

CURATION FOOD, INC.

Modeling Supply Chain Risks for Agricultural Sourcing

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Curation Foods, Inc., a \$550M enterprise, is a natural foods company dedicated to making fresh, plant-based foods with 100% clean ingredients accessible to as many people as possible. Curation Foods is a different kind of consumer packaged goods company, with leading brands like Eat Smart® superfood salad kits and Yucatan® and Cabo Fresh® guacamole, and the premium line O Olive Oil and Vinegar®.

The Tauber team aimed to solve two challenges: (1) predicting harvest dates for broccoli when 3 weeks out from harvest and (2) quantifying the optimal oversupply percentages for broccoli plantings to maximize yearly savings and reduce costs. Significant challenges experienced by the company include lacking clear data collection strategies, weather factors affecting harvest and quality, inconsistent supply planning, and high levels of demand volatility.

The Tauber team created regression and financial models to address and solve these challenges. To address the problems of harvest date subjectivity, climate change, and record keeping, the team built the “Days to Harvest” Dashboard. This tool analyzes historical weather patterns and a series of other inputs to determine when broccoli fields will be ready to harvest 3 weeks out from anticipated harvest dates. Two prediction models based on a multiple linear regression were built for California and Arizona. The R-squared for the California and Arizona regressions were 90.4% and 87.2%, respectively. Testing of 69 plantings in the Salinas Valley confirmed that the model is 97% accurate within +/- 6 days of the actual harvest date. The dashboard also includes a centralized database with information on all harvests, ranches, growers, and crop varieties to standardize the procurement office’s data collection efforts.

The oversupply strategy ultimately produced two main recommendations using the newsvendor statistical model – one for achieving a fill rate of 98.0% and one for maintaining the historical fill rate of 96.3% for broccoli products. These two recommendations yielded an expected reduction in average yearly procurement expenditures of \$627K and \$2,125M respectively. Furthermore, the oversupply strategy model showed that there was great potential for increased financial savings from improving forecasting capabilities (ranging between \$550K and \$1.2M in yearly financial savings based on the reduction in forecasting error) and that such efforts should be pursued.