Registration on farm level. Can I trust the results from national and international listings and breeding values?

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Ränneslöv
Sweden
Chairman of AI Svensk Avel
Chairman of "Swedanes"
Chairman of Nordic Cattle Genetic Evaluation, NCGE
Dairy farmer in southern Sweden. Milking 450 cows, mainly Holstein. All bull calves are fattened at the farm. 60 beef cattle and 200 sheep. Cultivate 1150 ha and the major crops are pasture, grass, grain, corn and potatoes.
## Production

<table>
<thead>
<tr>
<th>Year</th>
<th>2004</th>
<th>2005</th>
<th>2006</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of cows</td>
<td>273</td>
<td>381</td>
<td>403</td>
</tr>
<tr>
<td>Production, kg</td>
<td>12 486</td>
<td>11 486</td>
<td>11 430</td>
</tr>
<tr>
<td>% fat</td>
<td>4,0</td>
<td>4,1</td>
<td>4,2</td>
</tr>
<tr>
<td>% protein</td>
<td>3,2</td>
<td>3,3</td>
<td>3,2</td>
</tr>
<tr>
<td>Production kg ECM</td>
<td>12 285</td>
<td>11 463</td>
<td>11 460</td>
</tr>
</tbody>
</table>
Registration on farm level

• The registrations need to be
  – Reliable
  – Accurate
  – Cheap
  – Frequently updated
  – Useful as a management tool and base for estimation of breeding values
Can we trust the results from national **listings and breeding evaluations**

- Accuracy of proofs depends on
  - The way the registration is done
  - The number of observations
  - Genetic parameters of the traits
Can we trust the results from national listings and breeding evaluations

• Changes over time due to
  – Genetic trends
  – New ways to record the traits
  – New definitions of traits
  – Additional daughters
Can we trust the results from national listings and breeding evaluations

- Practical example from Sweden. The six bulls on Svensk Avel’s recommended list.
- Comparison between breeding values estimated August 2001 and June 2007
- Two traits milk-index and proof for mastitis resistance
Practical example: Ranking of bulls with second crop daughters

<table>
<thead>
<tr>
<th>Bull</th>
<th>MIN 01</th>
<th>MIN 07</th>
<th>MAS 01</th>
<th>MAS 07</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gubbilt</td>
<td>120</td>
<td>123</td>
<td>102</td>
<td>98</td>
</tr>
<tr>
<td>Spånstad</td>
<td>112</td>
<td>120</td>
<td>105</td>
<td>107</td>
</tr>
<tr>
<td>G Best</td>
<td>124</td>
<td>116</td>
<td>98</td>
<td>96</td>
</tr>
<tr>
<td>Gul</td>
<td>102</td>
<td>92</td>
<td>107</td>
<td>110</td>
</tr>
<tr>
<td>Atong</td>
<td>108</td>
<td>99</td>
<td>103</td>
<td>106</td>
</tr>
<tr>
<td>Ladva</td>
<td>106</td>
<td>93</td>
<td>103</td>
<td>100</td>
</tr>
</tbody>
</table>
Practical example: Ranking of bulls with second crop daughters

• The ranking of the bulls is reasonable consistent between 2001 and 2007 even though
  – New organization calculating the proofs (Svensk Mjölk and NCGE)
  – New definitions of the traits
    • Milk production from 1 to 1-3 lactations and higher weight on protein
    • Mastitis resistance now includes conformation
Total Merit Index

- TMI is the aggregated breeding objectives of the breeding program.
- TMI is changed over time due to new knowledge or new production conditions.
- At the Ränneslöv farm an extra attention is put on calving traits.
Practical example: Ranking of bulls with second crop daughters

• Between 2001 and 2007 the TMI in Sweden has changed in the direction towards more economical weights on functional traits and less on production. This have also had an impact on the ranking of the six bulls from the list of recommended bulls from 2001.
### Practical example: Reranking of bulls with second crop daughters, TMI

<table>
<thead>
<tr>
<th>Bull</th>
<th>TMI 01</th>
<th>TMI 07</th>
<th>Rank 01</th>
<th>Rank 07</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gubbilt</td>
<td>+22</td>
<td>+12</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>Spånstad</td>
<td>+18</td>
<td>+22</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>G Best</td>
<td>+18</td>
<td>+13</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Gul</td>
<td>+18</td>
<td>+19</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Atong</td>
<td>+16</td>
<td>+10</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>Ladva</td>
<td>+15</td>
<td>+3</td>
<td>6</td>
<td>6</td>
</tr>
</tbody>
</table>
Can we trust the results from international listings and breeding evaluations

- NCGE is a joint Nordic project between Denmark, Finland and Sweden.
- NCGE is today calculating proofs for production, fertility, temperament, conformation and udder health
- More traits will follow.
Can we trust the results from international listings and breeding evaluations

- NCGE is using raw data from the three countries in the estimations.
- The rg between countries is assumed to be 1.
- Harmonization of traits has been an important prerequisite for the work as well as a common pedigree file.
- The NGCE proofs are now the official proofs in all three countries.
Can we trust the results from international listings and breeding evaluations

• Interbull is using deregressed proofs from the participating countries in the estimations.
• The rg between countries is not $= 1$.
• Harmonization of traits is important as well as a common pedigree file.
• The Interbull proofs are the official proofs in Sweden for bulls without Scandinavian daughters.
3-5683 Ränneslöv  Addison x Fatal

- Very high production
- Excellent calving
- Good udder health

Breeder: Lars-Inge Gunnarssson, Ränneslöv, Laholm
1894, daughter of Ränneslöv

Owner: Lars-Inge Gunnarsson, Ränneslöv

Thank you for the attention!