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Effect of Magnesium Deficiency on Growth and Chlorophyll Content in Two Chickpeas Varieties under Drought Condition

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Plants need the nutrients during growth and development absolutely. Magnesium (Mg) is one of the most important nutrients involved in many enzyme activities and structural stabilization of tissues. Mg plants also affect the secondary metabolism. However, very little is known about the role of Mg in plant secondary metabolism. In addition, the central atom of the chlorophyll molecule in plants is the Mg element. This suggests that the mechanism of photosynthesis of the plant will be affected by lack of Mg element.

In this study, changes in the chlorophyll contents, root and shoot lengths were determined in two kinds of chickpea (drought-sensitive Akçin and drought-resistant Uzunlu) varieties under Mg deficiency conditions.

Our results showed that the chlorophyll content decreased by 3%, stem length decreased by 9% and root length decreased by 20% in Akçin while increased in Uzunlu by 14%, 6% and 6% respectively under Mg deficiency and drought conditions.

As a result, it has been determined that drought tolerance provides protection for Mg deficiency during growth of these chickpea varieties.

Key words: Magnesium deficiency, chickpea, drought, growth

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