

BREEDING

# Herd Genetic Report and Inbreeding Checker

Unlocking the genetic potential of your herd

## What is a Herd Genetic Report?

Herd Genetic Reports - HGRs are available to all UK dairy farmers that fully milk record. The reports allow farmers to see the genetic potential of milking animals and youngstock providing information on the following traits:

- £PLI (within breed designed for All Year Round calvers), £ACI & £SCI (both across breed designed for Autumn and Spring block calvers, respectively.)
- Milk (kg)
- Fat & Protein (kg & %)
- Inbreeding level
- Management traits including – SCC, mastitis, fertility, maintenance & lifespan

The HGR provides information in six parts – Herd Summary, Herd Standards Table, Sire List, Youngstock Report, Milking Cow Report and Inbreeding Checker.

## Herd Genetic Report Summary

The summary report gives an over view of a herd by age or lactation number. The summary allows the monitoring of trends and identification of strengths and weaknesses across a herd.

**Table 1 – Herd Genetic Report Summary**

Lactation Group	Number of animals	EPLI	Inbreeding %	Rel %	Predicted Transmitting Ability (PTA 2014) Herd Averages									
					Milk (kg)	Fat (kg)	Prot (kg)	Fat (%)	Prot (%)	Lifespan	SCC	Fertility Index	Mastitis	Maintenance
0-12 months	60	329	4.2	35	355	15.7	11.5	0.02	0.00	0.27	-10.2	6.0	-0.2	6.0
12-18 months	44	339	3.6	36	396	17.3	13.1	0.02	0.01	0.24	-9.7	6.3	-0.4	10.0
18-24 months	30	341	4.1	39	450	17.2	12.1	-0.00	-0.03	0.30	-12.8	5.3	-0.8	6.0
24+ months	38	301	4.0	41	403	14.9	11.7	-0.01	-0.01	0.25	-10.4	3.7	-0.8	3.0
1st Lactation	66	231	3.4	56	367	13.8	10.9	-0.01	-0.01	0.12	-5.6	2.6	0.5	3.7
2nd Lactation	99	198	3.7	68	328	9.2	8.7	-0.04	-0.02	0.15	-7.9	3.7	0.7	3.7
3rd Lactation	54	134	6.6	68	312	6.3	6.4	-0.07	-0.04	0.13	-7.6	2.2	1.2	3.7
4th Lactation	33	87	4.0	68	227	6.5	6.0	-0.03	-0.01	0.05	-4.5	0.8	0.9	10.0
5th Lactation	20	0	4.0	68	118	-0.1	-0.2	-0.06	-0.05	0.12	-5.7	1.1	1.4	7.1
>5th Lactation	14	3	2.9	68	-3	0.9	-0.9	0.01	-0.01	0.14	-3.8	-1.7	0.5	4.2
Average	458	221	4.1	55	329	11.3	9.1	-0.02	-0.02	0.18	-8.1	3.5	0.3	5.3

## Herd Standards Report

Percentile	EPLI	PTA Milk (kg)	PTA Fat (kg)	PTA Prot (kg)	PTA Fat (%)	PTA Prot (%)	Lifespan	SCC	Fertility Index	Inbreeding	Mastitis	Maintenance
1	260	444	14.9	12.3	0.14	0.09	0.33	-9	11.9	0.0	-0.9	-14.0
5	204	343	11.7	9.6	0.10	0.06	0.26	-7	8.5	0.1	-0.4	-5.8
10	178	287	10.0	8.2	0.08	0.05	0.23	-6	6.3	0.4	-0.2	-2.8
15	161	246	8.8	7.3	0.06	0.04	0.20	-6	5.0	0.8	-0.1	-1.1
20	148	216	7.9	6.5	0.05	0.03	0.19	-6	4.1	1.2	0.0	0.1
25	137	189	7.1	5.8	0.05	0.03	0.18	-5	3.5	1.6	0.1	1.1
30	127	162	6.4	5.2	0.04	0.02	0.17	-5	3.1	1.9	0.1	1.8
35	118	138	5.8	4.6	0.03	0.02	0.16	-4	2.7	2.3	0.2	2.4
40	110	115	5.2	4.1	0.03	0.02	0.15	-4	2.4	2.7	0.3	3.0
45	102	93	4.6	3.6	0.02	0.01	0.14	-4	2.1	3.0	0.3	3.4
50	92	69	4.0	3.1	0.02	0.01	0.13	-4	1.8	3.3	0.4	3.8
55	84	44	3.2	2.5	0.01	0.01	0.13	-3	1.5	3.6	0.4	4.3
60	76	20	2.5	1.8	0.01	0.00	0.12	-3	1.3	3.8	0.5	4.6
65	66	-11	1.6	1.1	0.00	0.00	0.11	-2	1.0	4.1	0.5	5.0
70	55	-46	0.7	0.3	0.00	0.00	0.10	-2	0.7	4.3	0.6	5.4
75	40	-85	-0.5	-0.8	-0.01	-0.01	0.09	-2	0.4	4.5	0.7	5.7
80	25	-134	-1.9	-1.9	-0.02	-0.01	0.08	-1	0.1	4.7	0.8	6.0
85	4	-187	-3.5	-3.4	-0.02	-0.02	0.06	-0	-0.2	4.9	0.9	6.4
90	-26	-265	-5.9	-5.5	-0.03	-0.02	0.03	1	-0.6	5.2	1.0	6.9
95	-81	-391	-10.0	-9.1	-0.05	-0.03	-0.02	3	-1.2	5.5	1.3	8.0

The Herd Standards Report compares your herd by youngstock or lactation group against national breed averages. This report allows genetic strengths to be identified within a herd, while also highlighting the weaknesses and where improvements can be made.

**Table 2 – Herd Standards**

## Herd Sire List

The Herd Sire List collates all the sires that have daughters within your milking herd or youngstock, allowing previously used sires to be easily identified, as well as providing their genetic evaluation data.



## Youngstock Report

The Youngstock Report allows each animal's genetic potential to be reviewed, ensuring the most suitable animals are selected to breed future replacements. The Youngstock Report also identifies the strongest and weakest animals by genetic trait, to help make more strategic breeding decisions. All animals can be re-ranked by specific traits (e.g. fertility, SCC) to identify strengths and weaknesses. This report is routinely updated when genomic data is available.

**Table 3 – Individual Youngstock Report**

Line	EPLI	EPLI Rel	Identity	Cow	Dam	Sire	Inbreeding %	Birth Date	Milk (kg)	Bfat (%)	Prot (%)	LS	SCC	FI	Mastitis	Gen	
0	539	56					7.1	11/06/2018	394	0.12	0.08	0.4	-18	5.9	4	-1	⊕
0	528	56					6.9	27/08/2018	424	0.08	0.02	0.5	-17	8.6	-1	-2	⊕
0	528	56					7.0	19/11/2017	560	-0.06	0.02	0.3	-19	11.8	-9	-2	⊕
0	524	56					5.5	27/06/2018	684	0.08	0.05	0.3	-12	1.8	17	0	⊕

## Milking Cow Report

Line	EPLI	EPLI Rel	Identity	Cow	Dam	Sire	Ped. Ind.	Inbreeding %	Curr Lact	Milk (kg)	Bfat (%)	Prot (%)	LS	SCC	FI	Mastitis	Gen	
9	574	64						6.6	2	564	0.05	0.06	0.4	-7	6.7	-1	0	⊕
71	535	56						5.4	1	330	0.15	0.12	0.3	-4	8.5	2	0	⊕
935	450	54						4.8	1	411	0.14	0.07	0.2	-6	3.8	1	1	⊕
781	423	58						3.1	4	403	0.12	0.01	0.3	-8	10.7	4	2	⊕

The Milking Cow Report is similar to the Youngstock Report, as it allows each milking cow's strengths and weaknesses to be identified. As with the youngstock report, all animals can be viewed, or filters can be applied to select specific groups (e.g. lactation group, fat %) to be bred. Both of these reports identify the genetically superior animals that could be used to breed a farm's next generation of youngstock.

**Table 4 – Individual Milking Cow Report**

## Inbreeding Checker

The Inbreeding Checker allows farmers to independently assess the expected inbreeding level from mating their milking animals and/or youngstock against available bulls. With the speed of genetic progress and the greater availability of new bulls, minimising inbreeding within your herd has become increasingly complex. The Inbreeding Checker allows you to select the animals you wish to breed, determine the bulls you are interested in and then produce a report to highlight the resulting inbreeding for each mating. Any predicted inbreeding level above 6.25% is highlighted in red.

**Table 5 – Inbreeding Results Table**

Line Number	Cow Name	Herdbook Number	EPLI	708	777	726	734
86			355	8.84!	5.29	6.54!	5.98
101			366	7.84!	4.06	5.31	4.36
140			350	9.05!	5.17	6.81!	5.25
194			365	10.3!	5.17	7.86!	5.99
221			355	8.78!	5.09	6.51!	5.25
222			361	9.47!	5.03	7.08!	5.61
232			359	8.16!	4.66	5.73	5.02
277			349	9.34!	4.94	6.15	5.46
279			349	9.34!	4.94	6.15	5.46
293			354	9.28!	5.48	6.87!	5.88

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## Further Information

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