

Área: ORG**Influence of water stress and inoculation with *Azospirillum* on the flavonoid content and antioxidant activity of wheat extracts**

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Palavras Chave: *Azospirillum*, Estresse oxidativo, *Triticum aestivum* L.

Highlights

Antioxidant activity of wheat inoculated with *Azospirillum* under water stress. The antioxidant activity, especially in the wheat stem, was evaluated for total flavonoids and iron chelation.

Resumo/Abstract

Triticum aestivum L., commonly known as wheat, is one of the most cultivated cereals worldwide, recognized for its nutritional value and bioactive compounds with functional properties, particularly antioxidant activity [1]. This fact can be important alternative to increase grain production. The use of plant growth-promoting bacteria (PGPB), such as *Azospirillum brasilense*, has emerged as a sustainable strategy to enhance plant resilience to abiotic stress, including drought [2]. This study aims to evaluate the total flavonoids content and antioxidant activity of wheat inoculated with *Azospirillum brasilense* under varying water stress conditions. The research focuses on the quantification of flavonoid compounds and the assessment of antioxidant capacity using iron chelation assay [3]. Through this analysis it was possible to note that there was a significant increase in flavonoids production with the *Azospirillum* inoculation, excess water and by inoculation and excess water together. The water scarcity also caused an increase in production of that metabolites, while iron chelation activity was similar. The findings are expected to contribute to the understanding of the biochemical interactions between wheat and *Azospirillum brasilense*, highlighting the potential of this association in improving the functional value of wheat.

[1] EL SABAGH, *et al.* (2021). Salinity Stress in Wheat (*Triticum aestivum* L.) in the Changing Climate: Adaptation and Management Strategies. In **Frontiers in Agronomy** (Vol. 3). <https://doi.org/10.3389/fagro.2021.661932>

[2] CRUZ-HERNÁNDEZ, *et al.* (2022). *Azospirillum* spp. from Plant Growth-Promoting Bacteria to Their Use in Bioremediation. In **Microorganisms** (Vol. 10, Issue 5). <https://doi.org/10.3390/microorganisms10051057>

[3] MÉNDEZ-GÓMEZ, *et al.* (2016). Oxidative and antioxidative responses in the wheat-*Azospirillum brasilense* interaction. **Protoplasma**, 253(Vol. 2). <https://doi.org/10.1007/s00709-015-0826-1>

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