

EFFECT OF POSTEMERGENCE HERBICIDES ON FIELD AND SILAGE CORN BIOMASS ACCUMULATION AND BIO-ENERGY QUALITY. Wesley J. Everman, Bradley J. Love, Jacob Gebhardt, and Andrew J. Chomas, Assistant Professor, Graduate Research Assistant, Field Research Assistant, and Research Technician, Department of Crop and Soil Sciences, Michigan State University, East Lansing, MI 48824-1325.

Increased interest in using corn as a renewable energy source for cellulosic ethanol production raises several questions about best production practices. Several herbicides have been shown to have an adverse affect on growth of corn when applied at labeled rates. A study was established in 2008 and 2009 at the Michigan State University Agronomy Farm in East Lansing, MI to determine if postemergence herbicides labeled for use in corn affect biomass accumulation and cellulosic ethanol production. Silage and field corn hybrids were planted in a split plot design with a randomized complete block arrangement of treatments. POST applications were applied at the V4 growth stage to both silage and field corn. Herbicide treatments consisted of atrazine at 1 lb a.i./A plus COC at 1 qt/A, 2,4-D amine at 0.475 lb a.i./A, bromoxynil at 0.375 lb a.i./A, a pre-mix of dicamba plus diflufenzopyr at 0.175 lb a.i./A plus NIS at 0.25% v/v and AMS 17 lb/100 gal, mesotrione at 0.09 lb a.i./A plus COC at 1% v/v and AMS at 8.5 lb/100 gal, nicosulfuron at 0.03 lb a.i./A plus COC at 1% v/v, and a non-treated plot maintained hand weed-free. Crop injury, height and stage measurements were taken every 2 weeks following herbicide application. Injury was observed in plots treated with 2,4-D and bromoxynil in both the field and silage corn hybrids. Corn heights and biomass yield differences at the end of the season were dependent upon hybrid.