**Modeling Change of Corn and Soybean Production in Shelby County, Kentucky from 2011 and 2019**

William C. Lyons, Buddhi R. Gyawali

College of Agriculture, Community, and the Sciences, Kentucky State University, Frankfort, KY 40601

 The United States is the world’s largest producer and exporter of several agriculture commodities; the two largest exports are corn and soybeans. According to the United States Department of Agriculture National Agricultural Statistics Service, as of September 2020, corn production in Kentucky is forecast at 259 million bushels, up 6% from 2019. Soybean production is forecast to be 101 million bushels, up 30% since 2019. Shelby County is a semi-rural county in Kentucky consisting of 983 km2, located in the interior plateau ecoregion, and receives average annual precipitation amounts of 42 inches. Corn and soybeans are a powerful economic force with global impacts. Regionally, corn and soybeans are the driving force for livestock feed production and other industrial applications. Due to the importance of these crops, monitoring the production of these commodities is vital to assisting farmers and aiding policymaking. Remotely sensed multispectral data provides the potential to access the production and health of corn and soybean production in Shelby County, Kentucky, and determine the early agricultural forecast accuracy. This study aims to develop procedures for utilizing geospatial applications to aid in crop production and provide reliable methods of assessing the accuracy of commodity forecast.