### Changes in production circumstances

<table>
<thead>
<tr>
<th>Condition</th>
<th>Group (1-3)</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trends in global markets</td>
<td>21111212</td>
<td>Some countries like Finland rely more on home market compared to export. However, milk prices are still affected by global market prices. How to adapt to fluctuating prices when changes to NTM are realized years later. How is NTM affected by pricing system? More variation in the global market in the future - Production moves to China and India – special high-value milk - Cow welfare is important *Increased global demand for milk (volume) – might be produced elsewhere? Consumption will increase in East (China etc) We are in global market, more different products from the same milk, retailers have big power but they are listening customers</td>
</tr>
</tbody>
</table>
## Changes in production circumstances

<table>
<thead>
<tr>
<th>Condition</th>
<th>Group (1-3)</th>
<th>Comment</th>
</tr>
</thead>
</table>
| Demand from Dairies        | 22211221    | Focus on unity milk and then using technology to create different products/ingredients
                                                                  *Continued and increased “local” focus on contents (F+P) + more specific contents (protein variants/FA profiles) (quality)
                                                                  Haven’t had much impact in the past (apart from the emphasis on contents), but more in the future (specific content, climate, welfare)
                                                                  Demands from consumers affect dairies, consumer demands are getting more variable. Dairies need to first decide what they want before it can be applied in breeding goal. Have to be included in pricing system, too! |
## Changes in production circumstances

<table>
<thead>
<tr>
<th>Condition</th>
<th>Group (1-3)</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Climate friendly cow</td>
<td>211111112</td>
<td>Not a question of &quot;if&quot; but when becomes a requirement. Climate friendly/efficient related to high yield. Kg CO2 per produced product (standard)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Its hard to know how</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Efficiency is important due to climate change</td>
</tr>
<tr>
<td></td>
<td></td>
<td>* Increased focus on this locally due to consumer demands but will it be payed for? Regulations might force it on producers anyway.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>* Feed efficiency important trait (general of less of importance on other markets, but nische products could be exported)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Goal conflict with &quot;natural&quot; cows?</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Political decisions, feed efficiency, consumer demands</td>
</tr>
</tbody>
</table>
### Changes in production circumstances

<table>
<thead>
<tr>
<th>Condition</th>
<th>Group (1-3)</th>
<th>Comment</th>
</tr>
</thead>
</table>
| Etic/health     | 22112221    | Cows on grass – could that be an requirement Tricky, extremly Use as little antibiotic as possible – resistance *Similar as climate friendly cow, no extra payment but risk for harder regulations  
*Polledness could be important to breed for and good possibilities Animal welfare: who defines it – farmer or consumer? Consumer demands in developed world, no value in developing countries. Ethics and health already in high level in Nordic countries |
| More ”natural” cows | 23122222 | Conflict between this groups and climate friendly cow, potential conflict with modern breedings techniques Important to agree on a definition of a ”natural” cow. What is natural? Good reputation in dairy sector  
*A certain consumer group will demand specific things (horned cows, natural matings). Consumer demands It is important to see cows on pasture, marketing tool for dairies Compulsory grazing during summer? Use of forage/grass? |
<table>
<thead>
<tr>
<th>Condition</th>
<th>Group (1-3)</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sexed semen</td>
<td>12112121</td>
<td>Nearly all semen will be sexed. It is not possible to produce sexed semen from all top bulls. Linked to ET. What does VG decide?</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Depends on price</td>
</tr>
<tr>
<td></td>
<td></td>
<td>High prices for beef in Sweden – not much of sexed semen – good quality is not rewarded. Different in other countries</td>
</tr>
<tr>
<td></td>
<td></td>
<td>*Important tool when want to produce milk + meat efficiently and env.mental friendly (in comb of beef semen)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Large increase expected</td>
</tr>
<tr>
<td></td>
<td></td>
<td>May not influence breeding goal that much, possibly with the exception of fertility</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Depends on prize of sexed semen, lower nrr affects how much farmers are willing to use sexed semen</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Best bulls should produce sexed semen, best bulls for best cows</td>
</tr>
<tr>
<td>Beef semen</td>
<td>11112122</td>
<td>Use of beef semen goes together with sexed semen</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Depends on price</td>
</tr>
<tr>
<td></td>
<td></td>
<td>*Important tool when want to produce milk + meat efficiently and env.mental friendly (in comb of beef semen)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Less ethical problem with low value males</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Less and less conventional semen is used</td>
</tr>
</tbody>
</table>
## Changes in production circumstances

<table>
<thead>
<tr>
<th>Condition</th>
<th>Group (1-3)</th>
<th>Comment</th>
</tr>
</thead>
</table>
| AMS                     | 232222223   | Decrease in Denmark, stable in Sweden, increase in Finland  
More technology, maybe not the same as AMS today, but carousel  
Norway has increasing number of herds. Not the case in other countries  
*no of herds with AMS will continue to increase but different types of AMS in biggest herds (no big effect on breeding goal but creates new data - accessible?)  
SWE: large farms will not buy AMS  
Linked to herd size  
Still increasing but will reach limit at some point, consumers might see it more natural |
| Organic production      | 23222132    | Only small changes, light green conventional  
Don’t believe it will change breeding goal  
*not consumers but retailers pushing this  
Potentially large market  
Scandinavia has an advantage with their knowledge  
Industry and consumer will dictate the balance, depends on price paid for milk  
Market is growing until the market is stabilized, new markets in |
## Changes in production circumstances

<table>
<thead>
<tr>
<th>Condition</th>
<th>Group (1-3)</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Barn system</td>
<td>32212122</td>
<td>Direction of more cows in free stall&lt;br&gt;Large herds can tolerate less variation among cows&lt;br&gt;Tie stall barns will disappear&lt;br&gt;Cheaper buildings</td>
</tr>
<tr>
<td>Herd size</td>
<td>21212122</td>
<td>Trend is towards bigger herds&lt;br&gt;Bigger herds need land to produce feeds and put the manure&lt;br&gt;It might depend on the market&lt;br&gt;Faster speed in Finland, Sweden and Norway&lt;br&gt;Large herds can tolerate less variation among cows&lt;br&gt;Increase in herd size will follow the same pattern as before (double in every 10 years)</td>
</tr>
<tr>
<td>Others</td>
<td></td>
<td>Crossbreeding ...</td>
</tr>
<tr>
<td>Feed efficiency</td>
<td>1</td>
<td>Linked to climate friendly cow</td>
</tr>
<tr>
<td>Genetic defects</td>
<td>??</td>
<td>?? How should we handle them</td>
</tr>
<tr>
<td>Polledness</td>
<td>??</td>
<td>Related to ethics</td>
</tr>
<tr>
<td>Antibiotics</td>
<td>1</td>
<td></td>
</tr>
</tbody>
</table>

---

Nordisk Avlsværdi Vurdering<br>Nordic Cattle Genetic Evaluation