Poster

Quality System and Microbiology analysis of water

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ABSTRACT

Motivation: Water is a vital and limited resource. Part of the water from rain and the rivers is accumulated in reservoirs to its purification and distribution. Once used, wastewater is conducted to wastewater treatments plants for its treatment and return to natural courses in adequate quality conditions, completing in this way the integral cycle of water. The different water uses are regulated by distinct laws and rules, such as the Royal Decree 140/2003, which stablishes the sanitary guideline of quality of drinking water. The aim of this reglament is to ensure healthiness, quality, and purity of water by following a suitable control of the water, with the purpose of protecting the health of people from side effects of any type of contamination. According to the article 16 of this R.D, laboratories that carry out this control must have a quality management system based on the rule UNE-EN/ISO/IEC 17025, having to be accredited, or at least, having a certification of the normative UNE-EN ISO 9001. Laboratories of EMASESA are accredited for ENAC by this rule. The objectives of the training in this laboratory are: to publicise the procedures of microbiologic analysis in a laboratory of water into the business environment and to integrate the student in a quality management system based in the rule UNE-EN/ISO/IEC 17025, a rule of reference to the testing laboratories.

Methods: Microbiologic procedures to analyze and detect the presence of Escherichia coli and coliform bacteria, Enterococcus, Clostridium perfringens, Salmonella, aerobics bacteria and coliphages in drinking water and continental water (untreated and reservoir water), wastewater and treated water.

Results: In this project, the student has learnt and acquired, on a practical way, the methodology and procedures of microbiologic analysis according to R. D. 140/2003 and the international rule UNE-EN/ISO/IEC 17025: 2005.

Conclusions: The enforcement of both normatives allows EMASESA to guarantee the compliance of the legislation and the quality of the product that it offers. Moreover, in this practical course the student has learnt and assessed the benefits of a having a control system with accreditation in the quality of the water.

REFERENCES

Normativa Internacional UNE-EN/ISO/IEC 17025: 2005

REAL DECRETO 140/2003, de 7 de febrero, por el que se establecen los criterios sanitarios de la calidad del agua de consumo humano

Ciclo Integral del Agua en EMASESA