

NATIONAL CRANBERRY COOPERATIVE

case assignment one

WHAT'S THE PROBLEM?

THERE'S NOT ENOUGH CAPACITY TO PROCESS WET BERRIES WITHIN 11 HOURS.

- 1 *truck backup*
- 2 *significant overtime expenses*
- 3 *high inventory levels*

ROOT CAUSE

DRYERS ARE THE BOTTLENECK OF THE SYSTEM.

600
BBLS/HR
dryer capacity

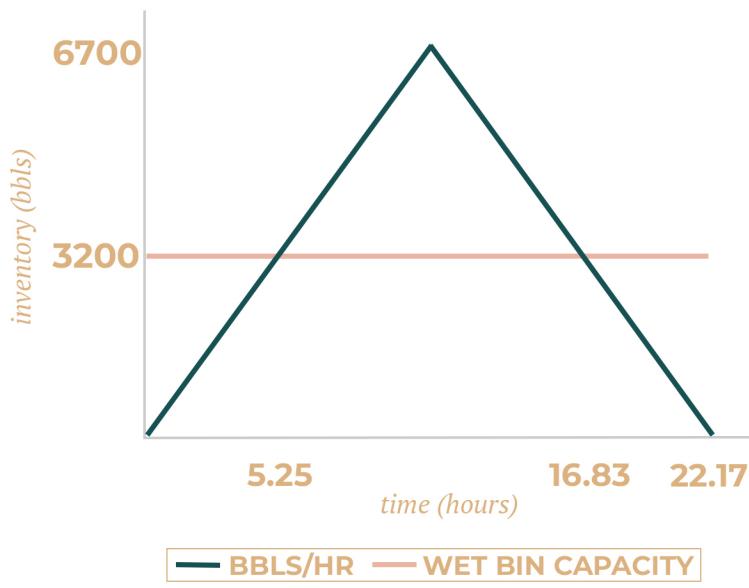
1209
BBLS/HR
demand



POTENTIAL
BOTTLENECKS:
separators

kiwanee dumpers

INVENTORY BUILDUP



ASSUMING DEMAND OF 19,000 TOTAL BERRIES
WITH 70% BEING WET BERRIES

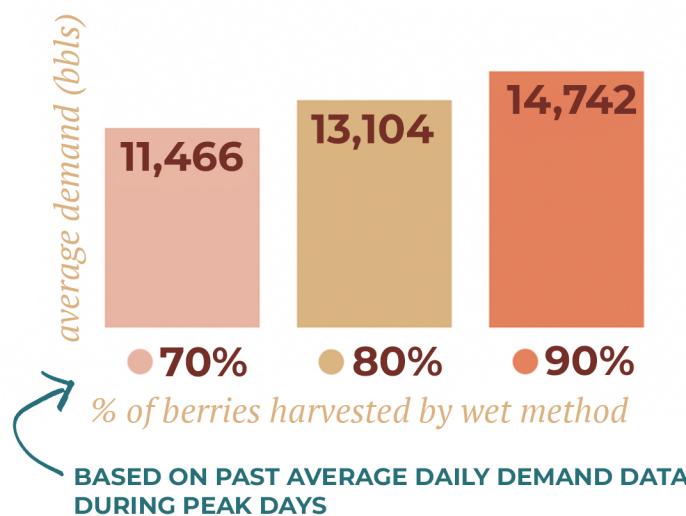
- ▶ **22.17 HOURS**
to unload & process all berries
- ▶ **12:15 PM**
wet berry bins fill up
- ▶ **46.67 TRUCKS**
in the queue at the end of shift
- ▶ **12:50 AM**
last truck unloaded

THE ENTIRE SYSTEM IS CAPACITY CONSTRAINED.

demand of wet berries exceeds dryer capacity

ALTERNATIVES

1 DON'T CHANGE ANYTHING



223%
LOAD FACTOR

if on an average peak day, wet berries grew to 90% of total demand and the operation didn't change

**HARVESTING CRANBERRIES
USING THE WET METHOD IS
GROWING IN POPULARITY.
KEEPING THE SYSTEM THE SAME IS
NOT A SMART LONG-TERM SOLUTION.**

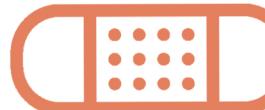
2 ADD A BIN

based on data from a previous season's peak days, adding bins would decrease trucks in the queue at the end of the shift

\$10,000
INVESTMENT
3,200 BBLS
STORAGE
↳ 3,600 BBLS
STORAGE

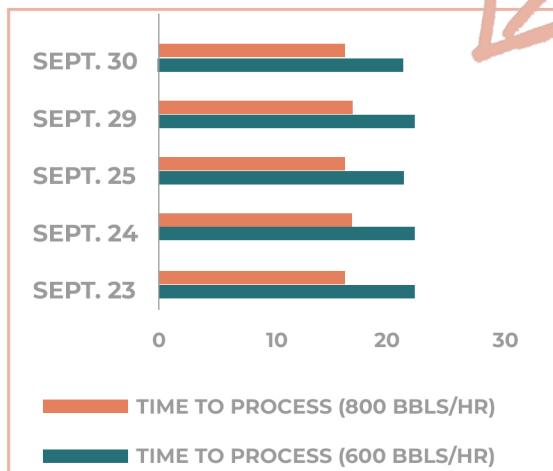
DATE	capacity 3200 # OF TRUCKS AT 7PM	capacity 3600 # OF TRUCKS AT 7PM
SEPT. 23	41	35
SEPT. 24	46	40
SEPT. 25	40	34
SEPT. 29	44	39
SEPT. 30	38	33

DRYERS ARE THE BOTTLENECK WITH
A CYCLE TIME OF 600 BBLS/HR.

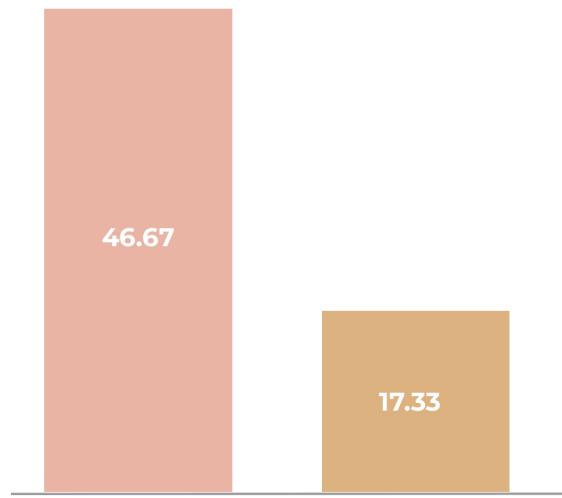


ADDING BINS DOES NOT INCREASE THE
SYSTEM CAPACITY, SO IT WOULD ONLY
PUT A BANDAID ON THE ROOT ISSUE.

3 ADD ONE DRYER



based on data from a previous season's peak days, adding a dryer would decrease the time it takes to process wet berries



\$60,000
PER DRYER
600 BBLS/HR
CAPACITY
↳ 800 BBLS/HR
CAPACITY



ADDING A DRYER INCREASES THE
SYSTEM'S CAPACITY, WHICH
ADDRESSES THE CURRENT BOTTLENECK.

RECOMMENDATIONS

A

PURCHASE A DRYER

Our goal is to reach an effective capacity that can be sustainable over the long term as demand rises.



ADDING A DRYER ADDRESSES THE CURRENT BOTTLENECK.

time to process berries with 4 dryers given an increase in wet berries



ADDING A DRYER WOULD HELP WITH CURRENT DEMAND. TO DEAL WITH THE RAPID INCREASE IN WET BERRY HARVESTING, WE NEED TO IMPLEMENT OTHER STRATEGIES TO CONTROL THE DEMAND ON THE SYSTEM.

B

OFFER INCENTIVES FOR EARLY OR LATE HARVESTING



FLATTEN THE DEMAND CURVE BY HAVING LESS CONCENTRATED PEAK DAYS.

C

STRONGER DATA & SCHEDULE SHARING

INTEGRATING DATA & SCHEDULES BETWEEN THE PLANT AND FARMS WOULD ALLOW FOR BETTER FORECASTS AND PREPARATION.

