

Cranberry



**ASSIGN
BUSTER**

Projection of the peak demand during the season Projection of demand for processing of cranberries can be taken as equal to the delivery load at the plant. The two major points that we considered while making the projections for the 1981 season were the fact that Mr. Schaffer had estimated the arrivals of wet berries to be 80% of the total quantity and the Cranberry Marketing Order of 1980. It is assumed that the peak load of 1981 will not exceed that of 1980 by more than 0.05%. Thus the peak load is taken as 18900 barrels.

Process Analysis Analysis of the process has been done with some simplifying assumptions. It has been assumed that there is no build up of inventory in tool changeover and production backlogs. Lunch time has not been accounted for to make the calculations simpler. All combined capacities have been divided as per the ratio of arrivals. Dry process: - For peak load, the dry process has an average arrival rate of 394 barrels/hour which gives a backlog of 1576 barrels/hour by the time the subsequent processes start at 11:00 am.

The holding capacity in bins is 4000 barrels and the process cycle time for the dry process is assumed to be 600 barrels/hour as that is the output received from the separation unit. As per the analysis, the dry process has no bottlenecks and can be done without any major modifications. Still, another separator unit may be needed if the capacity of the dryer is increased to match all other capacities.

Wet process: - For peak load, the wet process has an average arrival rate of 1,181 barrels/hour which gives a backlog of about 4000 barrels by the start of

the processing operation and the backlog never ends as the holding capacity in bins is at max 4500 barrels. This is exhausted as the arrival rate exceeds the cycle time of the process by 581 barrels/hour. That is a build up which requires a lot of overtime and waiting cost for the consumers. The waiting time will result in overtime and opportunity cost for the truck operators.