

Tropical Bioessence - A Sutra Glory's Journey in Lean

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Essential Oil has long since been recognized for its healing effect in improving psychological and physical well-being. As such, Tropical Bioessence Sdn Bhd (TBESB) through its aromatherapy product has been widely accepted in Malaysia and the demand for such product is increasing.

Thus, a system to better suit the increasing demand from customers is needed. This is the story of TBESB's aromatherapy multi-purpose spray Sutra Glory's (MPS Glory) journey in Lean.

Tropical Bioessence Sdn Bhd

TBESB was set up based on the research and development of essential oil and herbal extracts by Melaka Institute of Biotechnology. Established in March 2007, TBESB has since become one of the major players in Malaysia for essential oil, essential oil-based products and herbal extracts.

On May 2017, the management of TBESB decided to embark on a Lean project with the help from Malaysia Productivity Corporation (MPC).

The general aims of the project at the beginning were to recognise problem

occurred at the existing work process and increase company's profit and productivity as well.

TBESB has no specific objective initially. It was later developed when field observation was made by the consultant assigned to the project.

First-class technology but lacking in operational control

During the field visit, several limitations were recognised in the operations. TBESB has a well-equipped manufacturing unit with state-of-the-art technology but the operations were lacking in several areas.

Based on the findings, there was a lack of quality control on finished goods by the workers which increased the chances of customers receiving low-quality products. It was further proved by the percentage of rework rate for multipurpose spray.

The rework rate stands at 100% and it is quite worrying. Inventory control was also done through the use of stock cards causing the time taken for information to be relayed from storekeeper to Sale Department and vice versa, longer.

After a thorough Value Stream Mapping (VSM) analysis, several strategic projects were proposed to rearrange the system, reorganise activities in the operation, reduce reject rate and shrink stocks in the store.

A total of 5 projects were carried out at the processing area and store of finished goods. The project includes 5S, creation of work standard and stock control.

To avoid overstocking and improve the packing process, 5S and work standard were introduced to the staff. 5S is one of the basic principles in Lean besides being the easiest way to apply while work standard is one of the more difficult Lean principles to apply.

Both, however, take the minimum amount of investment fund to be carried out successfully.

A picking and packing work standards were established and different personnel were assigned to each task. In addition, orders were cut off at 1 pm daily to avoid last minute order.

This has decreased packing error to 0% from the initial 3% and reduced the cost of field failure. For stock control, rearrangement of finished products in the store was made using 5S and a "cloud-based" Stock Control Spreadsheet system was introduced.

The spreadsheet is accessible 24/7 through Google Drive thus increasing the efficiency and reliability of stock control. In total, the stock was targeted to reduce to 100 bottles only in making ample spaces for other products. This led to an estimated cost-saving of RM2,800 per year for the company.

Improve the processes, reduce the cost

At the processing area, a total of three projects were carried out with the aims to increase yield to 100% from the average of 82%, minimise production lost due to rework and reject; and reduce the processing time of a product.

The VSM analysis that was done prior to the project revealed that the high rejection rate was caused by overfilling



The implementation of Lean project at TBESB has brought tremendous improvement to the entity

- A** Increased in yield from average 82% to 98% at the processing area;
- B** Production cost reduced by 20%;
- C** Achieved target of zero reject rate;
- D** Reduced process time from 30 minutes to 15 minutes;
- E** Cost saving per year is estimated more than RM100,000;

of MPS Glory as a result of inaccurate machine parameter. Workers were not following the standard SOP and machine was not fine-tuned regularly.

For the process of mixing and blending, the time taken to complete both processes was too long due to the absence of a work standard. A designated area for the preparation of raw materials was also not allocated and materials and tools were not labelled making it hard to find.

To solve the above problems, the machine was rearranged to ensure safety and comfort to the workers and an area was assigned specifically for the preparation of raw materials only, separating it from the other processes.

Additionally, materials and tools were categorised and labelled based on its function for easy access. The less time it takes to find an item, the less time it takes to complete the production.

Then, a standardised step-by-step for mixing and blending was developed and staffs were trained on the correct method based on the established SOP. Machines were also calibrated frequently to avoid technical hitch.

The improvements made in the processing area have increased yield from average 82% to 98%, reduce production cost caused by 20% bottle replacement and 100% rework, diminished 100% rework to 0% and reduce processing time from 30 minutes to 15 minutes.

The cost saved by the company is estimated at around RM15,000 per year with half of the savings came from the reduction of processing time.

All in all, the Lean project at Tropical Bioessence does not only reduce the cost borne by the company, it also provided a more systematic work standard to the organisation.

Lean helped TBESB improved the efficiency of stock control, increased productivity and quality, enhanced communication between cross-functional members and increased customer's satisfaction. The best part is, yearly cost saving for all MPS product is estimated more than RM100,000.