Intern: Kaellen Miller
Major: Chemical Engineering
School: University of Nebraska-Lincoln

Background
The McCain Foods Grand Island facility is a small-scale food production plant specializing in the production of onion rings and other various appetizers. The plant produces approximately 400,000 pounds of onion rings, ranging from beer battered to breaded onion rings and other appetizer products per day including fried pickle chips, fried green beans, French toast sticks, and fried cream-corn nuggets.

Project Description
McCain Foods Grand Island is taking a variety of pollution prevention steps in order to become a more sustainable production facility. The goal over the summer of 2018 was to reduce the large amount of onion waste leaving the facility, while also increasing the total volume of packaged product. This was accomplished by setting a master rate (in the number of onions per minute) for Line M and finding correlations between the bulb count (the number of onions in 50 pounds) and the number of onion slabs per minute and the bulb count supplied by the onion suppliers. Eventually, the master rate will be based on the number of onion slabs per minute; this coincides greatly with the correlations performed.

Pollution Prevention Benefits
Throughout the duration of the summer internship, data was collected and analyzed in order to complete the project description. Both tasks will assist the facility in preventing pollution by reducing waste outputs and their carbon footprint. A summary of the pollution prevention benefits can be seen in **Error! Reference source not found.**.

Table 1. Pollution Prevention Benefits

P2 Opportunity	Cost Savings ($/yr.)	Annual Benefits	GHG Reduction (MTCO2e/yr.)
Master Rate	$132,000 $40,000 $7,825	1,650,000 lbs. increased packaged volume 245,000 lbs. decreased raw material volume 1,252,075 lbs. decreased waste	108
Bulb Count Correlations	$3,675	46,000 lbs. packaged volume increase	-
Total	**$183,500**	**1,252,075 lbs. decreased waste**	**108**