Line Productivity

1. What is the average actual batch duration (End Time – Start Time) compared to the Min batch time for each product?
2. How does productivity change over time (monthly, weekly, by shift)?
3. What is the productivity of each operator (batches produced ÷ working time)?
4. Which operators have the highest throughput (total batches, total hours worked)?
5. Are there anomalies? (Batches with actual time < Min batch time, or downtime > actual production duration).

Line Downtime

6. What is the overall downtime rate (Total downtime ÷ Total production time)?
7. What is the total downtime per batch, expressed in minutes and as a % of actual batch duration?
8. How does downtime trend over time? (increasing/decreasing).
9. What is the distribution of downtime by shift, by day, and by weekday? Which day had the highest downtime?
10. What is the overall Line Utilization Rate (Σ Min batch time ÷ Σ Actual batch time)?

Downtime Factors

11. What are the top downtime factors (by total minutes and frequency)?
12. Which factor contributes the most to overall lost time?
13. What percentage of downtime is caused by operator errors vs. non-operator errors? What are the top 3 causes in each category?
14. Are certain downtime factors linked to specific times of the day (morning vs evening)?

Products

15.Which products are associated with higher downtime rates than others?

16.How does downtime differ between product sizes (600ml vs. 2L)?

17.Which products are most affected by specific downtime factors (e.g., inventory shortage)?

18.Is there a correlation between batch time (Start/End) and downtime duration?

19.Do some operators improve over time (learning curve)?

20.Is production line efficiency more influenced by product type or operator performance?

21.Do operator handovers (shift changes) lead to higher-than-average downtime?

Forecasting

22.Can we predict the downtime rate for the next day of operation?

23.If we invest in reducing a single downtime factor, which one would yield the largest productivity improvement?