



# Investor Presentation



# The Core Idea

## What is Thales?..

**Thales is an atomizer that produces 100% homogenous droplets with a 2-micron diameter.**

Thales is a **'sanitation device/atomizer'** that provides a 'one hundred percent' effective solution at a low cost for **'dairy farms' initially, followed by raw milk processors and all food businesses requiring surface disinfection.**

*Developed in Turkey, patented in Turkey, and now expanding to Finland.*



*A national patent application has been filed; EU and global searches have been conducted, revealing no obstacles to the application. It is the first device to atomize hydrogen peroxide at this scale and with this method!..*

# The Core Idea

## What is 2 microns, and why is it important?..

The photo on the right is a microscopic image of a leaf. The scale bar at the bottom represents 10 microns. Most microorganisms that cause contamination, especially in 'raw milk', are around 2 microns in size and reside within the textures of surfaces that raw milk and other foods come into contact with.

Businesses that must regularly 'disinfect' surfaces touched by 'food products'—starting with 'raw milk producing farms', then 'raw milk processing plants', followed by 'bottled water' producers, 'dairy manufacturers', 'breweries', tomato paste producers, poultry slaughterhouses, etc.—need an effective application method that can penetrate these textures to prevent contamination.



**Thales is an atomizer that produces 100% homogenous, 2-micron diameter droplets. With its 2-micron droplet size, it performs this necessary sanitation function.**

## What is Thales's secret?..

Thales uses the heat of dry steam as a heat source and atomizes a hydrogen peroxide solution within its patented 'atomization unit' to produce 100% homogenous droplets with a 2-micron diameter.

*First, Thales produces 'dry steam' in its steam boiler (1). Once the steam is ready, the solution from the 'disinfectant bottle' (2) travels to the 'atomization unit' (3), where it is atomized into 100% homogenous 2-micron droplets. All particles are released into the environment at 4 Bar pressure through the 'trigger mechanism' (4).*



1. Steam Boiler
2. Disinfectant Bottle
3. Atomization Unit
4. Trigger Mechanism / Nozzle

## The Problem ?..

### Turkish Food Codex and EU Standards

According to the Turkish Food Codex and EU Standards, the bacteria level in 1 ml of raw milk should not exceed **100.000 cfu**.

However, the average in Turkey is **20.000.0000 cfu or higher**.

Through field trials over the past year, Thales has proven that it brings 'raw milk quality' in small and medium-sized farms up to EU standards.

DA farm that regularly uses Thales achieves a bacteria count of '**18.000 CFU**'.

## Pazar : Segment A

Small and medium-sized '**raw milk producing farms**' in Turkey, followed by '**raw milk collection centers**' and '**milk processing plants**', constitute the target audience for **Segment A** of the project.





## How Did We Succeed ?

Insufficient mechanization, high bacterial contamination, high somatic cell count, and very poor raw milk quality.

To bring raw milk quality to EU standards with Thales, which is easily 'adapted' to any milking system, without requiring farmers to make additional investments or replace their existing milking machines and tanks.

The photo on the right shows the milking machine of a farm with 25 dairy cows, a partner of the Tire Süt Cooperative.

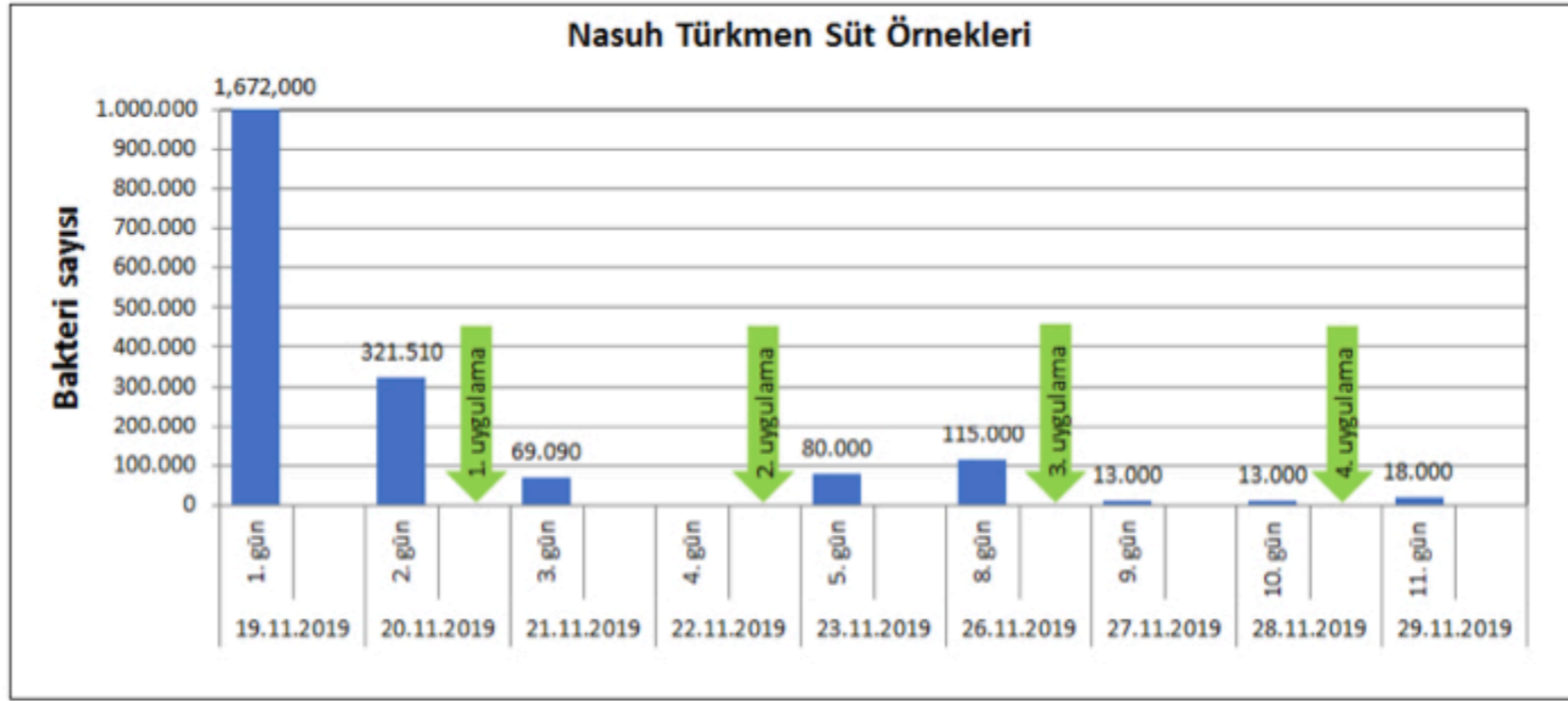
In our trials on farms of this scale, representing Segment B, we have scientifically proven that with regular use, the somatic cell count drops below 200,000, and the total viable count in raw milk decreases to 18,000 cfu..

*See: Lactalis Summary Scientific Content*



*With **Thales** the 'raw milk quality in medium-scale farms' meets EU standards, and animal health gradually improves.*





19.11.2019	1. gün	1.672.000
20.11.2019	2. gün	321.510
21.11.2019	3. gün	69.090
22.11.2019	4. gün	
23.11.2019	5. gün	80.000
26.11.2019	8. gün	115.000
27.11.2019	9. gün	13.000
28.11.2019	10. gün	13.000
29.11.2019	11. gün	18.000

## ***Benefit***

As a result of trials conducted at 3 farms that are partners of the Tire Süt Cooperative, the raw milk quality reached EU criteria. These 3 farms, which represent the national average, have ordinary milking systems and cooling tanks. The same results were

achieved in 3 other farms that placed orders in May 2024. Furthermore, it was observed that regular use prevents contamination from the milking machine, thereby inhibiting the formation of 'subclinical mastitis' and reducing the somatic cell count.



*Uşak/Sivashlı District Director of Agriculture and his team visit Sultan Farm, the owner of Thales.*

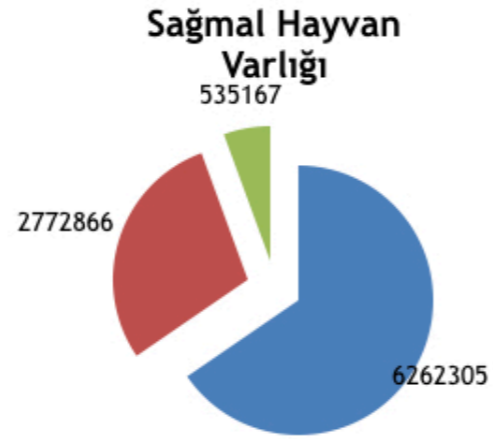
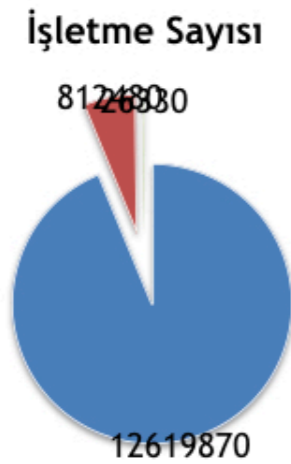
## ***Benefit***

Sultan Farm, which purchased a Thales unit, was in the process of seeking EU approval. With Thales, they easily passed the inspection conducted by the Provincial Directorate of Agriculture. The photo shows the Uşak/

Sivashlı District Director of Agriculture and his team, who were impressed by the effective results and visited the farm to learn more about Thales.

## Turkish Dairy Farm Numbers and Scales

### Türkiye 2 yaş üzeri sağlam ineğe sahip işletmelerin yapısı



Küçük: 1-20 inek , inek başına 3 ton/yıl süt

Orta : 21-100 inek , inek başına 6 ton/yıl süt

Büyük: 101-500+ inek , inek başına 7.5 ton/yıl süt



## What is the business idea, and why is this technology needed ?

We classify 'milk-producing farms' in Turkey into 3 categories:

- Small** farms with 5-20 dairy cows
- Medium** farms with 21-100 dairy cows
- Large** farms with 101 or more dairy cows

While there are 2,400 large farms in Turkey, there are 81,000 'medium' and over 500,000 'small' farms.

The majority of the raw milk supply is provided by small and medium-sized farms.

Our goal is to bring raw milk quality to EU standards with Thales, which is easily 'adapted' to any milking system, without requiring farmers to make additional investments or replace their existing milking machines and tanks.

**In our trials on these farms, we observed that with regular use, the somatic cell count drops below 200,000, and the total viable count in raw milk decreases to 18,000 cfu.**

# Segment A

Total Number of Enterprises Across Turkey			
1-20 Dairy Cows (warm milk)	20-50 Dairy Cows (collected milk with own cooling tank)	50-100 Dairy Cows (Farm Milks, some producing over 2 tons of milk)	Over 100 Dairy Cows
1.155.000	70.705	10.155	2.510

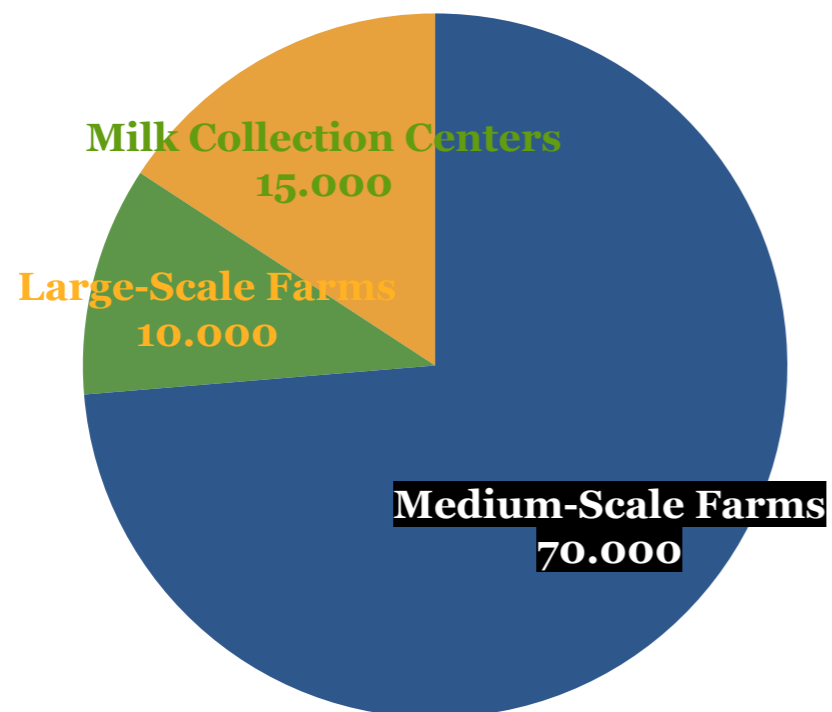
There are approximately 80,000 medium-scale enterprises in Turkey, producing between 500 liters and 2 tons of raw milk daily. If they improve their raw milk quality, it is possible for them to receive a premium of at least 0.50 TL per liter. In this scenario, a farm with 500 L/day earns a 90,000 TL/year premium, and one with 1 Ton/day earns a 180,000 TL/year premium. There is a possibility of the premium reaching 1 TL/liter, which would halve the payback period.

**The Thales acquisition cost of 250,000 TL has a payback period of 18 months.**

**Thales's secondary promise of 'improving animal health' and 'increasing milk yield' needs to be demonstrated to farmers through pilot usage.**

# Segment A

- Medium-Scale Farms
- Milk Collection Centers
- Large-Scale Farms



## The Turkish Market

In Turkey, raw milk is collected by approximately 15,000 vehicles, almost none of which have a CIP (Clean-in-Place) system.

Approximately 70,000 medium-scale farms and 10,000 large-scale farms constitute the market potential.

# Business Model

## GES ve Thales (Model A1) (TL)

Cost	Annual Return	Payback
250.000	180.000	2 Year
<b>GES Y.Cost</b>		
1.000.000	350.000	
<b>Total Cost</b>		
1.250.000	530.000	



## The Problem ?..

### Green Transition and Green Deal Standards

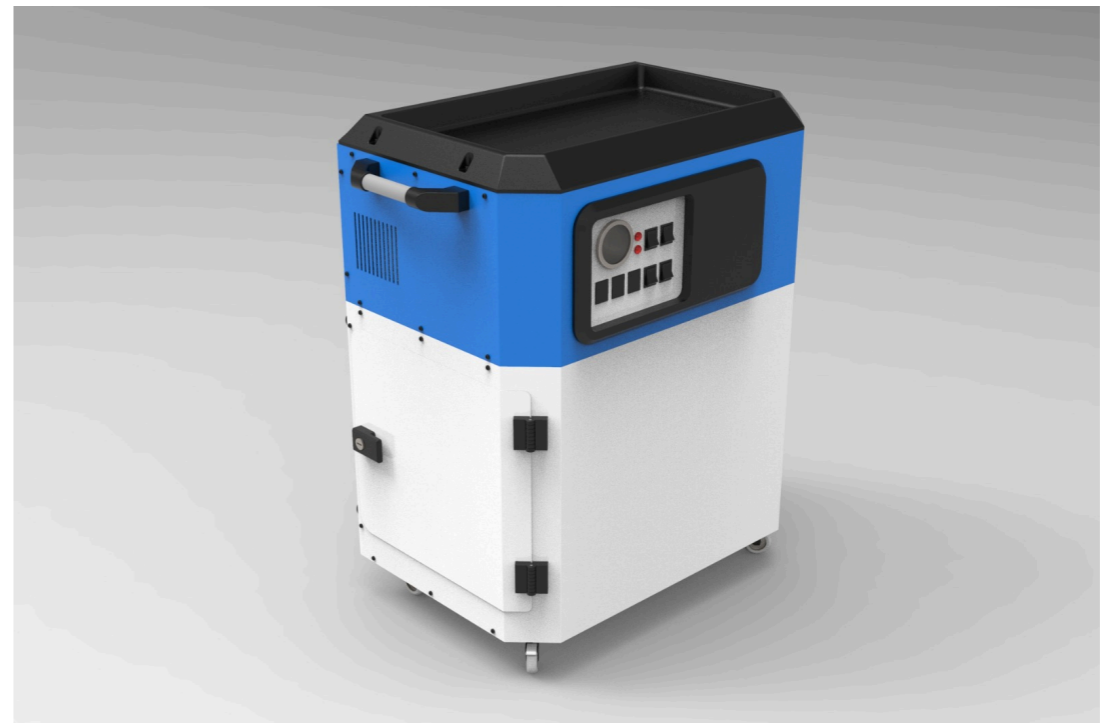
The EU and other Western countries have made decisions to reduce 'Carbon Emissions' within the framework of the Paris Climate Agreement.

Some of these decisions also cover 'dairy processing plants' and 'dairy farms'. A saving of 'at least 15% in water and chemicals' is targeted in the production process.

Thales, when integrated with CIP systems in dairy farms and processing plants, provides over 90% savings in water and chemicals during acid washing and rinsing.

## Market : Segment B

The target audience for Segment B of the project includes 'raw milk producing farms', 'raw milk collection centers', and 'milk processing plants' in Scandinavian countries, Australia, New Zealand, and other EU countries.



**Thales disinfects an 18-ton truck with 5 liters of water and 50 ml of disinfectant. A conventional CIP system performs the same task with 4 tons of water and 10 liters of disinfectant.**

## The Problem is Global

The problem is not unique to Turkey; it also exists in EU countries, albeit with some differences. Hygiene problems are particularly prevalent in robotic milking systems.

The excerpt is from an article published in AgriFuture Magazine/Germany. The article states that 'blind spots' form within the milking system, and contamination originating in these spots spreads throughout the entire system.

It reports that the average bacteria count is 13,000 CFU in conventional milking systems and 19,000 CFU in automatic milking systems, with 70-80% of this contamination stemming from inadequate surface sanitation.



**Milking hygiene - Don't leave everything to the robot**

**By Claudia Bodensteiner, TU Munich, Dr Ulrike Sorge, Bavarian Animal Health Service, Prof. Dr Jörn Stumpfenhausen, Weihenstephan-Triesdorf University of Applied Sciences**

The milking robot is in continuous operation longer than any other milking system. In addition to milking, the Automatic Milking System (AMS) also cleans the system.

But even with high utilisation of the AMS, there is usually not a continuously constant flow of milk. Due to the often long breaks between the individual milkings, milk residues can dry in the milk-bearing parts and cause a critical multiplication of microorganisms. This is especially true if there is an intermediate cleaning time of more than eight hours. Udder health and milk hygiene problems can be the result.

High bacteria concentrations in milking robots

While the germ content of Bavarian dairy farms with **conventional milking systems averaged 13,000 colony-forming units per ml (cfu/ml)** of milk between January 2012 and May

2020, farms with **AMS had average germ contents of 19,000 cfu/ml. As a quality criterion for raw milk,** the

microbial count is an essential indicator of the hygiene of milk production. The main influencing factors are the cleanliness of the extraction facilities, proper storage and transport of the milk and the udder health of the cow. An insufficiently cleaned and disinfected inner surface of milking machines, pipelines and tanks poses the greatest risk of contamination during machine milking. **Contaminated milk-carrying pipes and surfaces are assumed to be the cause of 70 to 80 % of the germ content in raw milk.**

# The Problem is Global

The article states that cleaning is not sufficient for 'sterilization,' and none of the farms examined in the research on which the article is based achieved 'complete sterility'.

What is encouraging for us is that in our first and most

comprehensive study, conducted in the Tire district of Izmir, the sampling points we chose and the methodology of our trial align perfectly with the "blind spots" identified in the article as contamination sources that require 'attention.' The results of this study showed that Thales provides sterilization in all of these critical points. Thus, we have proven that we can be the solution to the problem in Germany.

## Some of the bacterial counts were very high

Compared to conventional milking systems, the complexity of the AMS makes access to the swab sampling points within the milking system more difficult. (Overview 1).

In addition, there were large differences between the manufacturers regarding the design-related effort for targeted sampling, and not all defined sampling points could be reached with all milking robots investigated.

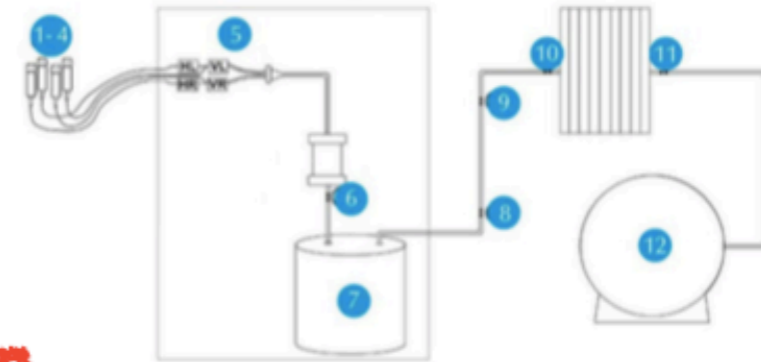
For sampling points 10 to 12, swab samples could only be obtained on some farms.

## No sterility after cleaning



In none of the farms examined was the AMS able to show complete sterility at all sampled milk-bearing points after the cleaning run. Of the total of 266 swab samples taken, 38 were germ-free, which corresponds to a proportion of 14.3 %. Eleven different bacteria of importance to the dairy industry were detected in the laboratory. In addition to dirt germs, coagulase-negative staphylococci, aerobic spore-formers, asculin-negative or positive streptococci, Staphylococcus aureus, the most important udder-associated mastitis pathogen, was also detected in one farm. Coliforms, Enterobacteriaceae and Pseudomonas aeruginosa were also present, sometimes in high levels (+++). Furthermore, yeasts and moulds were found in individual cases.

## The sampling points on the milking robot



- 1 liner HL
  - 2 Rubber liner HR
  - 3 Rubber liner VL
  - 4 Rubber liner VR
  - 5 Milk tube
  - 6 After milk quantity measurement
  - 7 Collection tank inside/bottom
  - 8 Before filter
  - 9 After filter
  - 10 Before tube cooler
  - 11 After tube cooler
  - 12 Milk tank
- Source: Bodensteiner

# Successful Results

6. gün üçüncü uygulama yapıldı. 200 ml dezenfektan kullanarak 10 dk tank, 10 dk sağım makinasına uygulama yapıldı. Pençe ağzlarına ayrıca uygulama yapılmadı. Uygulamadan sonra 10 dk beklendi.

**8. Gün 3. uygulama (26.11.2019)**

Nasuh Türkmen	TANK DİP		TANK RAYYUS		TANK GİRİŞ		TANK KARIŞTIRICI		CEİVER BAĞLANTI HO		RECEİVER GİDER		RECEİVER RAYYUS		PENÇE	
	Ö	S	Ö	S	Ö	S	Ö	S	Ö	S	Ö	S	Ö	S	Ö	S
	9681	0	1130	0							47418	0	1010	0	90	0

Ertesi gün sadece süt numuneleri alındı.

**9. Gün süt numuneleri (27.11.2019)**

Süt örneği	
13000	
415000 (somatik)	

**10. Gün süt numuneleri (28.11.2019)**

Süt örneği	
13000	
336000 (somatik)	

10. gün 50 ml dezenfektan ile 10 dk Tank, 10 dk sağım makinasına uygulama yapıldı. En son sol baştaki pençenin ağzından örnek alındı. Buharın homojenliğini test etmek için pençelere ayrıca uygulama yapılmadı. Uygulamadan sonra 10 dk. beklendi ve 'sonra' swapları alındı.

**10. Gün 4. uygulama (28.11.2019)**

Nasuh Türkmen	TANK DİP		TANK RAYYUS		TANK GİRİŞ		TANK KARIŞTIRICI		CEİVER BAĞLANTI HO		RECEİVER GİDER		RECEİVER RAYYUS		PENÇE	
	Ö	S	Ö	S	Ö	S	Ö	S	Ö	S	Ö	S	Ö	S	Ö	S
	60	0	20	10							74970	0	1510	0	397740	314160

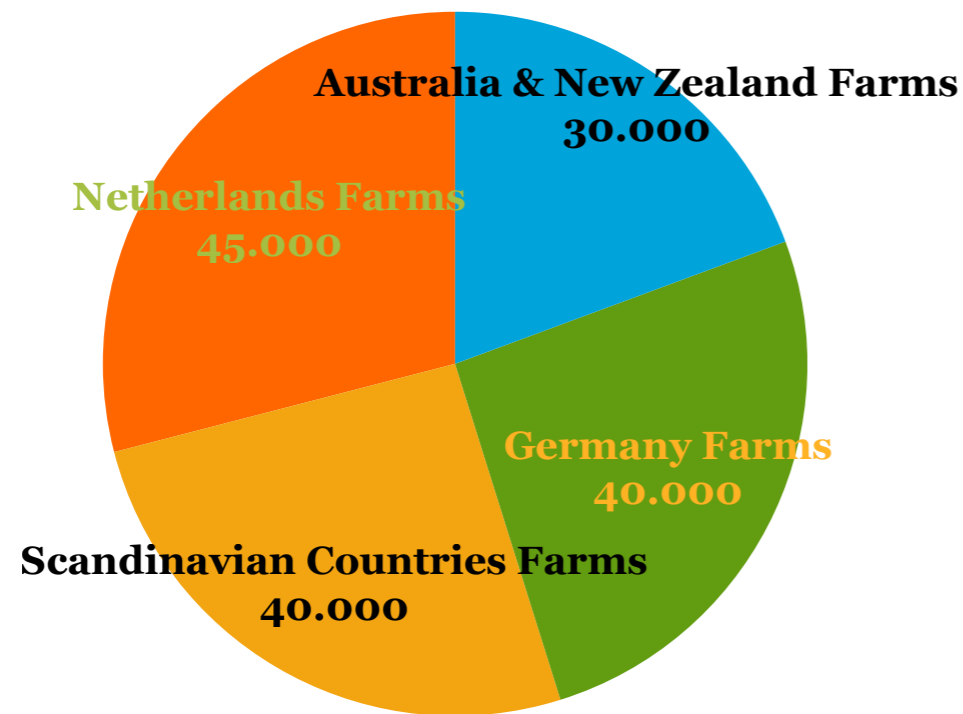
**11 Gün süt numuneleri (29.11.2019)**

Süt örneği	
18000	
169000 (somatik)	

*All our field tests, conducted in real-world environments, yielded the same result. With Thales, we can achieve sterilization in the 'unreachable points' of milking systems. Thus, with regular use, Thales makes it possible to achieve a raw milk quality of 3,500-5,000 CFU/ML, which is superior to the German standard. **Sterilization is possible with Thales!..***

## Segment B

- Australia & New Zealand Farms
- Germany Farms
- Scandinavian Countries Farms
- Netherlands Farms



## Export Market

Many countries are aiming to comply with Green Transition/Green Deal criteria. We are initially examining the Finnish, Danish, Australian, and New Zealand markets as a priority. In these priority markets, there is a total of 155,000 farms and over 1,000 'milk processing plants.'

**Thales's production cost is €1,200 per unit under Turkish conditions and €2,500 per unit under EU conditions. The sales price is 'at least €6,000.' We can easily say that the profit per unit could be €4,000.**

In this context, the total market in this segment has a profit potential of **€930.000.**

**In our trials on farms representing Segment B, Thales has been proven to provide both effective disinfection and over 90% savings in water and chemicals in CIP (Clean-in-Place) systems at this scale.**



# Competition

CIP Systems and/or  
weak mechanization

Vs



The problem for farms in Segment B (in Turkey, EU, and Australia) is 'high water and chemical' consumption. Thales solves this problem with a low acquisition cost; in this sense, it is unrivaled with its promise of effective sanitation and savings.

In Segment A in Turkey, milk collection vehicles do not invest in CIP systems due to the high 'CIP investment cost.' A CIP investment requires over 2,000,000 TL. Thales offers a low investment cost and low operating cost alternative in this segment. In Segment A, operating costs are high. Thales provides savings opportunities with its low operating cost.

Thales is an atomizer. It atomizes hydrogen peroxide. In this context, devices named 'hydrogen peroxide vaporizers' used in the healthcare sector abroad are Thales's secondary competitors. Compared to these rivals, Thales stands out with the following advantages: firstly, it has a 100% homogenous droplet size, which is a technical superiority over others. On the other hand, it is more affordably priced. 'Hydrogen peroxide vaporizers' from China neither have a 100% homogenous droplet size nor a sales price above \$10,000. Similar devices in the EU market also lack a 100% homogenous droplet size and have a sales price of €50,000.



# Business Plan, Our Promise, and Profitability

MODEL A1 (Euro)				
Material Cost	Labor	Production Profit	Sale Price	
1.500	300	675	5.500	
			<b>Gross Profit</b>	<b>3.025</b>
MODEL A2				
2.000	150	1.100	7.500	
			<b>Gross Profit</b>	<b>4.250</b>



**Thales A1 Model: Sanitizes an 18 m<sup>3</sup> volume with 4.95 L of water and 50 ml of hydrogen peroxide solution.**

**Thales A2 Model: Sanitizes a 36 m<sup>3</sup> volume with 9.9 L of water and 100 ml of hydrogen peroxide solution.**

# Team

Production Location: İzmir ve/veya Helsinki

Manager: **Cem Evcim**

Assistant Manager: **Fatih Özdemir**

Production Manager / Industrial Designer: **Cahit Onat , Ali Hakan VURAN, Serhat SAYGILI**

Production Solution Partner: **İNNOKAS MEDICAL / Finland**

Academic Advisory Board:

**Prof.Dr. Hamdi Bilgen,**

**Prof.Dr. Hüseyin Güler,**

**Doç.Dr. Tuncay Günhan.**





# First 12 Months & Required Capital

(October 2025 - October 2026)

**MODEL A1** (Euro)

Material Cost	Labor	Production profit	Total	Sales Price	Dealer Sales Price	First Year Sales Target Units	Production cost (Euro)
1.200	150	675	2.025	4.000	6.000	30	
<b>Brüt Kar</b>				<b>1.975</b>			<b>60.750</b>

**MODEL A2**

				Sales Price	Dealer Sales Price		
2.000	150	1.300	2.450	6.000	8.000	40	98.000
						<b>Total</b>	<b>158.750</b>
<b>Gross Profit</b>				<b>3.550</b>	<b>X70</b>		<b>248.500</b>



# First 12 Months & Required Capital

(October 2025 - October 2026)

September 2025  
September 2026

TL

Monthly Fixed Expenses (Per Month/TL)	Annual Fixed Expenses (Per Year/TL)	Machine Production Capital (Per Year/TL)		Total Cost
320.000	3.840.000	6.350.000		10.190.000
International Operations Expenses				6.200.000
<b>Total Costs</b>				<b>16.390.000</b>
		Sales Revenues/Year	Total Sales Revenue	27.200.000
A1		14.400.000		
A2		12.800.000	<b>Gross Profit</b>	<b>10.810.000</b>
Income from Domestic Grants (Tubitak 1507 and 1707)				7.500.000
Income from International Grants/Supports (Ministry of Trade Export Incentives)				16.000.000
<b>Year-End Profit</b>				<b>34.310.000</b>
Capital Required for the First Year				<b>11.000.000</b>





## Use of Funds and Equity Share

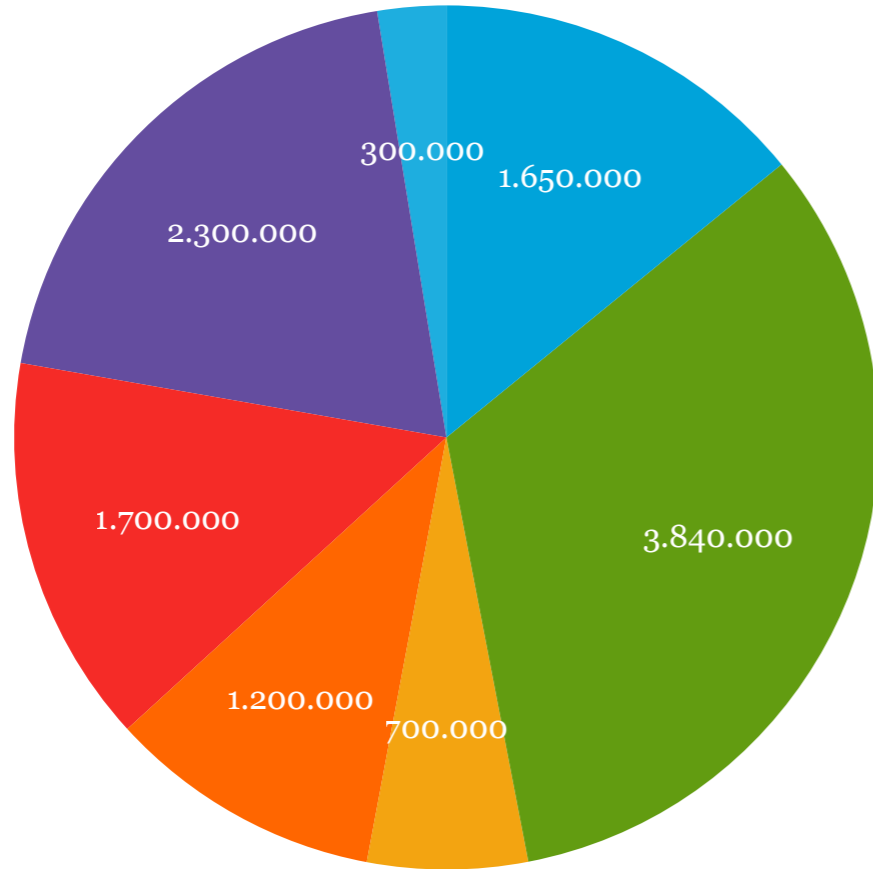
*Within the scope of the project, a capital injection of **11,000,000 TL** is requested through a crowdfunding system. In exchange for this investment amount, **14% of the shares** of Taşavlu AŞ, the owner of the Thales brand, will be offered to investors. Investors will also become partners, at the same rate, in the company that Taşavlu AŞ will establish in Finland.*

*Alternatively, we are willing to offer **10% equity** to investors in exchange for a capital injection of **8,000,000 TL**.*



# Use of Funds and Equity Share

- Production
- Contingency Reserve
- International Patent Fee
- Fixed Expenses
- Working Capital
- International Company Setup
- International Operations



**TL**

*Production: 1.650.000*

*Fixed Expenses: 3.840.000*

*International Operations: 2.300.000*

*International Company Setup: 700.000*

*Contingency Reserve: 1.200.000*

*Working Capital: 1.700.000*

*International Patent Fee: 300.000*



*Within the scope of the project, a capital injection of **11,000,000 TL** is requested through a crowdfunding system. In exchange for this investment amount, **14% of the shares** of Taşavlu AŞ, the owner of the Thales brand, will be offered to investors. Investors will also become partners, at the same rate, in the company that Taşavlu AŞ will establish in Finland.*



**Thank you.**

