

Potato Selection Optimization Project Proposal

R. D. Offutt Company

Offutt Farms, headquartered in Fargo, North Dakota is a leading producer of potatoes in North America with operations in the Upper Midwest and Pacific Northwest. Each year, Offutt Farms plants and harvests thousands of acres of potatoes in Minnesota and western Wisconsin which are contracted for sale to the LambWeston/RDO Frozen processing plant in Park Rapids, MN. LambWeston, is a leading supplier of frozen potato products to restaurants and retailers around the world. R. D. Offutt Company, Offutt Farm's parent company, and LambWeston jointly operate the Park Rapids plant to produce frozen potato products for an assortment of retail and quick-serve restaurants.

Each restaurant specifies a set of quality characteristics which the frozen product must meet. Most of the quality characteristics relate to size, the number of visual blemishes or defects allowed, and the overall product color after frying. When processing French fries for retail consumption, the plant produces a variety of cuts and styles, which are based on different set of quality characteristics. Each set of quality characteristics are referred to as a product "label". Overall, there are nearly 15 "label" profiles the plant can expect to produce in a given processing year.

The challenge for the processing plant is to select, blend, and process potatoes from various storage locations while abiding by three key principles: a) fulfill orders with product meeting label specifications, b) improve utilization of substandard and compromised raw lots with sufficient high-quality raw to meet product specifications, and c) make source selections which do not adversely affect the remaining stored potatoes or exacerbate compromised or degrading raw product.

Offutt Farms is in search of decision support tool for identifying combinations of raw product suitable for blending to meet "label" specifications. A solution would minimally have a short-term planning feature and, if possible, a long-term planning feature. In the short term, the tool should recommend selection of raw product to meet a known production schedule up to one month with a specific label processing order and required quantity. A long-term function would accommodate the association of raw lots to specific product labels for processing over a loosely defined production schedule ranging from six to nine months. In the long-term planning function, the weekly production schedules are outlined, but are likely subject to change as new information emerges.

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