Identification of Water Stress of Plants Using Image Processing

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Low Leaf Water Content (LWC) levels in plants lead to water stress, and the leaves become wilted. Most farmers use slight wilting as the visual indicator to water their plants. Though the researchers have studied LWC of plants extensively using remote sensing and complex methods, the agricultural industry cannot use them as they are complex and costly. This paper presents a simple method of recognizing water stress of leaves using leaf images taken by a smartphone. Our initial experiment on a large sample of mung bean leaves indicates that RGB values of images are related to water stress. The method would be beneficial to the agricultural industry as once further developed; it could be used to determine the watering time point of plants. The process can be automated by capturing the images by a camera mounted on a land or an aerial robot and processing them online.

Keywords: *Image Processing, Leaf Water Stress Recognition, LWC, RGB Decomposition*

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