



The Profile of Ningxia Yili Dairy Co., Ltd.



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Chapter 1: Company& Factory Profile

1.1Company& Factory Profile

1.1.1 An introduction of Yili

Yili Group is China's largest dairy company with the most complete product portfolio, ranking No.1 in Asia and top five in global dairy industry(Fig.1.1). The annual revenue of Yili Group was 12.32 billion Yuan in 2022 (Fig.1.2).The plant applying for the TPM award is the Ningxia Plant of Yili Group.

<p>In 1956, Cattle-raising Cooperative Group of the Huis Community in Hohhot was established;</p> <p>In 1993, the company changed its name to “Yili” amid the stock system reform;</p> <p>In 1996, Yili’s stock shares were listed;</p> <p>In 2003, Yili became a national champion among the Top 500 Most Valuable Players of Chinese Food Industry;</p>	<p>In 2008, Yili became the official commercial partner of the 2008 Beijing Olympics;</p> <p>In 2010, Yili became Shanghai World Expo’s commercial partner;</p> <p>In 2019, Yili was the most valuable brand in China’s food industry and dairy industry;</p> <p>In 2022, it won the world’s top 5 dairy products for the second time.</p>
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Figure 1.1: Yili Group

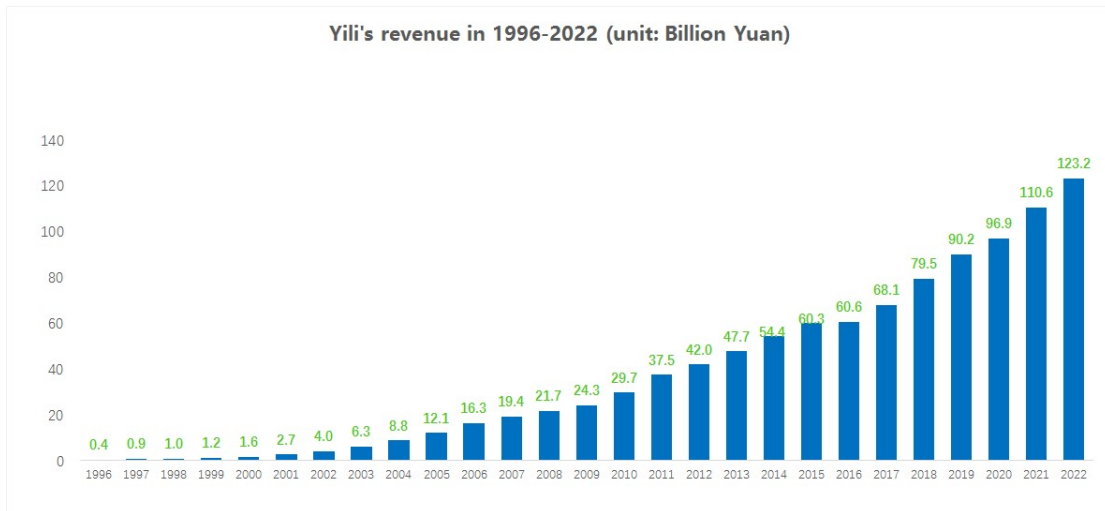


Figure 1.2: Yili Group’s Revenue

1.1.2 Factory Profile

The output of the plant has been increasing every year since its foundation. The production volume was 1.2066 million tons in 2022, and is expected to be 1.23 million tons in 2023. The output of the plant is the highest among all plants of the Liquid Milk Division.

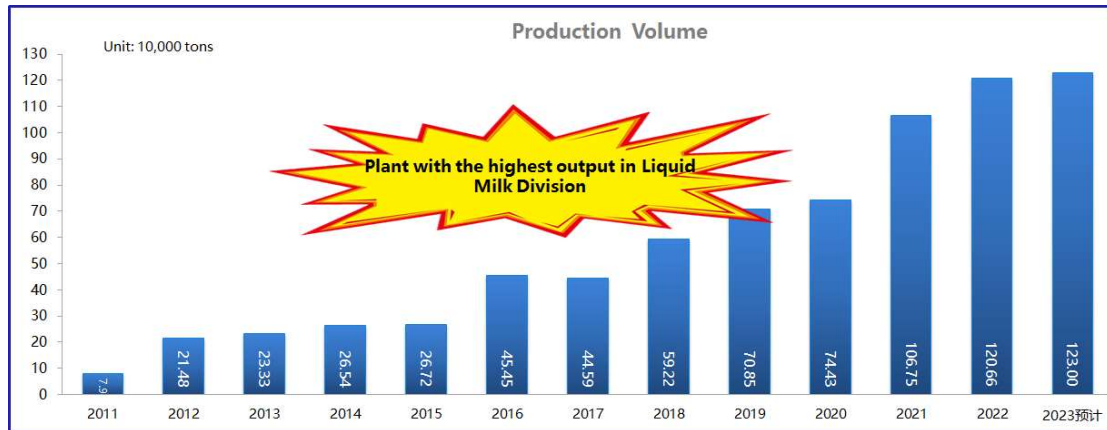


Figure1.3: Factory Output

Ningxia Yili started its construction in 2010 and the first workshop was officially put into production in 2011. It introduced TPM in 2015. The second workshop was put into production and TPM activities were kicked off in the same year. The factory won the Award for TPM Excellence (Category A) in 2018. The third workshop was put into production and TPM activities were introduced in May 2020, and in 2021 it won the Award for Excellence in Consistent TPM Commitment. (See Figure1.4)



Figure1.4: The Journey of Our Factories

1.2 Factory Overview

1.2.1 Factory flow chart

The production processes in the factory follow this pattern:

milking in the ranch → reception of raw milk → milk cleaning → Pasteurization
 → Mixing ingredients → UHT sterilization → Sterile filling → Packaging →
 Warehousing → Delivery (See Figure1.5)

Process		Grazing Land	Reception of Raw Milk	Pasteurization	Mixing Ingredients	UHT Sterilization	Filling	Packaging	Storage	Uploading	Delivery
Pure Milk Series	illustration										
	Key Point	≤4°C	≤6°C	75±5°C/15s (preset at 75°C)	1-8°C	137-141°C/4s	Good Sealing	Complete Packaging	Temperature: 10-30°C Humidity: 30%-70%	Loading up to 100%	Compliance Rate upon Arrival 99.96%

Processes		Grazing land	Reception of Raw Milk	Pasteurization	Ingredients	Milk Base Material Pasteurization	Fermenting Tank	Product Pasteurization	Filling	Packaging	Storage	Uploading	Delivery
Ambrosial Series	illustration												
	Key Point	≤4°C	≤6°C	75±5°C/15s (preset at 75°C)	50-55°C	38-42°C	40-42°C	75 2°C/15 seconds	Good Sealing	Complete Packaging	Temperature: 10-30°C Humidity: 30%-70%	Loading up to 100%	Compliance Rate upon Arrival 99.96%

Figure1.5: Flow Chart

1.2.2 Facilities& products

There are altogether 53 production lines and 10 machine models.

It has the largest number of models across Business Division.

All products of this factory are middle-to-high end products of the division.

(See Figure 1.6)

Facility	illustration	Specification	Production Line No.	Capacity (package/hour)	Production Capacity (T/h)	Status
PET		230g	3	48000	11.4	The world's most advanced production line of bottled products
CFA-124		200ml	2	24000	5	The world's most advanced KANGMEI production line
CFA-1724		220ml	2	24000	5.5	The world's most advanced KANGMEI production line
TPA-3		250ml	24	24000	6	The world's most advanced Tetra Brik production line
DGDA-16F		125g	2	20000	2.50	The world's most advanced Tetra Brik production line
A3CF-250E		250ml	2	9000	2.25	The world's most advanced Tetra Brik production line
CF-205		205g	12	9000	1.85	The world's most advanced Tetra Prisma production line
TT3-200		200g	4	9000	1.8	The world's most advanced Tetra Top production line
TBA-8		1000ml	1	6000	6	The world's most advanced Tetra Brik production line
BUE-1000		25KG	1	800-1800kg/h	0.9	The world's most advanced butter production facility

**53 production lines
10 machine models.
The factory boasts
the largest number of
models in the business
division.**

Figure 1.6: Facilities & Products

1.2.3 Factory leadership

The factory is under the leadership of General Manager. With the establishment of Steering Committee, TPM activities were instructed in an orderly manner (See Figure 1.7) .

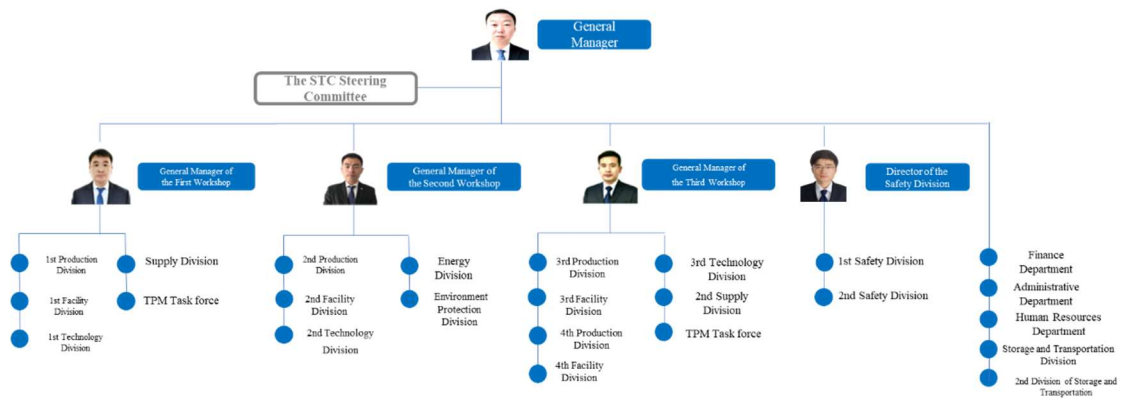


Figure 1.7: Factory Leadership

1.2.4 Employees' profile

The plant hired 1,929 employees. 79% employees are line workers. 84% employees have worked in the plant for more than 2 years. 79% employees are college

graduates or above. 54% employees are less than 30 years old. As a result of process optimization, development of multi-skill workers, and introduction of automatic machines, the number of employees is decreasing.(See Figure1.8)

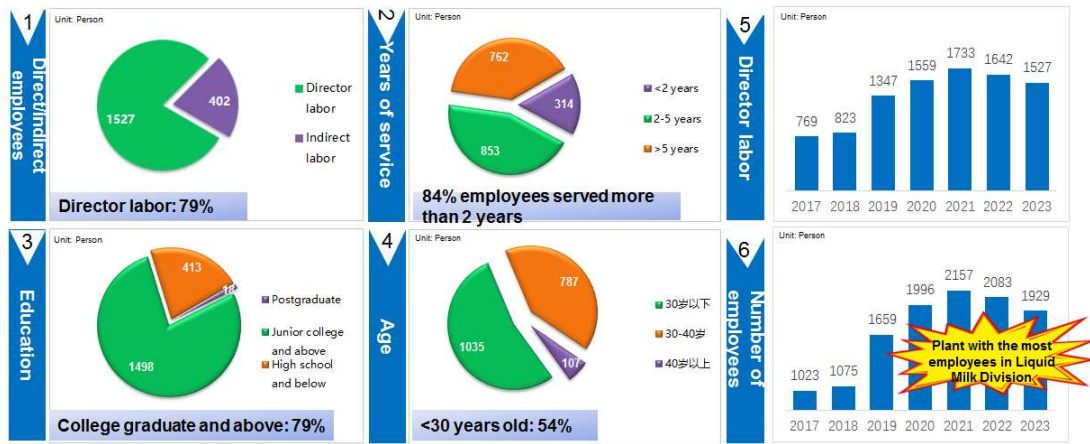


Figure1.8: Employees' Profile

Chapter2 Milestones of the Journey to Excellence

2.1 Background of TPM Introduction

The factory's vision is “To Build A World-class Health Food Manufacturing Plant”. Facing internal and external challenges such as competition in the industry and the lack of skilled workers, the factory decided to introduce TPM activities to improve the factory's operational performance.

The factory introduced some TPM tools and concepts in 2014 and officially introduced TPM in 2015. It won the Award for TPM Excellence (Category A) in 2018 and initiated the Supply Chain Management Pillar in 2019. In 2021, it won the Award for Excellence in Consistent TPM Commitment. It started the CM Pillar in 2022 and plans to apply for the Special Award for TPM Achievement in 2023. (See Figure 2.1)

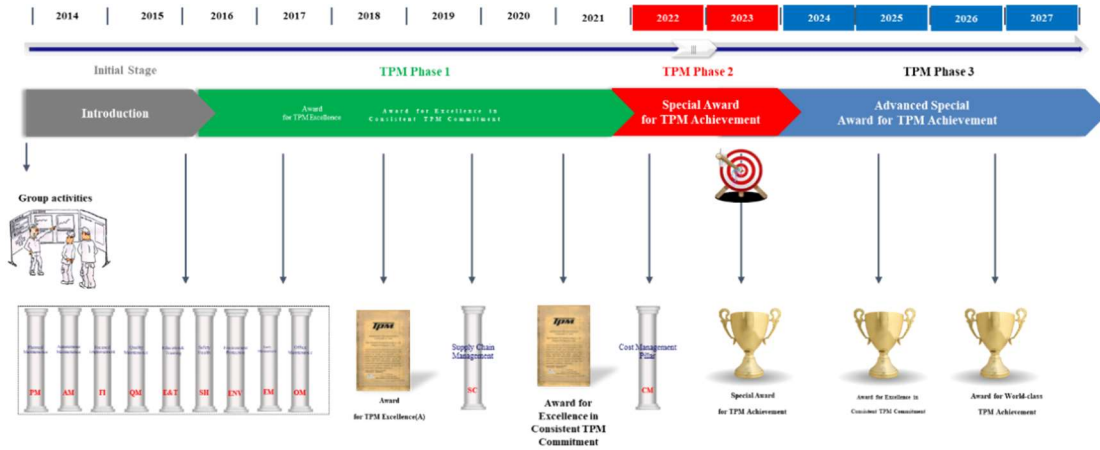


Figure 2.1 The Factory's TPM Journey

Chapter3 Achievements

3.1 Tangible Business Achievements

Through continuous TPM activities, our performance has been improved significantly. Compared with the phase of Award for Excellence in Consistent TPM Commitment, profit margin increased by 11%, output value increased by 16.5%. There was no environment accident in 9 years, and market claim rate decreased by 15.6%. (See Figure 3.1)

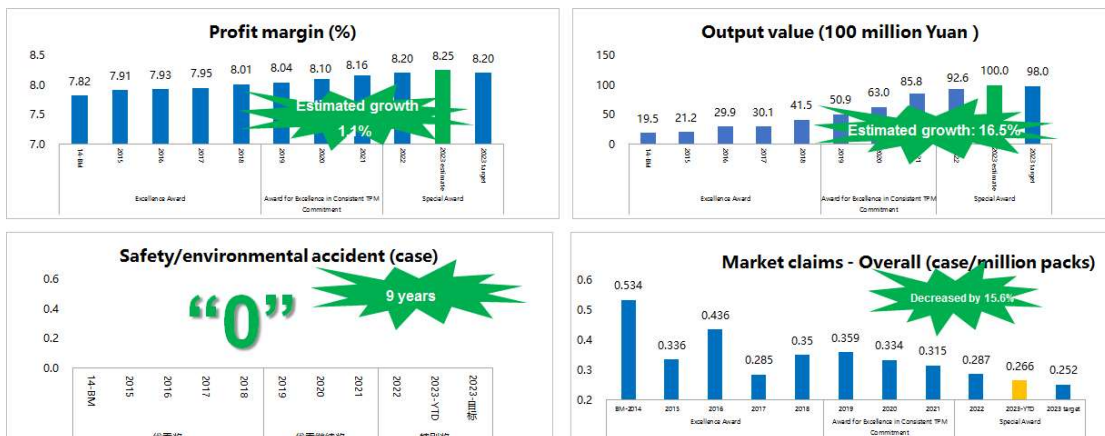


Figure3.1: Tangible Achievements

3.2 Intangible Achievements

Up to now, employees have submitted 130,175 suggestions, and 100% employees have been involved in TPM activities. (See Figure3.2)

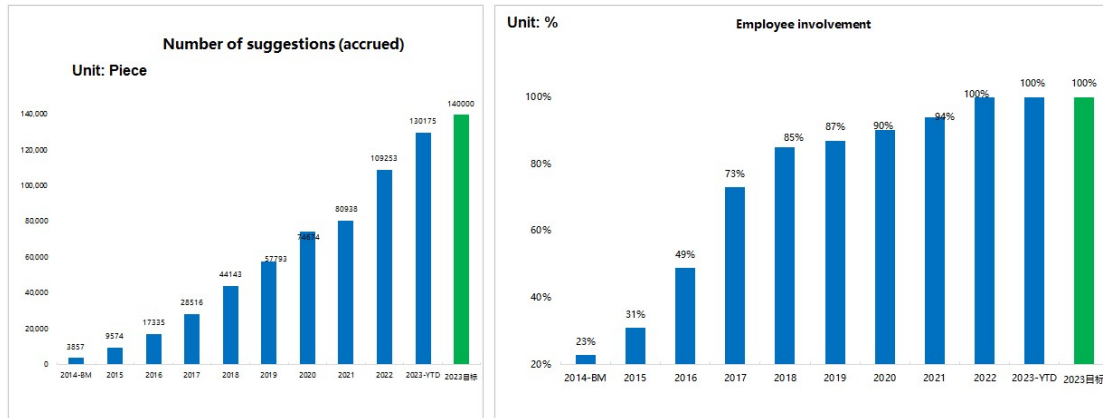


Figure3.2 Intangible Achievements

Chapter Key to Our Success

- The factory has set clear strategic guidelines;
- The factory's leadership has made TPM the only management model;
- A data collection system has been established and improved to identify all types of losses;
- Based on the goal of "zero" loss, we apply high-level tools and continuously carry out relevant activities;
- Promote TPM activities by raising the awareness of personnel to improve themselves;
- Continuously strengthen the ability of employees to identify and improve problems.



**Chapter5 Achievements**

TPM Award Assessment Achievement Sheet

Company & plant name	Ningxia Yili Dairy Co., Ltd.
TPM Slogan/Objectives	TPM Contribute to the continuous improvement of organizational performance

Category	Index	Unit	BM (TPM Started or last time awarded)	Actual Status	Target
Enter the year →			2015	2023 (1-12)	2023
S	Number of accident	Cases/ year	3	0	0
S	Number of first aid	Cases/ year	2	0	0
P	Productivity	Ton/Person	29.6	52.1	51.7
P	OEE (or Overall Plant Efficiency)	%	66.20	83.08	82.30
P	Breakdown and Short stop rate	machine stop time/ Available time * 100%	10.07	2.31	2.42
P	MTBF	Hour	8.02	11.4	20.51



P	MTRR	Hour	0.70	0.33	0.43
Q	Claim rate	PPM	0.336	0.266	0.272
Q	In-line defect rate (scrap)	%	0.049	0.021	0.022
C	Cost Per Ton	Cost/Ton	6242	6375.4	7344
D	Lead time	Days	7.10	5.98	6.11
D	Perfect Delivery	%	93.86	99.63	98.60
S	Lost Time Accident Rate	Lost Time Accidents / Total Worked Hours of Last 12 Months * 1.000.000	0.1009	0	0
M	Number of Employee Suggestions	Number/year	3851	21375	9905

Note: Have the indices covered all important items related to PQCDMS measures being undertaken in the entirety of the subject to be assessed. Note all indices in the TPM Activity Report. Where your specific indices vary from those above attach relevant data.