World Academy of Science, Engineering and Technology
International Journal of Agricultural and Biosystems Engineering
Vol:12, No:07, 2018

Research and Innovation Centre

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Abstract : Maize is among the most economically important crops and at the same time one of the most sensitive to soil deficiency in zinc. In this paper, the impact of the foliar zinc application in the form of zinc hydroxy nitrate suspension on the micro and macro elements partitioning in maize leaves and grain was studied during spring maize season, 2017. The impact of the foliar zinc fertilization on the grain yield and quality was estimated too. The experiment was performed by the randomized block design with 8 variants in 3 replications. Seven suspension solutions whit different Zn concentration were used, including ZnO suspension and zinc hydroxyl nitrate alone or nixed with other nutrients. Fertilization and irrigation were the same for all variants. The Zn content and the content of selected micro (Cu, Fe) and macro (Ca, Mg, P and K) elements in maize leaves were determined two weeks after the first spraying (5-6 sheets), two weeks after the second spraying (9-10 sheets) and after harvesting. It was concluded that the synthesized zinc hydroxy nitrate demonstrates potential as the long-term foliar fertilizer. A significant ($p < 0.05$) effect of zinc accumulation in maize leaves by foliar zinc application during the first growth stage was found, followed by its reutilization to other plants organs during the second growth stage. Significant export of Cu, P, and K from lower and middle leaves was observed. The content of Ca and Mg remains constant in the whole longevity period, while the content of Fe decreases sharply.

Keywords : foliar fertilization, zinc hydroxy nitrate, maize, zinc
Conference Title : ICAIE 2018 : International Conference on Agricultural Infrastructure and Environment
Conference Location : Paris, France
Conference Dates : July 19-20, 2018

Open Science Index, Agricultural and Biosystems Engineering Vol:12, No:07, 2018 publications.waset.org/abstracts/94916.pdf