

## Poster

## Quality control in agrifood and sanitary industry

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**Keywords:** Biotechnology; quality control; UNE-EN-ISO.



### ABSTRACT

**Motivation:** One of the main areas of Biotechnology are the quality control dedicated companies at different levels, such as the agrifood, cosmetic, public health and water analysis. Innoagral is one of this companies, which works according to UNE-EN-ISO 17025: 2005. The goal of the analysis carried out here is the continuous improvement of the product as well as the fulfillment of specifications to keep the quality parameters established for the different matrices.

**Methods:** Samples provided by different companies are evaluated by physical-chemical and/or microbiological methods, which follows the protocols established by Norms UNE-EN-ISO. The main physical-chemical techniques developed are the measurement of pH, conductivity, biological oxygen demand (BOD) and chemical oxygen demand (COD), sugar content by refractometry, total protein extraction (Kjeldahl), saturated fats content and alkalinity by volumetry, total fat content extraction (Soxhlet), humidity and ash by gravimetry and quantity of cations and other compounds measurement by spectrophotometry, always under the UNE-EN-ISO norms. The microbiological techniques include the detection and counting of *Listeria monocytogenes*, *Escherichia coli*, *Legionella* spp and *Salmonella* spp, among other microorganisms. For this, the culture media, sterility sample preparation, enrichment, culture, biochemical confirmation and serological tests are always developed subject to the Norms UNE-EN-ISO.

**Results:** After many analyses the main results obtained indicated that most of the samples of drinking water satisfy the established pH ranges (RD 140/2003) and conductivity ranges (UNE-EN 27888:1994). In the case of wastewater, it usually has a higher content in COD than in BOD. The analysis of soils reveals big differences in the heavy metals proportion depending on the origin and composition of the soil, in which the amount of organic matter directly affects phosphorus levels. At the microbiological level, food analyzed follows the Regulations (CE) 1169/2011 and 2073/2005 that dictate, respectively, the standards of food labeling (with the nutrients proportion obtained in the physico-chemical tests) and the microbiological criteria, mainly for *Salmonella* (UNE-EN-ISO 6579-1: 2017), *L. monocytogenes* (UNE-EN-ISO 11290: 2018) and *E.coli* (UNE-EN-ISO 16649: 2015).

For those samples that don't reach the minimum quality parameters, the companies must set up the necessary changes to comply with the established standards.

### REFERENCES

- Norma UNE-EN ISO 6579-1:2017, Microbiology of the food chain. Horizontal method for the detection, enumeration and serotyping of *Salmonella*.  
Norma UNE-EN ISO 11290-1:2018, Microbiology of the food chain. Horizontal method for the detection and counting of *Listeria monocytogenes* and *Listeria* spp  
Norma UNE-EN 27888:1994, Water quality. Determination of electrical conductivity. (ISO 7888:1985). (Official version EN 27888:1993).