FIELD PERFORMANCE OF FLAMING HOOD VS OPEN TORCH. Chris A. Bruening*, George Gogos, Robert Leskovsek, Santiago M. Ulloa and Stevan Z. Knezevic. Graduate Student, Professor, University of Nebraska, Lincoln, NE 68588; Graduate Student, Agricultural Institute of Slovenia, Ljubljana, Slovenia; Graduate Research Assistant, Assistant Professor, Haskell Agricultural Laboratory, University of Nebraska, Concord, NE 68728.

The ultimate goal of any weed control treatment is to obtain the desired level of weed control at a reasonable cost, and that is no different for the thermal weed control method of flaming. A flaming hood, which contains and concentrates the heat produced from the combustion of propane, can help to reach that goal. There have been several flaming equipment designs in the past that have utilized a hood of some type. Our team designed a new hood that is simple in operation and fabrication, yet very effective in maintaining flame stability and in containing the heat. Two field studies were conducted in 2009 at the Haskell Ag Lab of UNL, with the objective to compare the new hood design against a common open torch. Five propane rates (0, 19, 29, 41, and 56 kg/ha) were used, and flaming treatments were applied utilizing an ATV mounted flamer moving at a constant speed of 4.8 km/h (3 mph). Each study was arranged in a randomized complete block design with three replications. A total of six plant species were used in the study: field corn, soybean, velvetleaf (*Abutilon theophrasti*), ivyleaf morningglory (*Ipomoea hederacea*), common ragweed (*Ambrosia artemisiifolia*), and green foxtail (*Setaria viridis*). The response of each species to propane flaming was evaluated in terms of visual injury ratings (1, 7, and 14 DAT). The new hood design offered the greatest benefit in control of common ragweed, resulting in ED_{90} (90% injury) values of 46 kg/ha and 6 kg/ha for the open torch and flaming hood, respectively. On average, the new hood design decreased the ED_{90} values by 50%. (ggogos1@unl.edu)