

Cranberry cooperative association



**ASSIGN
BUSTER**

National Cranberry Cooperative, a processing and marketing firm of berries, is facing challenges related to operational efficiency, high overtime cost and lengthy queues of delivery truck. Analyses of the case lead us to the following propositions to alleviate these problems:

- Channel restructuring: Current practice of manual grading misclassifies significant amount of berries as a superior grade that leads to overpayment of premium meant for class 3 berries. Our analysis shows a strong case for installing a colour grading system which will reduce mislaid payments. The colour grading system will lead to saving that will pay for the cost of installation of the device within one year.
- Assembly line:

Trend shows that percentage of water harvested berries that currently stands at 70% of the berries delivered to the plant will keep increasing in the future. In our existing set up the dryers that process wet berries are a bottleneck at 600bbls/hr capacity. Our analysis recommends installation of 2 additional driers which will augment the drying capacity to 1000bbls/hr. This will be in line with forecast that quantity of wet berries arriving at the plant will increase in the coming time.

Separator is common resource for handling both wet and dry berries with capacity of 1200bbls/hr. After installing an additional dryer facility, separator becomes a bottleneck at 1200bbls/hr. We propose installation of one additional separator which will increase separation capacity to 1600bbls/hr

- Resource planning – Current mix of staffing level leads to excess overtime payment. We propose to run two shifts during the peak time with mix of non

seasonal and seasonal workers to cater seasonal demand and save manpower cost

- Bins : to cater for the increase in the amount of wet berries (Exhibit 1)

The cost benefit analysis for the propositions made is as follows | Proposition | Cost | | Color Grading System |+337500 | | Convert two dry bins to wet |-20000 | | Install two dryers |-120000 | | Introduce Shift |-25200 | | Total |+172300 |

With rapidly growing technology, we foresee an increase in the wet berry production, the changes suggested resonate that thought process. Analysis

Assumptions : Our analysis is made on the following assumptions : - Supply of cranberries -18000 barrels/ day

- Supply of Wet cranberries – 70% and Dry cranberries – 30%
- Wet and Dry cranberries are taken up as 2 different products while processing
- Supply of cranberries is staggered over 12 hours each day
- Plant operates throughout the day without disruption
- Steady state of operations is assumed (that the process is always full)
- Shared resources between wet and dry processes will be split in the ratio of 70-30 for capacity calculation

- Kiwane dumpers usage is assumed to be divided in 3 being allocated to wet cranberries and 2 allocated to dry cranberries
- All the common holding bins will be used for wet cranberries
- 2 de-chaffing units are dedicatedly used for wet cranberries and 1 for dry

Analysis The process flow diagram of the cranberry processing is shown in exhibit 1 and the calculation of process capacity and utilization is shown in the exhibit 2. Common process can be switched from processing one type of cranberry to another seamlessly.

Colour grading system: It has been identified the colour grading system erroneously classed a grad 2b berries into a class 3 berries in 50 percent of the occasion. This lead to mislaid premium to the suppliers. Our analysis of a business case for installing a novel colour grading system is as follows

Premium Paid = 1.5 dollars/barrel for Type 3

In 1995, 450,000 barrels of berries were potential grade 3 berries. 50 percent or 225,000 barrels of berries were incorrectly identified leading to excess payment of: $225000 * 1.5 = \$337,500$ A light meter costs \$40,000 to install with a lead time of 6 months. A light meter operator is required to man the machine. However, as the operator is paid same as the Chief Berry receiver. As the chief berry received will be replaced by light-meter operator at the same pay-grade the business will not incur any additional cost in manning the machine.