

**Special Award for TPM Achievement
Bright Dairy (Dezhou) Co., Ltd.**



1. Group and factory introduction:

1.1 Overview of the Group

Guangming Dairy Co., Ltd. is a diversified equity holding listed company composed of state-owned assets and social public capital. Its business includes the development, production and sales of milk and dairy products, as well as cow feeding, breeding, logistics, nutrition and health food development, production and sales. There are 15 subordinate factories in China. The company's mission is to innovate life and share health. On October 15, 2019, it won the world-class "Global Excellence Award", which is the first enterprise in China's dairy industry to win this world award; In July 2022, it won the National Green Innovation Case Award (Enterprise Award). While providing consumers with fresh, healthy and high-quality dairy products, Bright Dairy is also actively undertaking and innovating its corporate social responsibility with dairy characteristics. At the same time, Bright Dairy has 13 production bases that have won TPM awards, making it the dairy enterprise group with the most awards in the TPM field in the global dairy industry.

1.2 Factory overview

Guangming Dairy has five functional modules: production center, milk shed, Yimin First Factory, Lingxian Logistics and Guangming Animal Husbandry. Dezhou Factory is subordinate to the production center and one of the four largest factories in Changwen. Dezhou Factory is located in Shandong Province, between the two major economic belts of North China and East China, with a prominent strategic position. The factory covers an area of more than 53 mu, and has more than 23000 square meters of standard factory buildings. It is an enterprise with high average benefit per mu in this industrial zone. In 2021, the company will have assets of 312 million yuan and sales volume of 965 million yuan. Now it has 586 employees, implements the general manager responsibility system, and has 6 departments including production, engineering and quality control, which are divided into 5 management levels. At present, it implements the production mode of three shifts and two operations. The factory has 11 production lines, and the product processing process is divided into processing, filling and distribution. The products are divided into four categories: fermented milk, sterilized milk, modulated milk and milk containing drinks. The main products are fermented milk and sterilized milk. The technology of fermented milk is to mix and

ferment after UHT sterilization, and then fill the yogurt after it is formed; The process technology of sterilized milk is that pure milk is directly filled after UHT sterilization. The factory always maintains a production capacity of more than 100000 tons every year, and the output tends to be stable.



2. Factory history

The vision of Texas Factory is to become the world class dairy manufacturer preferred by consumers. With this vision, Texas Factory tried to use some TPM tools to improve performance in 2012, and achieved good performance. In order to expand and improve the performance and realize the vision, the Texas factory decided to fully launch the TPM management system.

Since the implementation of TPM, the factory has introduced 10 pillars, namely FI, AM, PM, QM, EM, E&T, OM, SH, ENV and CM, and determined the operation mechanism of TPM activities. In order to ensure the achievement of all indicators, an objective management mechanism has been established, which includes all KMI and KPI indicators into the indicator management system for monitoring and management, and is responsible for indicator follow-up by all pillars. The achievement of objectives is ensured through daily control and continuous improvement layer by layer decomposition.

In terms of cost improvement, the factory has innovated the cost improvement path, started cost improvement activities, and extended the cost improvement activities to the supply side for cost reduction activities throughout the industry chain by focusing on on-site management and process improvement.

The factory carries out quality management activities from daily management, source and flow management, and continuous improvement; In order to ensure the achievement of the high-quality strategy, the factory has established the AM PM QM EM E&T management system on the basis of AM PM QM around the theme of reducing the types of complaints, and carried out activities around quality improvement

to reduce food safety risks and ensure product quality.

In terms of safety management, according to Heinrich's Law and LEC's risk assessment and identification problems, the risk was controlled. At the special award stage, more attention was paid to the construction of safety culture. Through the management of plant safety characteristics, it was rated as a provincial food industry safety benchmark in 21 years and promoted as a national safety characteristic enterprise by China Emergency Management News in 22 years.

In terms of personnel training, a variety of training approaches are adopted to build a talent team with outstanding skills and unified ideas; It focuses on innovative training and independent learning, and constantly provides talents for all positions of the Group and the factory

Through the promotion of TPM, the Texas factory won the title of excellent TPM factory of the group in 2016; The 2017 Challenge TPM Excellence Award was successful; In 2020, it won the TPM Excellent Continuing Award again, and this award is also the first dairy enterprise in Shandong Province to win this award. The improvement is endless, and the factory will challenge the higher award of TPM.

3. Achievements

3.1 Tangible benefits

Since the introduction of TPM in 2014, a total of 2403 rationalization proposals have been put forward, 1026 labels have been posted, 256 groups have been opened, the employee participation rate is 100%, the cumulative income is 63.37 million yuan, the order volume has increased year by year, which has also led to a significant increase in the turnover, the continuous improvement of product costs has reduced the unit product cost by 16%, the OEE of equipment by 20%, the quality complaint rate by 86%, and the zero safety incident has always been maintained, and the workshop and equipment are kept in order, The relationship between departments has become closer, cooperation and communication have become more frequent, and employee morale and company image have been greatly improved.

3.2 Intangible income

Through the promotion of TPM, operators have a deeper understanding of equipment, improve their ability to find, solve and improve problems, promote improvement activities, and improve the overall efficiency of equipment; Establish a good quality prediction management system, enhance the quality awareness of employees, strengthen the ability to improve quality, effectively control the cost of quality loss, and reduce the rate of customer complaints; Create a safe, healthy, comfortable and clean working environment, improve the internal noise and temperature of the workshop, and improve the work efficiency.

4. Key points to win TPM success

Our goal is to become the first choice of consumers as a world-class dairy manufacturer and a performance benchmark factory within the yoghurt group. This is also a mapping of organizational commitment and self-worth. The firm determination of the top leaders to implement the TPM system will never waver our faith. Through continuous employee training and AM activities, we have laid a solid employee foundation for TPM implementation. Every Bright employee has CI awareness and

actively participates in daily TPM activities. They have made great contributions to the improvement of factory performance and ensure that our factory's TPM is fully deployed.

5. TPM Award Assessment Achievement Sheet

Company & plant name	Bright Dairy (Dezhou) Co., Ltd.
TPM Slogan/Objectives	To be the world class dairy manufacturing plant with the first choice by consumers.

Category	Index	Unit	BM 2014	Actual Status 2022	Actual Status 2023
S	Number of work-related accidents requiring days off work	Cases/ year	5	0	0
S	Number of work-related accidents not requiring days off work	Cases/ year	0	0	0
P	Productivity for main products	Parts/Operator hours	0.35	0.58	0.61
P	OEE (or Overall Plant Efficiency)	%	70	83.6	83.7
P	Number of tags raised	Number/year	114	1026	1100
P	Number of breakdowns	Breakdowns/ machine/month	12	0.48	0.45
P	MTBF	Hour	112	144	160
P	MTTR	min	24	18	15
Q	Number of customer complaints per million	PPM	4.25	0.78	0.62
Q	Defect rate	%	3.24	0.22	0.2
Q	Serious quality incident	events	0	0	0
C	product costs	RMB/ton	8265	6946	6800
D	Delivery performance	%	100	100	100
D	Lead time in days	Hour	271.9	192.6	180
S	Safety index	Accidents per 100,000 operator hours	1.9	0	0
M	Number of Employee Suggestions	Cases/annually	18	267	280
M	Employee satisfactory	Score	74.2	94.1	95.1
E	carbon dioxide emissions	KG/ton	231	156.8	152