THE IMPACT OF SI FERTILIZATION ON HEALTHY ATTRIBUTES AND YIELD OF GRAINS OF WHEAT PLANTS GROWN UNDER P DEFICIENCY

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Phenol (P) deficiency is one of the major limiting factor of wheat production at worldwide (Balami et. al. 2012). Although silicon (Si) is known to improve plant growth under low phosphorus (P) conditions (Hu et al. 2021), the impact of Si supply on nutritional quality of wheat grains at field conditions remains unclear. This study is aimed to investigate the impact of Si fertilization on healthy attributes and yield of grains of wheat plants grown under P deficiency.

Results and Discussion

At both growing seasons, Si supply enhanced grain P concentration of cv. Púrpura grown in absence of P (Figure 1), whereas grain Si concentration increased in both cultivars along the gradient of P supply (Figure 2).

Interestingly, increasing Si doses augmented phenol concentration (Figure 4) and antioxidant capacity (Figure 5) in grains of cv. Púrpura grown without P at both growing seasons. In contrast, Si decreased grain phenol concentration of cv. Fritz under P deficiency (Figure 4).

A positive effect of Si fertilization on grain yield of both wheat cultivars grown either without or with P fertilization at both growing seasons was also found (Figure 6).

References


Acknowledgments

FONDECYT Regular Project N°1201257.