**DESIGN OF A CULTURE MEDIUM FOR THE GROWTH OF THE NEMATOIDE CONTROL**

**STRAIN CIGBC8**

Dayana Morales-Borrell1, Nemecio González-Fernández2, Eladio Salazar-Gomez3

Center for Genetic Engineering and Biotechnology. Cuba

[**1**dayana.morales@cigb.edu.cu](mailto:1dayana.morales@cigb.edu.cu) [2nemecio.gonzalez@cigb.edu.cu](mailto:2nemecio.gonzalez@cigb.edu.cu) [3eladio.salazar@cigb.edu.cu](mailto:3eladio.salazar@cigb.edu.cu)

The composition of a culture medium is one of the most important parameters to be analyzed in biotechnological processes with industrial purposes, because the growth medium represents more than one third of the production costs. The main aim of this study was to design an optimal culture medium for the growth of the nematode control strain CIGBc8. Mixture statistical experimental design was applied using the Design-Expert 10.0 Software to optimize the growth medium. The effect of different sources of carbon and nitrogen and its molar relation, as well as, the influence of the components of the modified M9 medium on the growth and biomass production of the strain was determined. It was found that the carbon/nitrogen relation does not statistically influences in the specific speed of growth (μ) and the maximum biomass concentration (Xmax). The addition of 50 mM phosphate buffer in the composition of the medium allows achieving results similar to those obtained when other components are used. An optimum concentration of 10 g/L of sucrose and 5 g/L of yeast extract was obtained at a cost of 0.10 $/L. Under these conditions, μ and Xmax were equal to 0.439 h-1 and 8.0 respectively. The designed medium allows a cost reduction of 1.08 $/L with respect to LB medium. These results constitute an important basis for continuing the biotechnological development of CIGBc8 strain as a biological product.

**Keywords:** design, optimization, culture media, nematode control