

Recovery potential and nutrient uptake behavior of Chilli plants (*Capsicum annum* L.) exposed to soil moisture stress: indication for water and fertilizer management

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Soil moisture deficit has numerous impacts on crop production. Therefore, this study was aimed at investigating the recovery potential of Chilli plants (*Capsicum annum* L.) var. MI2 exposed to soil moisture stress as 25% water holding capacity (WHC), 50% WHC and 100% WHC (control) with stress cycles as 2, 7, 14 and 21 days for each treatment except the control. Eighteen plants in each treatment were arranged in a completely randomized design as a pot experiment under green house condition. Level of survival and growth parameters were assessed. Nutrient uptake behavior under the soil moisture stress was studied under 50% WHC by using Lithium as a non-radioactive tracer. About 40% plants survived under 2-d cycle and the rest died in 25% WHC. More than 50% of the plants survived in 2-d and 7-d cycles in 50% WHC. No significant difference in growth performances were found between the plants grown in 50% WHC under 2-d cycle and the control. Flowering was delayed and the number of flowers were significantly low in the stress treatments except in 2-d and 7-d cycles in 50% WHC compared to the control. Lithium uptake was reduced by 13.5% and 25.5% in 2-d and 7-d cycles in 50% WHC respectively compared to the control. Results showed that chilli plants in 50% WHC with 7-d stress exposure were able to survive and were partially recovered while the plants in 2-d stress in 50% WHC were totally recovered. Also, high amount of fertilizer application under stress condition does not work out to a satisfactory level. Therefore, water and fertilizer application should technically be managed in the presence of soil moisture stress.

Keywords: Soil moisture stress, Lithium, plant growth, survivability

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