



**NZFSA National Refrigerator
Temperature Survey**
(September 2010)

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This study was designed and conducted in accordance with the Code of Practice established by the Market Research Society of New Zealand.

MMResearch™ believes that this report represents a fair, accurate and comprehensive analysis of the information collected, with all sampled information subject to normal statistical variance.

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SURVEY HIGHLIGHTS

In August 2010, n=158 New Zealand households measured the temperature of their refrigerator twice a day – first thing in the morning, and again at dinner time.

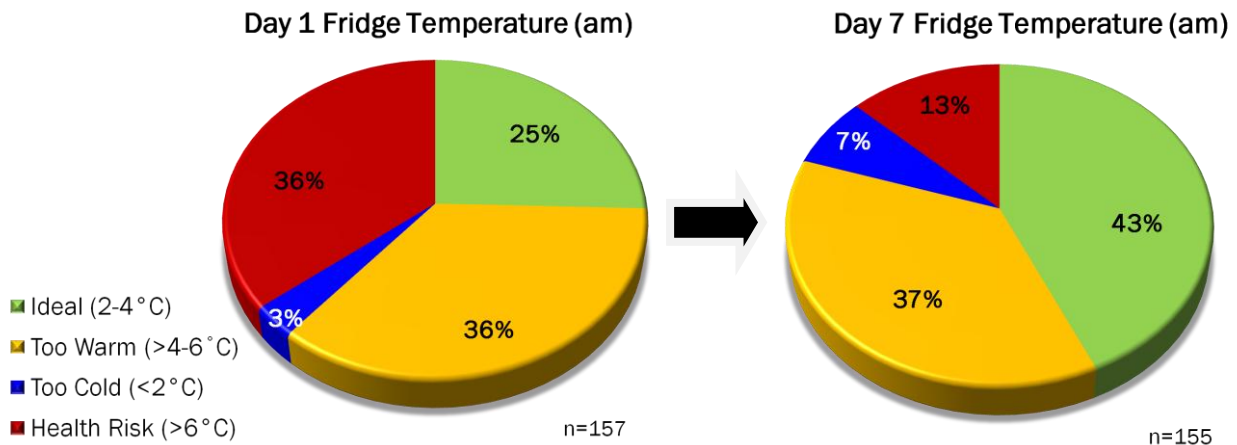
Proportion of Fridges at 2°C to 4°C

Based on the temperature on the first morning, a quarter of fridges were operating in the Ideal range of 2°C to 4°C (25%).

Temperature Corrections

Over the seven days of the survey, the proportion of fridges in the Ideal range of 2°C to 4°C significantly increased from 25% on the first day to 43% on the seventh day. (Refer Chart 1.) This shows it is beneficial to inform people how to monitor their fridge temperature.

Chart 1



Unsafe Fridges

On the first morning, over a third of the fridges (36%) recorded temperatures of more than 6°C. It is worth noting that by the seventh morning of the survey, the proportion of fridges with temperatures over 6°C had reduced by almost two-thirds to 13%.

Almost half (41%) of the people with fridges with average temperatures in the Health Risk range made no attempt to adjust the fridge temperature. This group was not included in the faulty fridge analysis, because we can't tell if it is possible to correctly adjust these fridges.

Depending on the way you define a faulty fridge, this survey found that after adjustments were made, only 1% of fridges were always above 6°C.

After adjustments were made, 7% of fridges were above 6°C more than half the time.

1. CONTEXT

1.1 Background

NZFSA is preparing for a food safety campaign in November 2010, aimed at informing New Zealanders about the correct, safe temperature for their refrigerators – two to four degrees Celsius. There was no up to date measure of the proportion of New Zealand fridges at the correct temperature for safe storage of food.

A BRANZ Study Report No.SR155 (2006) Energy Use in New Zealand Households showed:

“About 7% of domestic refrigeration appliances are faulty, and 9% operate marginally.”

NZFSA commissioned **MMResearch™** to conduct a survey to measure the temperatures of New Zealand household fridges.

1.2 Research Objectives

The research objectives have been defined as follows:

- To obtain a measure of the temperature of New Zealand household fridges.
- To estimate the proportion of fridges that are at the correct safe temperature of two to four degrees Celsius.
- In instances where the fridge temperature is not cold enough, adjustments made and the measurement repeated in an attempt to correct the fridge temperature.
- To estimate the proportion of household fridges that are faulty and not capable of refrigerating at the required safe temperatures.

2. RESEARCH DESIGN

2.1 Methodology

This survey was designed by **MMResearch™** in consultation with New Zealand Food Safety Authority. The survey form, instructions and cover letter are included in the Appendix.

Process

This survey involved several stages:

1. An initial recruitment survey to recruit people who were prepared to participate in the research project. This was a nation-wide Computer Assisted Telephone Interviewing (CATI) survey with 200 members of the public (n=200), aged 18 years or older with a fridge in their home, randomly selected from throughout New Zealand. The recruitment calls were made from 28 to 31 July 2010. All telephone calls were conducted by trained and experienced interviewers of Telelink who were given special training in all aspects of this research project. The first phone call explained the survey, and requested postal details.
2. A (well packaged) thermometer, survey form, instructions and food safety booklet were posted to the 200 participants. The instructions clearly explained that the thermometer should be attached to the inside wall of the fridge, half way up. The thermometer was an ISO 17025 calibrated Fisher Scientific Traceable Economy Refrigerator Thermometer. This thermometer provides a digital readout, held for 30 seconds and then updated, to the nearest 0.1 degree Celsius.
3. Survey participants needed to measure and record their fridge's temperature twice a day for seven days. The times to read the thermometer were first thing in the morning (after the fridge settled overnight) and then again at dinner time (a time of frequent fridge door opening). The temperatures were to be written on the survey form, along with whether any attempt was made to adjust the fridge temperature. To gain a fuller understanding of the fridges in the survey, additional questions were asked: the make and estimated age of the fridge, how full the fridge tends to be, and the condition of the fridge rubber door seal.
4. Following completion of the seven day survey, participants were to post back their completed survey forms to **MMResearch™** in a pre-paid envelope, keeping the thermometer for future use.
5. A follow-up phone call was made to n=99 participants whose forms were not received back by 18 August 2010. This call encouraged them to complete the survey if they had not done so, and to post it back.

Incentives

An incentive was included as a means of encouraging participation in the project. This was two chances to win grocery vouchers to the value of \$250. On 1 September the prize draw was held. Two winners were selected from the 158 participants who had returned completed survey forms.

Response Rates

Telephone recruiting took place in the last week of July 2010 (28-31 July). A total of 200 people were recruited for the survey from a total number of 907 contacts. This produced a response rate of 22% for the initial recruitment. Refer Table 1.

Table 1 Initial Recruitment

	n
Total contacts	907
Participants recruited	200
Refusals	688
Recruitment incomplete	3
Disconnected/invalid numbers	16
Recruitment response rate	22%

Table 2 shows that of the n=200 initially recruited, n=158 returned a completed survey. This was a response rate of 79% amongst those who had agreed to participate.

Table 2 Survey Completion

	n
Participants recruited	200
Surveys completed and returned	158
Surveys not returned	42
Completion response rate	79%

Feedback from those who did not complete their survey indicated that in some cases this was due to unexpected circumstances, e.g. sickness. Others could not be bothered. In one case a puppy chewed up the thermometer.

Regional Sampling

Participants were originally selected at random from the New Zealand White Pages. The proportion of participants selected in each region was fairly much in line with the New Zealand population distribution, based on Statistics New Zealand estimates at 30 June 2009.

Table 3 on the following page shows the population proportions by region, alongside the number and proportion of participants recruited initially, and then those who returned their completed surveys in each region.

The returned surveys do give a fairly representative sample of the New Zealand population.

Table 3 Sample by Region

Regions	NZ Population* %	Initial Recruitment		Surveys Completed	
		n=	%	n=	%
Northland	4%	6	3%	5	3%
Auckland	33%	60	30%	43	27%
Waikato	9%	20	10%	18	11%
Bay of Plenty	6%	10	5%	7	4%
Gisborne	1%	9	5%	8	5%
NORTHERN	53%	105	53%	81	51%
Hawkes Bay	4%	8	4%	6	4%
Taranaki	3%	7	4%	4	3%
Manawatu Wanganui	5%	4	2%	3	2%
Wellington	11%	28	14%	22	14%
CENTRAL	23%	47	24%	35	22%
Tasman	1%	1	1%	-	-
Nelson	1%	0	-	-	-
Marlborough	1%	4	2%	3	2%
West Coast	1%	3	2%	3	2%
Canterbury	13%	28	14%	25	16%
Otago	5%	5	3%	4	3%
Southland	2%	7	4%	7	4%
SOUTHERN	24%	48	24%	42	27%
Total	4,315,800	n=200		n=158	

* Statistics New Zealand sub-population estimates at 30 June 2009.

Household and Fridge Variables

The detailed household and fridge information collected is shown on Table 4 on the following page.

In summary:

- Half the participants surveyed live in a family/group household (48%), a third were couples (32%) and a fifth were single people (20%).
- There were twenty different brands of fridge in the survey, but almost half were Fisher and Paykel (47%).
- A quarter of the fridges were less than 5 years old (27%), and the same number were 5 to 9 years old (27%). 37% were 10 to 19 years old, and 8% were 20 years old or more.
- Most indicated their fridge's rubber seal was in good (53%) or excellent condition (41%).
- Most said their fridge tended to be half full (44%), or fairly full (46%).

Table 4 Household and Fridge Information

	n=	%
Type of household		
Group - total	75	48%
1 adult & children	12	8%
2 or more adults & young people	63	40%
Couples - total	51	32%
Couple aged under 60 years	21	13%
Couple aged 60 years+	30	19%
Single person - total	32	20%
Single aged under 60 years	12	8%
Single aged 60 years +	20	13%
What brand is your fridge?		
Fisher & Paykel	74	47%
Westinghouse	17	11%
Kelvinator	13	8%
Whirlpool	8	5%
Simpson	8	5%
Fridgidaire	7	4%
Samsung	6	4%
Mitsubishi	5	3%
Prestcold	4	3%
Elba	4	3%
Hoover	2	1%
LG	2	1%
Other brands*	8	5%
How old is your fridge?		
<2 years	16	10%
2 to <5 years old	27	17%
5 to <10 years old	43	27%
10 to < 20 years old	59	37%
20 years +	12	8%
Not answered	1	1%
What is the condition of the rubber seal around your fridge door?		
In poor condition (looks worn)	10	6%
In good condition	83	53%
Excellent (looks new)	65	41%
How full does your fridge tend to be?		
Empty	-	-
Fairly empty	10	6%
Half full	69	44%
Fairly full	72	46%
Packed full	7	4%
Total	158	100%

*Other brands were: Bosch, Candy, Sharp, Electrolux, Liebherr, Norge, GE, Leonard.

Analysis

The analysis of this survey was carried out in MS Excel.

Please note that the actual date of Day 1 varied depending on when participants started the survey. Most participants did the survey on seven consecutive days. However, there were a few who took “a break” somewhere in the middle and then continued.

Also, due to the nature of self completion surveys like this one, there were sometimes instances where participants left a gap, i.e. there was missing information where they had not filled in a question. For a missing value we have adjusted the relevant sample size when calculating proportions. For example, on Day 1 (am) there were n=157 temperatures recorded and on Day 7 (am) there were n=155 temperatures recorded.

When we calculated the “faulty” fridge proportions, a missing value did not count as faulty. So if a value was missing it was assumed it would have been healthy.

In this report, not all percentages add to 100% due to rounding.

3. SURVEY RESULTS

This section contains the detailed findings of the NZFSA National Refrigerator Temperature Survey.

This report presents fridge temperatures grouped into various ranges:

- the **Ideal** fridge temperature range is based on the NZFSA recommendation of 2°C to 4°C;
- fridges with temperatures from over 4°C to 6°C are in the **Too Warm** range;
- fridges in the **Health Risk** range had temperatures greater than 6°C;
- fridges with temperatures below 2°C have been classified as **Too Cold**.

3.1 Daily Fridge Temperature Readings

The fridge temperature survey participants (n=158) recorded their fridge temperature twice a day – first thing in the morning, and then at dinner time, for seven days. Participants were encouraged to adjust the temperature if it was outside the recommended range of 2°C to 4°C.

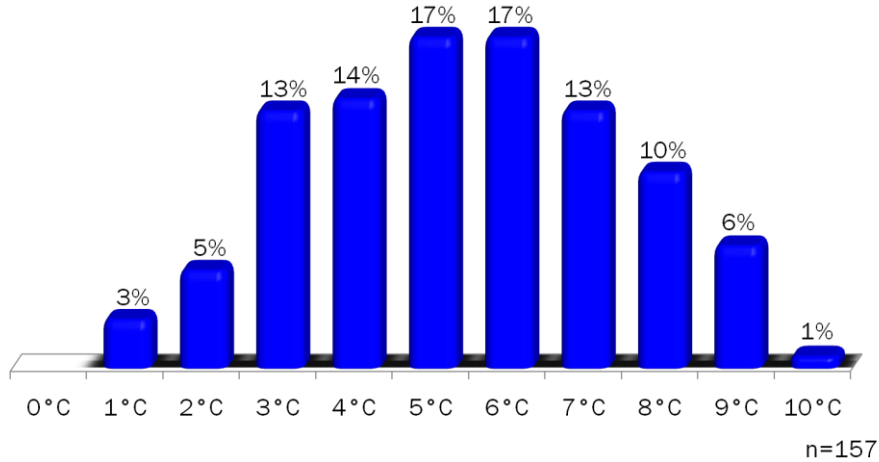
Please note that the following two “temperature distribution” charts are based on “rounded temperatures”. This means that in Chart 2 and Chart 3, 2°C actually includes temperatures from 1.5°C to 2.4°C.

Most of the charts in this report are based on the actual temperatures, not rounded temperatures. So when the Ideal temperature range is shown, it includes temperatures precisely from 2°C to 4°C.

The temperature distribution on Day 1 in the morning is shown in Chart 2.

Chart 2

Temperature Distribution - Day 1, am
(Based on rounded temperatures)

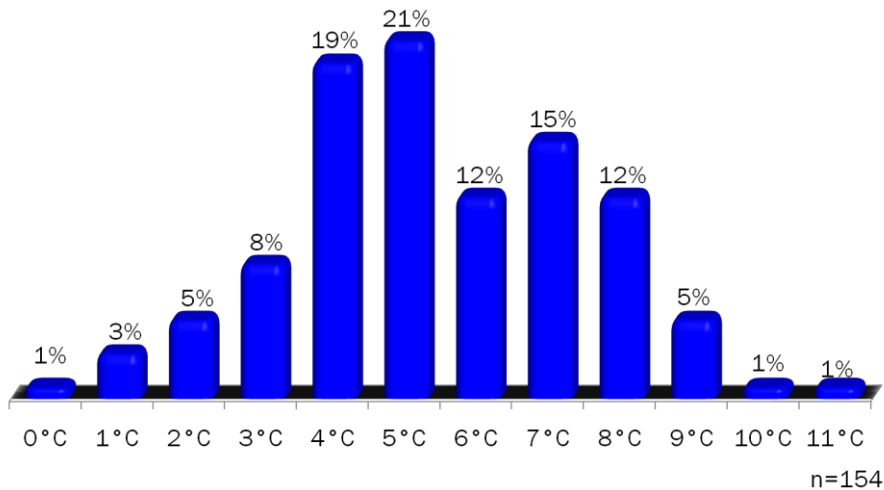


The temperature distribution on Day 1 in the evening is shown in Chart 2. (Again please note the temperatures have been rounded to the nearest degree.)

In comparison with the morning fridge temperatures, the evening temperatures tend to be significantly higher.

Chart 3

Temperature Distribution - Day 1, pm
(Based on rounded temperatures)



3.2 Proportion of Fridges at Safe and Unsafe Temperatures

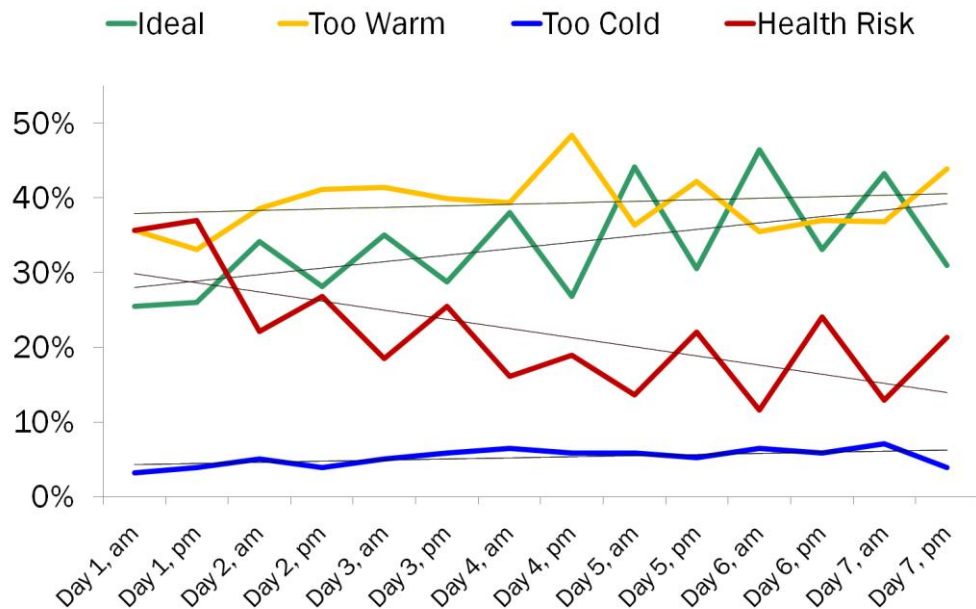
Chart 4 shows the proportion of fridges with temperatures in the:

- Ideal (2 °C to 4 °C)
- Too Warm (>4 °C to 6 °C)
- Too Cold (<2 °C) and
- Health Risk (>6 °C) ranges.

It shows a significant improvement in fridge temperatures over the seven days of the survey.

Chart 4

Proportion of Fridges at Safe or Unsafe Temperatures



Over the seven days there were significant improvements:

- an increase in the proportion of fridges in the Ideal temperature range; and
- a decrease in the proportion of fridges in the Health Risk range.

This can be seen in the morning and evening temperature results. Refer to Charts 5 and 6 on the next page.

Chart 5

Morning Fridge Temperatures

- Health Risk (>6 °C)
- Too Cold (<2 °C)
- Too Warm (>4-6 °C)
- Ideal (2-4 °C)

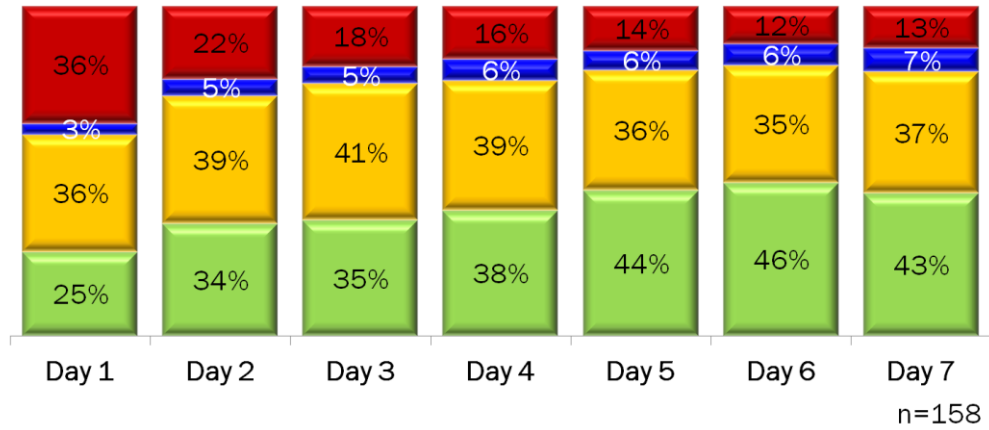
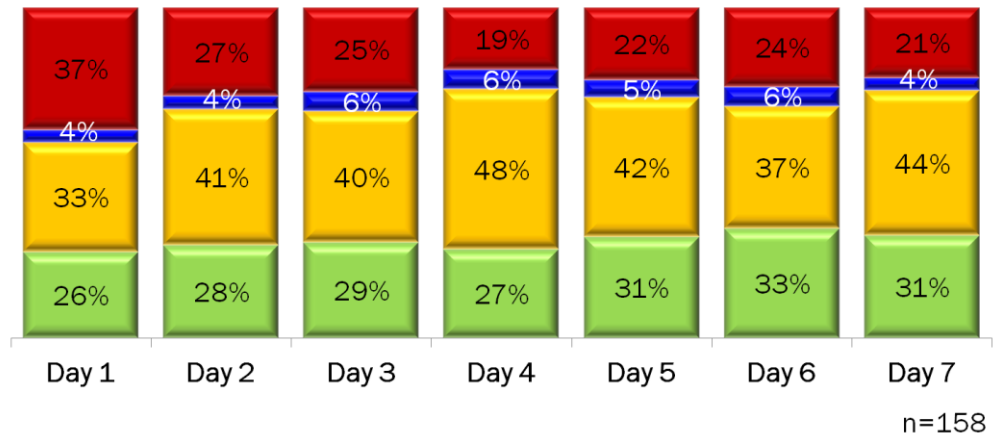


Chart 6

Evening Fridge Temperatures

- Health Risk (>6 °C)
- Too Cold (<2 °C)
- Too Warm (>4-6 °C)
- Ideal (2-4 °C)



Charts 7 and 8 illustrate the differences between the morning and evening temperatures over the seven day survey.

Chart 7

Percentage of Fridges in the Ideal Range
(2 °C to 4 °C)

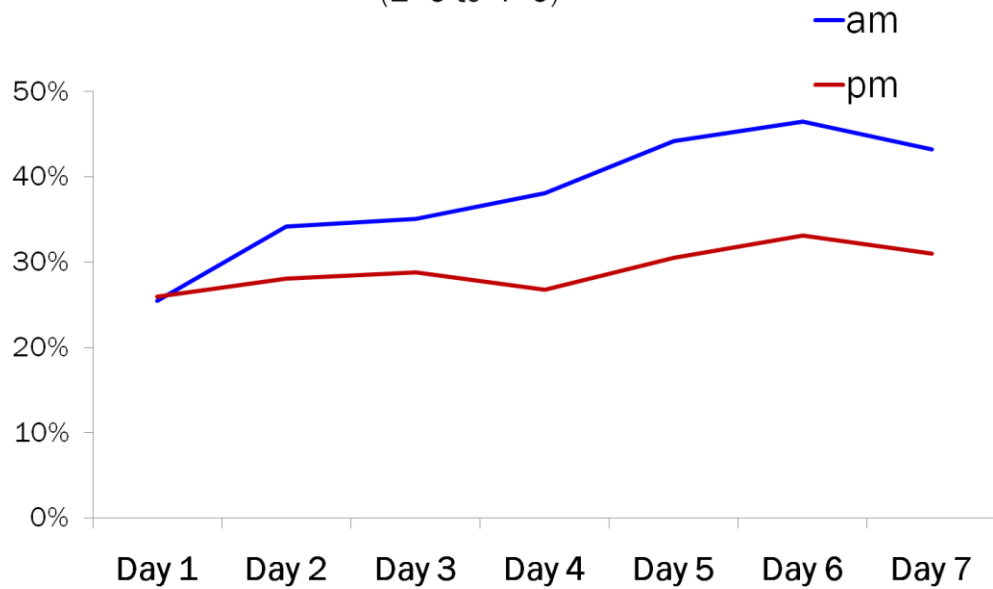
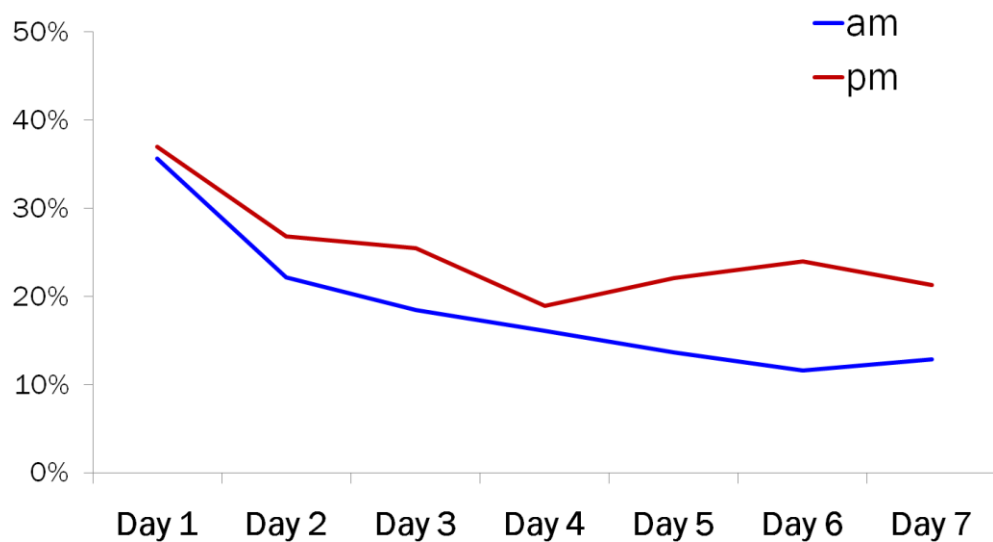


Chart 8

Percentage of Fridges in the Health Risk Range
(> 6 °C)



3.3 Average Fridge Temperature

The results in this section are based on the average daily temperature of all fridges in the survey across all seven days.

Chart 9 below shows the average temperature across all the fridges in the survey, at each of the fourteen measurement times (morning and evening for seven days). The maximum and minimum temperatures recorded at each time are also shown. Refer to Table 5 for detailed results.

The average temperature on Day 1 in the morning was 5.4°C. By Day 7 the average temperature in the morning was 4.1°C. This is a significant improvement.

Chart 9

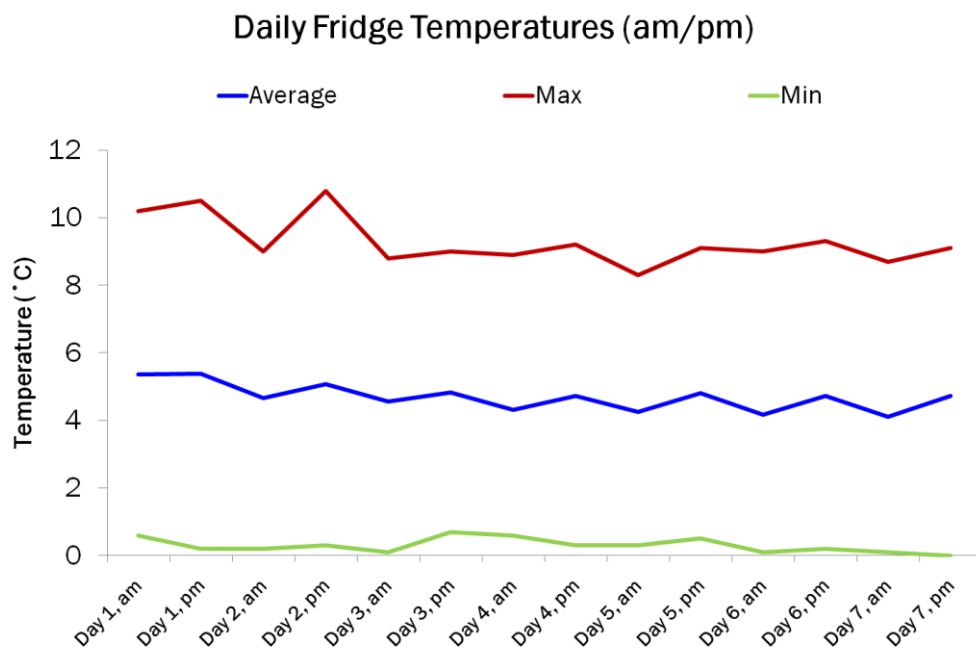


Table 5 Daily Fridge Temperature Statistics (°C)

	Day 1		Day 2		Day 3		Day 4		Day 5		Day 6		Day 7	
	am	pm	am	pm	am	pm	am	pm	am	pm	am	pm	am	pm
Average	5.4	5.4	4.7	5.1	4.6	4.8	4.3	4.7	4.2	4.8	4.2	4.7	4.1	4.7
Median	5.2	5.2	4.7	5.0	4.6	4.7	4.3	5.0	4.1	4.8	4.0	4.5	4.0	4.7
Max	10.2	10.5	9.0	10.8	8.8	9.0	8.9	9.2	8.3	9.1	9.0	9.3	8.7	9.1
Min	0.6	0.2	0.2	0.3	0.1	0.7	0.6	0.3	0.3	0.5	0.1	0.2	0.1	0.0

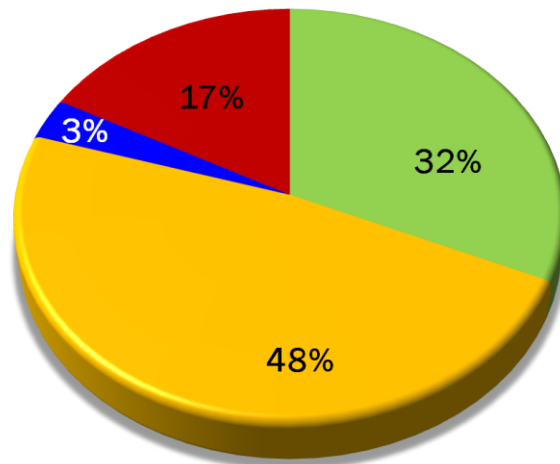
Based on the average fridge temperatures across the entire seven days, a third of the fridges surveyed were in the “ideal” temperature range of 2 to 4 °C (32%). Refer to Chart 10.

It is cause for concern that 17% of fridges had an average temperature which was more than 6 °C.

Chart 10

Average Fridge Temperature

- Ideal (2-4 °C)
- Too Warm (>4-6 °C)
- Too Cold (<2 °C)
- Health Risk (>6 °C)



(Based on average fridge temperature across seven days.)

n=158

3.4 Demographic Variables

NB: Some of the following tables include subgroups based on very small numbers of observations (less than 30) and thus any conclusions drawn should be treated as indicative only. Particularly small sample sizes are marked below with an *.

Weekends versus Weekdays

There was no significant difference between average daily fridge temperatures on weekdays compared to fridge temperatures at weekends.

Table 6 Fridge Temperatures

	Week days		Weekend days	
	am	pm	am	pm
Upper limit	4.7 °C	5.1 °C	4.6 °C	5.1 °C
Mean	4.5 °C	4.9 °C	4.4 °C	4.9 °C
Lower limit	4.4 °C	4.8 °C	4.2 °C	4.7 °C
No. of Readings	n=738	n=720	n=274	n=277

Safe and Unsafe Temperature Ranges

Table 7 below shows the distribution of the average temperature of fridges over the seven day trial by temperature range. The tables that follow explore some demographics of these ranges.

Table 7 Temperature Ranges

	Total	
	n=	%
Ideal Range	50	32%
Too Warm	76	48%
Health Risk	27	17%
Too Cold	5	3%
Total	n=158	

NB: Based on average temperature over seven days.

Household Types

A quarter of the families surveyed (27%) had a fridge in the Health Risk range, i.e. more than 6°C (based on the average temperature across the seven days).

Table 8 Temperature Range by Household Type

	Families/Groups	Couples	Single People
Ideal Range	27%	41%	28%
Too Warm	43%	51%	56%
Health Risk	27%	6%	13%
Too Cold	4%	2%	3%
Total	75	51	32

Age of Fridge

Not surprisingly, fridges over 20 years of age appear to be over represented in the Health Risk range at a rate of one in three (33%). This compares to an overall measure of 17% of all fridges falling in the Health Risk range. (This is based on the average temperatures over seven days.)

New fridges under 2 years of age do not seem to exhibit superior performance over fridges up to 20 years of age, but this observation is based on a small sample size of 16.

Table 9 Temperature Range by Age of Fridge

	Age of Fridge (Years)				
	<2	2 to 5	5 to 10	10 to 20	20 plus
Ideal Range	-	37%	34%	37%	25%
Too Warm	75%	44%	48%	46%	33%
Health Risk	19%	15%	18%	14%	33%
Too Cold	6%	4%	0%	3%	8%
Total	16*	27*	44	59	12*

*Caution small sample size

Condition of Fridge Door Rubber Seal

Fridges reported to have “poor seal condition” are approximately twice as likely as those with “good” or “excellent” seals to have average temperatures in the Health Risk range. Again this observation is based on a small effective sample size of only 10.

Table 10 Temperature Range by Condition of Rubber Seal

	Seal Condition		
	Poor	Good	Excellent
Ideal Range	20%	31%	34%
Too Warm	50%	49%	46%
Health Risk	30%	17%	15%
Too Cold	-	2%	5%
Total	10*	83	65

*Caution small sample size

Fridge Load

Nine out of ten fridges (89%) were reported as being either half or fairly full.

The sample sizes for “Fairly Empty” and ‘Packed Full” are too small to draw any reliable conclusions.

Table 12 Temperature Range by How Full the Fridge Tends to Be

	Fridge Load			
	Fairly empty	Half full	Fairly full	Packed full
Ideal Range	50%	33%	28%	29%
Too Warm	40%	45%	53%	43%
Health Risk	10%	20%	17%	-
Too Cold	-	1%	3%	29%
Total	10*	69	72	7*

*Caution small sample size

3.5 Fridge Adjustments

Survey participants were asked to indicate if they had adjusted the fridge temperature. More than a third did not adjust their fridge at any time during the survey (37%). A third adjusted their fridge once (31%), and a further third made two or more adjustments (32%).

Table 13 Number of Fridge Adjustments Made

	n=	%
Not adjusted	59	37
Adjusted once	49	31
Twice	35	22
3 times	10	6
4 times	4	3
5 times	1	1
Total	n=158	

Overall 77% of the fridge adjustments were successful. This is based on an analysis of morning temperatures that checked whether the next morning temperature was actually lower if participants indicated they had turned the temperature down, and vice versa. Of 165 adjustment attempts, 127 were successful.

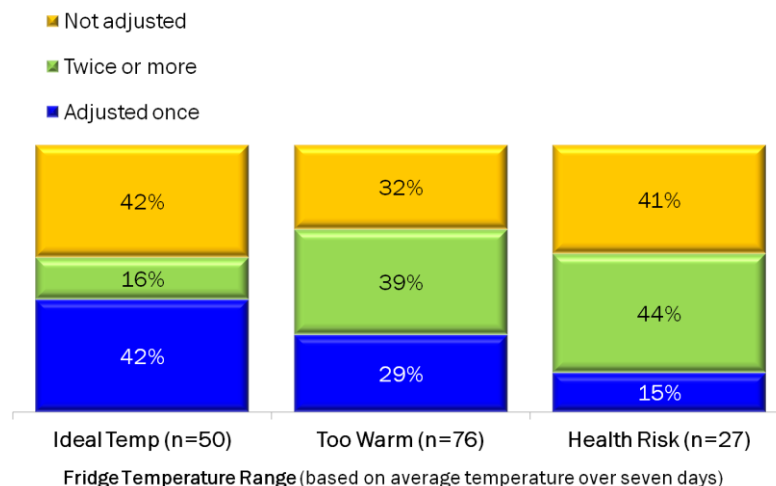
Chart 11 shows three groups; those whose average fridge temperature (over the seven days) was:

- Ideal (2 to 4 °C)
- Too Warm (>4 to 6 °C)
- Health Risk (>6 °C)

It shows that amongst the fridges deemed a “health risk” while over half (59%) did adjust the temperature at least once, 41% did not adjust the temperature despite the letter that came with the thermometer stating the ideal range is between 2 and 4 °C.

Chart 11

Number of Fridge Temperature Adjustments Made



3.6 Faulty Fridges

The concept of a faulty fridge can be defined in various ways. **MMResearch™** proposes that a “faulty” fridge is one that falls in the Health Risk range too often in spite of at least one attempt to correct it. We don’t believe that you can define a fridge as faulty if no attempt was made to adjust the temperature.

Therefore, for the purposes of this report **MMResearch™** has adopted a definition based upon the 14 available temperature readings from the survey:

A “faulty” fridge is one that:

- fell into the Health Risk range at least X% of the time; and
- there was at least one attempt made to adjust it to the correct temperature.

We present here three alternatives:

Option 1. Above 6°C all the time

If you assume faulty fridges always have temperatures above 6°C, (after adjustment attempts) then 1% were faulty.

Option 2. Above 6°C more than half the time (8 times out of 14)

If you assume faulty fridges have temperatures above 6°C at least half the time (after adjustment attempts) then 7% were faulty.

Option 3. Above 6°C more than a quarter of the time (4 times out of 14)

If you assume faulty fridges have temperatures above 6°C at least a quarter of the time (after adjustment attempts) then 11% were faulty.

Options two and three (given the small sample size) appear to support the 2006 BRANZ findings (Study Report No.SR155 (2006) Energy Use in New Zealand Households) that found “About 7% of domestic refrigeration appliances are faulty, and 9% operate marginally.”

4. APPENDIX



Recruitment Script for Refrigerator Temperature Survey – 21 July 2010

Hello, my name is [...] of **MMResearch™**. We are conducting a nation-wide survey about food safety in the home and the main grocery shopper may be able to assist us. Are you the main grocery shopper in your household? (If it is obvious that a young child has answered the phone, simply ask for one of the parents).

IF YES: Continue

IF NO: Can I please speak to that person?

IF NO: Terminate interview with Thank you for your time.

Re-introduce. Hello, my name is [...] of **MMResearch™**. We are conducting a survey about food safety in the home and you as the main grocery shopper may be able to assist us.

We are looking for a small group of New Zealanders to help us measure the temperature in their household fridge. To participate, we will send you, free of charge, a fridge thermometer (for you to keep), a survey form and a short questionnaire for you to complete. What you would need to do is record the temperature of your fridge twice a day – first thing in the morning and again around dinner time – for seven consecutive days. Would you be able to do that? For your effort we will put your name in the draw for a chance to win one of two grocery vouchers worth \$250, courtesy of NZ Food Safety Authority.

If YES: Great, I need to take down your name and address, so that I can send the thermometer and information pack to you.

If NO: Terminate interview with Thank you for your time.

Take down:

Mr/Mrs/Ms

First Name (get respondent to spell the name)

Last Name (get respondent to spell the name)

Telephone number including pre-fix

Street Number

Street Name (get respondent to spell the name)

Town/City

If need more information:

- *The NZ Food Safety Authority has asked us to do this survey for them. The survey is being conducted with the full knowledge of Mr David Crowe [NZFSA Manager Consumer Communications]. I can give you their 0800 number if you like? It's: 0800 693 721.*
- *We will send to you a small household fridge thermometer for you to place in your fridge.*
- *You will be sent a detailed instruction sheet, but basically, we require you to measure the temperature in your kitchen fridge twice per day; once in the morning and once just after dinner time over a seven day period. [Note: if more than one fridge in the home, it would need to be the main household fridge, not the beer fridge for example].*
- *All you do is read the temperature from the thermometer and write it down on a form that we will send to you and post the form back to us in a pre-paid self-addressed envelope.*
- *Your telephone number was randomly selected from the White Pages.*
- *MMResearch™ is an independent Wellington-based market research company.*
- *This is genuine market research. I'm not selling anything.*
- *MMResearch™ is a member of the Market Research Society of New Zealand. We strictly adhere to the Code of Conduct of the Society.*
- *Any information collected will be kept confidential to MMResearch™ and you will not be personally identified in the research results.*
- *If you wish to make a complaint about this survey, please contact MMResearch™ on 0800 667 373.*
- *Do you wish to be removed from our contact list?*
- *Do you have any other questions?*

Take down address details and close interview.

Thank you very much for your help in this important survey. My name is [first name only]. The information pack will be mailed to you within the next few days.



Dear Survey Participant

Thank you for agreeing to participate in the national fridge temperature survey, which we are conducting on behalf of the New Zealand Food Safety Authority. Your participation will help us to determine the proportion of New Zealand households with refrigerators that are able to maintain the recommended temperature (2-4° C) for keeping food safe. Please read the instruction sheet and place the thermometer in your fridge now, so you can start the survey tomorrow morning!

Storing food at the recommended temperature is an important part of food safety in the home. Maintaining a suitably chilly fridge helps keep harmful bacteria from multiplying. It also allows perishable foods to be stored and eaten safely over two or three days.

Here's what your survey pack includes:

1. One Fisher Scientific thermometer (yours to keep on completion of the survey).
2. Instructions on how to install and use the thermometer, and on how to record your fridge temperatures.
3. A survey form to record your fridge temperature checks.
4. A reply-paid envelope to return your completed survey form to us.
5. A copy of Food Safety in the Home – full of useful food safety tips.

For this survey, we want you to record the temperature of your fridge twice a day – the first time the fridge is opened in the morning, and once dinner is ready to eat – for seven days in a row.

As noted in the instructions, if you miss a morning or evening temperature check, leave that box blank. If you do miss an entire day, just carry on as if you had not missed a day, so that you have temperature readings for a total of seven days.

Once you've completed your survey, please post it back using the reply-paid envelope.

Returned surveys will go into a prize draw for a \$250 grocery voucher (two vouchers are up for grabs).

Individual survey results are confidential. Your name and contact information will only be used for the prize draw.

Kind regards

Theo Muller
Managing Director
MMResearch™

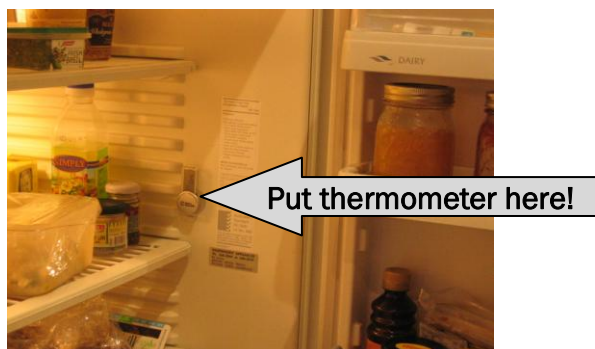
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How to install and use the thermometer and record fridge temperatures

Participating in this national fridge temperature survey is as easy as opening your fridge door. And by completing the following steps, you'll be one step closer to a prize draw for a \$250 grocery voucher. Here's all you have to do:

1. **Placing the thermometer for best results.**



Because fridge temperatures can vary (warmer on the top shelf and door, cooler on the bottom) the best location for the purposes of this survey is at middle-shelf level on the interior side wall – on the same side as the door hinge and close to the front so that you can easily read the temperature when you open the fridge door.



- 2. Attaching the thermometer.** Wet the suction cup with warm water and press it against the interior side wall.
- 3. Reading the temperature.** The thermometer will update the temperature every 30 seconds. That gives you plenty of time to note the current temperature when you open the fridge door. Note that the thermometer displays the temperature to one decimal point – 3.2 °C, for example. [The thermometer is ready to go right out of the box. If the temperature is not displayed when you open the box, replace the battery with the extra one supplied. Consult the instructions on how to replace the battery.]
- 4. Recording the temperature.** Please use the enclosed form to record your fridge temperature twice a day for seven days. If you miss a morning or evening temperature check, leave that box blank. If you do miss an entire day, just carry on as if you had not missed a day, so that you have a total of seven days. Be sure to record the exact temperature, for example 3.2 °C; don't round the temperature up or down.
- 5. Adjusting the temperature of your fridge.** If your fridge temperature isn't close to the recommended range (1-5 °C), you'll be tempted to make an adjustment. Go for it! But only adjust the temperature once a day, and preferably after recording the evening temperature, and only adjust in small increments – that will give your fridge time to adapt to the new setting before the next temperature check. Consult your fridge manual before adjusting the temperature. Also, please note on the reporting form which days you changed the temperature setting.
- 6. Returning your survey.** Once you've completed the survey form, simply slide it into the reply paid envelope and head to your nearest mailbox. We're looking forward to seeing your survey results.
- 7. Entering our prize draw.** If you've completed steps 1-6, you're already in the hunt for a fabulous prize. But you can't win if you don't complete and return your survey! Please return your form as soon as you have completed the survey, but before 20 August. The lucky prize winners will be contacted by telephone on 1 September 2010.

National Fridge Temperature Survey 2010

Please follow the instructions in your survey pack on how to use the thermometer and record your fridge temperatures.

<p>Each day, please record the exact thermometer reading (eg 4.6 C).</p>		<p>The first time you open your fridge in the morning.</p> 	<p>Either just before preparing dinner or when cleaning up after dinner.</p> 
Day 1	Date: <input type="text"/>	Morning temperature: <input type="text"/>	Dinner temperature: <input type="text"/>
<p>Did you adjust the temperature? Yes: <input type="checkbox"/> No: <input type="checkbox"/> If yes, did you adjust the temperature up or down? Up: <input type="checkbox"/> Down: <input type="checkbox"/></p>			
Day 2	Date: <input type="text"/>	Morning temperature: <input type="text"/>	Dinner temperature: <input type="text"/>
<p>Did you adjust the temperature? Yes: <input type="checkbox"/> No: <input type="checkbox"/> If yes, did you adjust the temperature up or down? Up: <input type="checkbox"/> Down: <input type="checkbox"/></p>			
Day 3	Date: <input type="text"/>	Morning temperature: <input type="text"/>	Dinner temperature: <input type="text"/>
<p>Did you adjust the temperature? Yes: <input type="checkbox"/> No: <input type="checkbox"/> If yes, did you adjust the temperature up or down? Up: <input type="checkbox"/> Down: <input type="checkbox"/></p>			
Day 4	Date: <input type="text"/>	Morning temperature: <input type="text"/>	Dinner temperature: <input type="text"/>
<p>Did you adjust the temperature? Yes: <input type="checkbox"/> No: <input type="checkbox"/> If yes, did you adjust the temperature up or down? Up: <input type="checkbox"/> Down: <input type="checkbox"/></p>			
Day 5	Date: <input type="text"/>	Morning temperature: <input type="text"/>	Dinner temperature: <input type="text"/>
<p>Did you adjust the temperature? Yes: <input type="checkbox"/> No: <input type="checkbox"/> If yes, did you adjust the temperature up or down? Up: <input type="checkbox"/> Down: <input type="checkbox"/></p>			
Day 6	Date: <input type="text"/>	Morning temperature: <input type="text"/>	Dinner temperature: <input type="text"/>
<p>Did you adjust the temperature? Yes: <input type="checkbox"/> No: <input type="checkbox"/> If yes, did you adjust the temperature up or down? Up: <input type="checkbox"/> Down: <input type="checkbox"/></p>			
Day 7	Date: <input type="text"/>	Morning temperature: <input type="text"/>	Dinner temperature: <input type="text"/>
<p>Thank you very much for taking part in the Fridge Temperature Survey! Please post this form asap in the reply paid envelope (or send to MMResearch™, PO Box 41073, Eastbourne, Lower Hutt 5047, Freepost Authority No.210092). If you have any questions please call MMResearch™ on 0800 667 373.</p>			

***Please turn over the page to complete the survey and enter a prize draw!**



A few general questions that will help us make sense of the results.

Q1 What brand is your fridge? *(Include the make and model if you know it.)*

Q2 How old is your fridge? *(If you are unsure, give your best estimate.)*

Q3 What is the condition of the rubber seal around your fridge door?

(Please tick one box only)

In poor condition (looks worn) <input type="checkbox"/>	In good condition <input type="checkbox"/>	Excellent (looks new) <input type="checkbox"/>
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Q4 How full does your fridge tend to be? *(Please tick one box only)*

Empty <input type="checkbox"/>	Fairly empty <input type="checkbox"/>	Half full <input type="checkbox"/>	Fairly full <input type="checkbox"/>	Packed full <input type="checkbox"/>
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Q5 Please list the ages of all the people living in your household:

Thank you for participating in our National Fridge Temperature Survey. To enter the prize draw to win one of two grocery vouchers (with a value of \$250 each), please complete the following:

Yes, please enter me in the prize draw:

Name:

Phone number:

(So we can contact the winners!)

***Please note that only completed survey forms will be entered in the prize draw, and the winners will be contacted by telephone on 1 September 2010.**