Future conditions for cattle production — which cow do we need?
- Value added Milk

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Our vision
Creating the future of dairy to bring health and inspiration to the world, naturally
To secure the highest value for our farmers’ milk while creating opportunities for their growth

About Arla

12,600+ OWNERS
14+ BL. KG. MILK INTAKE
THE 4TH LARGEST
19,000+ COLLEAGUES
10+ BL. EURO REVENUE
3 BRANDS
Arla has owners in **seven countries** - in 2015 they produced 14+ bl. kg. milk

3.5 glasses for everyone

To the moon

x 7

Around the world

x 47
Are the cows treated well?

Explore dairy in new ways

Looking for natural healthier choices

Is the product safe to consume?

Arlagårde n® ensirmilk

Milk composition
Food safety
Animal welfare
Environmental considerations
Milk composition

• A natural composition of
  • fat,
  • protein,
  • minerals
  • and other important constituents

• A good, fresh taste.

Milk "breeding"

Today the “milk breeding” is primarily driven by factors related the robustness of the cow and yield, i.e. milk yield and content of fat and protein. Apart from measuring antibiotics, microbiological quality etc. aspects of technological quality are not taken into account.
Milk genomics
Breeding for value added milk

Milk optimized for the technological use

E.g.
Optimizing Milk for cheese production and valuable Ingredients
- Without compromising the milk for other uses

Cheese production

- In Denmark there are produced >300,000 tonnes of cheese per year
- If we through breeding can improve the milk for cheese production properties it will minimizing variation during cheese processing (BC: > 4 million Euro / year)
Milk coagulation properties

Danish Holstein-Friesian (SDM)  
75% of the Danish dairy cattle's

Danish Jersey cows (JER)  
12% of the Danish dairy cattle's

Swedish Red (SR)  
41% of the Swedish dairy cattle's

- Non coagulating milk
- Poor coagulating milk
- Good coagulating milk

Coagulation properties reduced proportionally - when you mix good and bad coagulating the milk
Breeding high value milk - Big Milk

Control protein composition and increase the content of high value proteins in bovine milk through breeding

High value proteins for ingredients
BC: > 13 million Euro / year

- α-lactalbumin
- Osteopontin
- β-casein
- NPC-2
- Transcobalamin

Food safety

We strive to offer our consumers safe and reliable milk-based products.

- The milk must contain no undesired substances.
- We must practice good hygiene, to avoid the risk of contamination.

Increase levels of antibacterial substrates in milk
Animal welfare

We strive to ensure that animals’ overall physiological and behavioral needs are met, so that their health and welfare is promoted. The animals must:

• Be healthy.
• Be kept and looked after in a sound environment.

Environmental considerations

We strive for production on the farm to be environment-friendly, with respect for nature. The farm must:

• Protect the surrounding environment and cultural landscape.
• Optimise the use of nutrients and work to reduce the use of chemicals.
Adding value to the entire milk pool

Which cow do we need?
- Healthy and robust
- Sustainable cow
- Converting feed to milk
- Value added milk
Milk Genomics
The Arla Dream Milk

Potential value to Arla:

- **Cheese**
  - Optimal rennet coagulation
  - > 4 million Euro / year
- **Yoghurt**
  - Optimal acids coagulation
  - CO2 reduced cow

Potential value to Arla:

- **The Arla Dream Milk**
  - Increase level of oligosaccharides

Innovations

- **Ingredients**
  - Increase level of high value proteins
  - Osteopontin
  - Transcobalamin
  - α-lactalbumin
  - β-casein
  - NPC-2

- **The Arla Dream Milk**
  - Increase level of D-vitamin
  - Increase levels of antibacterial substrates in milk

- **Cheese**
  - Increase mineral content (Ca, Fe, Zn)

Thank you!