



Brief introduction to Hubei Huanggang Yili Dairy Co., Ltd.



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Chapter 1 Profile of the company & factory

1.1 Company profile

Yili Group is the largest dairy product enterprise with the most complete product lines in China. By 2022 Q3, the company had achieved the gross operating income of 93.861 billion yuan, ranking first in the Asian dairy industry and Top 8 in the global dairy industry. (See Diagram 1.1)

1956年 成立呼市回民区养牛合作小组，为伊利的前身。

1993年 股份制改革，正式更名为“伊利”。

1996年 伊利股份挂牌上市。

2008年 成为北京奥运会合作伙伴。

2010年 成为上海世博会合作伙伴。

2016年 进入全球乳业八强。



Diagram 1.1 Profile of the group

1.2 Overview of the factory

1.2.1 Brief history of the factory

Hubei Huanggang Yili Dairy Co., Ltd., located in Huangzhou District, Huanggang, Hubei, covers an area of 102,800m², with a total investment of 2 billion yuan. It is a factory jointly constructed by the Cold Drink Division and the Liquid Milk Division. Cold drink production plant that applied for TPM award certification this time. (See Diagram 1.2)



Diagram 1.2: Factory profile

The factory was invested and built in 2006, put into production in 2007, won the honor of City Quality Management Pioneer in 2013, won the honor of Safety Production Standardization Level 3 Enterprise in 2014, introduced TPM activities in 2019, passed the energy system ISO 150001 certification in 2020, passed the quality FSSC 22000 certification in 2021, and will challenge for the certification of TPM Excellence Award (B) in 2023 (see Diagram 1.3)



Diagram 1.3: History of the factory

1.2.2 Factory process

The production process includes raw material receiving → batching → pasteurization → aging → congelation → filling → filling → coating → packaging → boxing → palletizing and warehousing (see Diagram 1.4).



生産プロセス											
工程	前処理				成型工程					包装工程	
プロセス	原乳受入	材料調合	パースル殺菌	硬化	フリージング	充填	棒挿し	コーティング	包装	箱詰め	保存
図示											
多品目ラインキーポイント	1. 殺菌温度 87℃、温度幅 84-90℃、時間 30 秒。2. 殺菌後の牛乳温度 ≤8℃、保存時間 <24 小時間	1. 材料混合温度 60-65℃ 2. 液体材料の定容タンクでの保存時間 ≤2 時間	温度 90℃、温度幅 87-92℃。殺菌時間 30 秒	硬化温度 2-10℃、硬化時間 2-36 時間	材料排出温度 ≤-1.5℃、多色同時充填 ≤-2.0℃	塩水温度 -28~-40℃	生産過程に発見した棒折れ、棒屑は即座に取って、製品への混入を防止。	1、チョコレートコーティング温度は基準範囲内に抑える。 2、製品が液体チョコレート槽に落ちたらずきに取って、チョコレートの品質及びコーティング効果への影響を避ける	1、ロット番号印字やインクジェット印字が明瞭で、完全。 2、口が密封され、皺、焦げがない。	1、製品入庫前に重量計量台と金属検出機やX線機を通る。 2、外装箱のロット番号が明瞭で、完全。製品間違ひ防止。QRコードは明瞭でスキャンできる。	冷凍倉庫温度 ≤-22℃
Tunnelキーポイント					Tunnelラインカップ類、カップリング類製品 ≤-3.5℃	急速凍結 Tunnel温度 ≤-30℃					
設備年数	0.5年	5.5年	5.5年	5.5年	13.2年	5.1年	6.1年	3.2年	5.2年	5.2年	3.2年

Diagram 1.4: Process flow

1.2.3 Equipment layout of the factory

Hubei Huanggang Yili Dairy Co., Ltd. has a total of nine production lines, with a daily output of 240 tons. The production workshop includes pre-treatment workshop, filling workshop and packaging workshop, with 322 sets of equipment, including 184 sets of pre-treatment equipment, 58 sets of filling workshop equipment and 80 sets of packaging workshop equipment (see Diagram 1.5)

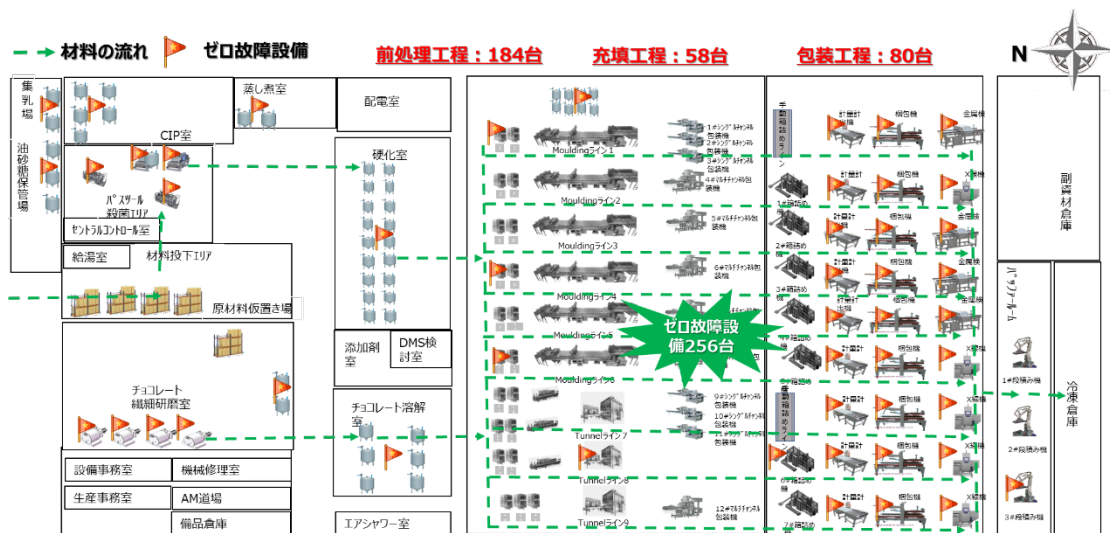


Diagram 1.5: Equipment layout

1.2.4 Categorization of factory equipment

The existing equipment are categorized according to the categorization criteria of A, B and C, and combined with the categorization process. Among them, there are 38 sets of Class A equipment, accounting for 12%, 26 sets of Class B equipment,

accounting for 8%, and 256 sets of Class C equipment, accounting for 80%. In order to ensure equipment maintenance, the maintenance strategies are developed for different types of equipment for stable operation of the equipment (see Diagram 1.6)

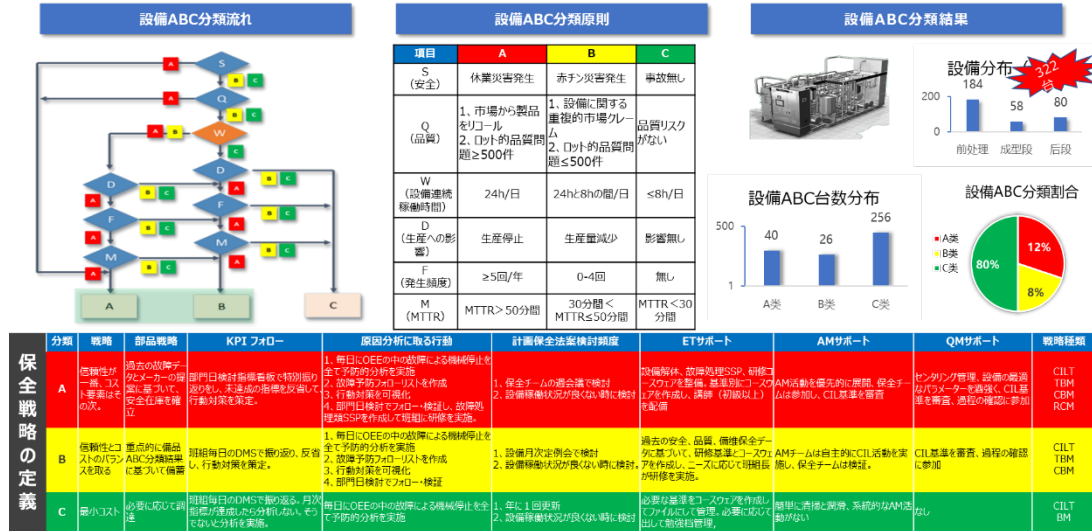


Diagram 1.6: Equipment categorization

1.2.4 Product structure of the factory

The factory has fancy ice-cream lines and quick-frozen tunnel lines, producing 4 series of products, namely, popsicle, ice-cream, ice stick and ice frost, with 37 items in total (see Diagram 1.7)



Diagram 1.7: Manufactured products

1.2.5 Factory organization

Huanggang Yili has a total of 9 business departments, 412 self-owned employees and 224 outsourced personnel. The three-shift system is adopted for production,

equipment and quality departments, and the day shift is adopted for others. (See Diagram: 1.8)

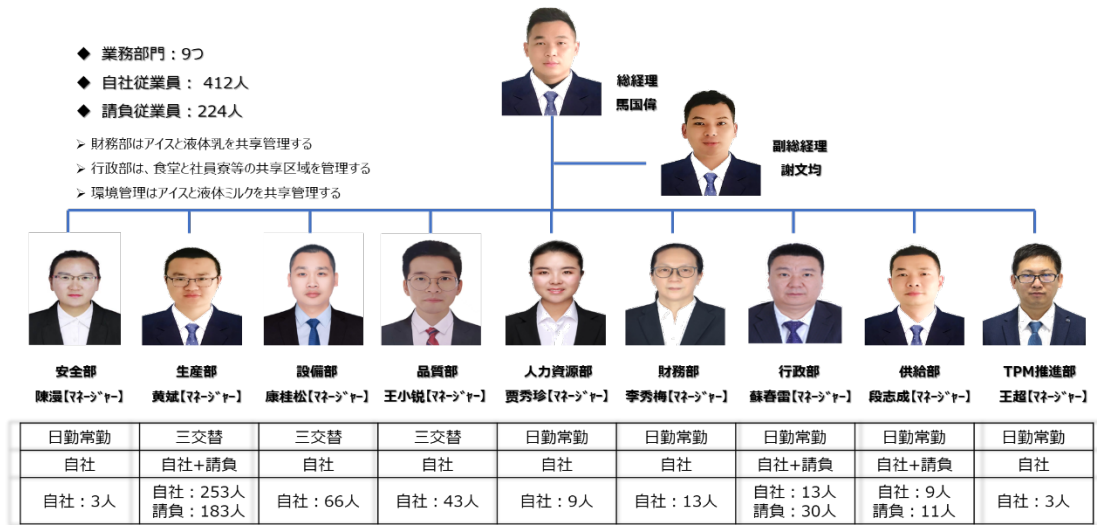


Diagram 1.8 Factory organization

1.2.6 Overview of employees

The factory personnel are mainly distributed in the production, quality and equipment departments, accounting for 85.69% of the total employees of the factory. Those with the college education and above account for 34.12%, those working for more than 5 years account for 48.3%, and those under 40 years of age account for 56.45% (see Diagram 1.9).

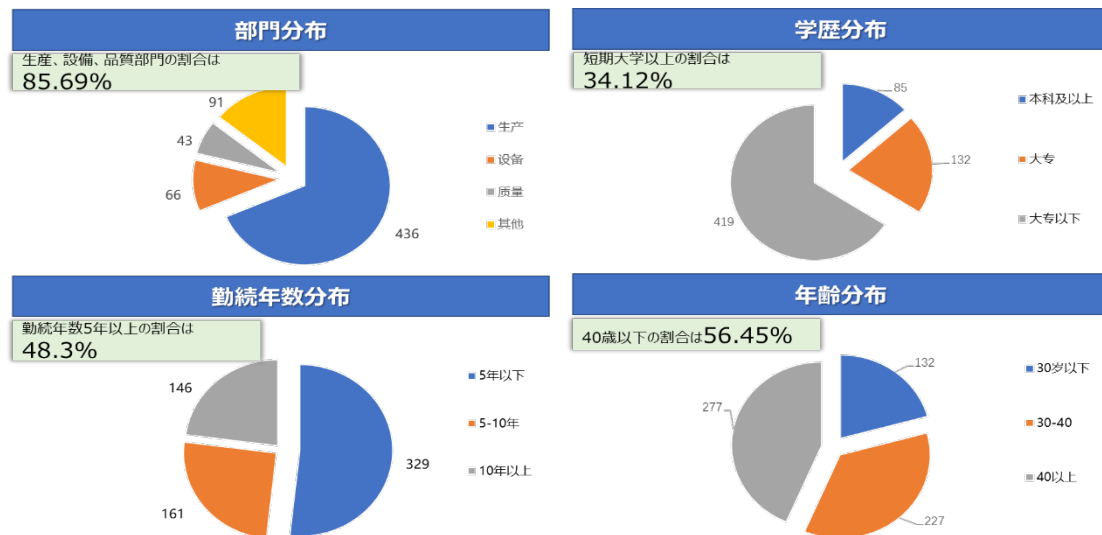


Diagram 1.9: Overview of employees

Chapter 2 TPM promotion plan

2.1 TPM support for strategy

According to the Group's vision of “becoming the world's most trusted health food provider”, the factory has proposed the vision of “building a healthy and intelligent operating factory”. Based on the analysis on the current situation of the factory, we have developed the five strategies of "creating green life together, casting excellent quality, improving synergy efficiency, reducing operation cost, and realizing value-added of all employees"; to achieve the strategies, we introduced TPM. (See Diagram 2.1)

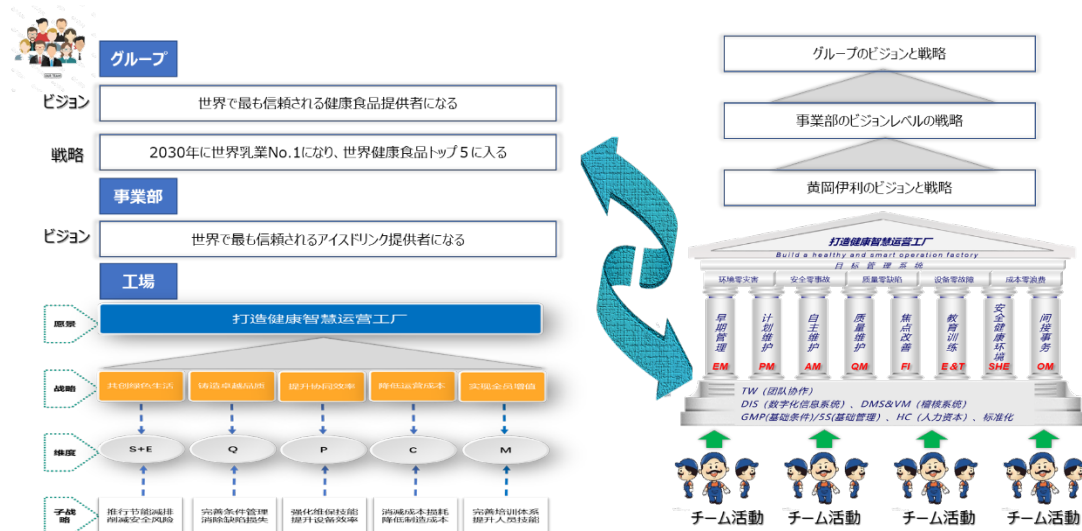


Diagram 2.1: Factory strategy

2.2 History of the factory's TPM

In 2019, the factory introduced the four pillars of AM, FI, ET and PM. To ensure the effective operation of the pillars, we established the DMS management mechanism and OEE data system in July of the same year. In 2020, we introduced QM, SH and ENV pillars. We plan to challenge for the certification of TPM Excellence Award (B) in 2023, and continue to challenge for JIPM awards at all levels in the future. (See Diagram 2.2)

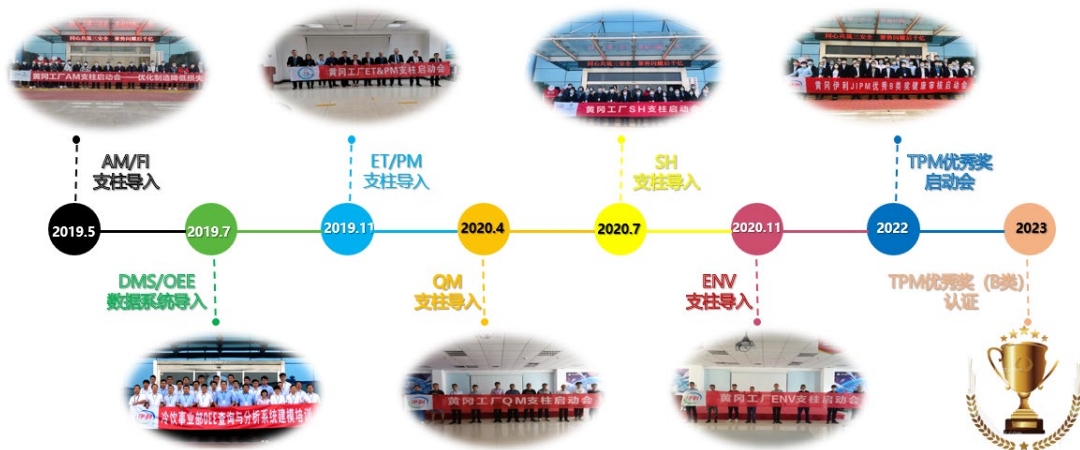


Diagram 2.2: History of the factory's TPM

Chapter 3 Benefits achieved

3.1 Tangible improvements in the factory's operating performance

Through the implementation of TPM activities, we have made certain achievements, safety accidents, environmental accidents and food safety incidents continue to be 0, the output value is increased by 168.2%, the profitability reaches the target, and the customer satisfaction is improved continuously (see Diagram 3.1)

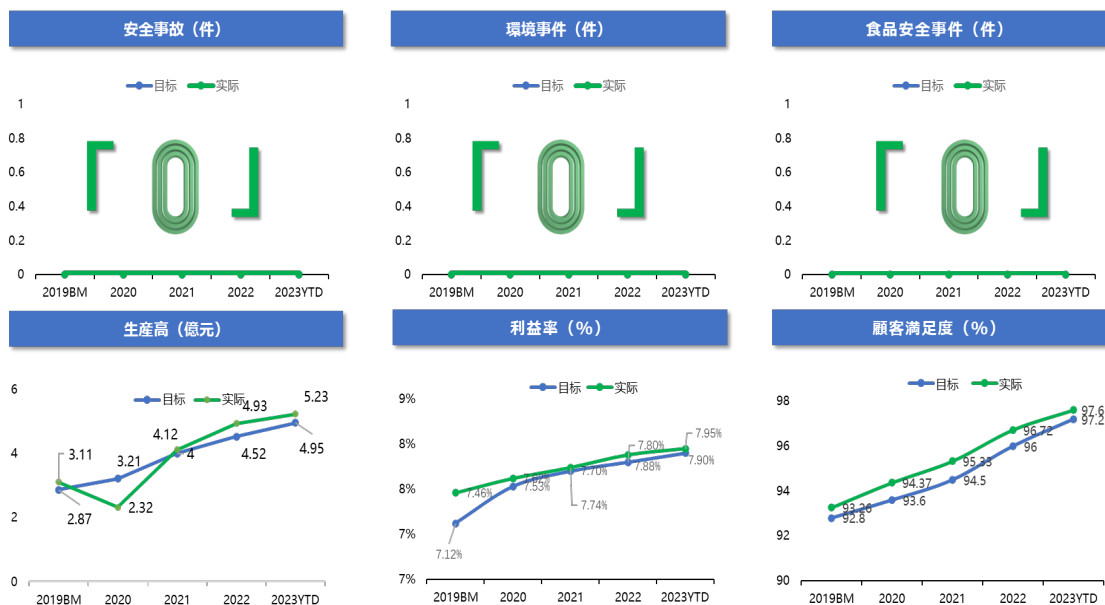


Diagram 3.1: Tangible achievements

3.2 Employee participation, atmosphere improvement and other intangible

achievements

Since 2019, the personnel have created a total of 33536 reasonable suggestions and 25087 AM tags. The participation in TPM activities continues to increase, with a participation rate of 100%. (See Diagram 2.2)

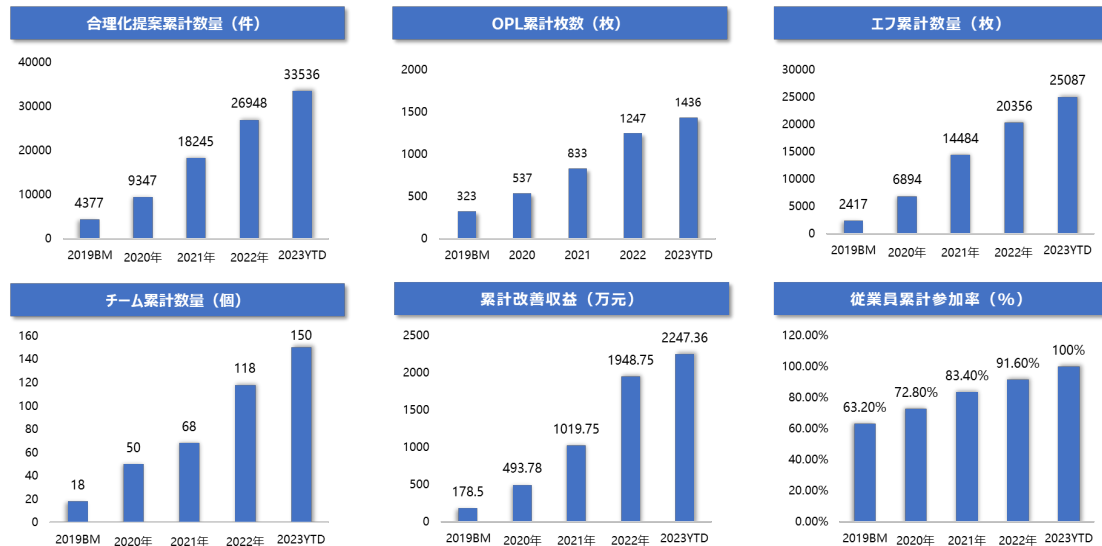


Diagram 3.2: Achievements of TPM

Intangible achievements:

The factory has become more confident in practicing the world-class manufacturing management model, and will continue to promote the full expansion of TPM in the factory.

Chapter 4: Key points for success of the factory

- The factory management pays attention to and adheres to TPM.
- The interdepartmental cooperation is closer.
- Combine TPM activities to daily work.
- Apply the standard methodology to make continuous improvement.
- Establish the TPM incentive system to drive more people to participate in TPM activities.



Chapter 5 Achievements obtained

TPM Award Assessment Achievement Sheet

Company & plant name	Hubei Huanggang Yili Dairy Co., Ltd.
TPM Slogan/Objectives	TPM contributes to the continuous improvement of organization performance.

Category	Index	Unit	BM (TPM Started or last time awarded)	Actual Status	Actual Status
			2019	2022	2023
Enter the year →			2019	2022	2023
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	Parts/Operator hours			
P	OEE (or Overall Plant Efficiency)	%	68.56	79.88	82.95
P	Availability	%			
P	Performance Rate	%			
P	Quality Products Rate	%			
P	Number of breakdowns	Breakdowns/ year	745	306	239
P	MTBF	Hour	2469	6480	8424
P	MTTR	Hour	46.24	37.62	36.43
Q	Number of customer complaints	Number/year	0.042	0.033	0.030
Q	In-line defect rate (scrap)	%	0.678	0.259	0.208
Q	In-line defect rate (rework)	%	0.71	0.31	0.23
C	Cost index	Cost/Unit Cost/Kilogram			
D	Production Lead time	Days	11.4	8.5	8
D	Delivery performance	%	100	100	100
S	Frequency rate	Number of occupational accidents with leave for 1 000 000 worked hours	0	0	0
M	Number of Employee Suggestions	Number/year	4566	8484	8858

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.