WEED TOLERANCE TO FLAMING. Stevan Z. Knezevic and Santiago Ulloa*. Associate Professor and Graduate Student Haskell Ag. Lab., University of Nebraska, Concord, NE, 68728-2828.

Organic producers rank weeds as the most important pests that limit their crop production. In order to optimize propane use as a weed control tool, the objective of this study was to collect a baseline data on weed tolerance to broadcast flaming. Field studies were conducted in 2007 utilizing six rates of propane and ten major weed species in northeast Nebraska, including: Venice mallow (*Hibiscus trionum*), waterhemp (*Amaranthus rudis*), field bindweed (*Convolvulus arvensis*), kochia (*Kochia scoparia*), Ivyleaf morning-glory (*Ipomoea hederacea*), velvetleaf (*Abutilon theophrasti*), redroot pigweed (*Amaranthus retroflexus*), barnyardgrass (*Echinocloa crus-galli*), green foxtail (*Setaria viridis*) and yellow foxtail (*S. glauca*). The propane rates included: 0, 12.1, 30.9, 49.7, 68.5 and 87.22 kg/ha (0, 2.5, 6.5, 10.5, 14.4 and 18.4 gal/a). Flaming treatments were applied utilizing an ATV mounted flamer moving at a constant speed of 6.5 km/hour (4 MPH). Species response to propane rates were described by log-logistic models based on relative dry matter for each weed species. Overall response to flame varied among the species, growth stages and propane rate. Broadleaf weeds were more susceptible to flames than grasses. Propane rate of 50-70 kg/ha provided 90% control of most broadleaf species. Although, 70-90 kg/ha provided 80% control of grasses, none of the propane rates provided 90% control. Flaming has a potential to be used effectively in organic agriculture (sknezevic2@unl.edu).

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