Antioxidant Properties of Oklahoma Grapes
Eric T. Stafne¹*, Sandra Peterson², and Edralin A. Lucas²
¹360 Agricultural Hall, Department of Horticulture and Landscape Architecture, Oklahoma State University, Stillwater, OK 74078, ²422 HES, Nutritional Sciences Department, Oklahoma State University, Stillwater, OK 74078

Cardiovascular disease (CVD) is a major public health concern with an associated health care cost of approximately $438.1 billion and is the leading cause of death in the United States each year. Atherosclerosis, the formation of fatty deposits in the artery, is the common cause of CVD. Numerous studies have consistently linked diets rich in fruits and vegetables to reduced CVD risk. Grapes constitute one of the major sources of phenolic compounds among different fruits. Findings from human studies have shown that consumption of grapes is beneficial to the heart; therefore, it is important to evaluate grape varieties grown in Oklahoma and determine the potential of each in preventing CVD. The objective of this project was to examine the anti-inflammatory properties of juice from grape varieties grown in Oklahoma. Thirty-three varieties of Oklahoma grapes were tested for their total phenolic content and antioxidant capacity as assessed by Folin assay and ferric reducing ability assay (FRAP), respectively. Grapes were either smashed or pureed for the analyses. Genotypes with the highest phenolic content (>100 mg/mL) when pureed were ‘Corot noir’, OK249, ‘Petit Verdot’, ‘Rubaiyat’, ‘Sunbelt’, ‘Riesling’, and ‘Zinfandel’. Those with the highest antioxidant capacity (>10000 µM) when pureed were ‘Corot noir’, OK249, ‘Petit Verdot’, and ‘Zinfandel’. When the smashed technique was employed, the genotypes with the highest phenolic content (>60 mg/mL) were ‘Chardonel’, ‘Cynthiana’, ‘Frontenac’, OK249, ‘Petit Verdot’, and ‘Rubaiyat’. The highest for antioxidant capacity (>5000 µM) were ‘Rubaiyat’ and ‘Vignoles’.