TOLERANCE OF SWEET CORN TO BROADCAST FLAMING AT DIFFERENT GROWTH STAGES. Santiago M. Ulloa*, Avishek Datta, Stevan Z. Knezevic, Goran Malidza, and Robert Leskovsek. Graduate Student, Post Doctoral Research Associate, and Associate Professor, Haskell Agricultural Laboratory, University of Nebraska, Concord, NE 68728, USA; Research Associate, Institute of Field and Vegetable Crops, M. Gorkog 30, Novi Sad, 21000, Serbia; Graduate Student, Agricultural institute of Slovenia, Hacquetova 17, 1000, Ljubljana, Slovenia.

Propane flaming could be a potential alternative tool for weed control in organic sweet corn production. However, sweet corn tolerance to broadcast flaming must be determined first in order to optimize the use of propane. Therefore, field studies were initiated at the Haskell Agricultural Laboratory, Concord, NE in 2008 and 2009 to determine sweet corn response to five propane rates applied at three different growth stages, including: V2 (2 leaves), V5, and V7. The propane rates included were 0, 12, 24, 42, and 75 kg/ha (0, 2.5, 5, 8.5, and 15 gal/acre). Flaming treatments were applied utilizing an ATV mounted flamer moving at a constant speed of 6.5 km/h (4 m/h). The response of sweet corn to propane flaming was evaluated in terms of visual injury ratings (1, 7, 14, and 28 DAT), plant height reduction, effects on yield components (plants/$m^2$, tillers/plant, cob/plant, cob length, and numbers of kernels/cob), and fresh marketable yield loss. The response of different growth stages of sweet corn to propane rates was described by log-logistic models. Based on yield reduction, V7 was the most tolerant and V2 was the least tolerant stage for broadcast flaming. For example, a 5% yield reduction was evident with 23, 25, and 36 kg/ha rate of propane for V2, V5, and V7 growth stages, respectively. These results suggest that flaming has a great potential to be used effectively in organic sweet corn production. santiago@huskers.unl.edu

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