Creating the products & processes of tomorrow starts with the practical application of science today.

Because you care about CONSUMERS’ HEALTH

MERIEUX NutriSciences
In our increasingly complex global food supply chain, it is crucial for food processors to conduct thorough scientific studies to ensure the **quality and safety** of products, verify the effectiveness of **production processes** and comply with **regulatory requirements**.

To support you in your daily needs and crisis management plans, **Mérieux NutriSciences** has significantly expanded its capabilities in contract research to provide innovative and troubleshooting solutions through its newly-launched **Food Science Centre**.

**OUR TEAM** of highly experienced Research Scientists, in collaboration with our external Food Science Advisory Board, is ready to hand-craft a project geared to meet your specific challenges, whether it’s assuring ingredient or product stability, quality and/or safety.

- **MUTSA RWASOKA** / B.Tech (Hons)
  Food Labelling & Regulatory Compliance Consultant & Research Scientist

- **PETRA MULLER** / M. Dietetics
  Food Labelling Consultant & Research Scientist

**FURTHERING THOUGHT LEADERSHIP...**

An external **Food Science Advisory Board** has been formed with various academics and industry experts who will be on call to provide advice and guidance on specific areas of expertise when required.
SHELF LIFE AND STABILITY STUDIES

Manufacturers are responsible for determining the shelf-life of foods they produce. Predictive models can help determine shelf life but laboratory testing of microbiological, chemical or sensory indicators within a food over time is often necessary.

Our custom-designed shelf-life or stability studies enable the determination of a product’s use-by and best-before dates. This service is needed for new product formulations, to verify a new production or storage method, or a change in distribution conditions. Studies of this type are designed to help ensure quality throughout the lifecycle of your product.

Mérieux NutriSciences takes a holistic approach to shelf life testing that provides insight into all aspects of the food. Our experts will design a robust study that encompasses all applicable testing. For many products this will be a combination of microbiological, chemical, and sensory testing. All aspects are considered when determining the shelf life of a product. In many cases this testing can be conducted at real-time and accelerated conditions.

Testing methods include, but are not limited to:
- Organoleptic parameters: appearance, color, odor, flavor
- Texture
- Consumer acceptability
- Physical-chemical parameters: pH value, viscosity, density, emulsion stability
- Microbiological parameters: microbial count
- Lipid oxidation

CHALLENGE STUDIES

Mérieux NutriSciences uses predictive microbiology to gather all theoretical approaches aiming to predict the growth profile of a microorganism in the conditions chosen by the operator.

This approach associates a growth profile with each combination of intrinsic (i.e., pH, water activity, preservatives) or extrinsic (i.e., humidity, light, temperature) parameters.

Our predictive microbiology services can help you:
- Create a new product or change the formulation of an existing one
- Evaluate product spoilage or pathogenic risks
- Limit costs and time of experimental studies with better targeted analyses
- Determine optimum microbiological safety intervals and critical points to integrate in the food safety process (such as HACCP)

Challenge studies performed in the laboratory can help ensure the microbiological quality and safety of your products. Our challenge tests present the following benefits:
- Evidence of spoilage organism containment by intrinsic product factors
- Classification of products according to the pathogen growth risk
- Evaluation of risks and determination of critical points within the Food Safety approach
- Determination of criteria for acceptable levels of pathogenic indicator organisms

PROCESS VALIDATION

It is critical for manufacturers to conduct thorough scientific studies to ensure the safety of food products and processes. Our validation studies help minimize the risks of contaminants by demonstrating the effectiveness and safety of your processes.

Our process validation studies will help to verify the effectiveness of your processes and ensure the safety of your finished products. It includes:
- Thermal and non-thermal process validations
- In-plant equipment validation studies
- Allergen cleaning validation
- Surface disinfection validation

Adhering to recognized industry protocols, our researchers bring highly specialized expertise to each validation study. At each stage of our custom-designed projects, our research team will keep you informed and involved in the process.

LABELLING AND REGULATORY SERVICES

Food labelling is subject to increasingly complex regulations around the world. Ensuring that your food products are correctly labelled according to local, regional and international laws can be a challenging task.

Mérieux NutriSciences offers a range of Food Labelling Consulting services to assist you with labelling of new or existing products and formulations, as well as legal compliance with evolving regulatory requirements in different countries and regions. Moreover, when it comes to exporting foodstuffs around the world, a literal translation of labelling texts by a mother tongue translator is not always enough.
PRODUCT DEVELOPMENT SUPPORT

Product development is an ongoing and strategic component of the food industry.

Foods can be enriched with vitamins and minerals, added fiber or fatty acids in order to offer a health benefit. They can be engineered to contain no cholesterol, low salt, less fat or to be free of allergens.

From developing new food products to evolving existing ones to better meet consumer needs, our experts can support key steps of your product development process.

Mérieux NutriSciences offers resources and experience in the following areas:

- Robustness of tests performed
- Legislation and regulatory requirements
- Prototype formulation assessments
- Food safety in the development process
- Product shelf life
- Commissioning of industrial line
- Quality monitoring of industrial production
- Preparation for manufacture and packaging of new product

PHYSICAL TESTING

Quality is not negotiable when it comes to meeting the demands of suppliers and customers. Defects in raw ingredients and finished products can lead to wasted goods, affect supplier relationships, and alienate customers. Mérieux NutriSciences works with the world’s leading food service chains and retailers to measure aspects of quality.

We offer a wide spectrum of physical tests on raw ingredients and finished products. Our consultants use their technical know-how and data analysis skills to evaluate products against defined specifications. Using analytical testing, visual evaluation, applicable data and records, we identify product variations and pinpoint potential safety and quality risks in concise and confidential reports.

SENSORY EVALUATION

At the end of the day, the sensory experience (taste, smell, colour and overall appearance, texture) is what drives the consumer to make an instant decision on whether they will purchase a product again. Sensory evaluation is a valuable tool during product evaluation over a time period (shelf life testing), for product benchmarking and during research and development of new products. Mérieux NutriSciences can give valuable input by performing sensory evaluations tailored to your specific needs.

COOKING INSTRUCTIONS

Cooking instructions or instructions for use are a labelling requirement on all products that require special preparation before consumption - and the accurate preparation of food is a crucial determining factor in the quality and enjoyment of a food product.

Mérieux NutriSciences can generate and evaluate cooking instructions, to ensure the cooked product is safe and of a high quality. This is achieved by using kitchen appliances similar to those the consumer will use to prepare food at home.

After cooking, the product undergoes testing as per your specific requirements, like microbiology and sensory evaluation to evaluate the properties of the prepared or final product. Mérieux NutriSciences will prepare a concise report on the findings with possible technical recommendations.
CAN & PACKAGING QUALITY TESTS
(Can Head Space, Vacuum, Label Screen and Code Date Conformance)

Finished product quality is the determining factor of the safety and enjoyment experience of the product to the consumer. Mérieux NutriSciences can evaluate quality aspects of finished packaged food products that may point to some production issues within facilities, or product handling and logistical problems.

We are able to evaluate cans by measuring the finished products' can head space and vacuum or acceptability of the quality of the overall label and coding - in accordance to legal and customer specifications - ensuring the consumer consistently enjoys a quality experience when purchasing your product.

Mérieux NutriSciences can also review the legality of content of your food product label (see page 2).

QUANTITY CHECKS
(Net Mass and Volume, Gross, Drained & Washed Mass)

Prepackaged food, by law, has to bear a declaration of the quantity of the product within the packet, and that declaration has to be accurate. Products containing brine, oil or another liquid medium, or products that are coated with a glazing agent, have specific product mass specifications. Food packets containing less food than the declared mass or volume is illegal. On the other hand, overfilling may lead to unnecessary costs to producers. Mérieux NutriSciences can verify, evaluate and monitor product mass to ensure that products on the shelves comply.

FOR MORE INFORMATION OR ASSISTANCE WITH MERIEUX NUTRISCIENCES’ FOOD SCIENCE CENTRE SERVICES, CONTACT MICHELLE PRODEHL

TEL: +27 21 683 8436 / Ext: 4065
CELL: +27 82 066 0807
EMAIL: Michelle.Prodehl@mxns.com

www.merieuxnutrisciences.com/za