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Diversity of Arachnological Fauna in an Agricultural Environment: Inventory and Effect of Herbicides

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Abstract : Spiders play an important role in agroecosystems due to their great abundance. They are considered a valuable group of invertebrates in agricultural land. They are predators of insects harmful to crops, but their use in biological control requires in-depth research on their ecology. During our study, we counted a total of 768 spiders, which we were able to identify and classify into 14 families over a period between March 2021 and October of the same year. This study aims to compare a station subjected to agricultural practices, including the spreading of herbicides, with another station subjected to the same practices but without the use of phytosanitary products. The inventory shows a strong dominance of the Gnaphosidae family (75.8%). This result affirms that the proliferation of this family is very favorable to the knowledge of the fruits by limiting the populations of aphids infesting the plot, which can therefore be proposed for biological control. The comparative study of the populations of spiders in the stations studied shows the negative effect of agricultural practices on the species richness and abundance of these species; as for the diversity, this one is only slightly affected. Finally, we can note that the effects of herbicides did not cause a significant imbalance in this agroecosystem, unlike plowing, which showed harmful consequences on spiders.

Keywords : spiders, predator, species richness, herbicides, agricultural practices
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