# MYCORRHIZAL COLONIZATION OF CORN (*Zea mays* L. cv. AL Bandeirantes) SUBMITTED THE APPLICATION OF DOSES OF THE 2,4-D HERBICIDE

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Pesticides are a main resource of the current development model of Brazilian agriculture. But due to adverse events that can cause to human health and the environment, concerns about these products rises in importance. Corn is one of the most important crop in the world, being raw material for the industry and various products for food and feed. One of the molecules that is recommended to control invasive plants in corn crop and that has been widely used is the 2,4-D (2,4-dichlorophenoxyacetic acid). This is known for its high potential for leaching and reaching underground aquifers, presenting serious risk of environmental pollution. The establishment and development of mycorrhiza can be influenced by management adopted in the culture, and depends on the interaction between soil factors, climate and the host plant. One of the management factors that may influence the mycorrhizal establishment is the application of pesticides, including 2,4-D herbicide. This work aims to evaluate the influence of application of 2,4-D herbicide on the mycorrhiza establishment in plants of corn (cv. AL Bandeirantes). For this, we carried out an assay where the corn plants were maintained in 4L vases during 35 days after the seedling emergence. Together with the seeding, the soil was inoculated with soil containing spores of the mycorrhizal fungi *Scutellospora heterogama*, *Glomus clarum*, *Glomus etunicatum* and *Acaulospora* sp. The treatment with the herbicide consisted in the application of four doses of 2,4-D that are close to usually indicated for crop production (0.3, 0.6, 1.2 and 2.4L.ha$^{-1}$). There were three applications of herbicide distributed in three different phenological stages of the plant: 1) three fully expanded leaves; 2) five fully expanded leaves; 3) nine fully expanded leaves. The assay was conducted with five repetitions. After the growing period, the roots were separated and submitted to discoloration with KOH and HCl followed by staining with trypan blue and lactoglycerol. Then, it was determined the percentage of mycorrhzal colonization of the plant roots using the checkered plate method. The results of colonization rates were as follows: 76.2 ± 6.8% for the negative control and 70.8 ± 8.2%, 76.2 ± 13%, 76.0 ± 5.1% and 80.4 ± 9% for the doses of 0.3, 0.6, 1.2 and 2.4L.ha$^{-1}$, respectively. The results showed that the application of the usually indicated doses of 2,4-D did not influence the mycorrhizal colonization of the corn cv. AL Bandeirantes.

Keywords: *mycorrhiza*, *2,4-D*, *corn*

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