Western Illinois University
2021 Thomas E. Helm Undergraduate Research Conference

Abstract

Live Poster Session

Major: Agriculture

Faculty Mentor: Mark Bernards

Determining the Optimal Rate of Fatty Acid Based Herbicide to Control Weeds Compared to Glufosinate

Alexandria Post

Elaina Crawford

Poster Presentation
Determining the Optimal Rate of Fatty Acid Based Herbicide to Control Weeds Compared to Glufosinate
Alexandria Post and Elaina Crawford
Faculty Mentor: Mark Bernards
Agriculture
There are herbicides that are based off fatty acids and soaps that are used in organic production. These herbicides are most effective where the herbicide makes direct contact with the plant tissue. Glufosinate is an active ingredient in herbicides that are commonly used in conventional agriculture production that with different formulation may qualify for organic certification. The basis of the experiment is to determine the relationship between application rate and application volume influence on the control of Setaria faberi (giant foxtail), Chenopodium album (common lambsquarters), and Amaranthus tuberculatus (waterhemp). The herbicide we used to conduct this experiment is AXXE, an ammonium nonanoate herbicide. Using a single-tip spray chamber we applied three different application rates of AXXE at three different volumes. In addition to spraying two different application rates of Liberty 280 SL with added AMS to compare to the AXXE. After the application necrosis rating were performed on days two, nine, and fourteen to calculate level of control. In addition, to collecting the fresh and dry weight of each plant for further data of how the weeds were controlled. This data was used to determine what rates were most effective to control the weeds.