

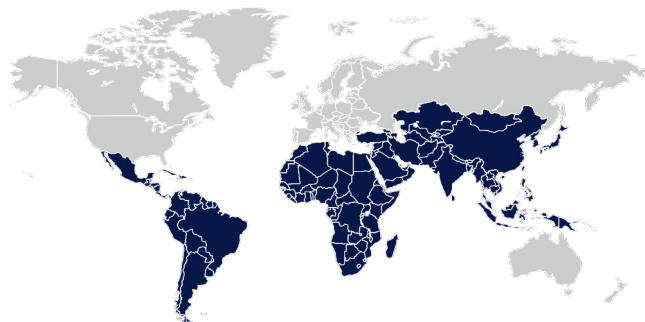
Goal

The Nutritional Quality and Food Processing Laboratory (NQL) is capable of performing physicochemical, nutritional, and culinary analyses of crops and foods. It also supports strategies to increase the impact of biofortified crops, focusing on their postharvest preservation, flour processing, and the development of food products with an improved nutritional profile. With more than 15 years of research experience, advanced techniques, and a specialized team, we offer innovative, high-quality solutions for the agri-food sector.



Where we work

NQL supports the programs at the Alliance, other CGIAR centers and other partners in **Latin America and the Caribbean, Asia and Africa.**



How we do it



Nutritional quality

We analyze micronutrients, macronutrients, and phytochemicals in crops and foods using advanced techniques like HPLC, XRF, NIRS, and UV-VIS spectrophotometry.



Nutritional impact

At NQL, we conduct studies on the retention of micronutrients during processing, and the evaluation of bioaccessibility of minerals and digestibility of protein, using in vitro methodologies.



Culinary and sensory quality

To evaluate acceptance by final consumer, we perform the physicochemical and culinary characterization of grains, roots and tubers, and sensory evaluation tests with consumers and trained panelists.



Added value

We develop and validate processing technologies for biofortified crops to produce functional flours and nutrient-dense foods, promoting adoption and consumption by farmers, consumers, and the food industry.

The impact



NQL is a leading laboratory within the CGIAR Centers, specializing in the analysis of micro and macronutrients using advanced, sustainable analytical techniques.



On average, more than **15,000 samples** are analyzed per year from the Alliance's breeding programs.



Our work provides key information to foster connections between crop breeders, consumers, nutritionists, health specialists, the food industry, and policymakers in food and nutrition security.



More than 400 technicians and specialists from national agricultural research centers, universities, and other partner institutions in Latin America and the Caribbean have been trained in NQL.

Actions for innovation



Greenchemistry and sustainability

Greener analytical techniques and chemical processes that minimize the use of high chemical risk reagents and reduce the waste of energy and materials.



Bioactive components and amino acids

Liquid chromatography to analyze carotenoids, phenolic compounds and amino acid profile, and evaluate the nutritional value and quality of proteins in foods.



Estimated glycemic index

In vitro digestibility of starch to predict the glycemic response of foods.



New functional foods

Development of foods with alternative proteins or with a low glycemic index, which not only provide basic nutrients, but also offer additional health benefits.



Nutritional labeling

Clear and precise information on the nutritional aspects, ingredients and environmental impact of foods, to facilitate compliance with legal regulations on health and sustainability.

Technologies



X-ray fluorescence (XRF)

Rapid, inexpensive and non-destructive technique that uses a high-energy radiation source to determine the concentration of minerals (iron, zinc and others) in samples of beans, rice and maize.

Impact

Support for the Alliance's breeding programs, delivering reliable and timely results for the generation of more nutritious crops.



High Performance Liquid Chromatography (HPLC)

Instrumental technique based on the separation, identification and quantification of carotenoids, sugars, phenolic compounds and organic acids in various food matrices.

Impact

Support for breeding programs and other Alliance partners for the evaluation of compounds of food and nutritional interest.



Bioaccessibility of minerals

In vitro technique used to estimate the percentage of minerals present in foods that are available for absorption in the human digestive tract.

Impact Support to different Alliance partners interested in studying the effects of compounds that can inhibit nutrient absorption and predict in vivo behavior.

Our Partnerships



To know more about the program, visit us:
Spanish only



Contact:
Sonia Gallego
s.gallego@cgiar.org