Herd Genetic Reports (HGRs) have been available for a number of years through AHDB Dairy to all UK dairy farmers who milk record. These HGRs allow farmers to see the genetic potential of their herd by providing the following information for the cows registered on their farm:

- Profitable Lifetime Index (£PLI)
- Milk (kg)
- Fat and Protein (kg and %)
- Inbreeding Level
- Management Traits - SCC, Lifespan and Fertility

Within the HGR the data is displayed in four parts – Herd Genetic Report Summary, Individual Milking Cow, Individual Youngstock and Breed Herd Standards.

**Herd Genetic Report Summary**

The Herd Genetic Report Summary allows your herd's strengths and weaknesses to be identified by age or lactation number, enabling you to monitor the genetic trends of your herd for a variety of traits. In addition, this summary allows genetically weaker traits to be identified and targeted on a whole herd basis.

**Table 1 – Herd Summary**

<table>
<thead>
<tr>
<th>Lactation Group</th>
<th>Number of animals</th>
<th>£PLI</th>
<th>Inbreeding %</th>
<th>Rel. %</th>
<th>Milk (kg)</th>
<th>Fat (kg)</th>
<th>Prot (kg)</th>
<th>Fat (%)</th>
<th>Prot (%)</th>
<th>Lifespan</th>
<th>SCC</th>
<th>Fertility Index</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-12 months</td>
<td>85</td>
<td>255</td>
<td>2.2</td>
<td>34</td>
<td>71</td>
<td>10.6</td>
<td>6.1</td>
<td>0.10</td>
<td>0.05</td>
<td>0.26</td>
<td>8.6</td>
<td>4.2</td>
</tr>
<tr>
<td>12-18 months</td>
<td>46</td>
<td>195</td>
<td>2.2</td>
<td>37</td>
<td>110</td>
<td>9.9</td>
<td>6.3</td>
<td>0.07</td>
<td>0.03</td>
<td>0.19</td>
<td>5.2</td>
<td>1.7</td>
</tr>
<tr>
<td>19-24 months</td>
<td>33</td>
<td>205</td>
<td>1.5</td>
<td>37</td>
<td>64</td>
<td>7.1</td>
<td>5.4</td>
<td>0.06</td>
<td>0.04</td>
<td>0.19</td>
<td>5.6</td>
<td>4.0</td>
</tr>
<tr>
<td>24+ months</td>
<td>69</td>
<td>132</td>
<td>2.0</td>
<td>39</td>
<td>13</td>
<td>3.2</td>
<td>3.0</td>
<td>0.03</td>
<td>0.03</td>
<td>0.10</td>
<td>2.8</td>
<td>3.3</td>
</tr>
<tr>
<td>1st Lactation</td>
<td>73</td>
<td>122</td>
<td>1.8</td>
<td>51</td>
<td>10</td>
<td>2.1</td>
<td>0.04</td>
<td>0.02</td>
<td>0.13</td>
<td>5.8</td>
<td>2.0</td>
<td></td>
</tr>
<tr>
<td>2nd Lactation</td>
<td>57</td>
<td>79</td>
<td>2.0</td>
<td>63</td>
<td>69</td>
<td>4.6</td>
<td>4.2</td>
<td>0.03</td>
<td>0.03</td>
<td>0.08</td>
<td>0.8</td>
<td>-0.3</td>
</tr>
<tr>
<td>3rd Lactation</td>
<td>27</td>
<td>56</td>
<td>2.0</td>
<td>66</td>
<td>55</td>
<td>3.6</td>
<td>3.1</td>
<td>0.02</td>
<td>0.02</td>
<td>0.01</td>
<td>1.9</td>
<td>0.8</td>
</tr>
<tr>
<td>4th Lactation</td>
<td>34</td>
<td>61</td>
<td>1.8</td>
<td>67</td>
<td>-20</td>
<td>1.6</td>
<td>2.1</td>
<td>0.03</td>
<td>0.03</td>
<td>0.03</td>
<td>-2.6</td>
<td>0.8</td>
</tr>
<tr>
<td>5th Lactation</td>
<td>13</td>
<td>43</td>
<td>2.6</td>
<td>68</td>
<td>-15</td>
<td>-0.2</td>
<td>1.5</td>
<td>0.01</td>
<td>0.03</td>
<td>-0.07</td>
<td>0.1</td>
<td>-3.8</td>
</tr>
<tr>
<td>&gt;5th Lactation</td>
<td>21</td>
<td>19</td>
<td>1.6</td>
<td>68</td>
<td>-252</td>
<td>-5.5</td>
<td>5.0</td>
<td>0.06</td>
<td>0.04</td>
<td>0.03</td>
<td>-3.1</td>
<td>0.4</td>
</tr>
<tr>
<td>Average</td>
<td>450</td>
<td>136</td>
<td>2.0</td>
<td>48</td>
<td>30</td>
<td>5.1</td>
<td>3.6</td>
<td>0.05</td>
<td>0.03</td>
<td>0.13</td>
<td>-4.3</td>
<td>2.0</td>
</tr>
</tbody>
</table>

**Individual Milking Cow**

The Individual Milking Cow Report can be used to identify the strengths and weaknesses of each cow (highlighted on the example report below); corrective breeding can then be implemented, either on a cow by cow basis or by highlighting the key traits that require improvement when identifying bulls for future breeding.

**Table 2 – Milking Herd Report**
Individual Youngstock

Similar to the individual milking cow report, individual animal strengths and weaknesses can be easily re-ranked and identified. Future breeding policies can then be implemented with youngstock. In addition, if the youngstock has been genomically tested the report will use this more accurate information in the tables. As with the individual cow report, filters have been added to the report, along with a print function, allowing groups of animals due to be mated to be assessed more easily.

Table 3 – Youngstock Report

<table>
<thead>
<tr>
<th>Line Number</th>
<th>Age (in months)</th>
<th>Lifespan (LS)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Somatic Cell Counts (SCC)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Fertility Index (FI)</td>
<td></td>
</tr>
</tbody>
</table>

Breed Herd Standards

Finally, a benchmarking report is also included to allow each herd to benchmark itself against the breed average by whole herd or lactation group. The report highlights areas where the herd is performing well, but also allows potential goals to be set when making future breeding decisions.

Table 4- Herd benchmarking

How often is it updated?

HGRs are updated at every bull proof run in April, August and December. The updates are based upon new data received about individual cows, progeny (daughters) or relatives.

How do I register for a Herd Genetic Report?

Email AHDB Dairy at: breeding.evaluations@ahdb.org.uk. To register for your log details, we will need your milk recording number, trading name and email address. For the reports to be created you need to be fully milk recording with CIS, NMR or UDF.

Can my vet/consultant be given access to my Herd Genetic Report?

Yes. Contact AHDB Dairy by emailing: breeding.evaluations@ahdb.org.uk. An advisor log-in can be created and your herd will then be added to your vet’s/consultant’s account once the relevant authorisation form has been completed.

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Breeding individuals which are closely related can cause dangerous levels of inbreeding (above 6.25%) and result in inbreeding depression in the herd. Inbreeding has a detrimental effect on the performance and vigour of the resulting offspring and increases the risk of bringing undesirable recessive genes together. The Inbreeding Checker is a new addition to the Herd Genetic Report (HGR) which will check how closely related any sire with a genetic index is to any heifer or cow in a milk recording herd. With increasing numbers of available sires and ever-more complex pedigrees this tool makes checking the inbreeding level of any proposed mating, from the entire database of dairy sires listed on the AHDB Dairy website, quick and simple.

**Step 1 – Select group of cows to mate**

Choose the group of cows that you would like to mate from the list. Youngstock and milking animals have been kept in separate groups as breeding priorities for bulls to be mated to youngstock may differ slightly from those to be mated to the milking herd – e.g. easier calving bulls used on youngstock.

**Step 2 – Select cows to mate**

Select the cows from chosen group that you want to mate using the tick box at the left hand side of each listing. The arrows along the top of the columns can be used to reorder records by specific traits of importance to the breeding goals of the herd. Use the ‘Save and Continue’ button to save changes or a new group and move onto the next step.

**Step 3 – Select breed/group of mating sires**

Choose a breed or previously created group of bulls that you want to use. For purebred herds, select the breed of your herd. For cross-breeding herds, select the first breed of interest and run this group through, then return to this step to run a different breed of bulls against your herd.
Step 4 – Select mating sires

Choose the bulls from the available bull or breed list that you want to check for suitability, using the tick box at the left hand side of each listing. Similar to step 2, arrows along the top of the columns can be used to re-rank the bulls by trait.

The ‘Average expected inbreeding’ column gives the average expected inbreeding level of the progeny for each bull, when mated to the group of cows selected in step 2. The ‘Number of safe matings’ column indicates the number of cows which can safely be mated to the bull (resulting in less than 6.25% inbreeding). These two columns allow the user to instantly see whether it is acceptable to use a particular bull, and if so, the number of cows in the herd which would be a suitable match. The ability to check the “expected inbreeding” on specific cows against all available bulls, allows farmers to consider sires that may previously have been disregarded due to concerns over their relatedness to the herd. Depending on number of records the lists may take a short while to load.

The ‘Bull Search’ bar can also be used to search for bulls no longer available or stock bulls with a genetic index. By including historic bulls, users can ensure that excess straws from their last purchase do not go to waste. Again, use the ‘Save and Continue’ button to save changes or a new group and move onto the final step.

Step 5 – Results

All inbreeding levels for potential matings are shown with cow IDs down the left and bull IDs along the top. Arrows below each bull name allows the user to reorder the cow IDs by inbreeding level against the bull. Cows and bulls can be selected for printing and downloaded for future reference.

- Unsafe level of inbreeding from this mating (>6.2%).
- Limited pedigree available for this calculation (Less than 5 generation pedigree).