

# Afimilk's Solution for Parlor Automation

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 **afimilk®**

# About Afimilk

Afimilk's full automation and management solution is simple to use, comprehensive, and focused on farmers' needs. AfiFarm software interprets the data from all these tools to provide you with comprehensive and accessible information you can use to make more insightful and informed decisions.

## How do we drive effective management?



### What

#### Informed Decisions

Artificial intelligence algorithms transform the sensors' data into valuable farming decisions, keeping your herd healthy and well fed.



### Who

#### Accurate animal ID

Afimilk's precise & accurate ID system assigns the measured data to the right animals.



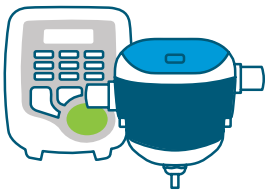
### How

#### High performance sensors

Afimilk sensors measure yield (ICAR accuracy) and conductivity as well as milk components (fat, protein, lactose).

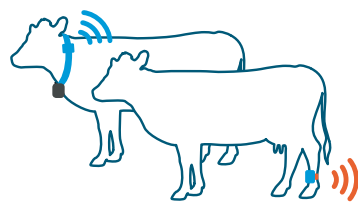
# Afimilk Solutions

For management, control, and growing productivity in dairy farming



## Milk sensors

Afimilk MPC milk meter (yield and conductivity) and Afilab milk analyzer (milk components)



## Animal sensors

AfiCollar  
AfiAct II (leg tags)



## Parlor ID

Accurate cow identification in the milking parlor and at the sorting gate



## AfiFarm

Comprehensive herd management software with dashboards, alerts, tasks, and reports



Management reports



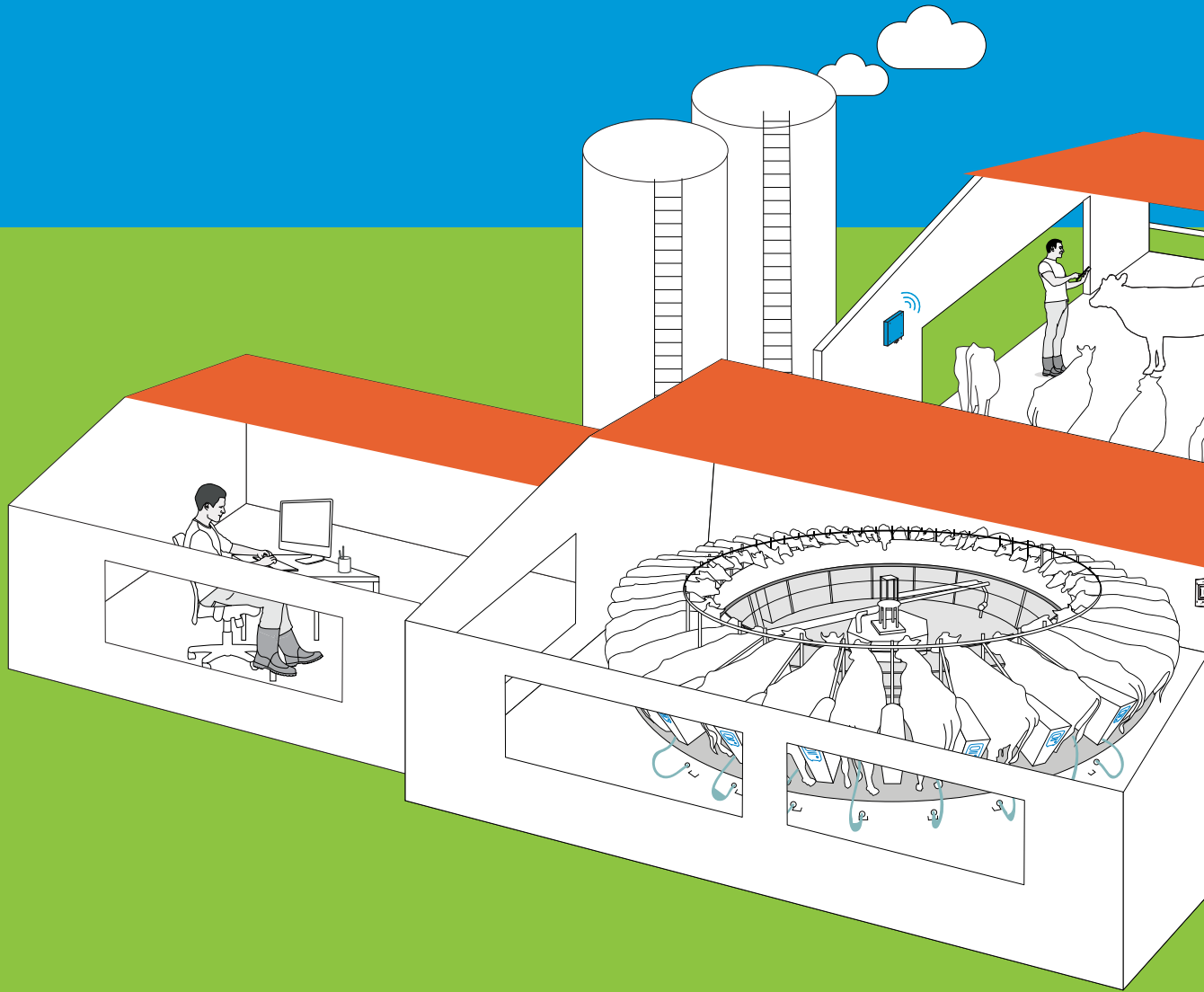
Apps



Health decisions

# Vital Knowhow in Every Drop

Automate and control parlor management & animal health with farmer-friendly technology



**Milk sensors**

P. 6



**Health management**

P. 10



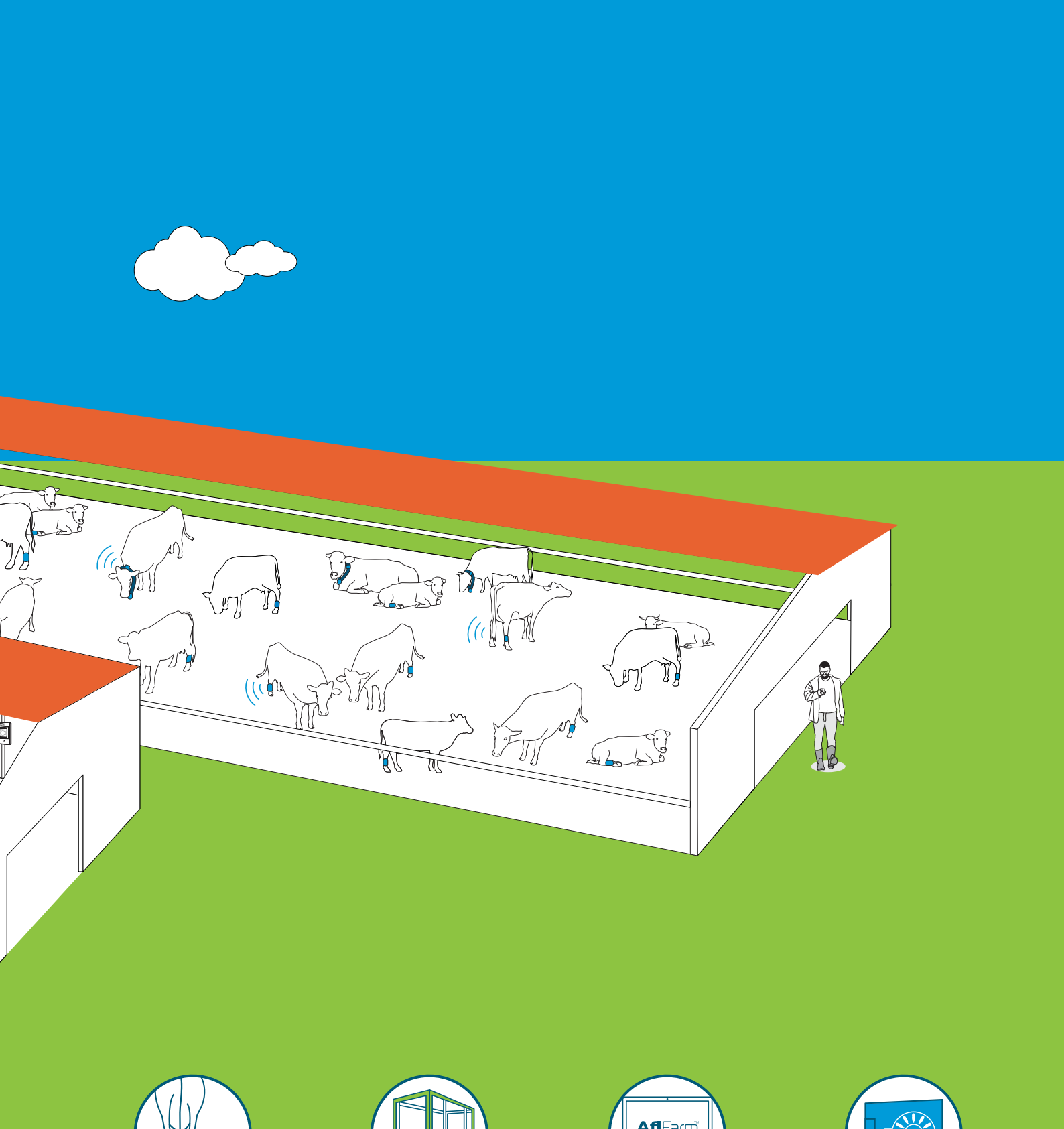
**Feed efficiency**

P. 18



**Prevents bulk milk loss**

P. 20



Milking  
efficiency

P. 21



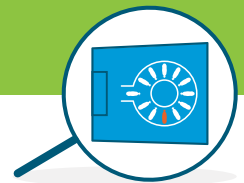
Animal  
sorting

P. 22



AfiFarm  
5.4

P. 26



Rotary parlor  
terminal

P. 30

# Milk Sensors

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Integrated milking point  
analysis and control





**AfiLab**  **AfimilkMPC**

# AfiLab and Afirmilk MPC Sensors

Unique sensors monitor and record vital details of the milk for every cow, at every milking



Afirmilk's milk sensors are today's most effective tools for early detection of:

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## Ketosis

Early detection minimizes losses due to negative energy balance

## Mastitis

Accurate detection helps prevent tremendous loss of production, and improves fertility

## Acidosis

Detection of Sub-Acute Ruminal Acidosis (SARA) allows quick modification of food quality

## Additional benefits

Feed monitoring (TMR corrections), prevents bulk milk contamination by blood and/or antibiotics, improves genetic planning



## How Afimilk MPC and AfiLab improve your bottom line

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- ✓ Early detection of critical health issues
- ✓ Precision milking
- ✓ Optimized feeding
- ✓ Fastest ROI (return on investment) - typically 1 to 2 years!



# Ketosis

## Early and accurate detection is key

### Ketosis or NEB (Negative Energy Balance) - What is it?

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Fresh (post-calving) cows suffer from reduced appetite and weakness. When daily feed consumption does not meet energy needs, cows enter a state of negative energy balance, breaking down body fat reserves, resulting in increased level of Ketone bodies in the blood (i.e. Ketosis)

#### Detection

Once the ketotic cow is detected, treatment can be very effective. However, detection is not simple at all, and use of detection kits has limited results.

Studies show that for every clinical case that is detected, 4 more (sub-clinical) cases go unnoticed. Detection kits may show inconsistent results when applied at different times of the day.

### Damaging effects of Ketosis

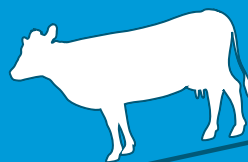
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- ✔ Direct impact on production: Milk peak will be lower and later in the lactation
- ✔ Tendency for ketosis to appear in next lactation
- ✔ Late pregnancies result in increased open days
- ✔ Negative selection - High yielding cows have a tendency to develop NEB

#### Prevalence and cost

Studies indicate that 40% of fresh cows in USA herds suffer from ketosis.<sup>1</sup>  
The associated cost is estimated at \$200 per cow affected with ketosis.<sup>2,3,4</sup>  
This is equivalent to \$80/year for each cow in the herd.

# Milk fat



## The Afimilk solution, how does it work?

The key to effective treatment is detection, and that is where Afimilk excels. Ketotic cows have increased levels of fat in their milk, and decreased levels of protein.

The AfiLab milk analyzer measures milk components at each milking. When the fat to protein ratio surpasses 1.4, AfiFarm will indicate that the cow is suspected as ketotic. As cows' milk is monitored 3 times a day, this method is highly sensitive and accurate.

Diagnostic accuracy  
is estimated at

**80%**

### Studies references:

1. McArt 2011, Duffield 2001, studied 1717 animals in 4 herds
2. Oded Nir, 2014: NEB cost of milk loss
3. Walsh, 2007: NEB cost of Days open
4. Guard 2008: NEB cost of involuntary culling

# Mastitis

## Early Detection for Improved Health

Mastitis is one of the greatest cost drivers (if not THE greatest) of cow health. Early detection is vital for effective treatment, preventing loss of production, and avoiding cross contamination (the spread of infection to healthy animals). The unique combination of sensors monitoring changes in milk yield, conductivity and lactose, is today's most effective tool for routine mastitis detection.

### Damaging effects of mastitis

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- ✓ Reduced production
- ✓ Damaged fertility
- ✓ Late detection causes chronic damage
- ✓ One of top 3 involuntary culling reasons

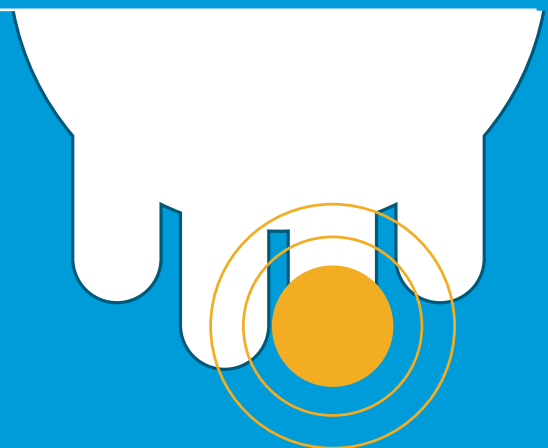
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In fact, farmers using the Afimilk solution save in mastitis-caused damages

an average of

**\$100**

per year per cow



Studies references:

- 400 cows treated using Afimilk conductivity detection
- 400 cows treated without MM (\$100 greater damages)

E. Gelb, Y. Kislev, H. Voet  
Center for Agricultural Economic Research, Rehovot Israel  
Department of Agricultural Economics and Management, Faculty of  
Agriculture, Hebrew University



**\$1.8 Billion**

annual mastitis  
damages in USA dairy

# SARA

(Sub-Acute Ruminant Acidosis)

## Early detection of digestion problems

### What is SARA?

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- SARA is a temporary reduction of the rumen pH below desired values (due to unbalanced feed)
- Low pH, poisonous gas in the rumen

### Symptoms and detection

- No practical kit is available
- Change in manure consistency and color - too late

### Damaging effects of SARA

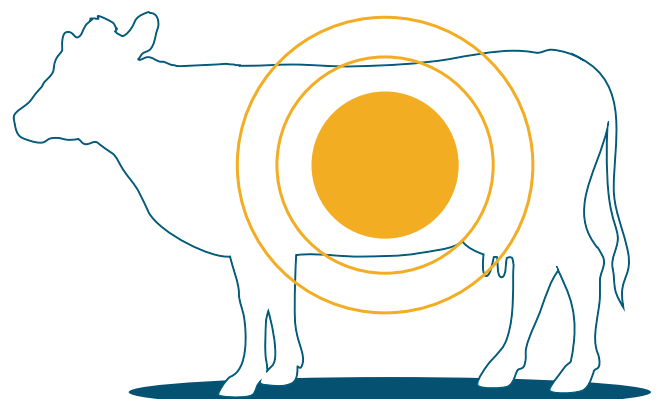
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- ✓ Damaged indigestion (impact on production)
- ✓ Decreased fertility
- ✓ Tendency to develop laminitis

#### Studies references:

- Prevalence in 19-26% of cows after calving
- Cost analysis: \$100/cow in herd

Garrett R. Oetzel  
MS Food Animal Production Medicine Section School of  
Veterinary Medicine University of Wisconsin-Madison





cost estimation  
for sick cow

**\$1.1-1.4**  
per day

# Early Detection Significant Return on Investment

How much money will I save at each milking point, using milk sensors?

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- ✓ 10 cows per stall - ( $\$200$  per cow  $\times$  10 =  $\$2000$ )
- ✓ 20 cows per stall - ( $\$200$  per cow  $\times$  20 =  $\$4000$ )
- ✓ 30 cows per stall - ( $\$200$  per cow  $\times$  30 =  $\$6000$ )

Afimilk MPC and AfiLab: Accurate and early detection helps prevent illness-induced damages, with saving of:

Mastitis: **\$100** cow / year saving

Ketosis & SARA: **\$180** cow / year Damage, over **\$100** saving

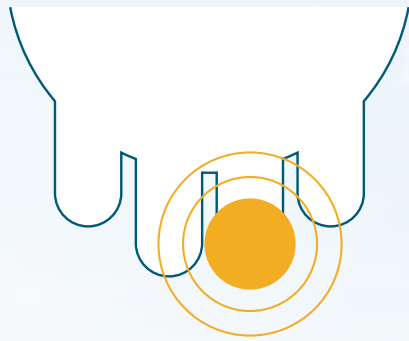
**Total:** about **\$200** cow / year net save



## Ketosis

Estimated damage  
per cow in herd

**\$80**  
per year



## Mastitis

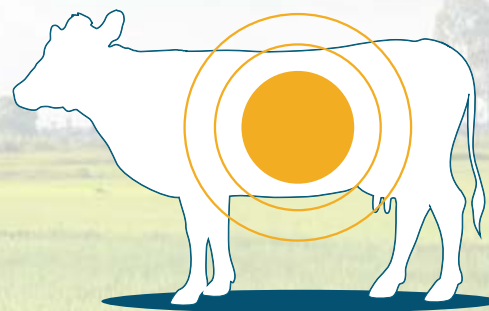
Direct saving  
For average cow in herd

**\$100**  
per year

## SARA

Estimated damage  
For average cow in herd

**\$100**  
per year



# AfiLab

## Ensuring Feed Efficiency

- ✓ Defining optimal feed regimes
- ✓ Identifying effects of ration changes
- ✓ Detecting reduced quality of feed



### AfiLab alerts you of feed problems

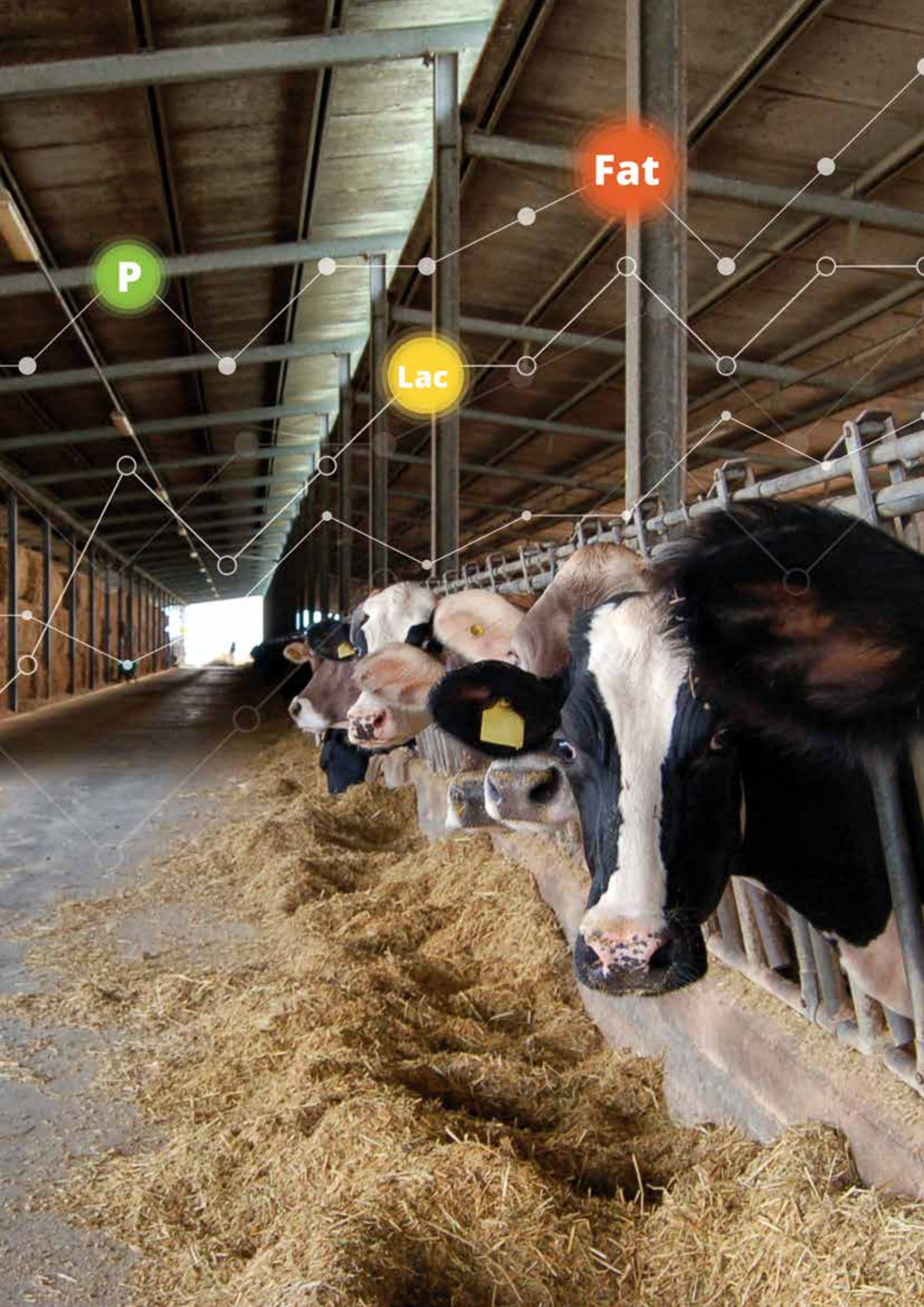
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Feed is the greatest cost of dairy farms. Therefore, its optimized control is of major importance. Problems such as unplanned changes or over-mixed rations, often cause changes in milk fat and protein, and the ratio between them.

### AfiLab to the rescue - with dedicated dashboard

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AfiLab monitors milk components at each milking. Any problem is quickly identified (within 1 or 2 milkings), and the dedicated dashboard alerts the farmer.



P

Lac

Fat

# Maintains Top Quality Milk



## Prevent loss of bulk milk

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There's nothing more frustrating than having to throw away a whole tank due to a load of contaminated milk wrongly milked to the tank.

Afimilk's milk sensors are your insurance policy to prevent bulk milk contamination:

- Colostrum - may be blocked from milking
- Milk of a cow with antibiotic treatment - may be blocked from milking
- Blood in the milk - may be detected by AfiLab, and quickly blocked from milking

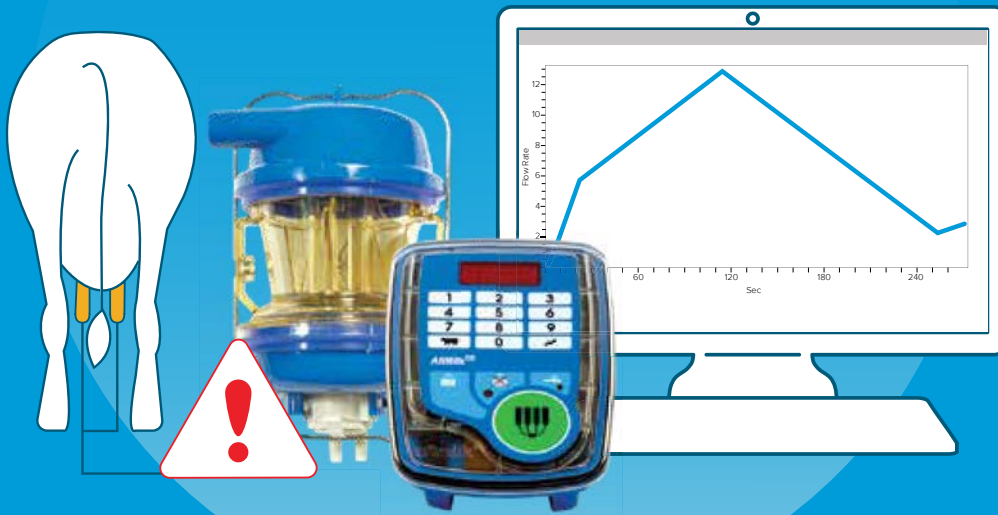
## Prevent bacterial growth - monitor CIP wash

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- ✔ Careful monitoring at each milking point
- ✔ Alerts of detected deviation

# Afimilk MPC Ensures Precision Milking

Afimilk MPC is the most advanced milk meter in the market. Aside from measuring yield, it optimally controls pulsation, stimulation, accurate cluster removal and milking time. As an advanced module of the AfiFarm management solution for milking efficiency, it will help you monitor and coach your parlor team, and improve milking procedures.



## How can Afimilk MPC improve my bottom line?

- ✓ Optimizes milking routines and adheres to procedures
- ✓ Controls pulsation, stimulation, cluster removal time
- ✓ Calms milking environment - comfortable cows
- ✓ Maintains udder health
- ✓ Maximizes parlor efficiency

# Animal Sorting

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Save labor and avoid  
stressing your cows  
when you need to bring  
them from the barn



# AfiSort

## A better way to manage your animals

Bringing cows from the barn for treatment can be stressful for animals and farm staff alike. AfiSort changes all that with its easily set automated routines for animal sorting.

## Sorting with **AfiSort**, Easy as A-B-C

In addition to setting sorting routines in AfiFarm, you may assign a sort order to any cow with a single click, from:

- The parlor via the Afimilk MPC keypad
- Your office via AfiFarm
- Remotely via our smartphone app



**In the parlor**

From each keypad



**In the rotary**

using touch screen rotary terminal



## Benefits

- ✓ Calm animals - Avoid stressing your animals when you need to bring them from the barn
- ✓ Labor savings - Fewer people are needed for managing the animals
- ✓ Flexible management - automated schedule, one-by-one animal selection or "sort now"
- ✓ Solution for farms of all sizes - 2 way sort, 3 way sort, single or multiple
- ✓ Sort and weight scale (optional) integrated and cost effective



### In the office

from every AfiFarm report



### Anywhere

From any smartphone

# AfiFarm

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The most advanced and  
user-friendly management  
software suite



**Milk Production**

Milk last session	4271
Milk previous day	32477
Cows milked last session	322
Last day average milk per cow	27.6
Fat % last 24h	3.8%
Protein % last 24h	3.4%

**Animals Inventory**

Category	Count
Cows	254
Pregnant	33
Open	249
Dry	26

**Health**

- Mentals: 1
- Digestion Problems: 11
- Ketosis: 4
- Fresh cows to check: 9
- Anestrus: 21
- Non-specific health report: 18

**Fertility**

- Animals for insemination: 18
- Reported abortion: 3

**Groups**

- Groups Comfort: 0
- Nutrition alerts: 5

**To do today**

- To dry today: 1
- Due calving: 11
- Sorted Animals: 9
- For pregnancy check: 21

**Faults today**

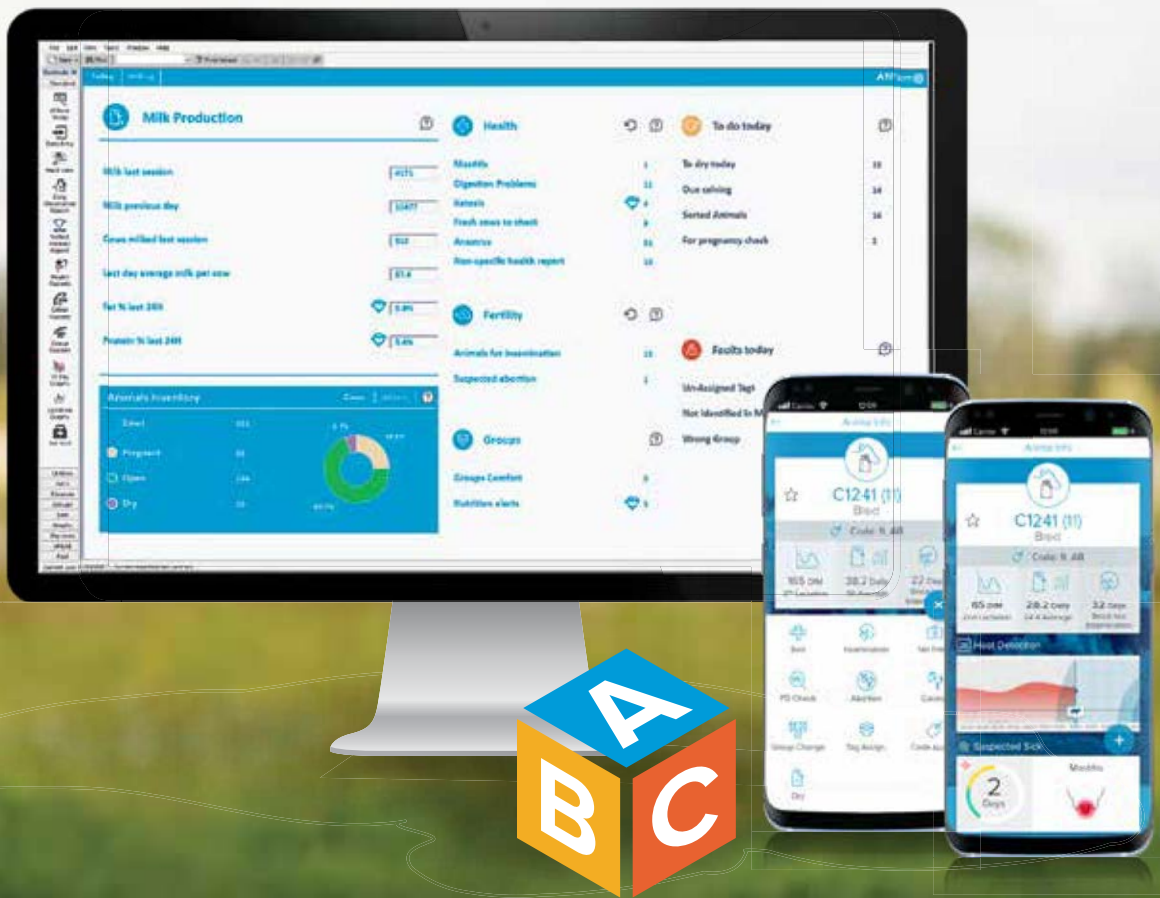
- Un-Assigned Tags: 3
- Not Identified in Milking: 1
- Wrong Group: 1

**AfiFarm™ 5.4**

AfiFarm 5.4

# Today's most advanced & comprehensive farm management solution

AfiFarm™  Dashboard



# Farm-Friendly Management Software - Convenient Dashboard, Easy Start

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The most comprehensive management solution available today, AfiFarm is both sophisticated and flexible for optimal user customization.

Thanks to AfiFarm's ABC dashboard, operation is user-friendly and intuitive. AfiFarm ABC brings common functions to a single homepage screen that is always on, intuitive to learn and constantly displays updated data.

A rotary terminal with touch screen, and a smartphone app introduced with AfiFarm 5.4, further help make management with AfiFarm even more efficient and convenient for the farmer.



# Rotary Terminal Control Center of Your Rotary Parlor

No need to walk around the deck, everything is visible from the 1st milker's position.

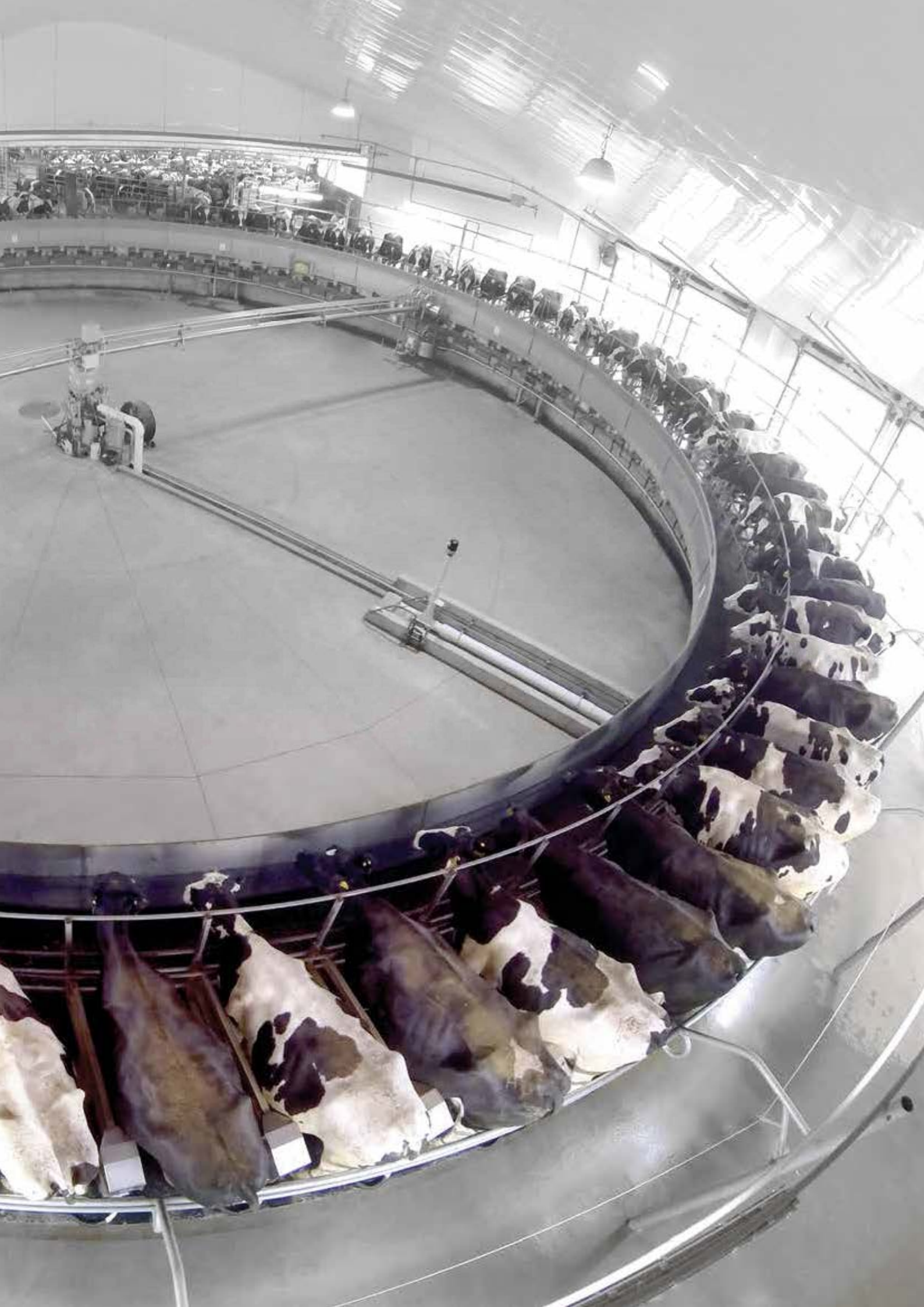
Intuitive touchscreen-based control pod to help you stay on top of everything that happens in your rotary parlor through:

**Statuses:** Milking session progress, groups milking and groups on the deck, production data, milking progress on the deck

**Alerts:** Cow in wrong group, conductivity (possible mastitis), cluster kick-off, low yield, canceled ACR, manager codes

**Action:** Point and send to sort, keep for 2nd rotation (requires retention bar)





Afimilk's full automation and management solution is simple to use, comprehensive, and focused on farmers' needs. AfiFarm software interprets the data from all these tools to provide you with comprehensive and accessible information you can use to make more insightful and informed decisions.



operating in  
**>50** countries



**~15,000**  
farms automated  
by Afimilk



**>10 million**  
cows managed by AfiFarm SW



**8 Rotaries**  
working together in a  
single farm, managed  
by Afimilk system



**~110,000**  
milking cows-largest  
herd managed using  
Afimilk automation



**~2.5 million**  
cows already managed  
using AfiFarm 5.4

