

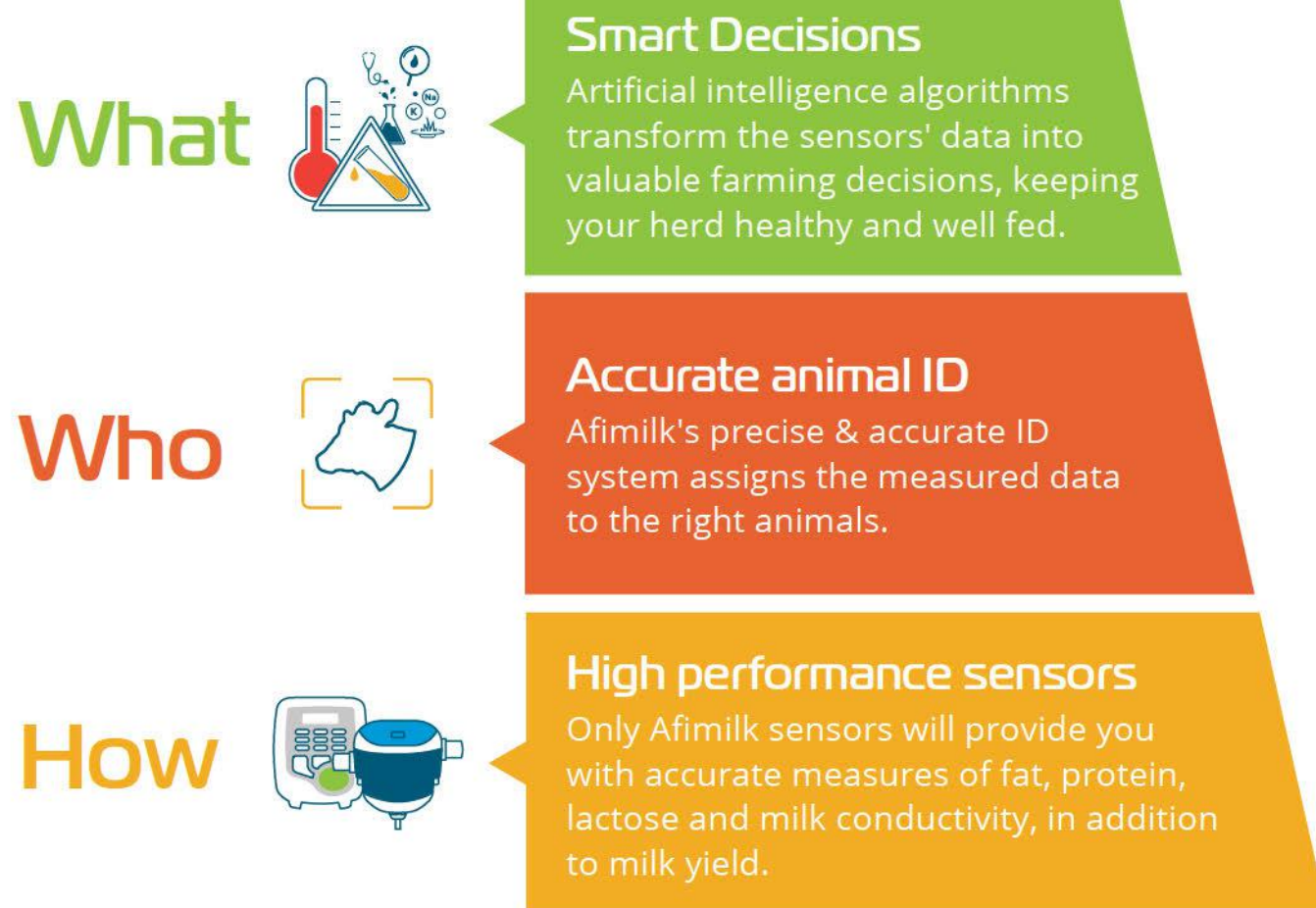
Afimilk's In-Line Milk Lab and Parlor Automation Solution

2019



afimilk®
Vital know-how in every drop

What makes management optimally effective?



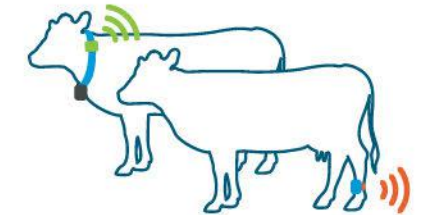
Afirmilk Solution

For management, control, and growing productivity in dairy farming



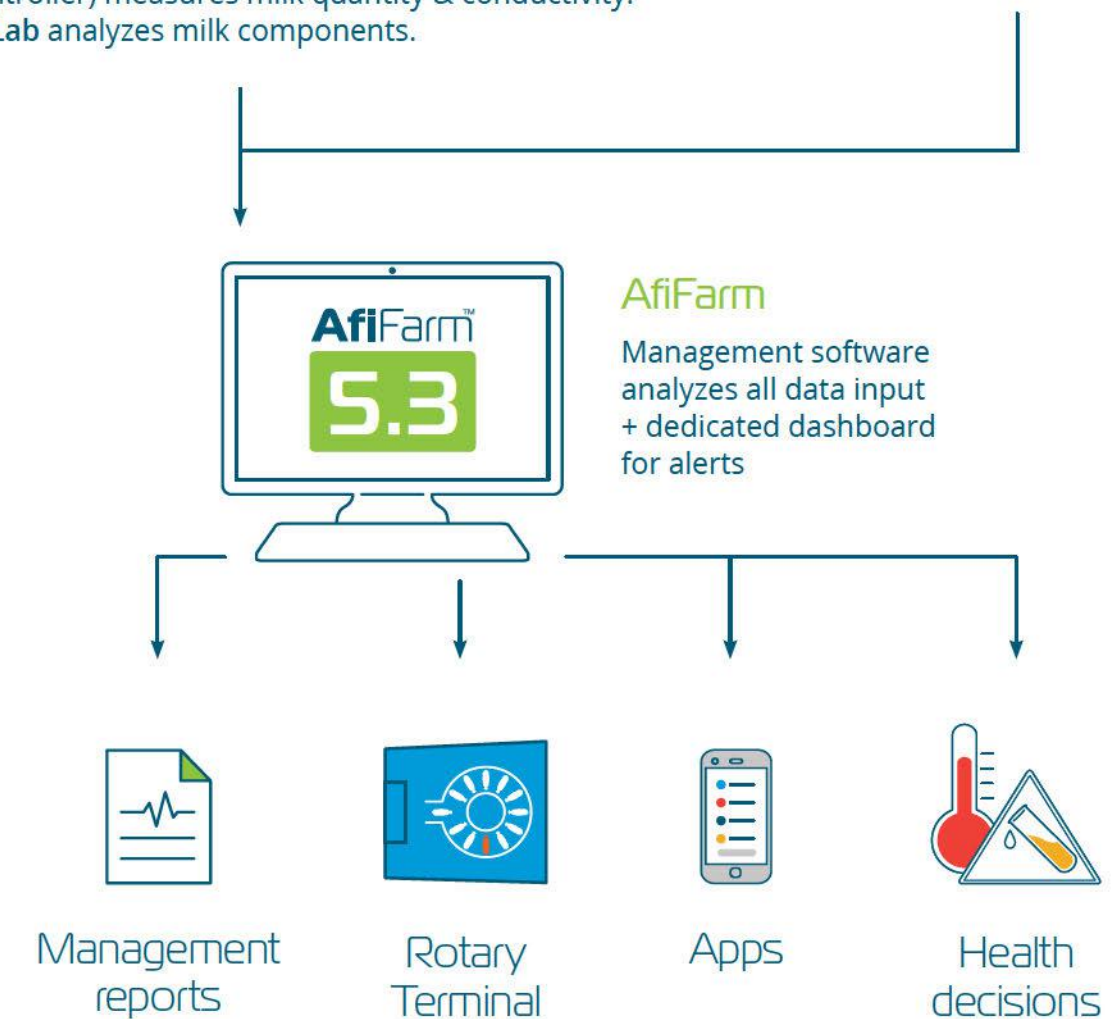
In-Line Milk Lab sensors

Consists of two sensors for decision support and early detection of health issues: Afirmilk MPC (Milking Point Controller) measures milk quantity & conductivity. AfiLab analyzes milk components.



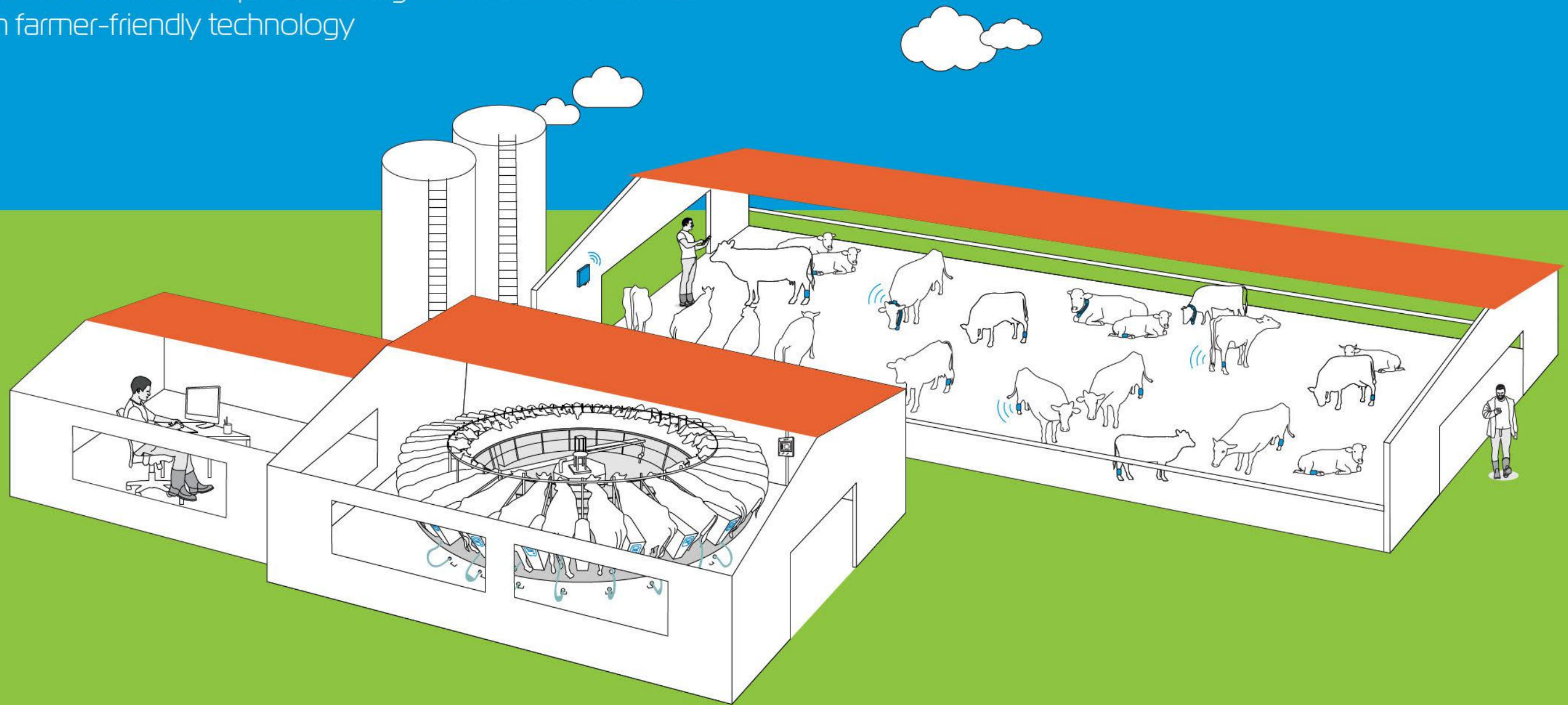
Animal sensors

AfiAct II leg tag
Silent Herdsman neck collar



Vital Knowhow in Every Drop

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



In-Line Milk
Lab sensors

P. 6



Health
management

P. 8



Feed
efficiency

P. 18



Prevents bulk
milk loss

P. 20



Milking
efficiency

P. 21



Animal
sorting

P. 22



AfiFarm
5.3

P. 26



Rotary parlor
terminal

P. 30

In-Line Milk Lab

Integrated milking point
analysis and control

In-Line Milk Lab Applications



In  line
milk lab

In-Line Milk Lab

AfiLab and Afirmilk MPC Sensors

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



In-Line Milk Lab is today's most effective tool for early detection of:

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 Ruminant 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 In-Line Milk Lab improves your bottom line

- ✓ 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?

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

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

Prevalence and cost

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



The Afimilk solution, how does it work?

The key for 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

In-Line Milk Lab

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). In-Line Milk Lab's 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

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

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



cost
\$1.8 Billion
in USA annually

SARA

(Sub-Acute Ruminal Acidosis)

Early detection of digestion problems

What is SARA?

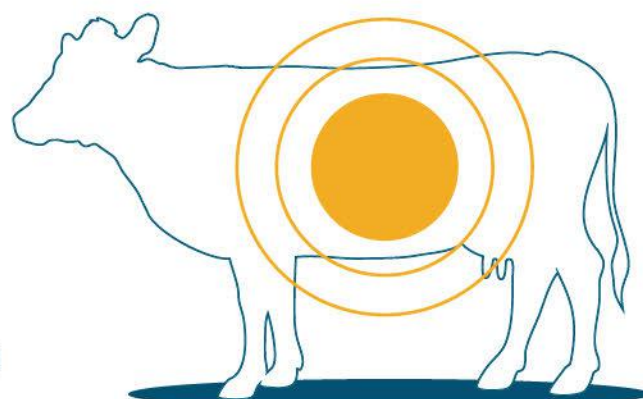
- SARA is a temporary reduction of the rumen pH below desired values (due to unbalanced feed)
- Low pH, poisonous gas in the rumen

Symptoms and detection

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

Damaging effects of SARA

- ✓ 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

In-Line Milk Lab

Early Detection Significant Return on Investment

How much money will I save at each milking point, using In-Line Milk Lab?

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

In-Line Milk Lab's accurate & early detection allows to prevent illness-induced damages with savings of

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

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

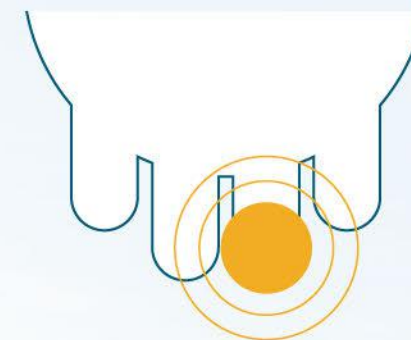
Total: about \$200 cow / **year** net save

Ketosis

cost estimation

For average cow in herd

\$80
per year



Mastitis

Direct saving

For average cow in herd

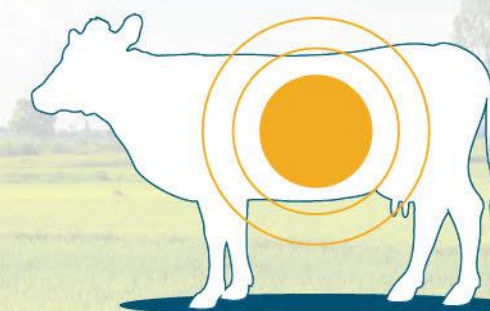
\$100
per year

SARA

cost estimation

For average cow in herd

\$100
per year



In-Line Milk Lab

AfiLab

Ensuring Feed Efficiency

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

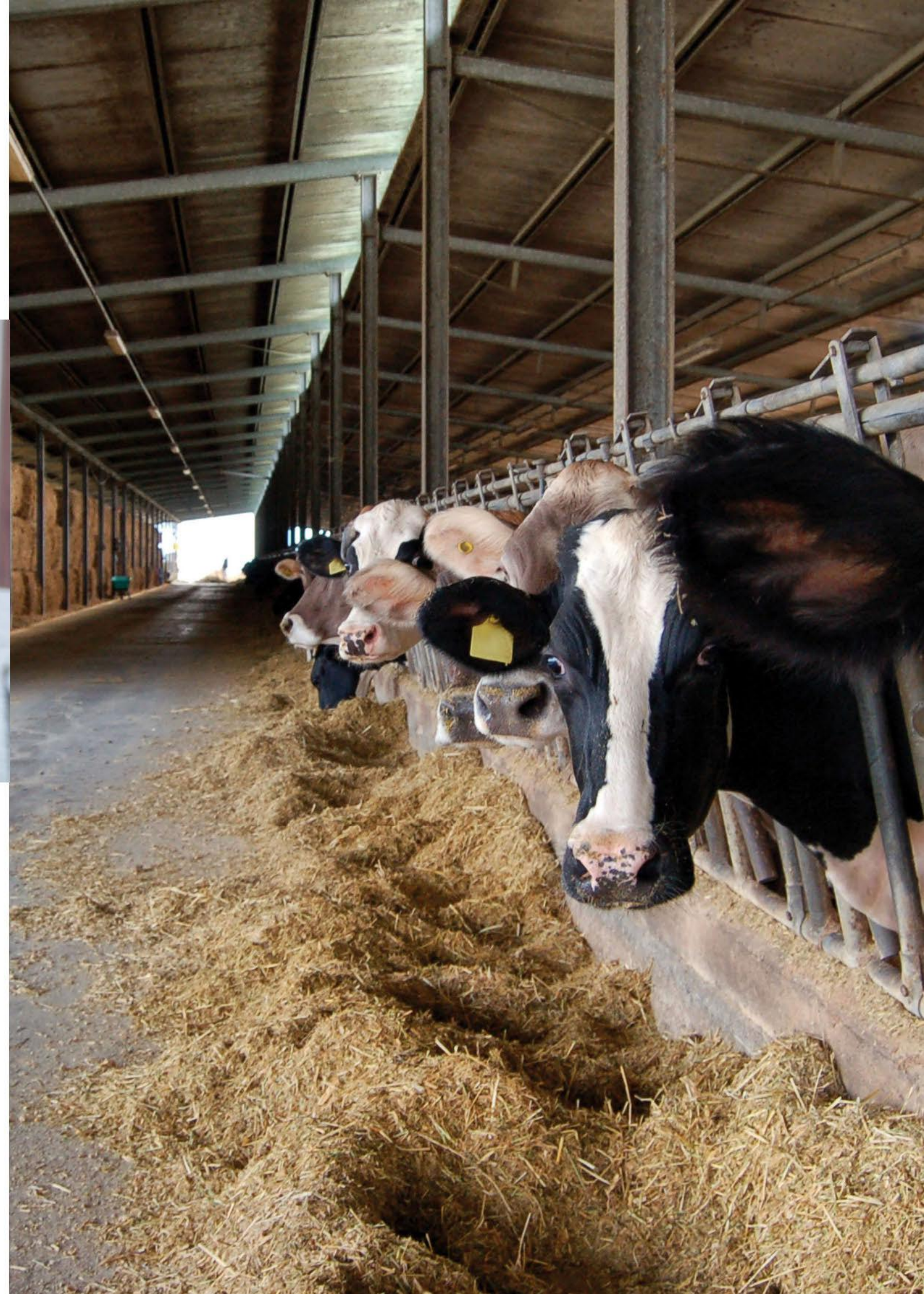


AfiLab alerts you of feed problems

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

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



Maintains Top Quality Milk



Prevent loss of bulk milk

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

Afimilk's In-Line Milk Lab is your insurance policy to prevent bulk milk contamination:

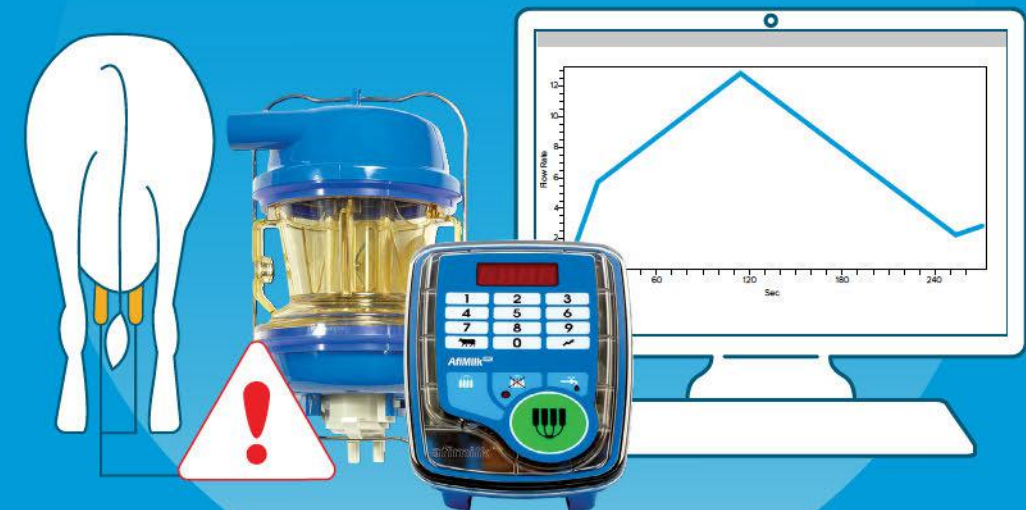
- Colostrum - may be blocked from milking
- Milk of a cow with antibiotic treatment - may be blocked from milking
- Blood in the milk - may be detected by AfiLab, and quickly stop milking

Prevent bacterial growth - monitor CIP wash

- ✓ 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

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.

Benefits

- ✓ Calm animals - Avoid stressing your animals when you need to bring them from the barn
- ✓ Labor savings - Less 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



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

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

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



In the parlor
From each keypad



In the rotary
using touch screen rotary terminal



In the office
from every AfiFarm report



Anywhere
From every smartphone

AfiFarm 5.3

The most advanced and user-friendly management software suite



AfiFarmTM 5.3

AfiFarm 5.3

Today's most advanced & comprehensive farm management solution

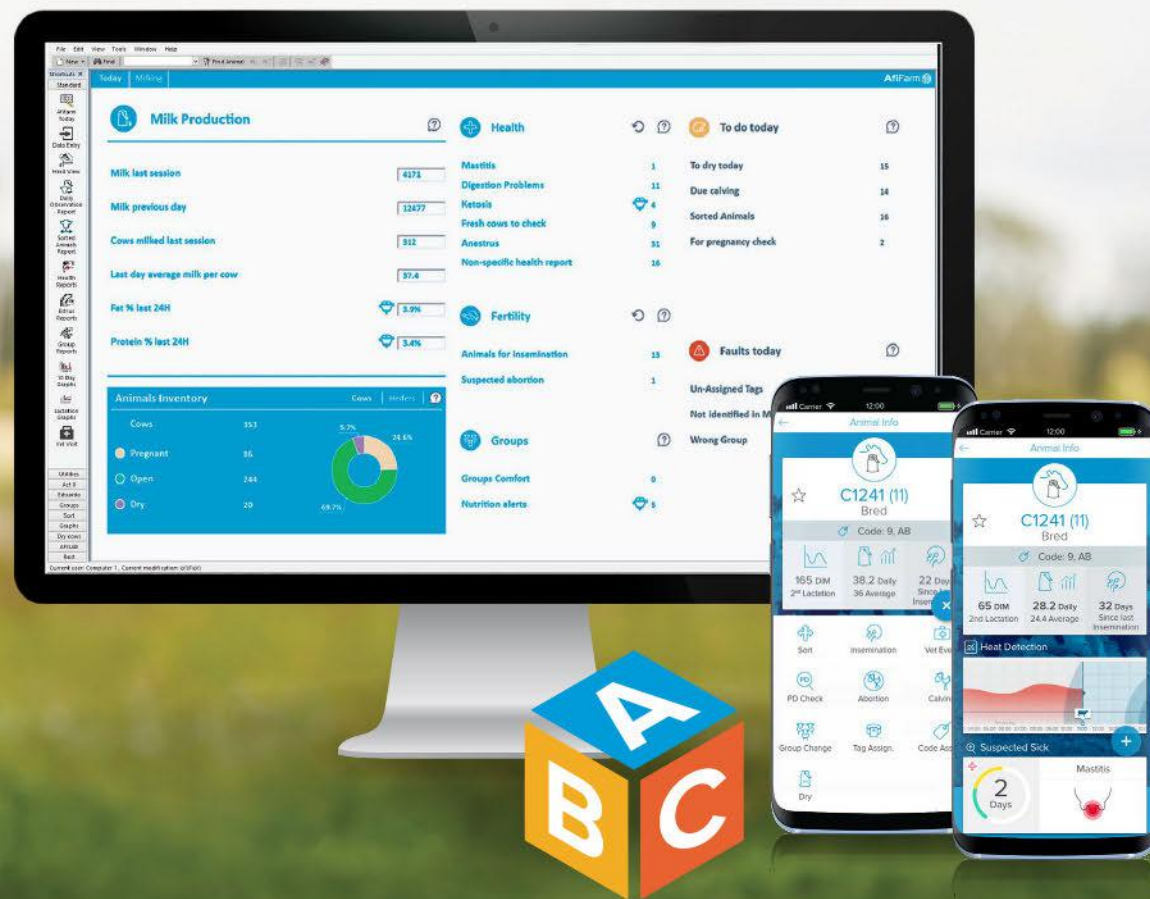
Farm-Friendly Management Software - Convenient Dashboard, Easy Start

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 two new smartphone apps introduced with AfiFarm 5.3, further help make management with AfiFarm even more efficient and convenient for the farmer.

AfiFarm™  Dashboard



AfiFarm 5.3

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)

Features & Benefits

- ✓ Pre-installed cabinet with ruggedized PC and built-in 15" touchscreen
- ✓ High spec and water proof
- ✓ Alternative option: Rotary terminal as a software-tool, based on your own screen



