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Chlorophyll content and the expression pattern of ERF transcription factor gene in leaves and roots of wild corn under flooding treatment

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Abstract

The origin of wild corn (teosinte) is distributed in the Northwest coastal pacific area of Central America, including Mexico, which is a wetland area of 5 to 6 months per year. Depending on these climate characteristics, wild corn is genetically resistant to flooding condition. In order to evaluate the availability of flooding resistant genes of these wild corns, we examined the physiological responses after the flooding treatment in the early stages of the growth of various wild corns. The difference of chlorophyll content between flooding untreated and flooding treatments (untreated chlorophyll content - humidified chlorophyll content) was the highest in chlorophyll content in the case of B73, the common corn. In the middle leaf, *Zea mays subsp. Parviglumis*, *Zea mays subsp. Mexicana*, *Zea mays subsp.*, *Zea perennis* decreased significantly. In the lower leaves, *Zea mays sub* and *Zea nicaraguensis* showed the lowest content compared to B73. PCR analysis was performed using 34 primers divided into two groups, top and bottom. In the wild corn, pyruvate decarboxylase 2 in root and alcohol dehydrogenase 1 in shoot showed the difference in the reaction.

Keywords: teosinte, corn, flooding, tolerant

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