	8	
Other(specify)	1	1	2	8	

B24. Do you keep formal records of all your monitoring data? (CIRCLE ONE ONLY)

Yes	No	Do not monitor	Don't know / not sure
1	2	3	4

B25. Who do you feel should be responsible for developing your food safety / HACCP system? (CIRCLE ONE ONLY)

Food Safety Authority	Environmental Health Officer / Health Board	Us	Other
1	2	3	4

B26. With regard to your food safety / HACCP system, which organisation would you MOST like to receive support or help from in the future? (CIRCLE ONE ONLY)

Food Safety Authority of Ireland	1
Environmental Health Officer / Health Board	2
Other (specify)	3

B27. Before being contacted about this survey, had you ever heard of the Food Safety Authority of Ireland?

Yes	No
1	2

SECTION C : PROBLEMS TO IMPLEMENTING HACCP

C1. Could you please tell me whether you agree or disagree with each of the following statements.

	Agree	Disagree	Don't Know
I don't really know what HACCP is	1	2	3
HACCP is too complicated	1	2	3
I don't have the time for food safety issues	1	2	3
Food safety is not really a business priority	1	2	3
I can't see the benefits of HACCP/food safety system	1	2	3
There is no real incentive for having a HACCP/food safety system	1	2	3
There are language problems in communicating food safety issues to staff	1	2	3
It costs too much to have a proper food safety system in place	1	2	3
Food safety is not really a major priority	1	2	3
There should be more food safety checks by the authorities	1	2	3

C2. Can you identify any other problems in putting in place food safety procedures / food safety system? (CIRCLE ONE ONLY)

Yes	1	-> go to C3
No	2	-> go to C4

C3. What are these other problems? (WRITE IN)

C4. Do you feel your food safety procedures / system could be any more effective than it is at present? (CIRCLE ONE ONLY)

Yes	1	-> go to C5
No	2	-> go to C6
Don't Know	3	-> go to C6

C5. What would make it better?

C6. In what ways do you feel that businesses/organisations could help yourselves in improving food safety? DO NOT PROMPT – PROBE – ANY OTHER WAYS

C7. In what ways could the Food Safety Authority be of assistance to you? (DO NOT PROMPT – PROBE)

SECTION D: TRAINING

D1. Approximately how many employees are involved in food handling at your location?(WRITE IN THE NUMBER)

--	--	--

D2: Of these employees, approximately what percentage have....

no instruction or training in food safety	%			
on the job instruction	%			
more formal instruction (e.g. training seminars etc.)	%			

D3: Approximately what percentage have yet to receive and attain an acceptable standard for their role as food handlers? WRITE IN PERCENTAGE

%				
---	--	--	--	--

D4A. I am now going to list different types of training and ask you whether each is needed by your business/organisation? (CIRCLE ONE ONLY)

	D4A		D4B
	YES	NO	
Induction Training	1	2	1
Basic Food Hygiene	1	2	2
Management of food hygiene / safety	1	2	3
Microbiology	1	2	4
Food safety / hygiene auditing	1	2	5
HACCP training	1	2	6
Training the trainer	1	2	7
Other, specify...	1	2	8

D4B. Of the training that you said was needed, which would be the main priority for your organisation? (CIRCLE ONE ABOVE)

D5 If asked, could you produce for inspection, the training records that relate to the training which staff had received? (CIRCLE ONE ONLY)

Yes	1
No	2

D6: If there are staff who handle food, but have not as yet been trained in food handling procedures, please tell me why?

D7. How satisfied are you with each of the following:

	very satisfied	satisfied	not very satisfied	not at all satisfied
your organisations commitment to training staff on food safety issues	1	2	3	4
the practical training on food safety given to staff	1	2	3	4
your organisation's understanding of its statutory obligations regarding food safety	1	2	3	4
the level of support / advice provided by your local Environmental Health office for training	1	2	3	4

THANK RESPONDENT AND CLOSE INTERVIEW