Agriculture Production Increase with Carbon Dioxide Seed Treatment, Phase II

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The world population grows approximately 83 million people per year, and if this progression continues, by 2050 it will reach more than 9 billion people. To meet their needs, it would be necessary to double or even triple agricultural production over the next 40 years. Observing an increase in corn productivity using CO2, the present research aimed to prove the efficiency of the treatment of seeds with carbon dioxide in soy production. I chose the soybean culture because it is one of the largest agriculture production in Brazil and the USA. I used seeds with industrial treatment and organic seeds. Industrial seed treatment occurs in a mixing equipment to adhere chemical products to the seeds, usually to control phytopathogens, initial pests and increase productivity. For this study, tests were conducted from May to July of 2017, with germination of corn and soybean seeds. The tests were carried out in germination chambers and the analysis was performed using the rules of seed analysis (RAS), determined by the Brazilian ministry of agriculture. A new methodology for corn and soybean cultivation tests was created in which 4 replicates (A, B, C and D) were divided into 6 treatment lots, thus creating 24 analysis groups that were placed in a random order in order to eliminate variables involving the soil. Each of the 24 groups had 5 planting lines, spaced 45 cm apart for soybeans and 90 cm for corn. The germination tests show that the seeds treated with carbon dioxide germinated approximately 10% more than the industrial seeds. However, in the soybean production, plants growth is very similar to corn seeds treated with carbon dioxide, leading to believe that soybean production will be higher when compared to industrial seed treatment.

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