

TPM Activity Brief

Bright Dairy & Food Co., Ltd Plant 4

I. Company and Plant Overview

Bright Dairy & Food Co., Ltd is one of the four listed companies under Bright Food (Group) Co., Ltd.. We primarily specialize in the development, production and sales of milk and dairy products, cattle husbandry, logistics, and the development, production and sales of nutritional products and health supplements. Sales in 2022 were 28.215 billion yuan.

There are 15 plants under Bright Dairy. Founded in 1980, Plant 4 is a food processing plant specializing in the production of bottled milk products. There are currently 13 production lines, where dairy products in various forms of packaging are produced, like bottled, plastic cups, paper cups, plastic buckets, Tetra Top cartons, etc.. Our investment in fixed assets is 110 million yuan, and we have a maximum daily production capacity of 400 tonnes and an annual output of about 80,000 tonnes. The plant adopts the system under which the factory director assumes full responsibility. Under which we have the departments of Production, Quality, Engineering, Management, HR, and Finance. At present, we have a total of 389 employees, including 242 regular workers and 147 third-party labor workers. In 2022, our sales amounted to 606.96 million yuan. Our main products is fresh milk, including pasteurized milk, prepared milk, fermented milk, etc. In 2023, we have successfully developed six new products. Their total output contribution rate reaches 11.3%, with a turnover of 6.62 million yuan/month. Among them, Rushi (如实, "truthfulness") for Sam's Club, Youbei Nongchun (优倍浓醇) 4.0, and Bright Nongchun (浓醇, "richness") Fresh Milk have added values way above the plant's average.

II. Milestone on the Journey of Manufacturing Excellence

In view of the problems and current situation of the factory, such as the growing age of employees, the urgent need for knowledge and skill transfer, the increasing cost of raw materials and labor, the insufficient degree of equipment smartification, and the lack of coordination and communication between departments, we have decided to continue to promote TPM World-Class Manufacturing to achieve the goal of becoming the first dairy enterprise in the world to establish WCM for the entire industry chain.

Milestones during our TPM activities are as follows:

1. On May 20, 2013, TPM activities were introduced. We established the TPM Steering

Committee, and launched systematic training.

2. On May 16, 2014, we successfully held the TPM Kick-Off event. We have then successively introduced the five pillars of FI, AM, PM, E&T and SHE, built TPM maintenance classrooms. Pillar activities went on smoothly, and we have adhered to the concept of continuous improvement and pursuit of excellence.

3. In June and October 2016, we passed both stages of assessment for the Award for TPM Excellence (Category B).

4. In January 2017, we held the kick-off conference for the Award for Excellence in Consistent TPM Commitment, and added three more pillars of QM, EM and OM.

5. We passed the first-stage assessment in May 2018, and the second-stage assessment in November.

6. In March 2019, we received the Award for Excellence in Consistent TPM Commitment from JIPM, becoming the first company amongst our industry to receive such award.

7. In June 2019, the conference for Bright Dairy & Food High-end WCM Project and Plant 4's kick-off for Special Award for TPM Achievement was held.

8. We passed the first-stage assessment in June 2021, and the second-stage assessment in November.

9. In December 2023, we are prepared and have decided to take up the challenge of Award for World-class TPM Achievement in 2024.

III. Benefits Achieved from TPM Activities

Through the continuous implementation of TPM activities, the performance of the plant has been significantly improved, and a positive corporate culture has been established, which is manifested in the following two aspects.

Tangible effects: In 2023, the plant revenue increased significantly, with the cumulative profits from improvements reached 178.88 million yuan, and the ratio of project input to output reached 1: 10.4. We have always had zero major customer complaints, and the number of customer complaints has decreased by 6% from 2021. Food safety high risk point improvement rate is 100%; Delivery rate remains at 100%, mainly due to the improvement of OEE, with the filling machines' OEE increasing by 9% from 2021. In terms of cost, our revenue reached the target value, and the operating profit margin has reached 21%. There has been zero serious work

injury accidents.

Intangible effects: We are seeing unprecedented employee morale and enthusiasm for TPM project participation, and increasing team spirit and cohesion. Employee skills and operational efficiency have been improving continuously, and we have formed a corporate culture of "continuous improvement and pursuit of excellence".

IV. Key of our Manufacturing Excellence

We have been implementing TPM activities in Plant 4 for 10 years, and the key to our TPM activities are as follows:

1. Strong support from the higher-ups. Managers are the key to the success of TPM. Factory director and managers must come to the site for guidance and high-level diagnosis.

2. The reasonable use of TPM's three major tools and analysis methods. Characteristics of our activities include overlapping small group activities, on-site activity Kanban, OPL, why-why analysis, and PM analysis.

3. Our employees' understanding and full participation, front-line employees' sense of responsibility and autonomous-management for their equipment, and realizing that there is room for improvement in everything and everyone has the ability to improve.

Each pillar has its own role in the implementation of TPM activities. FI (Focused Improvement) focuses on the analysis of 34 major losses to create a flexible production site and achieve perfect delivery. AM (Autonomous Maintenance), PM (Planned Maintenance) and QM (Quality Maintenance) are integrated as the APQ pillar, focusing on the stable equipment operation, improving operators' skill levels, reducing defect modes and food safety high risks across the entire industry chain, establishing and optimizing the predictive maintenance and intelligent management systems, and achieving 5-zeros production lines with zero failures, zero minor stoppages, zero defects, zero incidents, and zero customer complaints. EM (Early Management) continues to optimize the development and management process of new equipment and new products in Bright Dairy & Food, shorten the development cycle, and increase the turnover of new products. By improving the education and training system, E&T (Education and Training) pays attention to talent training and cultivation, and aims to enhance employees' sense of belonging. SCM (Supply Chain Management) Pillar is guided by customer needs and implements value-enhancing activities throughout the whole industry chain. SHE (Safety, Health, and

Environment) Pillar reduces our carbon footprint and builds a green factory by utilizing product life cycle evaluation and management. CM (Cost management) Pillar pursues the optimal cost for the whole industrial chain to improve operating profits.

V. Achievements

<u>TPM Award Assessment Achievement Sheet</u>					
Company & plant name	Bright Dairy & Food Co.,Ltd Plant 4				
TPM Slogan/Objectives	Continuous improvement and pursuit of excellence				
▼ Please fill in the range of data you are collecting ▼					
Category	Index	Unit	BM (TPM Started or last time awarded)	Actual Status	Target
Enter the year →			2021	2023	2024
S	Number of work-related accidents requiring days off work	Cases/ year	0	0	0
S	Number of work-related accidents not requiring days off work	Cases/ year	0	0	0
P	Productivity for main products	Tons/person/ hour	0.53	0.58	0.6
P	OEE (or Overall Plant Efficiency)	%	75	82	82.5
P	Availability	%	83.5	89.2	89.7

P	Performance Rate	%	90	92	92
P	Quality Products Rate	%	99.85	99.95	99.96
P	Number of breakdowns	Breakdowns/ year	6	5	5
Q	Number of customer complaints	Number/ mo'nth	72	68	65
Q	In-line defect rate (scrap+rework)	Ppm	250	215	200
C	Product Cost	Yuan/ton	7158	7141	7060
D	Production Lead time	Hours	54	48	47
D	Delivery performance	%	100	100	100
M	Number of Employee Suggestions	Number/year	3125	3800	4050