

Website Exemplar

GCE D&T Food Technology

Unit: 6FT01

Topic: Design and make a low fat product suitable to sell in the market



AS Food Technology

Product Investigation

A. Performance Analysis



Healthy living fish pie

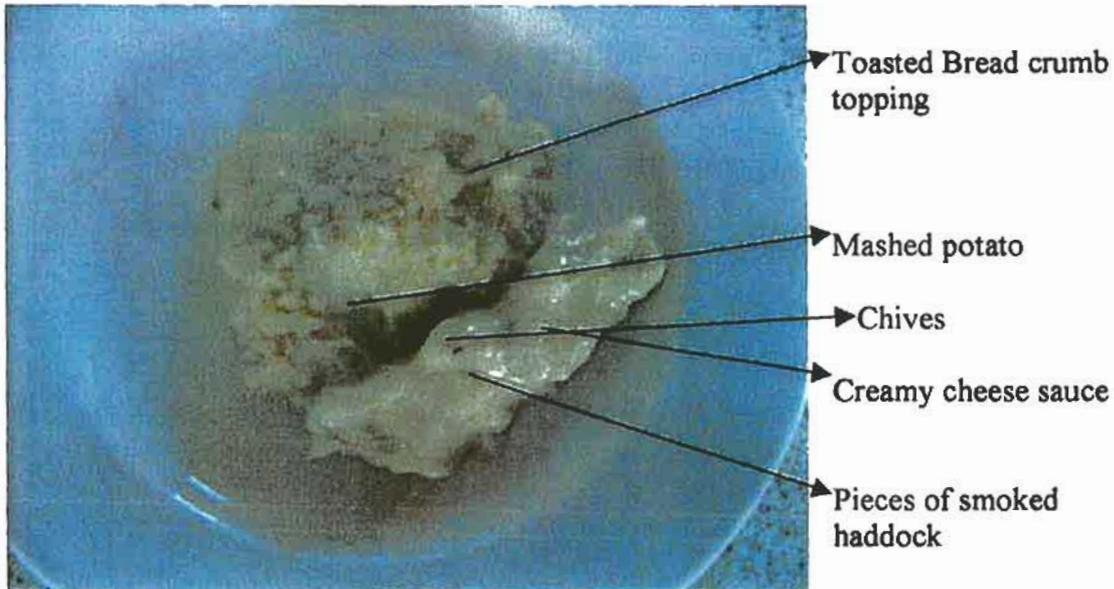
Before designing the fish pie, the manufacturer would have to develop a list of criteria as part of a specification to ensure a high quality product is produced. These points would have been checked and referred to throughout the manufacturing process, to allow checks to be made wherever possible if certain points are not up to the high standard required.

Technical Specification

- **Cost:** £2.29
- **Portion size:** single portion 400g
- **Special claims:** less than 2% fat, (295 calories)
- **User requirements:** healthy eating (calorie controlled diets), reduced fat, quick to prepare, young professionals, complete meal, convenient, suitable for freezing, microwave or oven cook, useful for busy people.
- **Form:** Rectangle 16cm x 11cm x 4.5cm, thermoplastic, (PET), sealed see through film on top of the product, cardboard sleeve displaying information for the consumer, easy to transport and stock.
- **Function:** a ready made main meal providing macro nutrients and micro nutrients, no further preparation required other than heating, can be eaten out of container, busy professionals who don't have much time to cook, convenient, healthy living.
- **Performance:** ability to be reheated and maintain its form in layers. Shelf life of 6 days if stored at 2-5°C, suitable for freezing, can be reheated in a microwave, although when it was heated in the microwave the topping didn't go brown, it was

either micro waved or cooked in the oven. For microwave use, the plastic seal must be pierced, and for oven use, the plastic seal must be removed.

Image of cooked fish pie showing the cross section



Scale of production

This product would most likely be mass produced. I believe it would be this production method, as there are many component parts in this product that would already be prepared such as the breadcrumbs, grated cheese and the haddock pieces. The mashed potato could possibly be bought in as powdered dried potato and hydrated by adding water and possibly milk. Alternatively the potato may be prepared cooked and mashed on site, depending on the equipment available. The cheese sauce would be made on site. The ingredients for the sauce would be high risk, as there are ingredients such as raw fish, milk and cheese, which would all have to be kept in different areas to stop cross contamination. Stock must be stored at the correct temperatures, and used within a certain amount of time, to prevent going off and wasting products. Hygiene would be a big issue when making the fish pie, as staff would have to make sure they wore hair nets, and overalls to prevent foreign objects going into the product. The manufacturer could also change some of the ingredients to make the product more appealing, healthier or cheaper for the consumer. Once the product has been assembled and cooked, it needs to be chilled within 90 minutes to 0-4°C.

Cost

This product is an own brand healthy living product.. The balance of potato and smoked haddock is proportioned well, as I believe the manufacturer has used a good proportion of fish to appeal to the healthy eating market to provide HBV protein. The manufacturer has also used smoked haddock rather than a cheaper fish as this would taste a lot nicer than a cheaper fish, but this is also a disadvantage as it will be more expensive for the consumer. Skimmed milk has also been used to reduce the fat content, it also provides calcium and HBV protein which makes the product appeal to people following a healthy diet.

Comparison to an existing similar product

Young's Admiral's pie (frozen)



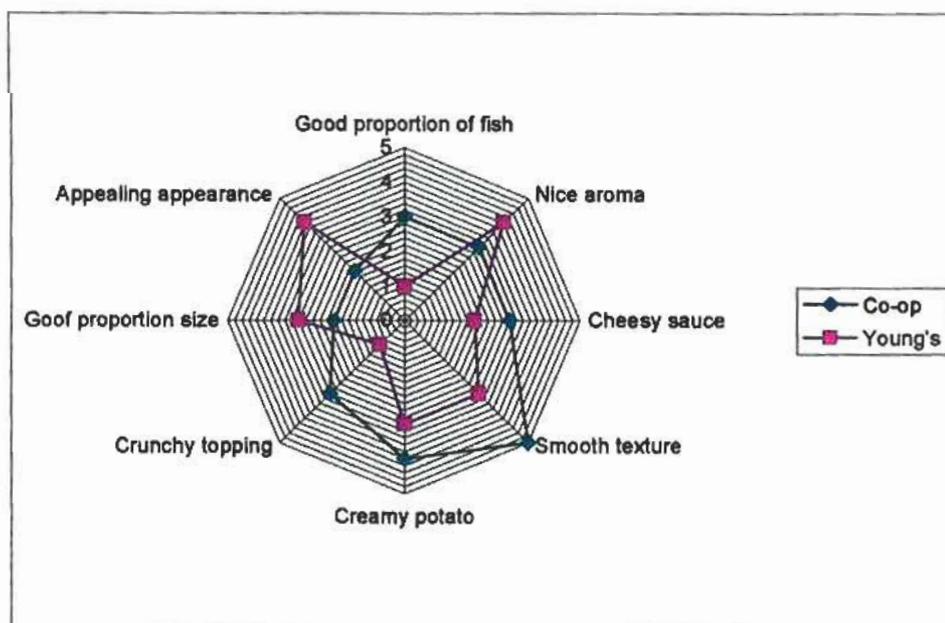
- **Cost:** £1.09
- **Portion size:** Single portion 360g
- **User requirements:** this product would be for people who are busy and need a ready meal to cook quickly if they are on the move. It was cheaper than the healthy living fish pie as I believe it would be for the lower income households. This product also has a lot more calories than the healthy living product.. As this one has 362 calories, and the other one only has 295 calories.
- **Form:** same as previous product apart from the size. As this product is 3.5cm x 17cm x 12cm.
- **Function:** this product can only be heated in the microwave or in the oven from frozen. If cooking in the oven, it needs to be for about 45 minutes. If cooked in the microwave it should be heated for about 10 minutes depending on the wattage of the microwave, and left to stand for 1 minute.
- **Performance:** Product can be kept fro approximately 18 months in the freezer at -18°C. Although after this amount of time the colour, texture and taste would probably deteriorate.
- **Materials/components:**
- *Partially Reconstituted Dried Potato (44%)* - provides carbohydrate and bulk to the product. Also cheaper than using fresh potatoes. Dried potato would also be easier to store as it would take up less room than potatoes.
- *Reconstituted Dried Whole Milk Powder* - provides calcium and HBV protein. Also cheaper than using fresh milk. Contains more fat than the other milk used in the previous product as this milk is whole milk, and skimmed milk was used in the

previous healthy eating product. Dried whole milk powder would also be easier to store and wouldn't go off as quick as fresh milk.

- *Diced Alaska Pollock fillets (14%)* - provides protein, flavour and texture. Although this is a cheaper fish used than in the healthy living product which would have impact on the flavour.
- *Water* - provide moisture and liquid to the sauce. Also used to reconstitute the dried potato and dried whole milk powder.
- *Cheddar cheese (2%) (contains natural colour: annatto)* - provides flavour, colouring, calcium and HBV protein.
- *Butter (2%)* - provides flavour and mouth feel
- *Vegetable oil* - provides flavour
- *Corn flour* - thickener
- *Wheat flour* - thickener
- *Seasoning (contains flavouring)* - seasons the product, flavour
- *Salt* - seasoning
- *Dextrose* - sweetener
- *Parsley* - flavour, colour
- *Potato Starch* - thickener
- *Flavourings* - enhance flavour
- *Colours* - enhance colour
- *Paprika extract* - flavour, colour
- *Curcumin* - flavour, colour

Overall the healthy living fish pie had a much nicer flavour, as there was more fish used which was better quality. The Young's Admiral's pie had a lot more mash potato in it compared to the fish, whereas the healthy living one had a reasonable balance. Even though the Young's Admiral's pie was not as high quality in taste, it had a better appearance which was more presentable,

Sensory profile



Summary

After evaluating both products I concluded that the two fish pies were very different in many ways. Both products had a nice aroma once heated, which made you want to proceed and eat it, although before heating the smell wasn't too pleasant.

The sauces included in each product were very different; as the healthy living fish pie had a cheesy sauce and had more of a distinctive flavour of herbs, which I believe had a better taste than the Young's Admiral Pie as this sauce was very buttery and overpowering. Both products had a smooth texture, although the Young's fish pie only had a smooth texture once in the mouth, as the potato was very dry but then soon added moisture once in the mouth, which I believe shows that the potato was dry powdered and needed more reconstitution.

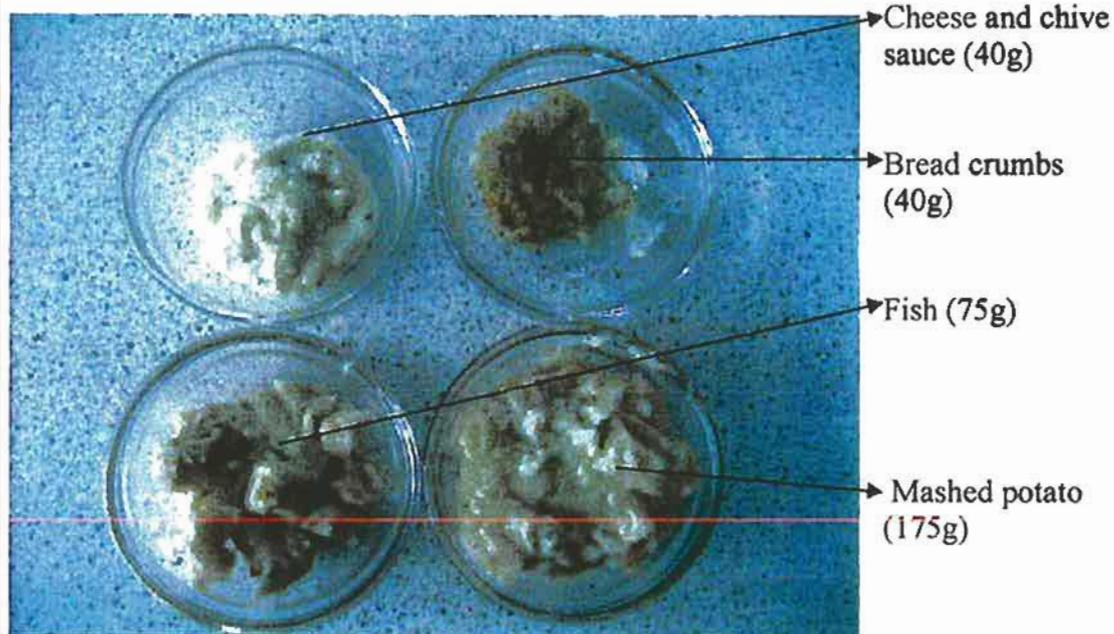
Each fish pie had a very creamy potato topping, apart from the Young's potato before entering the mouth. A crunchy topping failed on the Young's fish pie as there was only a little sprinkle of cheese over the potato, although the Co-operative healthy living fish pie however had a little crunchy topping due to the bread crumbs over the potato, although this didn't go very crispy or brown in colour, which I believe was due to it being reheated in the microwave. The appearance was very poor on the co-operative healthy living fish pie, as it was very pale in colour and showed no decorative presentation. On the other hand the Young's Admirals Pie showed more effort had been put into the product to ensure the appearance looked appetising to the consumer. The co-operative fish pie also showed signs of synerisis in the corners of the packaging, and the Young's fish pie didn't show this, I believe this didn't show because the product was frozen.

The co-operative healthy living fish pie consisted of more fish which was at a higher quality, as it was haddock, whereas the Young's Admirals Pie showed little fish in the product, which was also at a lower quality as the fish used was Pollock which is much cheaper and this showed in the prices of the products. Both products were similar in size, as they were both portioned for one person, however I think a side dish such as vegetables would be needed for those who want a more substantial meal. In the Healthy Living fish pie there was 23% of fish compared to the Young's fish pie as this only had 15% fish, this shows some indication of why the price was higher for the Healthy living product, as more high quality fish was used to provide HBV protein to the consumer. There was a higher percentage of mashed potato in the Young's fish pie as this is a cheaper ingredient and was used to bulk out the product. A greater percentage of sauce was in the Young's fish pie compared to the Healthy living fish pie, so that this also seemed as though the customer would still be receiving the same sized product.

Additional bread crumbs were added on the top of the Healthy living fish pie to provide texture and a crunchy topping to the product and to make it look appealing.

B. Materials and/or Components/Ingredients

Images showing the breakdown of the individual component parts for the Co-operative Healthy Living Fish Pie



Smoked Haddock has been used in the product to give a Smokey flavour to the fish pie. 21% of the product is fish, which is quite a high percentage to provide HBV protein to the consumer.

Skimmed milk has been used, as this milk contains the least amount of fat, which will be the most suitable for people who are looking for low fat product if on a diet or just wanting to eat healthy.

A little cream (3%) has been used in the product to add a richer flavour to the sauce, although only a little has been used to keep the fat content low for healthy eating consumers, as cream contains a lot of fat.

A small amount of cheddar cheese has been used in the product to provide more flavour to the sauce and also to add calcium and HBV protein which consumers will be looking for.

Skimmed milk powder has been used as this is low in fat but it also provides calcium and HBV protein.

White wine has been used to compliment the white fish, as red wine would not be appetizing combined with the white fish. White wine gives a luxurious flavour to the sauce.

An alternative for the white bread crumbs could be using wholemeal or brown bread, as this will add more fibre into the product which will benefit healthy eaters. The brown bread would also add more colour to the product, as it was very pale in colour when white bread was used.

A lower fat cheese could also be an alternative, as this would lower the fat content, although this may have an effect on the flavour and texture.

Vegetables such as peppers and mushrooms could be added to the product to add to the nutritional content and enhance colour and texture.

The ingredients in the product weren't really that balanced as there was more mashed potato (53%) than any other ingredient to provide the main bulk. There was a good balance of high quality smoked haddock (23%) as you got a piece of fish in every mouthful you ate. There was an even balance of cheese and chive sauce and bread crumbs, as these both amounted to 12%.

Nutritional Profile

Nutrition			
Typical Values	per 100g	per pack	GDA
Energy Value	310 kJ	1250 kJ	Average adult
(Calories)	75 kcal	296 kcal	2000 kcal
Protein	5.2 g	20.8 g	45 g
Carbohydrate	9.5 g	38.0 g	230 g
(of which Sugars)	1.4 g	5.6 g	90 g
Fat	1.7 g	6.8 g	70 g
(of which Saturates)	1.0 g	4.0 g	20 g
Fibre	1.2 g	4.8 g	24 g
Sodium	0.2 g	0.9 g	2.4 g
Salt	0.5 g	2.1 g	6 g

GDA = Guideline Daily Amounts

This label on the packaging clearly states the nutritional information which the consumer may need when comparing to other products to ensure they are buying the right product to suit them. The amounts are given per 100g and also per pack. Daily guide line amounts are given on the right of the nutritional information to inform an average adult on how much they should receive each day, so that the consumer can calculate how much of this total they are taking when eating the product.

Environmental issues

Most of the ingredients in the product have been sourced locally. The potatoes would probably be sourced from local farms. The Co-Op may source their potatoes from local companies such as Branston Potatoes, which is situated a few miles from the city of Lincoln. Branston Potatoes are a main supplier to many other major supermarkets too, such as Tesco. The Co-Op would probably use these potatoes to sell in bags and also to use in products in their factory. The haddock would originate from the North Atlantic. Haddock is a popular fish, widely fished commercially. Other ingredients like the milk and cheese would be sourced in this country also.

The packaging is very minimal to save on wastage. The cardboard sleeve around the product can be recycled, however the plastic container cannot, also this would add to

still pale, whereas I believe if it was heated in the oven it would have gone a golden brown.

● **Materials/components:**

- *Potato (37%)* – provides carbohydrate, gives bulk to the product, provides a smooth topping.
- *Smoked Haddock (21%)* – provides HBV protein, flavour and texture
- *Water* - used for cooking potato, to add moisture, sauce
- *Skimmed milk* - to make the potato smooth, sauce, provides calcium and HBV protein
- *Cream (3%)* - sauce, texture mouth feel
- *Onion* - flavour, texture
- *Cheddar cheese (2%)* - flavour in the sauce, calcium and HBV protein, colour
- *Breadcrumbs (Wheat flour, yeast, salt)* - texture, crunchy topping
- *Chives* - flavour, colour
- *Corn flour* - thickener
- *Garlic puree* - flavours the sauce
- *Lemon juice concentrate* - flavour
- *Nutmeg* - flavour
- *Parsley* - flavour, colour
- *Salt* - seasoning
- *Skimmed milk powder* - provides calcium and HBV protein
- *White pepper* - seasoning
- *White wine* - flavour

Image of the product in its packaging before cooking/reheating



The fish pie in its packaging looks very unappealing and very pale in colour. There is also syneresis, which is present in the corners of the product. The product needs to be

the waste. Many consumers could eat the product from the container to save on washing up, which would benefit busy workers. The container is made out of thermoplastic which will be suitable to withstand high temperatures when reheating in microwaves and ovens.



A plastic film was sealed onto the top of the container to protect the product from the entry of bacteria. The film is removed for oven cooking, and only pierced for microwaving. The container is not recyclable, therefore this would add to landfill disposal.

Many factories should be working towards making all the packaging recyclable to ensure more waste doesn't go into landfills, as some of the packaging on the healthy living fish pie could not be recycled. However if the container was foil or aluminium this would be better for the environment, although this would change the way the product could be reheated, as this would mean the product couldn't be reheated in a microwave and could only be cooked in an oven.

Recycling logos and anti-litter symbols could have been printed on the outer packaging by the manufacturer, to ensure the consumer disposes each component part correctly.

C. Manufacture

Production Method

This product would be mass produced, as this manufacturing process would be the most suitable for large quantities of fish pies to be made. The machinery and equipment would be expensive to buy, although once bought, it would only need to be maintained at the same clean standard it was bought at to ensure high quality products. Once the machinery is established, this would reduce labour costs and allow large numbers to be made consistently. Some ingredients would be delivered as a standard component such as the fish and grated cheese, therefore they would be easily stored and assembled to produce the numbers required on a daily basis. The rectangular shape will be easy to store.

Raw Materials

Haddock – gutted, skin removed, filleted, washed, smoked and chopped into similar size pieces.

Potato – peeled, washed, chopped, cooked, and mashed

Cheese – standard component, grated

Breadcrumbs – standard component

Chives – standard component, dried

Production Processes

- Mashed potato – Cooked in large quantities in water, time and temperature control. Checked on regularly. Once cooked it would be mashed using large mashing machines where butter and cream would be added.
- Cheese and chive sauce – all in one method, constantly agitated, time and temperature control. Cheese and chives added off the heat once gelatinisation has taken place.
- Smoked Haddock – cooked separately in large quantities, controlled time and temperatures.
- Assembly Line of Components – computerised assembly. Smoked haddock pieces placed into each container, cheese and chive sauce extruded on to the haddock pieces, Mashed potato piped on the top, then topped with breadcrumbs.
- Chilled within 90 minutes in a blast chiller between 0-4°C.
- Sealed with plastic film, batch stamped, packaged, date stamped.
- Stored in chiller rooms for distribution.
- Distributed to many places in chiller Lorries.
- Batch production

Comparison with scale production

This product could also be produced using batch production. This could be in a school canteen kitchen for example. However large dishes of fish pie would be made, which would be manufactured, cooked and sold on the same day, which would be fresh and easy to provide to the pupils. This would also reduce the storage time for the ingredients, therefore ensuring good stock rotation and freeing up areas for other use. It would be likely that some standard components would be used to make the fish pie such as:

- Dried cheese and chive sauce to be rehydrated with milk
- Pre-crumbed bread
- Smoked haddock pre-chopped into pieces

The basic method of making the fish pie would be the same as in mass production, although each process would be manual rather than by machine.

- Poach Smoked Haddock in milk with seasoning in a conventional oven
- Make cheese and chive sauce using a roux method, or rehydrate cheese sauce, then once off the heat add the cheese and the milk from the Smoked Haddock and any extra if necessary
- Boil potatoes and once cooked mash with butter, cream and seasoning until smooth. Dried potato may be used and reconstituted for ease of use.
- Flake smoked haddock into chunks into a large oven proof dish
- Pour over cheese and chive sauce
- Pipe the mashed potato evenly over the filling
- Sprinkle with bread crumbs
- Allowed to cool, covered and chilled (0-4°C) or baked in a conventional oven until golden brown
- Serve in equal size portions

This *method of manufacture* also allows changes to be made where necessary if flavours want to be changed, for example adding prawns into the fish pie, to vary the flavour. In addition, a vegetarian option could be considered by using a range of chopped vegetables, which would be prepared, chopped and cooked before adding to the sauce. Also other HBV protein foods such as chicken could be considered to vary the options available. Making it this way would probably be more expensive per portion than if made mass produced.

Environmental issues related to manufacture

60% of all UK packaging comes from food, causing the following environmental problems:

- Waste gases which add to the air pollution and damage the environment.
- Air, land and water pollution are caused both during manufacture and after the product has been used.
- General waste which can not be recycled would fill landfill sites
- Transportation lorries would give out gas and fumes which would damage the environment.

Further appeal to the consumer could include factors such as:

- Use of Fairtrade ingredients
- Use of farm assured ingredients
- Awareness of animal welfare issues
- Use of organic ingredients, although this may increase the prices and make this appeal to a smaller market.

D. Quality

Quality checks during manufacture

There are many quality control checks that would take place during the manufacture of the Healthy Living Fish Pie, to ensure a high standard is maintained throughout the processes.

- Most of the ingredients would be sourced locally from a reputable supplier to ensure that the product they are making is of a high quality. Regular checks would be carried out to the suppliers to make sure that the ingredients they are receiving from them are always at the same consistent high standard.
- Visual checks on the arrival of ingredients would be made, such as colour, temperature of chilled ingredients, size and that everything is up to the standard they require.
- Sizes of components - smoked haddock, potatoes, bread crumbs are the right size.
- Checks would be made to ensure the viscosity of the cheese sauce is the right thickness. Colour coded charts would measure the product to ensure the correct visual appearance. This will ensure consistency of quality.
- Texture of the sauce and component parts would be checked by testers who taste the product to make sure the product has the right mouth feel.
- The overall weight would be linked to computers to ensure an accurate weight of each product is correct and within tolerance.
- Organoleptic checks of the product would be carried out throughout the process to ensure taste, texture, appearance etc are of a high quality. These checks would also be carried out at the end of the process to ensure the high standard is maintained and evident in the finished product.
- The colour of the finished product would be checked against tolerance charts to ensure the right colour has been achieved e.g. the cheese sauce. The onion in the product would also be measured against tolerance charts to ensure the pieces of onion are within size tolerance.
- Random checks would be carried out throughout the process to ensure the flavour of the component parts are of a high standard, using taste testers and fair testing methods.
- The date and traceability would be printed on the packaging, so that if any problems occurred they could easily be identified, and traced to source if necessary.
- Temperature and time controls would be carried out during storage, cooking, chilling and distribution, to ensure ingredients are kept at the right temperatures to stop any bacterial growth which would lead to the products deteriorating. To also prevent this from happening, certain things would take place, such as stock rotation and correct storage of high risk foods.
- Chemical control checks would take place to ensure the product is not contaminated in any way e.g. correct peeling and washing of the potatoes to ensure no chemical contamination by cleaning fluids etc.
- Physical control checks would take place to ensure the product is not contaminated. Metal detecting and microbiological screening would be managed using HACCP.

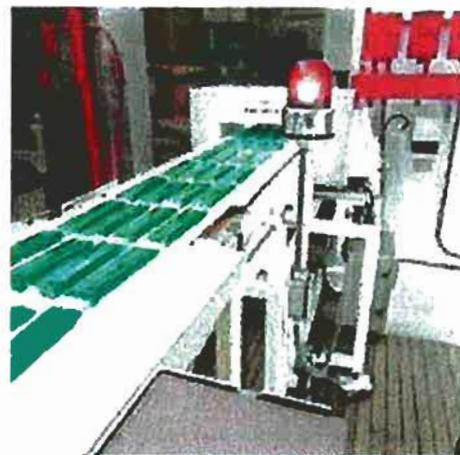
- Labelling information would need to be printed on the packaging to give information to the consumer, such as sell by/use by dates, nutritional value and any allergy advice.
- The final product would be checked against tolerances to ensure the weight is equal for each fish pie. Also the cheese sauce would be checked against tolerance checks to ensure the right colour is present in each product. All these checks would be done to ensure the final product is of a high standard for the consumer.

Quality Assurance System

Good manufacturing practice requires that every aspect of the manufacture is at a high standard and organised well. It is intended to raise standards of the work and to ensure everything is done consistently. There are many stages which a quality assurance system aims to follow:

- Agree on standards - training staff and workers performance.
- Draw up an action plan - This will include all the procedures that need to be done, who will do it, how it will be done, and when.
- Keeping records - deals with suppliers and customers, complaints and maintenance of equipment.
- Self assessment - Making checks against your plan to compare how well the company are producing the product against the specification..
- Ensure checks are made, so any changes can be made if needed.
- HACCP system in place.

A quality assurance check that would take place during the manufacture of the fish pie would be foreign body control. This is carried out to ensure any foreign bodies are not in any product that has been made. An example of foreign body control is a metal detector. These are used on packaging lines to check that metal from machinery has not entered the food. This usually involves computerised tests, which automatically removes any packages which contain any foreign objects. Foreign bodies in food products used to be quite common, although now that quality control is so effectively implemented, it is almost 100% certain that any foreign bodies are detected in food products and removed instantly, mainly using metal detectors, as these are very reliable and accurate.





AS Food Technology Product Design

Design and develop an interesting main dishes that could be served in a restaurant. The dish should appeal to a wide range of customers who enjoy eating out and are prepared to pay a reasonable price for a high standard restaurant dish.

Specification

It must be of a high quality to be served in a restaurant - customers are more likely to choose the dish from the menu if it is of a high quality.

It should contain a source of HBV protein - this will ensure the customer is receiving a nutritional dish. To include ingredients like meat, fish, cheese etc.

It must be a savoury dish - The British population much prefer a savoury dish for a main meal, as it is more appetizing than a sweet dish. As it is one of my points to ensure the dish is appetizing, I believe I should ensure the dish is savoury to appeal to the customer.

It must be nutritionally balanced - to ensure the consumer is receiving a range of nutrients, so they have a balanced dish.

The dish must look appealing and appetizing - it should be well presented and look attractive to appeal to a wide range of consumers.

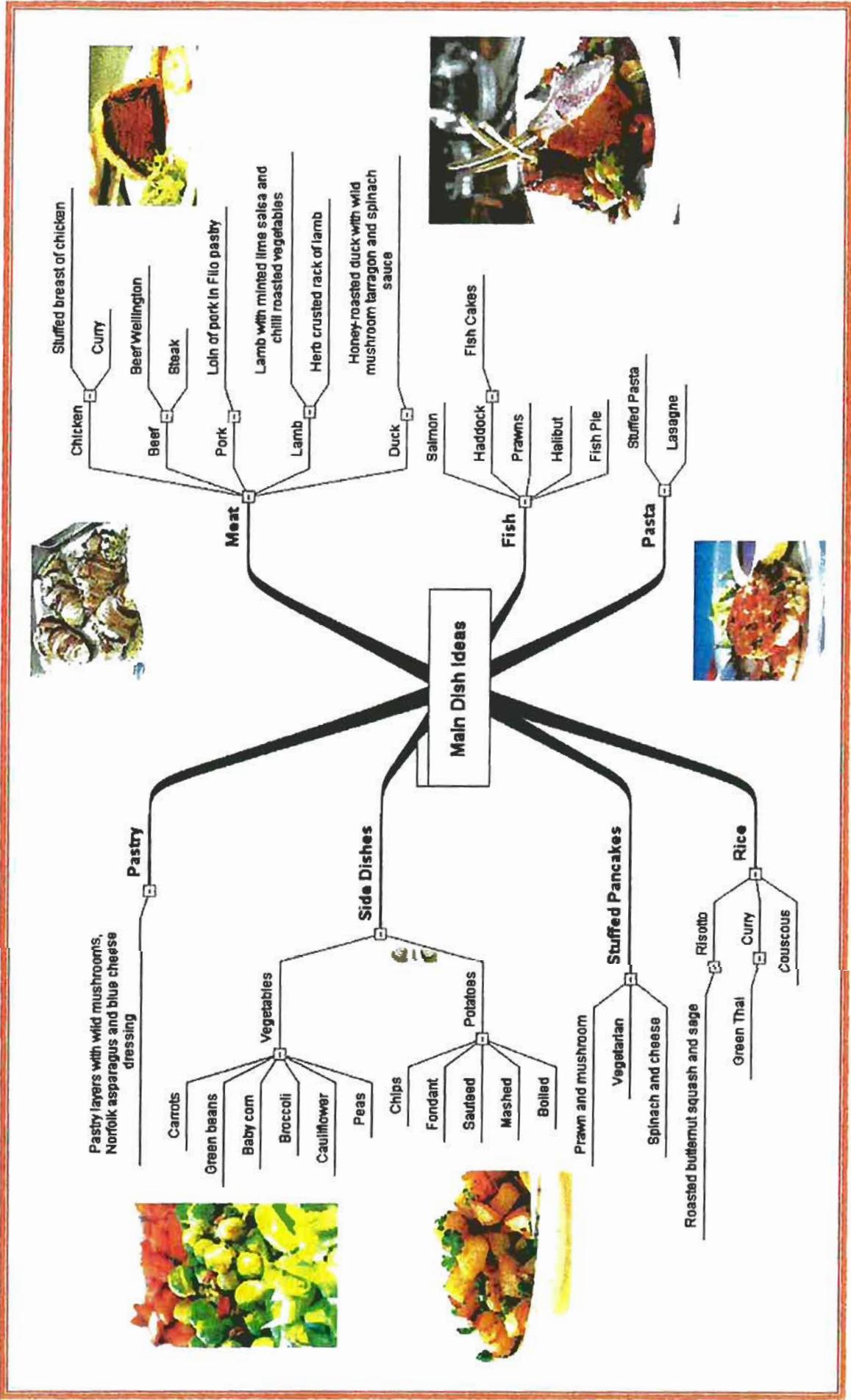
The dish should be a suitable size for one person - when consumers go to a restaurant they order a dish for themselves, so I am going to develop a dish to be served for one person. (200-250g)

The dish should cost between £10 and £15 - most people are prepared to pay a reasonable amount for a main dish at a restaurant

The dish should not contain any additives - shouldn't contain any additives. Customers prefer dishes made from fresh ingredients and produce.

It should have a good flavour - Consumers are looking for tasty flavours. So the choice of ingredients must be carefully selected.

It should contain at least two different vegetables - many different vegetables are grown locally which could be included in the dish. This would also add to the nutritional value of the dish, and give extra colour, texture and flavour.



Pastry layers with wild mushrooms, Norfolk asparagus and blue cheese dressing



Carrots

Green beans

Baby corn

Broccoli

Cauliflower

Peas

Vegetables

Chips

Fondant

Sautéed

Mashed

Boiled

Potatoes

Side Dishes



Prawn and mushroom

Vegetarian

Spinach and cheese

Stuffed Pancakes



Roasted butternut squash and sage

Risotto

Green Thai

Curry

Couscous

Rice



Chicken

Stuffed breast of chicken

Curry

Beef Wellington

Beef

Steak

Pork

Loin of pork in filo pastry

Lamb

Lamb with minted lime salsa and chilli roasted vegetables

Herb crusted rack of lamb

Duck

Honey-roasted duck with wild mushroom tarragon and spinach sauce

Meat



Salmon

Haddock

Prawns

Halibut

Fish Pie

Fish

Stuffed Pasta

Lasagne



Main Dish Ideas

Six Ideas

Idea 1

Breast of chicken, filled with a sage, celery and onion stuffing, wrapped in Parma ham and served with a lemon and chive sauce and mushroom rice. This would be a good savoury dish to serve in a restaurant as it would appeal to a wide range of customers. The appearance would look very appealing to the customer, as it would be presented cut in half on the plate, to show the stuffing inside. This dish would contain a range of ingredients, so that the dish is nutritionally balanced. Celery is quite an over powering vegetable, however I believe this would work well in the chicken. This dish also contains a source of HBV protein as I have included chicken and Parma ham, which will meet my specification. Having Parma ham wrapped around the chicken, also adds colour and flavour to the dish.



Idea 2

Honey Roasted Duck with wild mushroom, tarragon and spinach sauce on a bed of creamed potatoes. This dish would be suitable for serving in a restaurant, as I believe it looks appetising showing a variety of colour and texture. The wild mushroom, tarragon and spinach sauce will compliment the honey roasted duck really well. I have included a bed of creamed potatoes, to give the dish a form of carbohydrate. Because duck isn't as popular as traditional meat, this may raise the price, as the supplier can charge more for the meat.



Idea 3

Spinach, cheese and nutmeg stuffed pancakes. This dish would be a popular option to be served in a restaurant as it could be made as a larger batch, and then sliced into separate portions for a single consumer. The appearance of this dish probably wouldn't be as appealing as some of the other dishes, however I believe it shows a lot of skill. It also contains HBV protein, as the sauce contains two different cheeses, which will meet my specification. Having spinach in the pancakes, also adds nutritional value to the product, as spinach contains a lot of iron. I believe a slight hint of nutmeg will add to the flavour and smell of the dish, which will make it appealing to the customer.



Idea 4

Rack of lamb with minted lime salsa and chilli roasted vegetables. This dish would offer a range of tasty flavours to the consumer eating in a restaurant. I think that the lime salsa would compliment the chilli flavoured roasted vegetables, as the lime would break the chilli down. The appearance of this dish would be effective, as the shape of the cut of lamb would



look highly attractive along with the bright colours in the dish. To make this dish complete I would probably have to include some sort of carbohydrate, such as creamed potatoes to give a bulk to the dish. Having chilli roasted vegetables would meet one of my specifications as I would include a range of locally sourced vegetables to accompany the lamb.

Idea 5

Haddock and cod fish cakes served with a lemongrass sauce, green beans and tomatoes on the vine. This dish could also be served in a restaurant, as it meets many of my specification points. It would contain a high source of HBV protein due to the two types of fish included, and would add great nutritional value to the consumer's diet, as it would include carbohydrates (mashed potatoes in the fish cakes to act as the main bulk), HBV protein (cod and haddock), vitamins and minerals (green beans and tomatoes), fat (sauce) and calcium (cream in the sauce). I believe the lemongrass in the sauce would compliment the fish cakes well and the tomatoes on the vine will give a slight sweetness to the dish.



Idea 6

Green Thai chicken curry, served with coconut rice and a garlic and coriander Naan bread. This dish would be quite popular to be served in a restaurant, as it is an Indian dish and foreign influences have had a big effect on the choice of main food dishes served in restaurants. It would contain a good range of flavours to appeal to the consumer, due to the many spices included. It will include HBV protein in the chicken breast and a range of vegetables in the curry. There will also be skill in making the Naan bread, as I will have to make sure it looks appealing. Sprinkling freshly chopped coriander over the curry will reflect the flavours in the Naan Bread. Including coconut in the rice will give a slight sweetness and creaminess to the sauce.



Three ideas

I have chosen the following three ideas as the dishes I am going to make. I believe these three dishes show a lot of skill and also meet the majority of my specification points.

Idea 1

Breast of chicken, filled with a sage, celery and onion stuffing, wrapped in Parma ham and served with a lemon and chive sauce and mushroom rice. I have decided I am going to make this dish as one of my three ideas, as I believe it meets a lot of my specification points. It has 5 main component



parts which I could develop to see which flavours complimented each other the best. The stuffing in the centre of the chicken gives the dish some carbohydrate due to the breadcrumbs which act as the bulk of the stuffing. It also gives a range of flavours which I could easily change to see which flavour would work the best, to appeal to the consumers palette. The coating around the chicken could be changed to another option such as a herb crust or even pastry to give a different flavour and texture in the mouth. The sauces which are served with the chicken breast could be developed to see which flavours compliment the chicken and the stuffing inside. A variety of accompaniments could be served with the dish, such as rice or potatoes.

Idea 2

Spinach, cheese and nutmeg stuffed pancakes. I also decided to make this dish as it meets a range of my specification points.

It contains 3 main component parts which all could be developed. The spinach in the centre of the pancakes, gives nutritional value to the consumer, as spinach contains a lot of iron which is good for the body's bloodstream and strength. Cheese is present in the pancakes and in the sauce which is poured over the top, contains protein which meets one of my *specification points*. Having nutmeg in the dish compliments the flavours well and gives a more exciting taste in the mouth. I could develop the pancakes by adding different flavours to see which flavour complimented the filling inside. To meet more specification points I could include another vegetable that would be sourced locally to keep within my price range. I could also change the types of cheeses that are included in this dish to make the flavours stronger e.g. add stilton which is a blue cheese, that has a quite distinctive flavour.



Idea 3

Haddock and cod fish cakes served with a lemongrass sauce, green beans and tomatoes on the vine. I also decided to make this dish as I thought it would be good dish to be served in a restaurant that would appeal to a wide range of customers. It contains 4 main components which could all be developed to satisfy the consumers taste. Including



Haddock and Cod in the fish cakes will meet one of my specification points as fish contains a lot of HBV protein. The mashed potatoes in the fish cakes also act as the bulk in the dish as they add some carbohydrate to make the dish nutritionally balanced. The type of fish could also be an ingredient I could develop as I could change the fish to salmon for example, however this would give a different taste and appearance due the fish having pink flesh rather than white. I think I need to keep the tomatoes on the vine with the dish to give a slightly sweet, acidy flavour to break down the fishcakes. Adding lemon juice on the fish cakes will also give this sensation in the mouth. The green beans could also be changed so that I am including two vegetables in my dish to meet my specification. Changing the flavour of the sauce could also be a development, as I could use a roux method rather using fish stock as a base.

Breast of chicken, filled with a sage, celery and onion stuffing, wrapped in Parma ham and served with a lemon and chive sauce and mushroom rice.



Function of ingredients

Chicken breast - main component part to the dish and also provides HBV protein.

Rice - bulk to the dish and also provides carbohydrate.

Sauce - adds protein as there is milk included, provides a good flavour and adds moisture to the dish.

Stuffing - provides a lot of flavour to the dish adds carbohydrate due to the breadcrumbs in the stuffing and also makes it look appetizing when the chicken breast is cut in half.

Parma Ham - adds colour and flavour.

Ingredients

- 1 chicken breast
- 2 slices Parma Ham

Rice

- 50g rice
- 3 chopped mushrooms
- 2 teaspoons of freshly chopped chives

Stuffing

- 1 slice of white bread
- ¼ onion
- 1 stick celery
- ¼ teaspoon sage
- ¼ egg
- Salt and pepper

Sauce

- 25g flour
- 25g butter
- ½ pint milk
- Salt and pepper
- ½ lemon juice
- 2 teaspoons of freshly chopped chives

Evaluation

I decided to make this dish as I believed it was a very pleasing meal to be served in a restaurant that would appeal to a wide range of customers. This dish meets all my specification points, as I have included HBV protein by using chicken breast as the main part, which I then wrapped in Parma ham, which also adds extra protein and makes the dish look appealing due to the colour. I have ensured that the dish is savoury as consumers much prefer a savoury dish for their main meal, as sweet is mainly associated with desserts. Having only one chicken breast, also ensures the portion size is suitable for one person. The dish contains a wide range of flavours that all compliment each other well. I included chives in the sauce and in the rice, so the flavour was reflected in two component parts.

Testers Opinions

I asked six people from my target group to taste the chicken breast dish.

Tester 1 thought the stuffing really complimented the chicken, as they liked the celery in it, even though it is an overpowering vegetable they thought the flavour worked well.

Tester 2 didn't think the sauce complimented the stuffing, as they didn't reflect flavours in each, although overall it was a successful dish. They also thought there was a good range of textures.

Tester 3 thought the Parma ham and stuffing complimented the chicken breast very well, as they believed the chicken would taste quite bland without them. They also thought the Parma Ham and stuffing looked very appetizing on the plate.

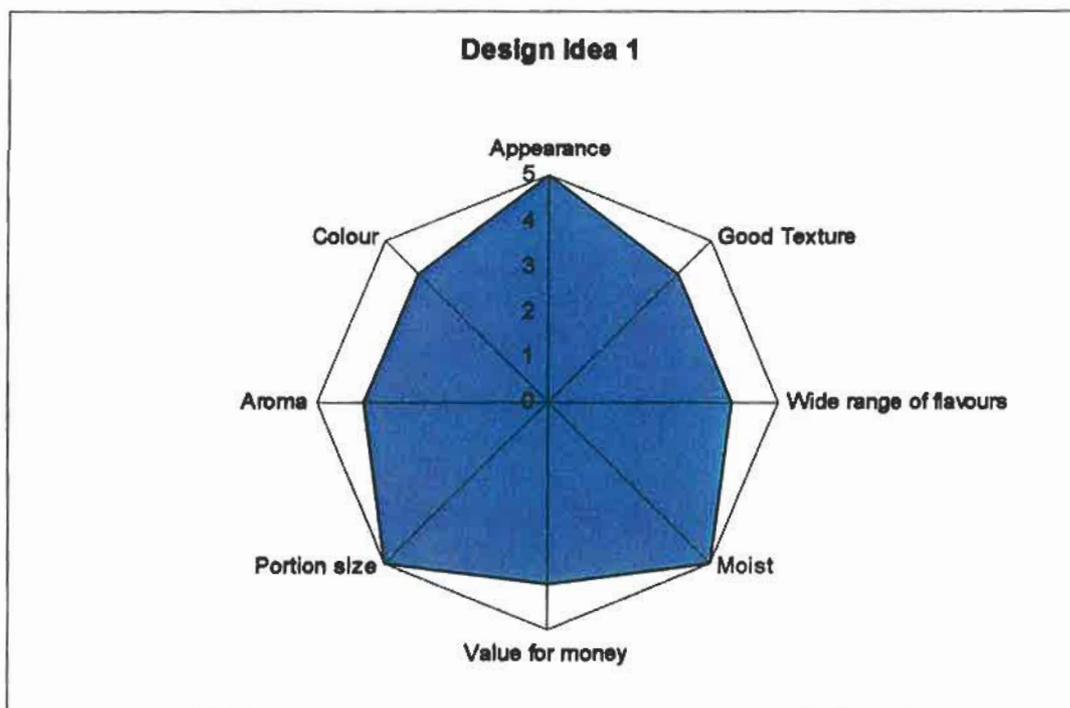
Tester 4 really liked this dish, they thought the flavours were all of high quality and looked appetizing when cut in half to show the filling inside.

Tester 5 thought the dish looked very appealing and eye catching. They said the colours could have been a little brighter, however they liked how I had incorporated mushroom and chives in the rice to give a better appearance.

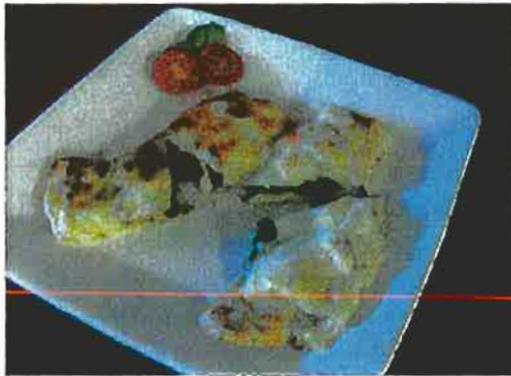
Tester 6 thought the taste of the dish gave a lovely texture and flavour in the mouth. Additionally they thought the appearance was very attractive however they thought a richer colour sauce would look better and contrast with the white chicken breast.

Development

This dish could be developed in many ways as it has 5 component parts. The stuffing inside the chicken breast, could easily be changed in flavour, as more vegetables or even fruit could be added to change the texture and sweetness to the dish. Other herbs could be used instead of the sage to compliment the chicken and sauce. The coating around the chicken breast could also be developed to give a different flavour and change in appearance e.g. pastry or breadcrumbs. The method of making the sauce could be changed, as this dish contained a roux sauce, so by changing the technique this may give a different texture in the mouth and also add different flavours. This meal has rice as the side dish, so this could easily be changed to a different carbohydrate such as potatoes, which is also including another vegetable which is meeting another specification point.



Spinach, cheese and nutmeg stuffed pancakes.



Function of ingredients

Pancakes - main component part to the dish and also add carbohydrate to the dish.

Spinach – adds iron into the dish, which is contributing to the nutritional value, which meets one of my specification points.

Sauce - adds protein as there is milk included, provides a good flavour and adds moisture to the dish.

Cheese - provides a lot of flavour to the dish and also adds HBV protein.

Ingredients

(Serves four people)

Pancakes (Makes 12-14)

- 110g plain flour
- A pinch of salt
- 2 large eggs
- 200ml milk, mixed together with 75ml water
- 2 tablespoons melted butter
- A little extra butter for cooking the pancakes

Filling

- 450g fresh spinach
- 50g butter
- 75ml double cream

Cheese Sauce

- 50g butter
- 40g plain flour
- 425ml milk
- 75ml double cream
- 40g grated strong cheddar cheese
- Salt, freshly milled black pepper and freshly grated nutmeg.

For the topping

- 40g grated strong cheddar cheese
- 25g grated parmesan cheese

Evaluation

I decided to make this dish, as I believed it was a suitable meal to be served in a restaurant. This dish meets the majority of my specification points, however some points have not been met. To meet the rest of my specification points I would have to consider adding more vegetable into the filling of the pancakes, as I have only including spinach, so by adding another vegetable this would meet the specification. The portion size serves four people, however it is served in single portions. The dish didn't look very appealing when presented on the plate, so this could be something that could be improved to appeal to the consumer's eye. Including a hint of nutmeg in

the cheese sauce, adds flavour to make the dish different from other dishes, it also makes the aroma of the dish smell appetizing.

Testers Opinions

Tester 1 thought the dish was tasty and the flavours combined well. However the presentation wasn't brilliant.

Tester 2 liked the look and smell of the dish as soon as they saw it. They thought the hint of nutmeg in the cheese sauce complimented the spinach well.

Tester 3 believed this was a very nutritional dish as the spinach added a lot of iron into the meal. Having cheddar cheese and parmesan grated over the top gave a lovely golden brown appearance and crispy texture on top.

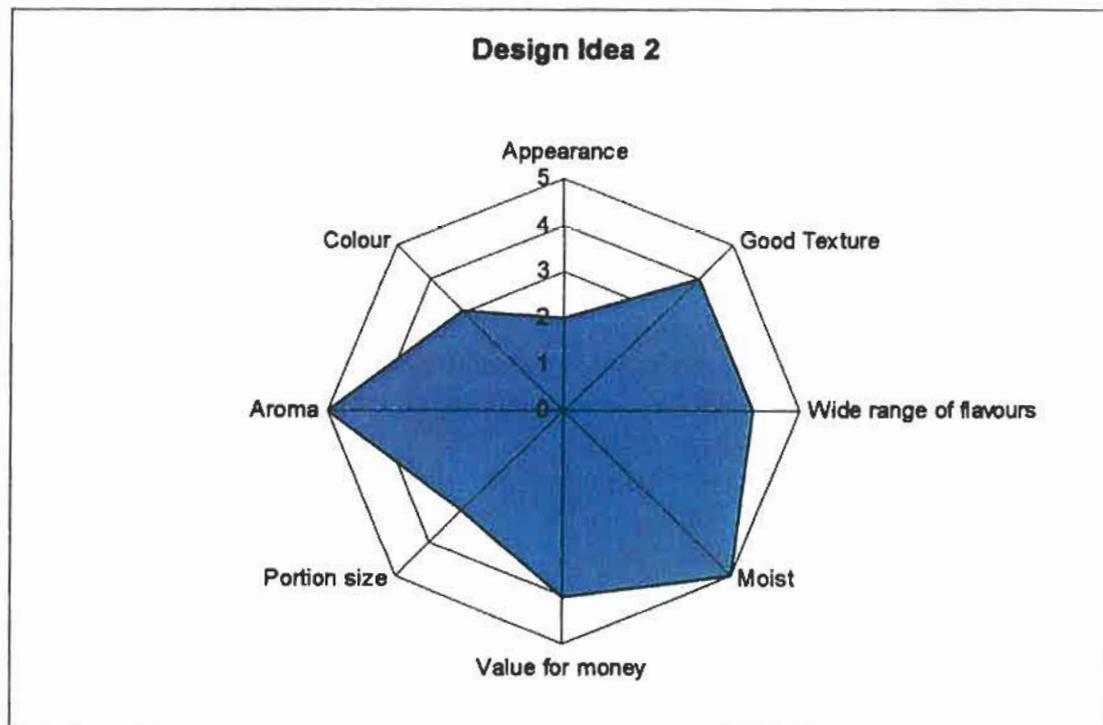
Tester 4 thought the dish was very moist and left a pleasant taste in the mouth. They said the flavours worked well, although the appearance lacked good presentation.

Tester 5 said the different textures worked well together, however it wouldn't be the sort of dish they would choose to eat when going out for a meal in a restaurant. It would be a more homely dish.

Tester 6 liked the dish very much, however not much colour was shown on the plate.

Development

This dish could be developed in many ways. The filling inside the pancakes could be changed to other ingredients such as chicken or prawns with other vegetables to add HBV protein and meet more of my specification points. Instead of having a cheese sauce, a tomato sauce could be included instead to show different flavours and a better appearance due to the rich red colour. Different herbs could be added into the pancake batter to make the taste stronger and also to add a little colour. Other cheeses could be used instead of cheddar such as stilton (a blue cheese) which would give a much stronger more unique flavour.



Haddock and cod fish cakes served with a lemongrass sauce, green beans and tomatoes on the vine.



Function of ingredients

Mashed potato – main bulk in the fishcakes and also acts as a carbohydrate.

Haddock and Cod – provides HBV protein

Breadcrumbs – provides carbohydrate and texture

Sauce – adds protein and a range of flavours

Side dishes – add colour, texture and appealing appearance

Ingredients

Fish Cakes

- 137.5g haddock, skinned and boned
- 137.5g cod, skinned and boned
- 15ml lemon juice
- 15ml Worcestershire sauce
- 15ml creamed horseradish
- 100ml fresh milk
- 15ml chopped fresh parsley
- 350g potatoes, cooked and mashed
- 50g fresh wholemeal breadcrumbs
- 2 spring onions
- 1 egg
- Salt and black pepper

Lemongrass Sauce

- 500ml fish stock
- 500ml double cream
- 6 lemongrass stalks, crushed and finely chopped
- 2 lemons
- Salt and black pepper

Side dishes

- Green Beans
- Tomatoes on a vine
- 1 Lemon

Evaluation

I decided to produce this dish as I thought it would be a popular meal that could be served in a restaurant. This dish met all my specification points as I have included HBV protein in the fish cakes by including haddock and cod, which are both white flesh fish. The dish looked very appealing on the plate as there were a range of different colours and component parts which stood out. The roasted tomatoes on the vine and the lemons gave the dish some form of acidity to break down the stodginess of the fishcakes. The lemongrass sauce really complimented the fishcakes; however a lot was needed to make the dish moister. High quality ingredients were included in this dish to encourage consumers choosing this on a menu in a restaurant. Having the sauce in a separate dish, made the dish look more appealing, this also made it easier for the consumer to pour the sauce wherever they would prefer.

Testers Opinions

Tester 1 liked the fishcakes a lot, however believed they needed the acidity from the tomatoes and lemon to break down the thick texture in the mouth.

Tester 2 thought the sauce complimented the fishcakes very well, and by squeezing lemon on the fishcakes this reflected the lemongrass in the sauce.

Tester 3 believed the textures worked well together and the appearance was very pleasing to the eye due to the range of colours.

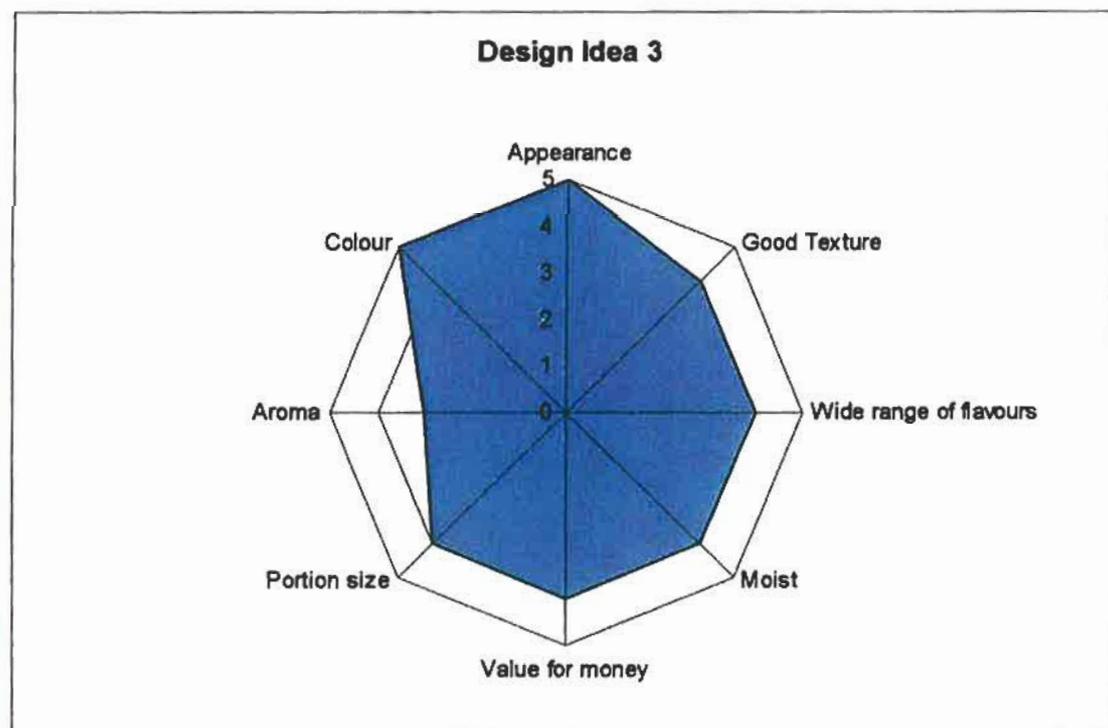
Tester 4 liked the hint of horseradish and Worcester sauce in the fishcakes, as it gave them a slight bite. They said the appearance was very good too.

Tester 5 said that the dish was very appetizing however they would probably make the fishcakes smaller and have them as a starter. The high quality ingredients also made the dish value for money.

Tester 6 liked the slight crunch of the green beans that accompanied the fishcakes as it added a different texture. Having tomatoes on the vine gave the dish a slight sweetness which they liked, and the lemon juice gave a lovely tang in the mouth.

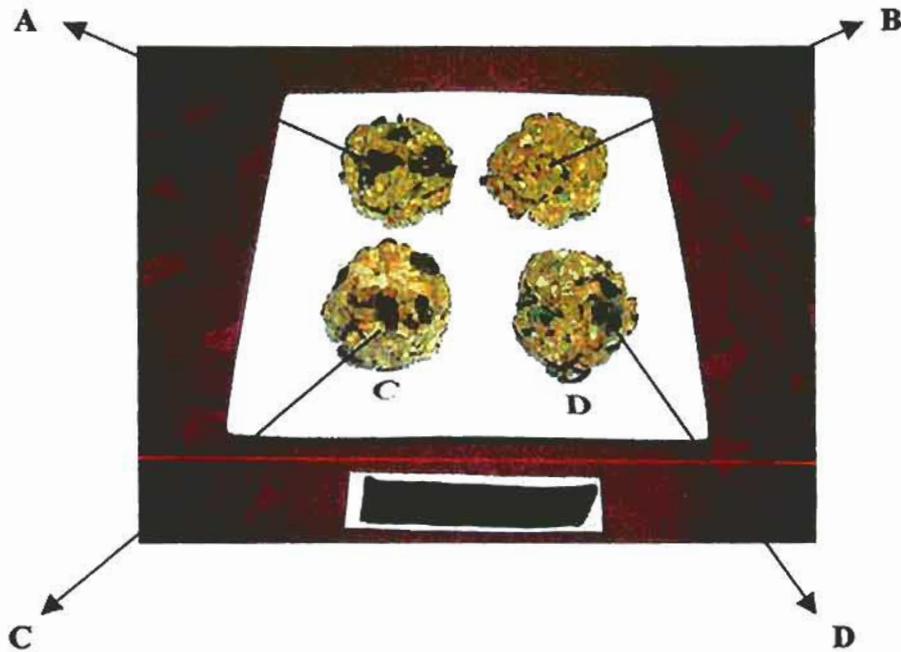
Development

This dish could be developed in many ways. The type of fish could be changed to another fish e.g. salmon, however this would give a different appearance and taste, as salmon had pink flesh and is oilier than the white flesh fish I have used. Adding another vegetable as a side dish with the greens beans such as carrots, will meet another specification point and will also add more colour into the dish which will improve the appearance. Changing the flavour of the sauce could also be a development, as I could use a roux method rather than using fish stock as a base. However I believe using a roux method would not compliment the fishcakes as well, as a roux sauce is quite thick and rich, whereas using a stock is lighter and more flavoursome.



DEVELOPMENT 1 - Investigation into stuffing's

The design idea I have decided to take forward for development is breast of chicken, filled with a sage, celery and onion stuffing, wrapped in Parma ham and served with a lemon and chive sauce and mushroom rice, because I believe this dish showed the most range of textures and flavours, and the presentation looked appealing to the consumer. I have decided to look at stuffing's to go inside the chicken breast. The stuffing's need to contain a good range of flavours and a moist texture in the mouth.



Basic recipe:

- 100g breadcrumbs
- 1 onion
- 1 egg to bind the mixture together
- Salt and pepper

I used a rating test to assess which was the most successful stuffing with my testers.

Rating Test

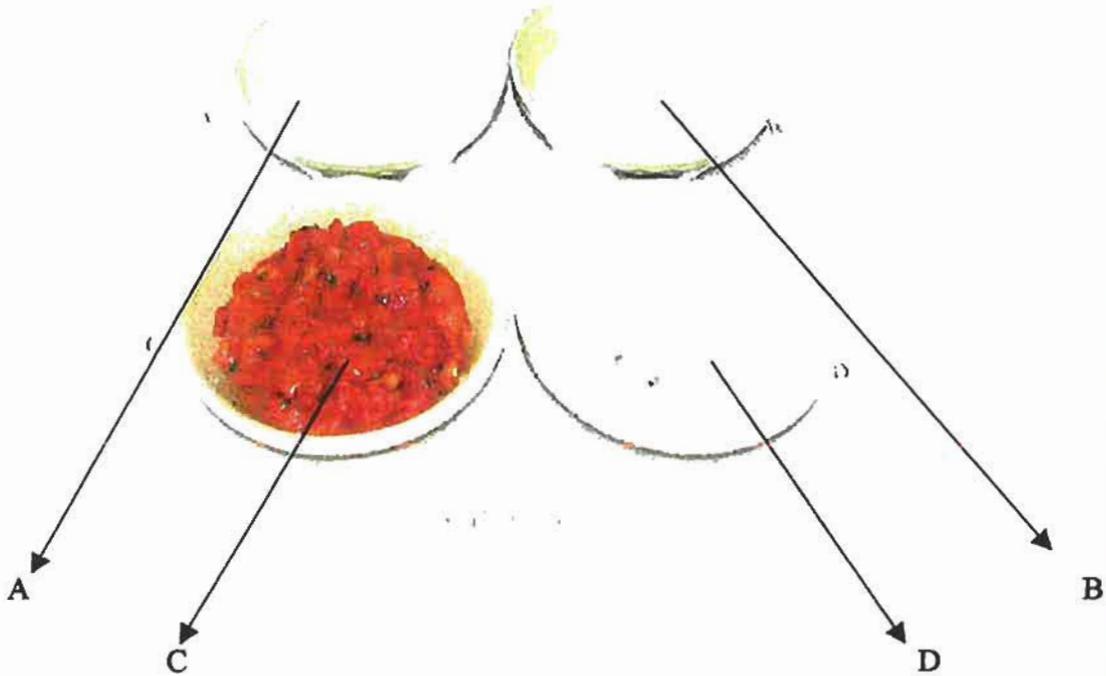
- 1) Like extremely
- 2) Like very much
- 3) Like slightly
- 4) Like moderately
- 5) Neither like nor dislike
- 6) Dislike moderately
- 7) Dislike slightly
- 8) Dislike very much
- 9) Dislike extremely

Stuffing	Ingredients	Summary	Rating test
A - apricot and sage stuffing	<ul style="list-style-type: none"> • ¼ of basic recipe • 3 dried apricots • ½ teaspoon dried sage 	Overall this stuffing had a very pleasing taste in the mouth and the sage really complimented the fruity flavour of the dried apricots, The sage and onion in the stuffing worked really well together, however the apricots looked a little shrivelled, which made the appearance less appealing.	<p>Tester 1 – 2 Tester 2 – 1 Tester 3 – 2 Tester 4 – 3 Tester 5 – 2 Tester 6 – 2</p>
B - Tarragon and grape stuffing	<ul style="list-style-type: none"> • ¼ of basic recipe • 4 green grapes • ½ teaspoon tarragon • Pinch of orange zest 	This stuffing complimented the chicken very well. The juicy grapes gave the stuffing a moist texture in the mouth which contrasted with the breadcrumbs. The tarragon gave a very pleasing taste in my testers mouths. I believe a tarragon sauce would go with this stuffing very well, as the tarragon flavour would be present in each component part.	<p>Tester 1 – 2 Tester 2 – 2 Tester 3 – 1 Tester 4 – 2 Tester 5 – 1 Tester 6 – 1</p>
C - Cinnamon, pine nuts and raisin stuffing	<ul style="list-style-type: none"> • ¼ basic recipe • 1 ½ teaspoons of raisins • 1 ½ teaspoons of pine nuts • Pinch of cinnamon • Pinch of cloves 	This stuffing had a very sweet flavour, which the testers seemed to like, however it was too overpowering to accompany the chicken. A couple of the testers commented on the fact that the cinnamon and cloves gave a sense that it would be a flavour they would see in a dessert rather than a main meal.	<p>Tester 1 – 5 Tester 2 – 4 Tester 3 – 4 Tester 4 – 5 Tester 5 – 4 Tester 6 – 4</p>
D - mushroom, coriander and garlic stuffing	<ul style="list-style-type: none"> • ¼ basic recipe • 2 button mushrooms • 1/2 clove of garlic • 1 teaspoon freshly chopped coriander 	This stuffing had a wide range of textures, as the breadcrumbs gave a moist and crunchy texture, however the mushrooms gave a softer feel in the mouth. The garlic was very strong in this stuffing, which could be improved by using less garlic, however some testers really liked the strong flavour that complimented the freshly chopped coriander. The use of coriander in the stuffing, gave the dish some colour too, which made it look more appetizing.	<p>Tester 1 – 2 Tester 2 – 3 Tester 3 – 1 Tester 4 – 2 Tester 5 – 3 Tester 6 – 2</p>

I am going to take forward stuffing B, as this stuffing gave a very pleasant taste in the mouth. It will really compliment the tarragon sauce too.

DEVELOPMENT 2 - Investigation into sauces

I have decided to investigate into sauces to see which one would compliment the chicken breast and stuffing the best. The sauce needs to be of good consistency and have an appetizing taste.



Rating Test

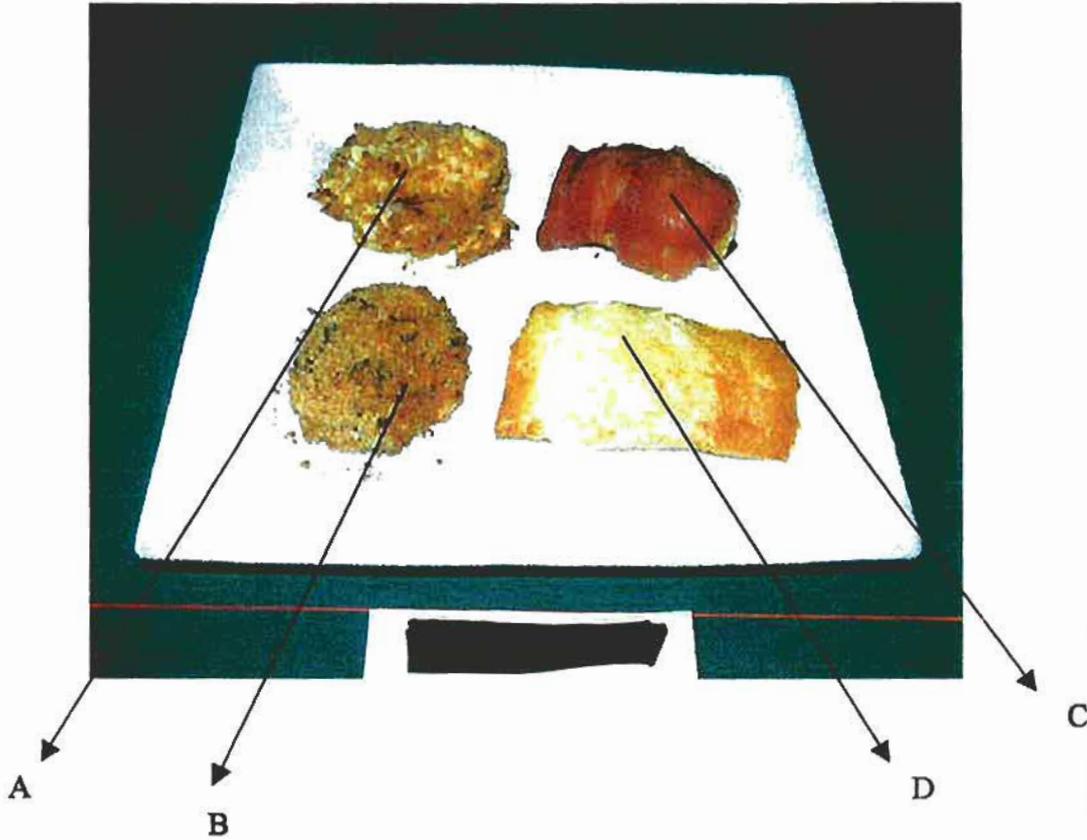
- 1) Like extremely
- 2) Like very much
- 3) Like slightly
- 4) Like moderately
- 5) Neither like nor dislike
- 6) Dislike moderately
- 7) Dislike slightly
- 8) Dislike very much
- 9) Dislike extremely

Sauces	Ingredients	Summary	Rating test
A - mustard sauce	<ul style="list-style-type: none"> • 25g butter • ½ small onion • 10g plain flour • 2 teaspoons dry mustard powder • 275ml milk • 2 teaspoons lemon juice • a generous pinch of sugar • salt and freshly milled black pepper 	Overall my testers thought this sauce wasn't very appealing in the mouth. The sauce was very bland and didn't show a lot of colour either.	Tester 1 – 5 Tester 2 – 7 Tester 3 – 8 Tester 4 – 5 Tester 5 – 6 Tester 6 – 6
B - tarragon sauce	<ul style="list-style-type: none"> • 18.75g butter • 6.25g flour • 100ml chicken stock • ½ tablespoon tarragon vinegar • ½ teaspoon French mustard • ½ teaspoon tarragon • 12.5g cheddar cheese (grated) • 37.5g cream • salt and pepper 	This sauce was very popular with my testers, they all liked the strong flavour of tarragon from the herb and the vinegar and thought it complimented the chicken very well. Some of the testers commented on how it would go really well with the grape and tarragon stuffing too. The thickness of this sauce had the right consistency, as they thought the mustard gave it that extra flavour.	Tester 1 – 1 Tester 2 – 1 Tester 3 – 2 Tester 4 – 1 Tester 5 – 1 Tester 6 – 2
C - sun dried tomato and basil sauce	<ul style="list-style-type: none"> • ¼ onion • ¼ pepper • 1 clove of garlic • 4 sundried tomatoes • handful of freshly chopped basil • chopped tomatoes • salt and pepper 	This sauce was also very popular with my testers, they strong flavours of the tomatoes and garlic gave the dish real flavour. The freshly chopped basil that was added at the end of making the sauce really gave the dish flavour and a range of colour.	Tester 1 – 1 Tester 2 – 2 Tester 3 – 1 Tester 4 – 1 Tester 5 – 2 Tester 6 – 1
D - mushroom and white wine sauce	<ul style="list-style-type: none"> • ¼ onion • 15g butter • 25g mushrooms • 3fnoz cream • 3fnoz white wine • salt and pepper • tablespoon lemon juice 	This sauce had a very different taste to the other sauces. The white wine gave it a very distinctive flavour, that probably wouldn't appeal to a wide range of customers. The mushrooms gave the sauce a varied texture in the mouth which contrasted with the smooth texture of the cream.	Tester 1 – 3 Tester 2 – 2 Tester 3 – 3 Tester 4 – 4 Tester 5 – 3 Tester 6 – 5

I am going to take forward sauce B, as the tarragon flavour really complimented the tarragon and grape stuffing. The consistency of the sauce was also very pleasing.

DEVELOPMENT 3 - Investigation into coatings

I decided to look into the coatings on the chicken breast to see which would look the most appealing and taste the best with the chicken, stuffing and sauce.



Rating Test

- 1) Like extremely
- 2) Like very much
- 3) Like slightly
- 4) Like moderately
- 5) Neither like nor dislike
- 6) Dislike moderately
- 7) Dislike slightly
- 8) Dislike very much
- 9) Dislike extremely

Coating	Ingredients	Summary	Rating test
A - almond	<ul style="list-style-type: none"> • 25g breadcrumbs • 20g almonds • salt and pepper 	This coating gave a variety of textures around the chicken breast. The almonds gave a crunchy taste, which contrasted with the moist chicken breast. My consumers thought this was an interesting topping, however didn't contain much flavour.	<p>Tester 1 – 3</p> <p>Tester 2 – 4</p> <p>Tester 3 – 4</p> <p>Tester 4 – 5</p> <p>Tester 5 – 4</p> <p>Tester 6 – 3</p>
B - herb	<ul style="list-style-type: none"> • 25g breadcrumbs • 1 teaspoon freshly chopped rosemary • 1 teaspoon freshly chopped thyme • salt and pepper 	This coating was similar to coating A, however the flavour was slightly different due to the use of herbs rather than nuts. This contained a lot more flavour, however the texture did not have the same effect.	<p>Tester 1 – 3</p> <p>Tester 2 – 2</p> <p>Tester 3 – 3</p> <p>Tester 4 – 4</p> <p>Tester 5 – 3</p> <p>Tester 6 – 2</p>
C - Parma ham	<ul style="list-style-type: none"> • 2 slices of Parma ham 	Overall this coating was the most popular with my testers. They thought the taste of the Parma ham gave the dish more flavour, as it was quite salty. The appearance of this dish was very pleasing as the bright colour of the ham gave the dish more colour, that would contrast with the pale colour of the tarragon sauce.	<p>Tester 1 – 1</p> <p>Tester 2 – 1</p> <p>Tester 3 – 1</p> <p>Tester 4 – 2</p> <p>Tester 5 – 1</p> <p>Tester 6 – 2</p>
D - filo pastry	<ul style="list-style-type: none"> • 1 sheet of filo pastry 	This coating didn't have such an appealing appearance as the Parma ham, as it was pale in colour, however the texture of this gave the dish a variety of textures, as once cooked it gave a crispy finish to the dish.	<p>Tester 1 – 1</p> <p>Tester 2 – 2</p> <p>Tester 3 – 1</p> <p>Tester 4 – 2</p> <p>Tester 5 – 3</p> <p>Tester 6 – 2</p>

I have chosen to take forward coating C, as this gave the most colour and flavour to the dish. The bright colour contrasted with the white breast of chicken, and the saltiness left a pleasant taste in the mouth.

Final Product

Breast of chicken, filled with a tarragon, grape and onion stuffing, wrapped in asparagus and Parma ham and served with a tarragon sauce and mushroom rice.



By experimenting with various ingredients I found what flavours complimented each other well. I used these flavours to combine a dish which was suitable for a wide range of people who enjoyed eating out in a restaurant. The tarragon flavour was used in both the stuffing and the sauce to ensure an overall good taste. The asparagus tips underneath the Parma ham on the chicken breast also gave the dish colour and excellent appearance once cut in half. I liked the way the rice was served using a ramekin to give it a neater finish, however the mushrooms looked a little messy. After experimenting with a range of coatings I decided the Parma ham had the best flavour and appearance to the consumer.

Ingredients

- 1 chicken breast
- 2 slices Parma Ham
- 3 asparagus tips
- Two sprigs of broccoli
- Two cherry tomatoes to garnish

Rice

- 50g rice
- 3 chopped mushrooms
- 2 teaspoons of freshly chopped chives

Stuffing

- 25g breadcrumbs
- 1/4 onion
- 1 egg to bind the mixture together
- Salt and pepper
- 1/2 teaspoon tarragon
- Pinch of orange zest
- 4 green grapes

Sauce

- 18.75g butter
- 6.25g flour
- 100ml chicken stock
- ½ tablespoon tarragon vinegar
- ½ teaspoon French mustard
- ½ teaspoon tarragon
- 12.5g cheddar cheese (grated)
- 37.5g cream
- Salt and pepper

Method

- **Stuffing** - Fry ¼ of an onion until soft and then take off the heat and mix with breadcrumbs in a clean mixing bowl. Add ½ a teaspoon of tarragon, a pinch of orange zest and 4 green grapes chopped finely. Gradually combine the egg until it forms together and then season with salt and pepper to taste.
- **Chicken** - Butterfly the chicken breast using a sharp knife and fill with enough stuffing. Then roll the chicken breast back together and place the 3 asparagus tips on top. Carefully wrap the chicken and asparagus in Parma Ham and bake in foil for 20 minutes at 190°C/gas mark 5 until thoroughly cooked.
- **Sauce** – Melt the butter and stir in the flour. Gradually add the stock and vinegar. Stir in the mustard, tarragon and cheese. Then bring to the boil whilst continuously stirring, season to taste and simmer for 3 minutes. Remove from the heat and add the fresh cream. Finally heat gently without boiling.
- **Rice** – Gently fry 3 chopped mushrooms and leave to one side. Then cook the rice in a saucepan with double the amount of water to rice until soft. Once cooked drain through a sieve and run boiling water through it. Then mix with the mushrooms and finely chopped chives.

A HACCP control would be put in place to ensure the product is manufactured in a safe and hygienic environment to produce a high quality product.

Storage

This dish would be stored in a refrigerator after making, at 0-5°C for a maximum of 2-3 days.

Match to specification

My final design met all my specification points. It was of a high quality that appealed to a wide range of customers. I have ensured the customer is receiving a nutritional dish by including meat and cheese to provide HBV protein. I have also ensured that the dish was savoury, as the British population much prefer a savoury dish for a main meal, that looks appealing and appetizing. The dish was big enough for one person and met my price range. I ensured I did not add any additives into the dish, as I used fresh ingredients and produce. Consumers are always looking for tasty flavours, so I carefully selected different ingredients which complimented each other well.

Testers comments

Overall my testers thought this dish was of a very high standard. They commented on how moist the chicken breast was, which gave a contrasting texture to the stuffing and crispy Parma ham. The tarragon sauce had a strong flavour, however this worked well with the tarragon stuffing. My testers thought the rice was a little bland, and some thought another side dish may work better with it, such as potatoes.

Product Manufacture

Make a dessert that could be served in a high quality restaurant. The dessert should contain a range of skills and appeal to a wide range of customers.

Specification

The dish must show a variety of skills - having several skills and processes in the dessert will ensure high quality is consistent throughout.

It must be of a high quality to be served in a restaurant - customers are more likely to choose the dish from the menu if it is of a high quality

Chocolate must be included in the dessert - having this flavour throughout the dish, ensures consistency and flavours which will complement each other well.

It must include a range of textures and good flavours - customers are more likely to choose this dish from the menu if it has a good range of textures and flavours to suit their palate.

The dessert should look appetizing - customers like to eat a dish that looks appealing to the eye when eating it.

Trio of desserts (Dark chocolate and coffee mousse)(Marbled chocolate and orange cheesecake)(Chocolate raspberry tart)



Dark Chocolate and coffee Mousse

- **44g plain chocolate** - chocolate and bitter flavour
- **7.5g coffee** - strong flavour
- **1 egg separated** - egg yolk thickens the mixture and the egg white when whisked and folded in creates a light and foamy texture
- **3.75ml rum** - hint of alcoholic flavour
- **37.5ml fresh double cream** - decoration
- **25g white chocolate** - decoration

Marbled chocolate and orange cheesecake

- 45g digestive biscuits - bulk of the base
- 19g melted butter - to combine the biscuit crumbs together
- 25g milk chocolate - chocolate flavour
- 75g cream cheese - filling
- 50ml double cream - filling
- 19g sugar - sweetener
- 1 Satsuma - tangy and citric flavour and moist texture
- 15g white chocolate - decoration
- 15g milk chocolate - decoration

Chocolate raspberry tart (focus product)

For the tarts:

- **87.5g plain flour** - is used to form the bulk and structure of the tart. Plain white flour is used to create a short texture and a lighter pastry than if wholemeal flour was used.
- **15g cocoa powder** - this is added as a dry ingredient with the flour to give a more interesting colour and flavour to the pastry, it is also a popular flavour in desserts.
- **25g caster sugar** - is a finer sugar than granulated and sweetens without making the texture of the pastry too coarse.
- **1/8 teaspoon salt** - season the pastry
- **62.5g unsalted butter** - creates a shortness in the pastry and provides a rich flavour to enhance the quality of the product
- **½ large egg yolk** - helps to combine the dry ingredients together with the water and again creates a richer pastry which is very suitable for the tart case.
- **½ tablespoon iced water** - also helps to combine the dry ingredients together with the egg yolk.

For the filling:

- **25g white chocolate** - used in the filling contrasts well with the dark cocoa colour of the pastry but also complements the chocolate flavour of the pastry to give an overall chocolate effect.
- **125g mascarpone cheese** - helps to create a light delicate cheesy flavour filling that is not overpowering, it also creates a good mouth feel.
- **50ml double cream** - again creates a rich filling, it is high in fat which gives a creaminess and good mouth feel when whisked with the mascarpone cheese.
- **250g raspberries** - are regarded as a luxury fruit, they have a good colour and flavour and hold their shape well as a decorative topping. Their soft moist texture contrasts well with the cream cheese filling and the flavour of the raspberries works well with the chocolate flavour of the filling and pastry.

Chocolate raspberry tart - for production in a restaurant kitchen

Times	Quality Control	Process	HACCP
	Visual checks.	Purchase of ingredients.	Check all ingredients are fresh and packaging has not been

			damaged.
	Use quality and reliable suppliers.	Delivery of ingredients.	Check all ingredients are fresh and sell by dates are current.
	Ensure each ingredient is stored at the right temperature 0-5°C for perishable ingredients.	Stored appropriately until used.	Check ingredients are stored at the right temperature to ensure they don't deteriorate before use.
10 minutes	Make sure each amount weighed is consistent for each batch using computerised/digital scales.	Weigh out ingredients.	Make sure all weighing equipment is clean, to ensure no foreign bodies get into the ingredients.
1 minute	Make sure no ingredients are dropped or lost and each ingredient is stored at the correct temperature if possible.	Ingredients are moved to the production area.	Ensure production area is kept clean and ready to use.
5 minutes	Ensure the dry ingredients are mixed thoroughly.	Blend the flour, cocoa, sugar and salt together in a food processor - batch production depending on number required.	Make sure food processor is thoroughly cleaned out before use to ensure no other ingredient is mixed in with the pastry ingredients.
5 minutes	Ensure each piece of butter is cut to the same size to ensure it is distributed through the mixture evenly.	Cut the butter into pieces and pulse with the flour mixture until it looks crumbly.	
5 minutes	Make sure the egg yolk and water is added gradually to ensure the pastry is the right consistency.	Beat the egg yolk and iced water together and add, down the funnel, to bind the pastry.	
10	Make sure it has	When it starts to clump	Make sure

minutes	formed together to form the right consistency to form a ball.	together, turn it out of the processor and work it together with your hands.	hands and work surface are clean.
1 minute	Make sure all pastry is covered by the cling film.	Wrap in Clingfilm and rest the pastry in the fridge for at least 30 minutes. 	Check pastry is stored at the right temperature (-18°C) for exactly 30 minutes.
5 minutes	Make sure the pastry is rolled out to the same thickness each time. Also ensure not too much flour is used on the rolling surface, as this will make the pastry dry and crack easily..	Roll out the dough, it will be quite dry due to the cocoa so don't use much flour on the rolling surface. 	
5 minutes	Ensure each pastry circle is cut to the same size to ensure quantity and quality is equal.	Then using a tart case as a guide, cut rough circles slightly bigger than the tin.	Use the same size tart case each time to ensure equal sized portions.
5 minutes	Make sure any gaps are sealed with excess pastry, so the filling doesn't drip though when added.	Ease the pastry circles into the tins and cut off the excess pastry.	
30 minutes	Make sure pastry feels frozen before placing in the oven.	Freeze them for about 30 minutes or until they feel frozen.	Ensure pastry is stored at the right temperature (-18°C) for exactly 30 minutes.
		While the pastry is in the freezer, turn on the oven to 180°C/gas mark 4, and slip in a baking sheet to heat up at	

10 minutes	Ensure the same amounts of raspberries are placed on each tart every time.	Then top with the raspberries. 	
		Store in chilled conditions until required in the restaurant.	Check temperature of chiller for correct storage condition 0-5°C.

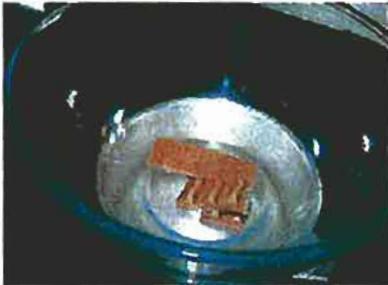
Testing

Sensory Analysis

Throughout the development of a new product in the test kitchen, the taste panel will carry out organoleptic analysis to check the appearance, texture, flavour and aroma of each stage in the development of the product. This enables any changes to be made where necessary to meet the expectations of the consumers needs.

Testers comments

Tester	Comments
1	Tester 1 thought the dessert was of a very high standard and believed the appearance of the dish looked excellent, especially with the chocolate decorations on the top.
2	The chocolate theme throughout the dessert was very pleasing in the mouth, the use of oranges in the cheesecake also gave a juicy texture which broke down the sickly taste of chocolate.
3	Tester 3 liked the trio, as this made the dessert more unique, and also gave you a range of flavours and textures, rather than just one individual dessert.
4	Tester 4 liked the contrast between the dark chocolate pastry and the white filling in the tart.

		the same time.	
10-15 minutes	Watch the pastry carefully to ensure overcooking doesn't occur.	Put the tartlets straight into the oven on the baking sheet, and cook for 10-15 minutes or until the pastry feels cooked and dry. The freezing plus the fact that the individual area is small means that they shouldn't puff up.	Ensure oven has reached 180°C/gas mark 4 before adding the pastry.
10 minutes	Ensure the chocolate is stirred regularly and it doesn't burn, as this will spoil the quality.	While the pastry is cooking, melt the chocolate for the filling, using a double boiler. 	Make sure the bowl over the top is not touching the water in the pan below, as this will cause the chocolate to overcook or burn. Make sure the mixing bowl used is clean to ensure no other foreign objects enter the chocolate.
5 minutes		When the pastry cases are cool, slip them out of their tins.	Make sure pastry cases are cool enough to slip out, as this may cause the pastry to break.
10 minutes	Beat the cream and mascarpone to the right viscosity each time, to ensure even quality in each tart. Do not stir more than needed, as this will make the mixture too thick.	Beat the mascarpone and double cream together and fold in the melted, slightly cooked white chocolate. 	Make sure all equipment is clean before mixing the ingredients together.
5 minutes	Make sure equal amounts of filling are added to each pastry case.	Fill the pastry cases with the cream.	

	The use of raspberries on the top also looked very appealing to the eye with the bright colour standing out.
5	Tester 5 thought the marbled chocolate and orange cheesecake and the chocolate raspberry tart were very appetising, however they weren't too keen on the coffee and chocolate mousse, as the flavours were very overpowering and bitter.
6	Tester 6 believed presentation, taste and texture were all of a very high standard in each individual part of the dessert.

Overall my testers believed this dessert was of a very high standard. They commented on how they liked the trio, as this made it more interesting and gave a wider range of flavours and textures to suit their palate. A couple of my testers liked the theme of chocolate throughout the dessert, and liked the use of fruit in two of them to give a more fruity citric flavour. A few of my testers mentioned that each part of the trio left a pleasant mouth feel and presentation was clearly shown in great detail that gave an excellent finish.

Shelf life/storage testing

The shelf life of a product is the length of time it will remain edible and harmless to eat, if stored as recommended by the manufacturer. It is important to consume that product within the sell by date or use by date, as after this period of time, the food becomes unsafe to eat, which may lead to food poisoning to the growth of bacteria, leading to decay in food.

Shelf life testing of Chocolate Raspberry Tart

Day	Storage and Temperature	Appearance/Taste/Texture
1	Refrigerator at 0-5°C.	The appearance was still appealing and the taste and texture of the product were still of a high standard.
2	Refrigerator at 0-5°C.	There was still no change in the appearance/taste/texture.
3	Refrigerator at 0-5°C.	The appearance of the desserts still looked appealing, however the cream started to look a little yellow in places, and the taste had gone a little sour.
4	Refrigerator at 0-5°C.	Unsafe to carry out any taste testing due to shelf life expiring, and the appearance was similar

		to day 3. Pastry losing its crispness.
5	Refrigerator at 0-5°C.	Unsafe to carry out any taste testing due to shelf life expiring, and the appearance didn't look very appealing due to yellow tinges in the cream, the raspberries looked a little soft and mushy and the pastry was soft.

From conducting this storage test I can conclude that the shelf life of the product is 2 days if kept chilled at 0-5°C.

Tolerances

Tolerances would be in place for the component parts used in my dessert to ensure consistent high quality desserts are produced.

- There would be a tolerance on the viscosity of the filling in the tart to ensure it has the same thickness in each one.
- There would also be tolerance on how many raspberries would be placed as the topping on the dessert to make sure each tart was of a consistent appearance.
- There would also be tolerances on the thickness of the pastry, as it would always have to be of the same thickness to ensure the taste and texture is consistent for each tart produced.
- The weighing of ingredients used must be accurate to ensure the consistency of quality.

Referenced and tested against the original specification

- The trio of desserts demonstrated a variety of skills to create an original, high quality dessert.
- The dessert was of a high quality to be served in a restaurant that consumers would want to choose from the menu.
- Chocolate was included in each trio which all complimented each other well.
- A variety of flavours and textures were used in each individual part of my tart, which suited my testers palates.
- Each tester commented on the excellent presentation demonstrated using different techniques to capture different effects.

Overall my testers thought this dessert was of an extremely high quality, which offered a range of textures and flavours in each individual part of the trio. The use of oranges in the cheesecake broke down the strong chocolate flavour, leaving a pleasant fruity flavour in the mouth. My testers commented on how the size of the dessert was not too big, as having a trio gave you a variety that left you feeling not over indulged. The chocolate decorations on the top of my dessert really made the dessert appealing to the eye and my testers confirmed that it would be a dessert that they would choose from a menu in a restaurant.