

PERFORMANCE ADVANTAGES OF FLAMING HOOD. Chris A. Bruening*, George Gogos, Santiago M. Ulloa, and Stevan Z. Knezevic. Graduate Student, Professor, University of Nebraska, Lincoln, NE, 68588; Graduate Research Assistant, Associate Professor, Haskell Agricultural Laboratory, University of Nebraska, Concord, NE 68728.

Utilizing a hood in flaming equipment has several advantages that can be readily observed in the field. A flaming hood can offer a higher quality and more consistent level of weed control by better utilizing the combustion heat, and when compared with a common open torch, a flaming hood can obtain the same level of weed control with less fuel. In addition, utilizing a hood in flaming equipment increases safety and enables weed control even under relatively windy conditions. These advantages in the field were observed in our previous studies. In order to gain a better understanding of the flaming hood characteristics, a laboratory study was performed in 2008. The objective was to collect a range of temperature measurements in order to describe how the new hood design compared to a common open torch in temperature distributions and maximums. Based on the results, the new hood design maintained higher maximum temperatures and a larger high temperature core over a significantly longer and wider path. For example, 80 cm away from the torch exit the hood maintained an almost uniform temperature of 800°C over the entire hood cross-sectional area, while the open torch had only a small region at 600°C and the perimeter temperatures had fallen below 400°C. (ggogos1@unl.edu)