Should you milk every cow?

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Dairy Herdowner’s Needs

- Work life balance
- Profit
- Health & Wellbeing
- Protection
- Reduced time per cow
- Lean
Dairy Industry Needs

- Profitability
- Work Life Balance
- Health
- Attractive
- Milk Quality
- Increased % Fat & Protein
- Decrease SCC

- Disease control program
- Mineral & Vitamin management
- AMR

- GHGE & Carbon Production Management
- Water Quality & Usage

Herd Owners

- Reduced Disease
- Reduced SCC
- Increased Calf Health

AMR, Welfare & Disease Mitigation

- Ease of management
- Grass to Kgs solids
- Energy Efficiency
- Resilient
- Profitable

Simple Grass Based Systems

Environment

Product Specification & Reassurance/Traceability

Sustainability

Efficiency & Processability

Milk Quality
- Increased % Fat & Protein
- Decrease SCC
Consumer Needs

- Social licence
- Water Quality
- Nutrient Management
- Carbon Footprint
- Antimicrobial Resistance
- Animal Welfare
- Biodiversity

Ireland is ranked 3rd in the world on the UN human development Index
## 2017 Profit Monitor Analysis – 1568 Farms

It takes 250 kg MS to pay for the cows upkeep in LOW COST herds

<table>
<thead>
<tr>
<th></th>
<th>Top 25%</th>
<th>Average</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Gross Output/Cow</strong></td>
<td>€2,342</td>
<td>€2,128</td>
</tr>
<tr>
<td></td>
<td>489Kgs MS</td>
<td>445Kgs MS</td>
</tr>
<tr>
<td><strong>Total Variable Costs/Cow</strong></td>
<td>€641</td>
<td>€674</td>
</tr>
<tr>
<td><strong>Total Fixed Costs/Cow</strong></td>
<td>€473</td>
<td>€514</td>
</tr>
<tr>
<td><strong>Total Costs/Cow</strong></td>
<td>€1,114</td>
<td>€1,188</td>
</tr>
<tr>
<td></td>
<td>233Kgs MS</td>
<td>248Kgs MS</td>
</tr>
<tr>
<td><strong>Net Profit/Cow</strong></td>
<td>€1,227</td>
<td>€941</td>
</tr>
<tr>
<td></td>
<td>256Kgs MS</td>
<td>197kgs MS</td>
</tr>
</tbody>
</table>
Analysis for 4,500 Spring Milk Herds in 2018

If its costing €1,188 to keep the average cow in a LOW COST HERD
How much will 100 cows leave???

<table>
<thead>
<tr>
<th></th>
<th>TOP 20%</th>
<th>TOP 40%</th>
<th>AVERAGE 20%</th>
<th>BOTTOM 40%</th>
<th>BOTTOM 20%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fat &amp; Protein (Kg/cow)</td>
<td>513</td>
<td>445</td>
<td>402</td>
<td>355</td>
<td>264</td>
</tr>
<tr>
<td>Milk value (€)</td>
<td>€2,452</td>
<td>€2,127</td>
<td>€1,921</td>
<td>€1,697</td>
<td>€1,262</td>
</tr>
<tr>
<td>Margin from milking 100 cows</td>
<td>€126,400</td>
<td>€93,900</td>
<td>€73,300</td>
<td>€50,900</td>
<td>€7,400</td>
</tr>
</tbody>
</table>
Improving Milk Solids Yield

Through Culling

• Genetics/EBI
• SCC
• Poor Performers
• Johnes
• Neospora?

Through Managing

• Herd maturity
• Days in milk
• SCC
• Replacement heifers
• Disease
• Parasites
Culling Selection Tools - EBI & C.O.W.

C.O.W. is a decision support tool that ranks dairy females on expected profit for the remainder of their lifetime.
Should you milk every cow?

<table>
<thead>
<tr>
<th>Variable</th>
<th>N</th>
<th>Mean</th>
<th>Std Dev</th>
<th>Minimum</th>
<th>Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td>EBI</td>
<td>371,331</td>
<td>127</td>
<td>48</td>
<td>-183</td>
<td>386</td>
</tr>
<tr>
<td>C.O.W.</td>
<td>371,331</td>
<td>1,282</td>
<td>654</td>
<td>-2,076</td>
<td>5,417</td>
</tr>
</tbody>
</table>

Where do you draw the line?
Analysis on herds using C.O.W. & EBI

Fat Yield

-87 kg

Bottom 10%
Median
Top 10%

305D Fat yield (kg)
Analysis on herds using C.O.W. & EBI

Protein Yield

[Bar chart showing protein yield for Bottom 10%, Median, and Top 10% herds.]

-70 kg

EBI, C.O.W.
**Analysis on herds using C.O.W. & EBI**

- Should I milk every cow?
- If all my cows were like the Top 10%?

### Difference in milk sales €69,854

<table>
<thead>
<tr>
<th>Ranked by C.O.W.</th>
<th>Milk (€)</th>
<th>Fat (€)</th>
<th>Protein (€)</th>
<th>Milk value (€)</th>
<th>Difference top and bottom 10%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Top 10%</td>
<td>-296</td>
<td>1,180</td>
<td>1,703</td>
<td>2,587</td>
<td></td>
</tr>
<tr>
<td>Median</td>
<td>-268</td>
<td>1,033</td>
<td>1,501</td>
<td>2,266</td>
<td>€699</td>
</tr>
<tr>
<td>Bottom 10%</td>
<td>-236</td>
<td>858</td>
<td>1,267</td>
<td>1,889</td>
<td></td>
</tr>
</tbody>
</table>
Chronically SCC & Johnes Infected cows – Need to be culled

Or clean cows will become infected
SCC Analysis of 1,235 milk recorded herds in dry period 2018/2019

<table>
<thead>
<tr>
<th>Heifers New Infection Rate</th>
<th>Cows New Infection Rate</th>
<th>Cows Cure rate over the dry period</th>
</tr>
</thead>
<tbody>
<tr>
<td>Top 20%</td>
<td>Top 20%</td>
<td>Top 20%</td>
</tr>
<tr>
<td>0%</td>
<td>0% - 5%</td>
<td>100%</td>
</tr>
<tr>
<td>21-40%</td>
<td>21-40%</td>
<td>21-40%</td>
</tr>
<tr>
<td>0% - 8%</td>
<td>5% - 9%</td>
<td>95% - 81%</td>
</tr>
<tr>
<td>41-60%</td>
<td>41-60%</td>
<td>41-60%</td>
</tr>
<tr>
<td>8% - 14%</td>
<td>9% - 13%</td>
<td>80% - 71%</td>
</tr>
<tr>
<td>61-80%</td>
<td>61-80%</td>
<td>61-80%</td>
</tr>
<tr>
<td>15% - 25%</td>
<td>13% - 18%</td>
<td>71% - 57%</td>
</tr>
<tr>
<td>81-100%</td>
<td>81-100%</td>
<td>81-100%</td>
</tr>
<tr>
<td>25% - 100%</td>
<td>19% - 100%</td>
<td>57% to 14%</td>
</tr>
<tr>
<td>Median 12%</td>
<td>Median 10%</td>
<td>Median 75%</td>
</tr>
</tbody>
</table>
High SCC Cows – Issues?

- **Infect** other clean cows - first calved heifers
- **AMR** – Increases antibiotic usage- calves ingesting waste milk
- **AMR** – Not worthy of treatment
- **Profitability** – Lower Production
- **Peace of Mind** – Antibiotics in bulk tank
- **Time** – Identification/ Treatment/Milk withdrawal
- **Interrupted** - milking routine
- **Labour**- Complications
- **Work life balance** – fear of contracting in a milker
SCC Cull or Not?
Early Milk Recording Post Calving Crucial

• Cull if two tests >500,000 SCC and no cure in the dry period
• Treat recently infected promptly - Maximize Outcomes
Highest Priority Critically Controlled Antimicrobials - Intramammary Dry and Lactating Cow Tubes
Johne’s Programme

• Provide additional reassurance to the marketplace
• Reduce the level of infection in their herds, where present
• Ensure that negative herds remain clear
• Improve calf health and farm biosecurity in participating farms
Herd Maturity

• Target: 5 to 5.5 lactations/cow; 18% replacement rate
• 1\textsuperscript{st} calvers have 22% less milk than 3\textsuperscript{rd} lact +
Should you breed your own replacements?

Just because you reared her doesn’t mean you should milk her!

• Spring Calving need high €BI maiden heifers, high health status calving at target weight in February.

• Herd €BI
• Spread in €BI
• Spread in Calving
• Health Status – Johnes & Neospora
• Calf Rearing – Pneumonia & Scour
Extreme differences in herds

Two herds
1. Low C.O.W. herd
2. High C.O.W. herd

Selected on comparable criteria
• Approximately same number of cows
  o Low C.O.W. herd = 118 cows
  o High C.O.W. herd = 135 cows
• Median spring calving date similar
• Geographically close

C.O.W. distribution of both herds
• Graphs on same scale
• Big spread/shift

= Average cow in herd

‘My most profitable cows would only be average in the herd below’
What does a herdowner need to do to decide which cows to cull?
Milk recording, Ancestry, Genetics & Heifer Rearing
What does a herdowner need to do to decide which cows to cull?

1. Milk record – 4+ times – 1st by St. Patrick’s day
2. Johnes testing - once annually
3. Ancestry – records or genomic test

Decision time for Culling - Spring & Autumn

Spring – Chronically SCC infected cows that did not cure in the dry period

Autumn – Poor performers and Johnes positives.

Source – High €BI February-calving heifers
CULLING

- Profitability increased
- Profitable no longer subsidising the unprofitable cows
- Align stocking rate to grass growth
- Labour reduction

- Housing- 1 cubicle per cow
  - Intakes
  - SCC
  - Immunity
  - Production
  - Lameness
Dairy Herdowner’s Needs

- Work life balance
- Profit
- Health & Wellbeing
- Protection
- Reduced time per cow
- Lean
1. Need to reduce numbers
   a) Overstocked facilities
   b) Stocking rate too high for land
   c) Labour shortage

2. Replacement rate
   a) High replacement rate suggests other issues (e.g. can't get cows in calf, high SCC, poor yield)
   b) Genetics
   c) Do you need to rear each heifer (cost >1580)
   d) Just because you reared her do you need to milk her?

3. Buy in top performers
   a) Buy replacements
   b) Replace cows with better cows
   c) Genetics and environment

Ireland is the best place in the world to be a Dairy Cow &
Ireland is the best place in the world to be a Dairy Farmer