

Title: ASSESSMENT OF DEVELOPMENT OF THE AERIAL PART, NUMBER OF LEAVES AND PLANT HEIGHT IN ONION THROUGH THE SEED MICROBIOLIZATION WITH *Pantoea agglomerans*

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Abstract:

The onion (*Allium cepa*) is an important crop in the region of Alto Vale do Itajaí / SC. Microorganisms can promote plant growth by establishing beneficial relations on their root system and can act as plant growth promoters. Aiming to evaluate the effect of microbiolization of onion seeds with *Pantoea agglomerans* in the initial development of aerial part of onion seedlings, an experiment was conducted at the Instituto Federal Catarinense - IFC / Campus Rio do Sul. In a completely randomized design with four replications constituting 10 plants each onion seeds Bola Precoce were microbiolized for 24 hours in *P. agglomerans* in suspension containing the concentration in the range of 10⁸ MacFarland and the treatment control immersed in saline solution (0.85% NaCl). After microbiolization, the seeds were placed in trays containing non-sterile commercial substrate and wrapped in plastic greenhouse at 25 ° C (± 2 ° C). After a period of 30 days was evaluated the number of leaves, plant height, fresh and dry mass of the aerial part. The results showed no statistically significant difference between the parameters evaluated. Nevertheless, in relation to the number of leaves, the treatment with *P. agglomerans* had a gain of 5.70% more than the treatment control. In the dry mass of shoot *P. agglomerans* exceeded treatment control in 7.69%. Although *P. agglomerans* have provided a greater number of leaves and a bigger weight in the dry mass of the aerial part, the other parameters obtained lower development compared to treatment control. Plants that have an increased in development of the aerial part tend to have a higher photosynthetic production rate and consequently a better development, which is a determining factor in the growth of onion. Therefore, new researches will be conducted at various stages of development of culture, as this bacterium has potencial of growth promotion, what is seen in other cultivated plants.

Keywords: *Allium cepa*, bacterium, aerial part.