PREPRINT

WHITE FISH AUTHORITY

White Fish Authority
Market Development Unit
7 Ashley Road
Epsom
KT18 5AQ

White Fish Authority
Sea Fisheries House
10 Young Street
Edinburgh
EH2 4JQ

TECHNICAL REPORT 178

Opportunities for Composite Fillet Portions of Blue Whiting in Institutional Catering

September 1980

Marketpower

A REPORT FOR:

THE WHITE FISH AUTHORITY

PRIVATE AND CONFIDENTIAL

REPORT:

OPPORTUNITIES FOR COMPOSITE PORTIONS OF
BLUE WHITING AMONGST INSTITUTIONAL CATERERS.

AUGUST 1980

I N D E X

SECTION 3: ATTITUDES TO COMPOSITE PORTIONS OF BLUE WHITING

FOREWORD

A market research study carried out on behalf of the White Fish Authority (WFA) in May 1979 (Ref) to determine the acceptability of sample composite fillet portions of blue whiting in fried fish outlets in the north west of England, indicated that although the portions were well received, there was unlikely to be a demand for the product in the frying trade in current circumstances.

The composite fillet concept appeared to be perfectly acceptable to the friers interviewed, but potential usage in the trade would be governed by factors such as attitudes towards frozen fish and the supremacy of cod as the main selling species. It was therefore decided to conduct a similar exercise in the non commercial sector of the catering market.

Composite fillet portions of blue whiting, manufactured on a trial basis at Torry Research Station as before, were demonstrated at personal interviews with caterers in hospitals, schools and industrial canteens.

The research, carried out in the early summer of 1980, indicated that there could well be potential for composite fillet portions of white fish in institutional catering.

REFERENCE:

WFA Technical Report 167 - Acceptability Trial with Composite Fillet Portions of Blue Whiting in Fried Fish Outlets in North West England.

SECTION 1: EXECUTIVE SUMMARY

1. Introduction

Torry Research Station are developing a process for producing composite portions (each of several fillets) of Blue Whiting.

But before significant additional development expenditure is incurred, market opportunities must be identified.

The White Fish Authority have specified several market sectors which could offer sufficient business:

Sector	Comment
Fish and chip shops	Previous research showed the opportunities are very limited
Restaurants, pubs, hotels	Likely to be too "upmarket" ... but this is not yet established with certainty
"Downmarket" restaurants cafes, clubs	Could well be a market for composite portions ... but marketing to this sector is difficult because it is so fragmented
Canteens, schools, hospitals	Large potential markets which are quite likely to want to serve composite portions

The research described in this report was commissioned to identify the extent of the opportunities for composite portions of Blue Whiting in these sectors:

Canteens:
- operated by contractors
- independently run

Schools:
- state sector only

Hospitals:
- NHS hospitals only

2. Objectives

The business objective of this report is to help the White Fish Authority answer this question:

> "Does the apparent opportunity for composite portions of Blue Whiting amongst institutional caterers warrant further research and development expenditure?"

The research objectives were to

- identify market sectors which offer acceptable volumes (for composite portions of Blue Whiting)
- establish the attitudes of caterers to the principle of "composite portions"
- establish the attitudes of caterers to Blue Whiting
- identify caterers' reactions to actual samples of Blue Whiting portions
- make recommendations for the further development of Blue Whiting portions

3. Conclusions

3.1 Extent of Demand for Composite Portions of Blue Whiting

Current Practice

1. Quite clearly, there is no current demand for the type of fish we interviewed caterers about ... because it is not currently available.

2. However, caterers we spoke to are very concerned about the rapid increase in the price of the fish they serve. Many of them claim to have switched to species other than cod ... the extent of this change varies considerably, one important constraint being the extent to which the caterers' customers will accept different species.

3. While it has not been possible to estimate the precise importance of each species of fish, we believe our research supports the following broad conclusions:

Sector	"Recent" changes
Canteens, hospitals	Used to serve 100% cod ... but this has fallen to about 80% and in some cases as low as 50%. The rest of the fish is mainly haddock, coley or plaice.
Schools	Switched almost 100% to coley

4. Demand for Composite Portions will be influenced by several factors:

   - Price
   - Need for freezer space
   - Acceptability of the product

Price

5. Since price is the major, and probably the only, incentive to switch away from cod it is important to try to determine the critical price level at which this switch will be made

6. Our research indicates that cod can rise by up to 20% above the price of other species before a major switch occurs.

7. So Blue Whiting will find a ready market if these conditions are satisfied

   - cod rises by at least 20%
   - composite portions of Blue Whiting compare with competitive species on grounds of
     - price
     - acceptability

Need for Freezer Space

8. A majority (60-70%) of caterers we interviewed, particularly in the Midlands, regularly use frozen fish

9. The major market opportunity for Blue Whiting portions will be amongst these caterers ... since they will not need to be persuaded to use frozen fish

10. A major marketing/sales effort will be needed to persuade wet fish users to switch to frozen fish ... but ownership of a freezer will not be a constraint because all caterers appear to have some frozen food space. The question which still remains though is: to what extent will they be prepared to use freezer space to store fish?

Acceptability of Blue Whiting Portions

11. Caterers' attitudes to Blue Whiting Portions are summarised in the next three sub-sections:

3.2 Caterers' Attitudes to "Composite Portions"

1. Institutional caterers are prepared to accept "composite portions"

2. However, two drawbacks were mentioned:

   - customer acceptability
   - limited application

3. A small minority (about 10%) of the caterers we interviewed were concerned that their customers would not accept a fish made from several fillets ... but this does not appear to be a major drawback.

4. Caterers were more concerned that composite portions appear to be suitable only for frying ... and while fried fish is the most popular form of "institutional" fish, caterers in this sector like to have the flexibility to poach, grill, steam etc. their fish ... this applies particularly to hospitals where there is a need to be able to prepare special dishes.

5. Whilst these factors will limit the opportunities for Blue Whiting portions, they do not appear to be major drawbacks.

3.3 Caterers' Attitudes to Blue Whiting

1. The name - Blue Whiting - does not concern caterers ... and they do not feel it will inhibit them from specifying the fish (provided it is acceptable in terms of taste, price etc.)

2. A few caterers (5%) were unsure how to describe the fish on their menu since they felt there might be some customer resistance to the name

3. But the majority did not see this as a problem

   - either because they only have a single item on the menu (e.g: schools, some hospitals, some canteens)

   - or because they will just describe it as "Fish", "Fried Fish" etc.

   - or because they do not believe there will be customer resistance

3.4 Caterers' Reactions to Samples of Blue Whiting Portions

1. Caterers were favourably impressed by the Blue Whiting samples they tried.

2. However, one major criticism concerns the colour which was criticised by a majority of caterers (60%) for being

   - too dark (i.e: "darker than cod") or ...
   - dark in patches

3. We believe that it is vitally important to get the colour right ... because caterers in the main will be unwilling to accept it in its present form.

4. The fish was entirely satisfactory in all other respects i.e.

   - coating performance
   - frying performance
   - smell
   - taste
   - texture
   - appearance (e.g. size, shape, flaky look etc.)

   ... and the fact that it can be 'fish shaped' is an advantage to those caterers used to 'square' or 'regular' shaped fish.

4. <u>Recommendations</u>

1. We believe that we have identified sufficient opportunities for Blue Whiting to consider further development of the process ...

2. ... provided that there exists sufficient evidence that the colour can be improved.

3. The most promising opportunities lie in

   - hospitals

   ... and to a slightly lesser extent in

   - canteens

4. Opportunities in schools are less promising, because Blue Whiting will be competing in a market where expensive cod has already been replaced by a less expensive fish (coley) ... and the price of Blue Whiting portions will have to be lower (with reduced margins as well) compared with hospitals and canteens

5. Opportunities are better in the Midlands than in London ... because frozen fish is much more widely accepted. In general, opportunities will probably be better in areas where frozen fish is more acceptable ... no doubt the White Fish Authority already have this information and can draw their own conclusions regarding other key opportunity areas.

6. If the White Fish Authority believe that insufficient potential lies in the sectors examined in this report ... we recommend that research be carried out to identify opportunities in

   - "downmarket" restaurants
   - cafes
   - clubs

   ... and possibly

   - "upmarket" restaurants
   - pubs
   - hotels

2.3 Reasons for Choice

In this section we list out the reasons why caterers purchase the fish they do, in terms of

- wet versus frozen
- fillets versus portions
- uncoated versus coated

2.3.1 Wet versus Frozen

Caterers' comments indicate a preference for Frozen fish:

Ratio of Positive : Negative Comments

Wet	1 : 0.5
Frozen	1 : 0.2

Reasons for choosing wet fish rather than frozen:

	% of Replies
Quality	32
Freshness	11
Taste	8
Consistent quality	3
Quality/Taste	54
Cheaper	22
Able to take advantage of special offers	8
Price	30
Can be portioned	4
No need for freezer	3
Can be frozen	3
Flexible preparation	3
Cooks quicker	3
	16
	100

	Respondents Purchasing		Relative Importance: % of Purchases		
	%	No.	1st.	2nd.	3rd.
Wet Fillet	16	26	77	0	23
Uncoated Frozen Fillet	14	24	83	17	0
Uncoated Frozen Portions	9	15	-	67	33
Frozen Breaded Fillets	7	11	20	50	30
Frozen Breaded Portions	6	10	36	55	9
Frozen Battered Portions	2	4	0	75	25
Wet Smoked Fillets	5	9	0	43	57
Frozen Smoked Fillets	11	10	17	50	33
Fish Fingers/Fish Cakes	14	6	20	40	40

The next table translates the previous table into a more convenient format and shows the number of respondents who make each form their first choice:

	Number of Respondents			
	1st Choice	2nd Choice	Total	%
Uncoated Frozen Fillet	20	7	27	45
Wet Fillet	20	3	23	38
Frozen Breaded Portions	4	1	5	8
Frozen Breaded Fillet	2	-	2	3
Frozen Smoked Fillet	2	-	2	3
Fish Fingers	1	-	1	2
				100

This shows that caterers in the sectors we examined generally purchase either

- uncoated frozen fillets or
- wet fillets

Other forms are far less important

	Percent of Answers	
	London	Midlands
Wet Fillet	31	16
Uncoated Frozen Fillets	19	22
Uncoated Frozen Portions	8	16
Uncoated	27	38
Frozen Breaded Fillets	8	10
Frozen Breaded Portions	13	6
Frozen Battered Portions	-	7
Coated	21	23
Wet Smoked Fillets	10	7
Frozen Smoked Fillets	6	10
Smoked	16	17
Fish Fingers/Cakes	4	6
	100	100

The major differences between the regions are

- the greater importance of wet fillets in London
- the greater importance of uncoated frozen fish in the Midlands.

2.2 Most Important Form

Just under a quarter of caterers we interviewed buy one form only:

Number of Forms Purchased	Percent of Respondents
1	22
2	28
3	26
4	16
5+	8
	100

The next table shows the relative importance of each form in terms of whether it is the

- most important
- second most important
- third most important

... form bought by the caterer:

Nevertheless, it is clear that

- Hospitals serve relatively less fish than either schools or canteens even though hospitals serve fish more often.
- Independently run canteens serve the same amount of fish as contract run canteens

2. Forms of Fish

2.1 Form Purchased

This table gives the importance of each form of fish:

	Percent of Answers			
	Contract Canteens	Independent Canteens	Hospitals	Schools
Wet Fillet	27	23	23	10
Uncoated Frozen Fillets	18	32	9	18
Uncoated Frozen Portions	9	11	14	27
Uncoated	27	43	23	45
Frozen Breaded Fillets	14	11	9	-
Frozen Breaded Portions	5	11	9	10
Frozen Battered Portions	5	2	6	-
Coated	24	24	24	10
Wet Smoked Fillets	14	9	6	-
Frozen Smoked Fillets	9	2	14	18
Smoked	23	11	20	18
Fish Fingers/Cakes	-	-	11	17
	100	100	100	100

Wet Fillets are more important in London then the Midlands

Fish on the Menu Times per week	Percent of Respondents Contracted Canteens	Independent Canteens	Hospitals
1	25	23	-
2	44	55	38
3	6	14	40
4	-	-	-
5	13	8	12
6	-	-	-
7	12	-	10
	100	100	100
Average: Times per week	2.4	2.5	2.7

This table shows that

1. Hospitals serve fish more often than canteens

2. Fish serving frequency is the same in contracted and independent canteens

1.2.3 Importance of Fish Servings

Fish accounts for between 10% and 25% of servings in the sectors we looked at:

	Fish Meals as % of Total Meals
Contracted Canteens	23%
Independent Canteens	25%
Hospitals	14%
Schools	20%
	100%

N.B. The fact that 20% of School meals are fish based tends to confirm the statement in the previous section that schools serve fish once a week provided that no other choice is available on fish-serving days and this appears to be a correct assumption.

This table disguises wide variations, for instance

- Midland Catering are one of the four main catering contractors, and serve 1 million meals a week of which only 15,000 (1.5%) are fish based ... but they have been excluded from the above table because they distort the data.

- Islington Area Health Authority serve only 4% fish meals

1. Classification

1.1 Freezer Space

Since Composite Portions have to be stored in the frozen state, a possible constraint on their use is the availability of freezer storage space.

However, all the caterers we spoke to (i.e: 90 in total) have freezer space ... and this confirms other work we have done which indicates that the vast majority of caterers have freezer storage space.

Note: The question remains whether this space is free for the use of composite portions. But it should be possible to answer this question in general terms, in a fairly simple research exercise, either in its own right or in connection with any further research carried out by the White Fish Authority

1.2 Fish Serving Practices

1.2.1 Caterers who serve fish

All the caterers we spoke to serve fish ... and it is reasonable to assume that fish is served by all:

- industrial canteens
- schools
- hospitals

1.2.2 Frequency of serving fish

On average, fish is served every other day ... and this is true of industrial canteens and hospitals. Schools were not able to give sufficiently detailed information but we understand that they are more likely to serve fish only once a week.

This table gives more information

SECTION 2 : CURRENT USE OF FISH

Clearly, quality and price are the key for sales of wet fish, while limited availability (primarily in the Midlands) is the reason why more wet fish is not sold:

Reasons for not buying Wet Fish

	% of Replies
Not available	30
Too expensive	30
	60
Locked-in to frozen fish	30
Wet fish not graded	5
Inconvenient	5
	40
	100

Frozen fish is bought primarily for its price

- either because it is less wasteful and therefore portion costs are controlled
- or because bulk contracts for frozen fish are arranged at price levels which are very attractive to the caterer:

Reasons for preferring frozen fish:

	% of Replies
Price	38
Better portion control	19
Labour saving	16
Cost	73
Can take advantage of seasonal prices	8
Better quality	5
Used as standby	5
Other advantages	8
	27
	100

2.3.2 Fillets versus Portions

Caterers' comments indicate a preference for fillets:

	Ratio of Positive : Negative Comments
Fillets	1 : 0.1
Portions	1 : 1.1

The reasons given for preferring fillets are:

	% of Replies
More realistic portion control	40
Better price	27
Better appearance on the plate	23
Flexible serving style	10
	100

A limited number of comments were made regarding the disadvantages of buying fillets and these all referred to

- the difficulty of obtaining accurate portions ... for hospital servings

The plus points of buying portions are:

	% of Replies
Improved Portion Control	40
Minimal preparation	30
Better Price Control	30
	100

The disadvantages of portions are

- price
- unacceptable appearance or size:

	% of Replies
Too expensive	52
Too large (for schools)	22
Too small (for canteens)	17
Unacceptable appearance	9
	48
Inferior quality	10
	100

2.3.3 Uncoated versus Coated Fish

Uncoated fish is preferred:

	Ratio of Positive : Negative Comments
Uncoated	1 : 0.1
Coated	1 : 1.0

Uncoated fish is preferred, because of its flexibility in terms of

- cooking style (e.g: grilled, fried, poached, steamed etc)
- portion size

Reasons for preferring uncoated

	% of Replies
Flexible	51
Adjustable for special diets (in hospitals)	10
	61
Own batter recipe gives better appearance	27
Price	12
	100

The very few reasons given fo. not wanting to use uncoated fish all related to

- the amount of time required to coat the fish

Coated fish is used for these reasons:

	% of Replies
Simplicity	52
Speed	26
Convenience	78
Accurate portion control	14
Adds variety	4
Useful as a standby	4
	100

The major drawback to using coated fish is its inflexibility:

	% of Replies
Inflexibility	42
Price	32
Inadequate quality	26
	100

N.B: 'Inadequate quality' refers to the quality of the batter or breadcrumbs which caterers, particularly in canteens, feel that they can surpass with their own batter or breadcrumbs.

2.4 Fish Preparation Practices

2.4.1 Thawing prior to Frying

The caterers we interviewed generally fry frozen fish after thawing it .... that is, if they buy or store frozen fish:

Usual Practice	% of Frozen Fish Purchasers
Always fry without thawing	25
Usually	11
Frequently	36
Occasionally	21
Never	43
Infrequently	64
	100

2,4.2 Filleting or Portions

Schools invariably portion the fillets they buy:

Filleting Practice	% of Caterers who Portion the Fillet			
	Catering Contractors	Independent Canteens	Hospitals	Schools
Always	53	45	85	100
Usually	14	28	15	0
Occasionally	14	27	0	0
Never	29	0	0	0
	100	100	100	100

3. Species of Fish

3.1 Species Purchased

With 2 exceptions all the caterers we interviewed serve cod:

	Percent of Respondents			
	Catering Contractors	Independent Canteens	Hospitals	Schools
Cod	95	100	100	95
Plaice	75	87	100	0
Haddock	50	74	55	85
Mackerel	50	35	27	-
Coley	25	17	27	100
Herring	13	26	-	-
Whiting	-	9	27	35
Smoked Haddock	-	-	36	-
Kippers	-	-	27	-
Rock Salmon	-	9	-	-
Salmon	-	9	-	-
Skate	-	4	-	-

N.B: We identified no other species of fish during our research.

3.2 Most Important Species

3.2.1 Current Situation

Caterers who serve cod generally use it for at least half of their servings ... although it is a minority product for schools:

Importance of Cod

% of purchases	Catering Contractors	Industrial Canteens	Hospitals	Schools
0-25	-	9	22	100
26-50	50	22	22	-
51-75	50	30	22	-
76-100	-	39	33	-
	100	100	100	100

The next two tables show that plaice and haddock are used for up to 50% of servings

N.B: We have not prepared similar tables for the other species because they are usually minorities (i.e: accounting for less than 10% of purchases) Schools however appear to buy large quantities of coley which account for up to 95% of purchases.

Importance of Plaice

% of Purchases	Catering Contractors	Industrial Canteens	Hospitals	Schools
0-25	60	74	89	-
26-50	40	26	11	-
51-100	-	-	-	-
	100	100	100	100

Importance of Haddock

0-25	25	59	50	100
26-50	50	35	25	-
51-75	25	-	25	-
76-100	-	6	-	-
	100	100	100	100

These tables show

- the predominance of cod
  - it is served by nearly all caterers
  - it is the major fish species
- although plaice is served by more caterers than haddock .... when haddock it used it generally accounts for a larger proportion of purchases
- all other species are very much minority products

3.2.2 Recent Changes

Only 10 of the caterers we interviewed (17%) have made changes in the last 6 months in the fish they have been buying.

The changes they made were all on the grounds of cost ... and were as follows:

Serving More ...	at the expense of ...	Number
Haddock	Cod	3
Coley	Cod	1
Mackerel	Cod	1
Whiting	Cod	1
"Everything"	Cod	1
Coated portions	Uncoated	1
Frozen fillets	Fresh	1
Breaded portions	Battered	-
		10

3.3 Effect of Increasing Price

Hospitals and Schools would not disclose the prices they pay.

Caterers told us they pay, on average, £11.35 per stone for wet cod:

	£ per Stone		
	Average	Minimum	Maximum
Wet Fillet	11.35	8.96	14.00
Uncoated Frozen Fillet	10.20	7.70	11.96

Both Haddock and Plaice appear to be more expensive than Cod. This table shows the relative price of these species taking Cod as 100:

	Relative Price: Cod = 100		
	Average	Minimum	Maximum
Cod	100	100	100
Haddock	109	96	109
Plaice	114	100	139

We asked respondents what action they would take if the price of the species they served most of increased, relative to other species by +10%, +20%, +50% in order to identify the critical level of price increase which would cause them to switch their fish buying or preparation practices.

These were the results:

Catering Contractors

At + 10%:
- 50% would stay with their current species (mainly cod)
- The other 50% would switch to other species, generally haddock or coley

At +20%:
- All would switch to other species

Conclusion:
- The critical increase for catering contractors is + 15/20%

Independent Canteens

At +10%:
- 69% would stay with cod
- 27% would switch to other species e.g: coley, haddock
- 4% would serve less fish

At +20%:
- 46% would stay with cod
- 54% would switch to haddock (mainly) coley, plaice

At +50%:
- 31% would stay with cod
- The remaining 69% would switch to other species

Conclusion:
- Independent canteens are far less price sensitive than catering contractors,... but any action they would take if prices of cod increase out of line with competitive species is to switch to other species, primarily haddock and to a lesser extent coley.

Hospitals

At +10%:
- 65% would stay with cod
- The remaining 35% would carry out a cost comparison exercise, plus trials, to select the most suitable fish

At +20%:
- 44% would stay with cod
- 20% would serve less fish ... indicating that they would serve "cod or nothing"
- The others would try other species before coming to a decision

At +50%:
- 11% would stay with cod
- 25% would serve less fish
- 63% would switch to haddock, plaice, mock halibut, hake, "any fish"

Conclusion:
- Hospitals are more circumspect with regard to the action they would take ...

  ... most would probably switch to a different, cheaper species ...

  ... but there is evidence, that some hospitals would serve less fish

Schools

School caterers would not give any detailed information ... but their brief answers indicate that they would react in much the same way as hospitals.

3.4 Implications

1. The price of cod would have to rise by about +20% relative to other species before caterers consider taking any action.

2. We suspect the price could rise by as much as +25/30% before any serious switching occurs.

3. The most common action would be to change to a cheaper species, probably haddock.

4. But some loss of fish business will also occur as hospitals switch to other protein sources.

5. Even if canteens (contracted or independent) do not switch, they are likely to increase the price of the cod they serve ... and this might cause their customers to demand other species or to stop buying fish.

SECTION 3 : ATTITUDES TO COMPOSITE PORTIONS OF BLUE WHITING

1. Attitudes to the Sample

During our interviews we asked respondents to test fry a couple of samples of composite portions of blue whiting. Respondents were encouraged to use their normal battering/breadcrumbing procedure, if appropriate ... but to adjust the frying time if they were not used to frying fish in the frozen state.

In this section we give details of the comments made on the quality of the fish:

N.B: Our tables show the balance of positive and negative reactions .... the greater the proportion of positive comments, the more acceptable is the sample

1.1 Coating

All respondents either battered or breadcrumbed the sample ... 90% battered the sample and 10% breadcrumbed.

Comments were as follows:

Battering:

Easy to coat	11	
Smooth	2	
OK	3	
+ve		15
Should be thawed	4	
Batter does not stick	3	
-ve		7
No comment	38	

Caterers were quite satisfied with the way the batter was applied to the sample

Caterers who commented that

- the sample should be thawed a bit before battering
- the batter does not stick

... were all used to preparing wet fillets. Clearly some education will be required to explain the most suitable way of applying the batter .... but this should not be a bar to the market development of composite portions.

Breadcrumbing

The 6 caterers who breadcrumbed the sample were all satisfied with the process.

1.2 Frying

Frying times were usually 5-6 minutes, although there were isolated instances of 7, 8 and even 10 minutes frying.

Typical temperatures were:

5 minutes	180-200°c.
6 minutes	175-180°c.

Comments were:

Frying was very good	4	
Perfectly acceptable	16	
+ve		20
-ve		0
No comment	32	

8 caterers made practical suggestions:

Should be thawed before frying	4
Should be fried for longer than normal	4

... and 6 of these caterers normally use wet fillets

1.3 Outside Appearance

Since caterers used their usual battering (or breadcrumbing) procedure it should be expected that they would be satisfied with the outside appearance of the batter. By and large this was the case:

Very acceptable	6	
Appetising	6	
Good	17	
Satisfactory	13	
+ve		42
Not very good	2	
"Too flat"	2	
"Shrunk"	1	
"Pressed"	1	
-ve		6
No comment	12	

The six caterers who made negative comments included 3 hospitals who were damning about several aspects of the fish. We do not know whether this is because

- they have especially high standards or ...
- the samples they tried were not of the same standard as the other samples

Since the comments of these 3 were so strong and out of keeping with comments made by other caterers we suspect the samples may have been substandard.

1.4 Colour of Coating

Caterers were satisfied with the coating colour:

Excellent	18	
Good	14	
Satisfactory	15	
+ve		47
A bit dark	2	
A bit pale	2	
-ve		4
No comment	9	

1.5 Smell

The smell of the fried fish was acceptable, but was criticised by some caterers as not being sufficiently noticeable:

Acceptable	20	
Fishy	12	
+ve		32
None/too little	19	
Not like fresh	2	
-ve		21
No comment	7	

1.6 Taste

Caterers were very impressed by the taste, one was moved to comment:

"It tastes like fish used to taste"

Very tasty	7	
Nice	18	
Meaty	3	
Sweet	1	
Acceptable	14	
+ve		43
Too mild	4	
Too strong	2	
Too dry	3	
-ve		9
No comment	8	

Hospitals in particular found the taste too mild.

1.7 Texture

The texture appears acceptable:

Good	9	
Flaky	4	
Meaty	7	
Satisfactory	12	
+ve		32
Unacceptable	5	
Not as good as cod	1	
Too dry/chewy	7	
-ve		13
No comment	15	

The caterers who found the fish unacceptable included the 3 hospitals already mentioned.

1.8 Fish Appearance

On the whole the fried fish flesh looks acceptable ... but some caterers are concerned over the comparatively dark colour or the presence of dark patches.

Excellent	5	
Good/Flaky	9	
Whiter than coley	2	
Marks are not noticeable	2	
OK	9	
+ve		27
Darker than cod	5	
Dark patches	5	
Looks "compounded"	3	
Not dark enough	1	
Too dark	1	
Unacceptable	1	
-ve		16
No comment	17	

We examine the question of colour (as opposed to appearance) in the final sub-section.

1.9 Colour of the Fish

The colour of the fish is criticised:

Appetising	3	
Good	4	
Acceptable	10	
+ve		17
Too dark	14	
Dark marks	4	
Unacceptable	6	
-ve		24
No comment	19	

The high level of negative comments shows that the colour of the fish is the single most important feature (possibly the only one) which needs improvement if Blue Whiting portions are to be successful.

2. Attitudes to Composite Portions & Blue Whiting

2.1 Awareness

2.1.1 Awareness of Blue Whiting

Three quarters of the caterers we interviewed had not heard of Blue Whiting:

	Percent of Respondents			
	Catering Contractors	Independent Canteens	Hospitals	Schools
Unaware	75	77	65	75
Aware	25	15	27	25
Aware & used	0	8	8	0
Use now	0	0	0	0
	100	100	100	100

We understand this is much in line with the White Fish Authority's findings.

There appears to be no differences between London and the Midlands or between head offices and outlets in the level of awareness of Blue Whiting.

2.1.2 Previous Trials of Composite Portions

Most caterers we spoke to considered it was obvious that the fish they had fried was made from several fillets of the same species of fish:

	Percent of Respondents
Obvious	78
Not obvious	22
	100

We identified 13 caterers who claimed to have tried composite portions in the past:

	Percent of Respondents			
	Catering Contractors	Independent Canteens	Hospitals	Schools
Used previously	25	20	45	0
Not used	75	80	55	100
	100	100	100	100

2.2 Likelihood of Purchase

2.2.1 Influence of Composite Portions

Most caterers would not be influenced in the purchase decision by the fact that the fish they need was made from composite portions. The question we asked was:

"Would the fact that this fish is made from several fillets influence your chances of serving the fish you have just fried?"

	Percent of Respondents			
Possibility of serving	Catering Contractors	Independent Canteens	Hospitals	Schools
Increased very much	25	8	9	-
Increased a bit	-	-	-	-
Not influenced	37	48	55	60
Reduced a bit	13	36	9	40
Reduced very much	25	8	27	-
	100	100	100	100

This is clearly encouraging since it indicates no prejudices against composite portions.

Caterers gave a number of reasons for their views:

Increased chances of serving:

- Caterers assumed that this fish would be priced at 10/20% below the price of cod ... and on that basis they would be likely to try it.

Reduced chances of serving:

- Concern over falling apart before frying
- Can only be fried and therefore not sufficiently versatile
- Customers would object
- Generally unhappy with the idea of composite portions

2.2.2 Purchasing Intentions

We asked caterers how likely they would be to buy the fish they had fried if it was priced at 80% of the price of cod, given that it was made from

- Composite portions
- Blue Whiting

Likelihood of Purchase	Percent of Respondents: Catering Contractors	Independent Canteens	Hospitals	Schools
Very likely	50	35	-	25
Quite likely	50	38	73	50
Unlikely	-	27	27	25
	100	100	100	100

We have already seen (Section 2) that a price difference of about 20% becomes significant in persuading caterers to change from cod to other species (although this is not applicable to schools where cod is already a minority species)

The above table confirms this and is also encouraging in that caterers are prepared to buy composite portions of Blue Whiting.

Hospitals appear less likely than canteens to change because 3 (20%) of the ones we interviewed were particularly vehement in their attitude against the portions ... and we have already commented on this.

Independent canteens are less likely than contracted to switch away from cod ... because about a quarter of them will serve cod even if the price rises by 50% relative to other species.

More information on the improvements required to make caterers consider buying composite portions of Blue Whiting are given in the next sub-section.

2.3 Improvements

We asked those caterers who were not positive in their intentions to buy composite portions of Blue Whiting (at 80% of the price of cod) which improvements would increase their chances of buying the fish:

	No. of Respondents
Colour must be much whiter/like cod	7
Eliminate dark patches	3
Improve colour	10
Reduce price to 60/70% of cod	2
Reduce price to below coley (schools)	2
Reduce price	4
Improvements	14
No chance of serving ... because "I insist on wet fish for versatility"	3

This shows that

1. The major constraint to acceptability is the colour of the product.

2. Price reductions might help in some instances ... particularly amongst schools and hospitals.

3. In a small minority, there will be no chance of selling the fish because it is not sufficiently versatile e.g: for grilling, poaching etc.

2.4 Frequency of Service

Most canteens claimed that if they bought composite portions of Blue Whiting they would serve them at least once a week ... and that it was possible that they would become the main species they serve, although customer preference would be the final arbiter.

Schools and hospitals were less clear in their views but felt that while they would serve the fish regularly it would not become their main species and would therefore be served only every 3/4 weeks.

2.5 Specification

The most frequently mentioned specification concerns product weight:

Weight (ozs.)	Percent of Respondents: Catering Contractors	Independent Canteens	Hospitals	Schools
2	-	-	15	-
2½ - 3	-	-	-	35
3	-	-	8	-
3½	-	13	-	30
3 - 4	-	9	15	-
3½-4	-	-	15	-
4	38	13	15	-
4½	12	-	-	-
4 - 5	25	17	15	-
5	25	17	-	-
5 - 6	-	13	8	-
5½ - 6	-	4	-	-
As per the example	-	7	8	35
	100	100	100	100

Portion weights should be between ± ½ oz. of the required weight ... without exception caterers claimed this as their requirement.

The only other specifications we identified was in hospitals, most of whom said that the fish should comply with White Fish Authority specifications.

RESEARCH METHOD

The information contained in this report was derived from

- telephone screening interviews with caterers in the sectors which had been previously selected. During the telephone interview we identified whether the caterer

  - had a freezer

  - served fish

  ... and arranged to interview 60 who said YES to both questions. (In fact all the caterers we asked had a freezer and served fish)

- 60 personal interviews were carried out as follows:

	Head Office	Outlet	Total
Catering contractors	2	8	10
Independent canteens	-	25	25
	2	33	35
Hospitals	4	11	15
Schools	6	4	10
	10	15	25
	12	48	60

Half the interviews were carried out in the London area and half in the Midlands.

We interviewed less schools than originally intended because, it became clear early on that the cook at individual schools had extremely limited influence on the choice of fish she would serve.

To compensate for this we interviewed more school meals supervisors ... and also interviewed more independent canteens because of the variations we noticed between individual outlets.

- The people we interviewed were:

Contract Caterers:	"Head Office"	- National or Area Manager
	Outlet	- Manager
Independent Caterers:	Canteen Manager/Cook	
Schools:	"Head Office"	- School Meals Supervisor
	Outlet	- Cook
Hospitals:	"Head Office"	- Regional Catering Advisor (not District Catering Advisor)
	Outlet	- Hospital Catering Manager/ Officer