

Effect of Management Methods in Chilling Injury of Sugarcane Fields

I. Roozbahani^{1*}, M. Meskarbashee², M. Nabipour³ and H. Hamdi⁴

1.* **Corresponding Author:** Graduate Student, Department of agronomy and plant breeding, Shahid Chamran University of Ahvaz (iman.roozbahani@gmail.com)

2,3. Associate Professor, Department of agronomy and plant breeding, Shahid Chamran University of Ahvaz

4. Member of Sugarcane Research and training institute

Received: 28 November 2010

Accepted: 2 May 2012

Abstract

Sugarcane is a tropical plant and a member of the poaceae family which, despite its low tolerance to cultivation in chilly climates shows no resistance to planing them in subtropical region. In order to evaluate different management methods in sugarcane fields damaged by cooling and yield reduction, a completely randomized block design (RCBD) was carried out with 3 replications and the 4 treatments (CP 48-103 cultivar) in 2008-2009 in Amirkabir Sugar cane company in the south of Ahvaz. The treatments were cutting of plant residue (Base Cutting), burning, application of Cytokinins hormone, and control. The results showed that the treatments had no significant differences in stalks numbers while the treatments of hormones and Base Cutting were significant in height, and the Base Cutting treatment had a maximum height. The Base Cutting, Burning and hormones treatments had significant differences in chlorophyll rate of leaf blade. Qualitative properties such as Recoverable Sugar (R.S) marked no significant differences between other treatments. The sugarcane yield showed a significant difference, where the treatment of Base Cutting had highest yield, but in the case of sugar yield production there were no differences between the treatments. Control, cutting of plant residue, burning and application cytokinins hormone treatments yield were 55375, 57625, 56562 and 49125 kg/ha cane and 4651, 4955, 4049 and 4092 kg/ha sugar, respectively. Results indicated that when chilling occurring injury, the suitable economic method is leaving the injured fields without any field practices.

Keywords: *Cane Base Cutting, Cane Burning, CP 48-103 cultivar, Cytokinins Hormone*