Herd of 3000 milking cows
Annual production per cow – 10,000 Liter
What is the meaning of increasing production by 1%?

300,000 liter

3000 * 10,000 * 0.01 = 300,000 L

(660,000 Lb)
Modern Dairy Farm

- Smaller farms
- Milk production per cow increase
- One task force → Specialist & Professional, Business manager
- Intimate familiarity → Automated data collection
  ⇒ New management skills based on advanced technology

The Two Dominating Approaches (Heterogeneity)
- Management by groups – do not deal with the individual cow (Homogeneity)
- Individual management through exceptions
  Emphasize Animal & Equipment that need individual attention

Conception Rate (%) and Annual Milk Production
After Butler, 2003

ICBA Herd Book, 2003
The Israeli Herd Health Program

The Conception

The Cow

Data Collection & Processing

Feedback

The Herd

From: Nir (Markusfeld), 2008

How Do We Define Our Exceptions?

- Deviation from individual history normality
- Deviation from group normality

<table>
<thead>
<tr>
<th>Cow</th>
<th>Avg. steps</th>
<th>25% Dev.</th>
<th>80% Dev.</th>
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</thead>
<tbody>
<tr>
<td>105</td>
<td>80</td>
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<td>150</td>
</tr>
<tr>
<td>247</td>
<td>120</td>
<td>150</td>
<td>220</td>
</tr>
</tbody>
</table>

Heat detection by activity

Steps/Hour

Milkings sessions
Welfare and comfort deviation – Group Level

How Do We Define Our Exceptions?

- Deviation from individual history normality
- Deviation from group normality
- Individual / Group / Herd
Monitoring abortions – Herd Level

By trimester

From: Nir (Markusfeld) O., 2007

Relative Risk

0 1 2 3

Trimester

How Do We Do It?
(AfiMilk Management System)

- Automated data collection based on reliable animal ID and advanced sensors
- Real time Analysis → decisions support
- Retrospective analysis → Herd planning
Products and Benefits

Heat detection, Health, Animal Welfare
Production, Health, Milk efficiency & Parlor performance
Feeding, Health, Genetic, Payment, RT applications
Feeding, Health, Reproduction

Herd management software (multifactorial approach) point out exceptions

Multifactorial approach - Mastitis

Milk drop
Lactose drop
Lying time decrease
Conductivity increase
SCC increase
Blood increase
How Is Production Increased?

- Individual Management through Exceptions
  - Early treatment of Health problem
  - Shortening open days period
  - Optimal feeding
  - Animal welfare optimization (Bedding, Climate)
  - Preventing abortions
  - Genetic improvement by selection for excellence

Individual care = Money

The Future of Exceptions

- Comparison between farms performance
- Create regional goals
- Accessible data every where any time

Farms management by exceptions
Multi Farm (Internet Based Software)

Farm_1
Farm_2
Farm_3

Multi Farm server

Feeding center
Milk factory
Veterinarian
Breeding Ass.

Thank you
Cows for Insemination

- Increased Activity
- Normal 21 Day Cycle since last Heat

Equipment malfunction
Fat concentrations measured over thirty consecutive milking session (ten days)