

## The study of manganese content in soil, wheat grain and wheat plants

\*Maria CIOROI and Traian FLOREA

*“Dunarea de Jos” University Galati, Romania*

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**Abstract.** Manganese, as well as iron, copper, zinc, molybdenum, boron, are considered essential to life, they could be called “bioessential” elements. The trace elements found in plants are organically bound, complexed and free ions. Among the trace elements needed for a normal growth of the plants, manganese is important, playing a definitive role in the metabolism of plants, animals and man. This paper presents a study of total manganese in soil, wheat grain and wheat plants, using the spectrophotometric method. A kinetic of manganese concentration in the growth of wheat plants, in soil with known manganese content, for one-month period was done. The total manganese from the soil, from the initial wheat grain and wheat plants grown only in distilled water was established too. It was noticed that the wheat plants have grown slowly in distilled water, for ten days but the growth became even slower afterwards. The conclusion is that the manganese content of the soil is significant for the growth wheat plants. The results are in agreement with the scientific literature, nevertheless, there are some differences. These quantitative differences are due to the pH of soil, the oxidation-reduction potential of soil, the effect of soil’s organic matter on micronutrients. Another factor which influences the quantity of manganese in wheat plants is the effect of salt and carbonate soil content on micronutrients solubility and micronutrients absorption by plants.

*Keywords:* manganese, spectrophotometric method, wheat grain, soil, plants wheat.

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