



Capstone Design Project Abstract

Project Title: Small-scale Automated Peanut Processing System (SAPPS)

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The purpose of our small-scale automated peanut processing system project is to bring farmers closer to consumers and to enable them to explore new revenue streams with increased profit margins on their peanut harvests. This will allow peanut farmers to easily produce market-ready peanut products to sell at a higher rate of return rather than selling their crop wholesale. Currently, the majority of family-owned peanut farms are restricted to making profits by selling their peanuts wholesale or through buying points, which translates to about 30 cents per pound. By developing a system that allows the farmers to fully process their harvested, shelled crop, we are providing the opportunity for them to sell peanut products in venues such as farmers' markets, which have much higher profit margins than wholesale. Once we felt we understood the overarching goal of the project, we began to hone in on the key specifications of our system. These included: cost (for the consumer), reliability, replicability, quality of finished product, and adaptability. With making this idea a reality, we had to create a development of our four-phase processing system. This was an achievement for our group as it solidified the trajectory for the rest of the year, and narrowed our effort to specifically forming a solution to our problem. To finalize the four-phase plan of frying, seasoning, mixing, and packaging, we broke each concept down individually to make decisions on how each process will operate and be assembled. After looking at all the options we came up with our current prototype.

Our system concept focused on achieving a few main objectives; we wanted to create a system that was automated, affordable, and simple to use and maintain, while staying within the bounds of FDA & USDA constraints. Within our entire prototype, we have to ensure that every transition and phase coincides with the FDA and USDA regulations of smooth, stainless steel surfaces that will not allow food buildup or rust to occur on surfaces that come in contact with the product.