



Food Manufacture

Product Development and Design

Lesson 2

Comprehend the process of the product development and design in food manufacture by completing this course.





In order to validate the product formulation and the manufacturing process, production trials will be carried out to ensure safe manufacturing in the desired quantity. All trials will be documented.





Any new product developments will fall in line with existing company policies and procedures e.g. the introduction of allergens.





**The NPD
department will at
all times adhere to
food safety and
regulations for the
safe consumption
of food.**



Any new product developments or changes to products will be approved by the HACCP team to ensure any hazards have been assessed and controls put in place.





The new food development process consists of several steps:

1. Idea generation
2. Product screening
3. Market research
4. Product specifications
5. Feasibility
6. Process development
7. Testing
8. Marketing and launch



Idea generation

The NPD idea can come from a number of places such as results from market research, sales team, customers and the production department. The idea generation step allows the factory to consider the concepts of new product and how best to improve existing products. This can lead to a factory being able to reach a wider target audience and potentially increase sales





Product screening

Screening of the product must be carried out to consider any constraints such as finance, processing, marketing, packaging, regulations and distribution.





Product screening

A company budget must be followed for NPD trails and final product development. Therefore product and ingredient benchmarking is an essential part of this step.





Market research

The screening step will allow the best ideas to be taken forward and a specification to be developed.





Market research

During idea generation and product screening market research takes place which helps to decide if the product will be a success or not.





Market research

Some reasons why the product might not work are:

- Cost of development is high
- Financial problems
- The product is inappropriate for the market
- A flooded market





Product specification

The development of the product specification is a large process which involves lots of information to be considered such as:

- Raw materials
- Processing methods
- Quality control and quality assurance
- Packaging
- Storage conditions





Product specification

The product specification enables the factory to develop the exact product they want which will be fit for purpose.





Feasibility

A feasibility study should be performed which checks the product to make sure it is technically and financially viable.





Feasibility

Some factors which are considered during a feasibility study are:

- The practicality of any new processing techniques
- Equipment appropriateness
- Manpower availability
- Time available
- Costs





Process development

The first stage of process development involves the production of a prototype. A prototype is developed to make judgement on what the product will be like when it is produced for the consumer





Process development

An NPD operative will be able to produce and control small and large batches of the developed product.





Process development

When developing the factory processes there maybe several key factors to consider:

- Managing ingredients
- Does a new product line need to be added
- Changes to the existing factory layout
- What different processing methods are required
- Packaging processes and storage
- Storage of ingredients and products
- Training of staff on new product and processes





Process development

Once a prototype has been produced and development factory trials have been performed, then the NPD team must work with the process team to perform pre production runs. These will run how they are going to run in a normal production shift to allow staff to fully understand the new process.





Process development

The pre-production run leads onto full production runs which is where the product can be processed in the factory to the specification, producing the correct product which is safe to consume.





Testing

The factory will assess the product to make sure the quality and uniformity of standards are met during processing.





Testing

Tests which are performed on the NPD products are microbiological, chemical, quality and organoleptic/sensory. All tests results are documented.





Testing

Shelf life trials will be performed under the exact same conditions as what is performed during the factory production process. The shelf life of the product can then be determined.





Testing

Tests are completed on the product in order to produce the product labelling information such as:

- Nutritional value
- Health benefits proven
- Allergens
- Time and temperature tests to ensure cooking instructions are suitable for the market





Testing

The packaging must meet all legal requirements for food products and contain information which is clear and easy for the customer to understand.





Documentation must be completed throughout the NPD process steps to ensure a valid reliable product is developed and will continue to be produced.





**The product is
then ready to
hand over to
the site process
teams for
normal
processing.**



The health and safety, processing, quality, HACCP and cleaning recording documents are produced and implemented.





Any materials and ingredients will be added to the purchasing systems ready for the product to run as part of the factory process system.





Marketing and launch

The marketing of the product is important in making sure the correct target audience is aimed at. This will increase sales and improve profit.





Marketing and launch

Factors to take into consideration when marketing the product:

- Packaging e.g. suitable packaging for target audience
- Price e.g. introductory offer to attract attention
- Place e.g. appropriate for a specific supermarket
- Promotion e.g. material such as free recipe's, special offers and taste sessions





Marketing and launch

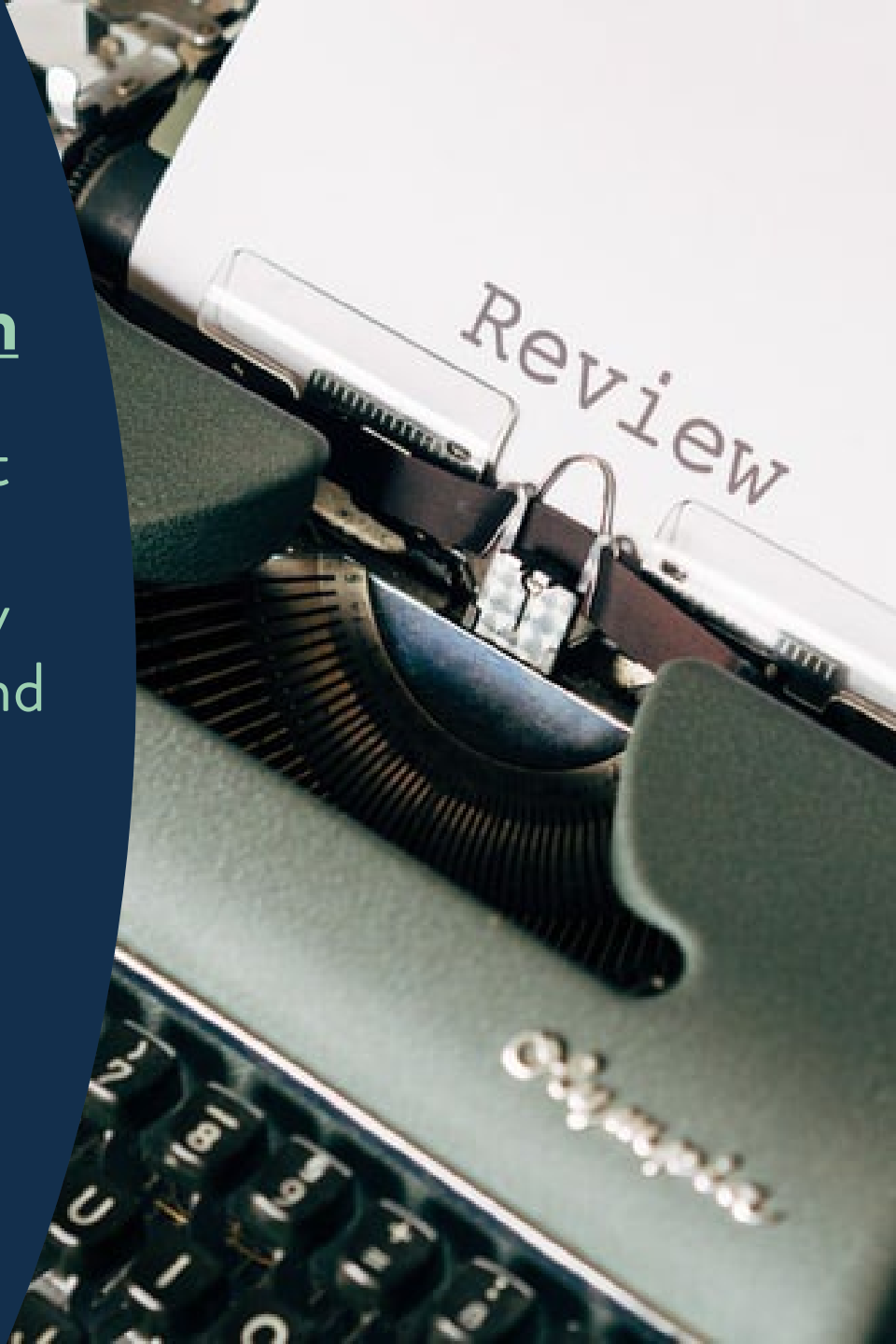
The final step in the NPD process is the product launch. There will be a detailed plan about the customers and timings when the product is launched.





Marketing and launch

Reviews are be carried out to ensure the product continues to run smoothly and within specification and customer requirements.





Revision Activity 2

**Name the steps in the
NPD process?**