

- Understanding a process in depth can trigger many opportunities for improvement.
- OEE (Overall Equipment Effectiveness) can help us to reduce waste and link it to equipment efficiency.



BACKGROUND

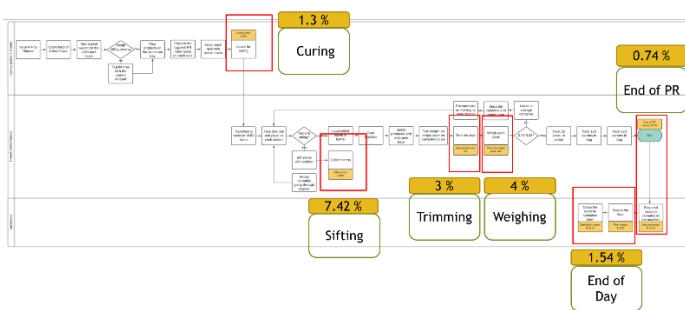
OEE is a robust leading key performance indicator (KPI) to monitor processes. The Quality metric is integrated into this KPI and can help us identify waste. The milling process at PPP Cannabis Inc generated almost 8% waste. When the cannabis milled flower cost is about \$2.00 a gram, is paramount to look at means to reduce it.

THE SITUATION

PPP Coop* operates a mill batching system that processes 16 kg per hour pre-rolls, enough capacity to supply the two production lines; however, the process was originally designed without considering the quality components measured at the sifting equipment.

THE SOLUTION

As always, we first trained the management and supervisory team in problem-solving methods. The process was mapped, gaps were discovered and a root cause analysis was performed (Fishbone Diagram and 5 Why's).




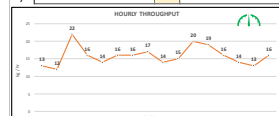
Milling process and wastage points detected after measuring several weeks.

The primary sources of wastage were identified, and the equipment was modified to reduce/mitigate the spillage. Also, during the changeover and end of the shift, an

improved method for shut down and machine disassembly were developed and implemented.


THE SUCCESS


The In-process Control Checks were implemented and measured in the daily production shift report. This Report was changed to integrate the OEE to measure availability, performance, and quality during production.


MILLING PROCESS CONTROL SHIFT REPORT											
PRODUCTION OVERVIEW											
PRODUCTION NUMBER	BATCH	STRAIN (S)	ALLOCATION TO BE MILLED	TOTAL KG MILLED	DOWNTIME	STARTAGE	FINISHAGE	TOTAL WASTE (KG)	QUALITY CONTROL		
PROD008123	872	Blue Dream		253	0	7:0	36				
Start Up Check List											
Item	Check	Min/Max	Unit	Value	Unit	Value	Unit	Value	Unit	Value	Unit
1	Oil free materials in plant	Check									
2	Production start machine physical quantity	Check									
3	Machine clean	Check									
4	Machine assembled	Check									
5	Control panel machine operational (stop & start)	Check									
6	Control panel machine ready to operate	Check									
7	Control panel machine ready to operate	Check									
Hourly Throughput											
											
Daily Performance											
Bin	Strain	Milling time (min)	MT Speed (kg/h)	Output (kg)	Quality Control (Sieve Level)	Waste (kg)	Waste (%)	Waste (mm)	Waste (mm)	Waste (mm)	Waste (mm)
1	Blue Dream	8	15	42.5	56.2	39.9	43.8	15%	10%	20%	10%
2	Blue Dream	8	15	42.5	56.2	39.9	43.8	15%	10%	20%	10%
3	Blue Dream	8	15	42.5	56.2	39.9	43.8	15%	10%	20%	10%
4	Blue Dream	8	15	42.5	56.2	39.9	43.8	15%	10%	20%	10%
5	Blue Dream	8	15	42.5	56.2	39.9	43.8	15%	10%	20%	10%
6	Blue Dream	8	15	42.5	56.2	39.9	43.8	15%	10%	20%	10%
7	Blue Dream	8	15	42.5	56.2	39.9	43.8	15%	10%	20%	10%
8	Blue Dream	8	15	42.5	56.2	39.9	43.8	15%	10%	20%	10%
9	Blue Dream	8	15	42.5	56.2	39.9	43.8	15%	10%	20%	10%
10	Blue Dream	8	15	42.5	56.2	39.9	43.8	15%	10%	20%	10%
11	Blue Dream	8	15	42.5	56.2	39.9	43.8	15%	10%	20%	10%
12	Blue Dream	8	15	42.5	56.2	39.9	43.8	15%	10%	20%	10%
13	Blue Dream	8	15	42.5	56.2	39.9	43.8	15%	10%	20%	10%
14	Blue Dream	8	15	42.5	56.2	39.9	43.8	15%	10%	20%	10%
15	Blue Dream	8	15	42.5	56.2	39.9	43.8	15%	10%	20%	10%
16	Blue Dream	8	15	42.5	56.2	39.9	43.8	15%	10%	20%	10%
17	Blue Dream	8	15	42.5	56.2	39.9	43.8	15%	10%	20%	10%
18	Blue Dream	8	15	42.5	56.2	39.9	43.8	15%	10%	20%	10%
19	Blue Dream	8	15	42.5	56.2	39.9	43.8	15%	10%	20%	10%
20	Blue Dream	8	15	42.5	56.2	39.9	43.8	15%	10%	20%	10%
21	Blue Dream	8	15	42.5	56.2	39.9	43.8	15%	10%	20%	10%
22	Blue Dream	8	15	42.5	56.2	39.9	43.8	15%	10%	20%	10%
23	Blue Dream	8	15	42.5	56.2	39.9	43.8	15%	10%	20%	10%
24	Blue Dream	8	15	42.5	56.2	39.9	43.8	15%	10%	20%	10%
25	Blue Dream	8	15	42.5	56.2	39.9	43.8	15%	10%	20%	10%
DOWNTIME DURATION								DAILY PERFORMANCE		DOWNTIME DURATION	
								253		20% 80% 20%	

The Daily Production Shift Report

The production supervisory team was instructed in the operation of this report and in deciding on OEE while in production mode, not post-shift. This integration with the machine modifications and improvement procedures provided the right tools and methods to reduce wastage during the milling/sifting process.

 The OEE as a primary metric, assisted production supervisors in making wiser decisions based on data and change the process in advance.

 The OEE metric was expanded to the other processing operations. Eventually, we built an OEE dashboard for management, who could visualize the overall performance of all production lines.

 The savings were calculated at over \$360,000 annually, reducing wastage from 7.4% to 4.2%.

* The company's identity has been disguised for the sake of privacy; however, the case study is genuine.