

EVALUACIÓN DEL POTENCIAL BIOFERTILIZANTE DE CONSORCIOS DE CIANOBACTERIAS EN PASTO RAYGRASS (*Lolium multiflorum*)

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EVALUATION OF THE BIOFERTILIZER POTENTIAL OF CYANOBACTERIA CONSORTIA IN RAYGRASS (*Lolium multiflorum*)

Abstract

The bio-fertilizing potential of three consortia of cyanobacteria on the annual growth and nutritional value of Raygrass was evaluated. This work was performed based on the need for biological treatment as an alternative to chemical fertilizers. Three microbial consortia with cyanobacteria (CMA, CMB and CMC) were obtained from samples collected from the bacterial mats in Pasochoa volcano. The microbial consortia were massively multiplied and kept in BG-11₀, the growth was monitored by using a spectrophotometric method and by counting in a Neubauer Chamber. In addition, a chemical fertilizer and a blank (distilled water) were used as control. The amount of the consortium of cyanobacteria to be used was determined by preliminary tests. The fertilizing capacity of the treatments was assessed through an analysis of plant height, root length and coverage in the pot. After harvesting the plants the influence of the treatments regarding the nutritional variables were examined: dry matter, moisture, protein, fiber and ash. As a result, it was found that Raygrass samples treated with CMA and CMB, showed better heights with 23,16 cm and 21,18 cm, respectively. In terms of coverage, the plants treated with CMB covered the pot by 83,8%. The root length was also improved by the use of CMB, reaching a length of 4,68 cm. Regarding the quantification of morph agronomic variables, it was found that CMA positively influences the synthesis of protein and fat in Ryegrass, yielding values of 11,74% and 0,26% respectively. CMC-treated plants showed 79,73% humidity, and a fiber content of 4,08%.

Keywords: Biofertilizer, cyanobacteria, consortia, agricultural soil

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