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Normalized Difference Vegetation Index and Normalize Difference Chlorophyll Changes with Different Irrigation Levels on Sillage Corn

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Abstract : Normalized Difference Vegetation Index (NDVI) is a widely used index in the world that provides reference information, such as the health status of the plant, and the density of the vegetation in a certain area, by making use of the electromagnetic radiation reflected from the plant surface. On the other hand, the chlorophyll index provides reference information about the chlorophyll density in the plant by making use of electromagnetic reflections at certain wavelengths. Chlorophyll concentration is higher in healthy plants and decreases as plant health decreases. This study, it was aimed to determine the changes in Normalize Difference Vegetation Index (NDVI) and Normalize Difference Chlorophyll (NDCI) of silage corn irrigated with subsurface drip irrigation systems under different irrigation levels. In 5 days irrigation interval, the daily potential plant water consumption values were collected, and the calculated amount was applied to the full irrigation and 3 irrigation water levels as irrigation water. The changes in NDVI and NDCI of silage corn irrigated with subsurface drip irrigation systems under different irrigation levels were determined. NDVI values have changed according to the amount of irrigation water applied, and the highest NDVI value has been reached in the subject where the most water is applied. Likewise, it was observed that the chlorophyll value decreased in direct proportion to the amount of irrigation water as the plant approached the harvest.

Keywords : NDVI, NDCI, sub-surface drip irrigation, silage corn, deficit irrigation
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