



IRISH CATTLE BREEDING FEDERATION

Developments in Dairy Breeding.

Andrew Cromie, ICBF.

23rd March 2011.



© Irish Cattle Breeding Federation Soc. Ltd 2009

1

Cattle Breeding Trends.

EBI	Monaghan		Total	
Number Herds	400		14567	
Average EBI	€34		€63	
Milk Sub Index	€22		€22	
Fertility Sub Index	€10		€34	
EBI	Monaghan	%	Total	%
Dairy cows	20,025		945,799	
Dairy cows with a calving in 2009/2010	16,903	84.4%	834,157	88.2%
Dairy cows in milk recording	6,805	34.0%	420,499	44.5%
Dairy cows with an EBI	9,629	48.1%	540,408	57.1%
Dairy calves born in 2009/2010	6,079	30.4%	287,315	30.4%
Dairy calves born in 2009/2010 by an AI sire	2,397	12.0%	153,426	16.2%



North Eastern Breeding Initiative.

- Co-ops, ICBF, Teagasc and cattle breeding companies working together to increase profit from dairy cattle breeding.
 - Co-op performance reports.
 - Sire Advice Initiative.
- Profit from dairy cattle breeding = Economic Breeding Index (EBI).

3



Page 26 Irish Farmers' Journal **Dairying** October 24, 2000

High index Holstein route not the answer

Peter Young Pregnancy to first service for both groups was just 35 per cent 1). This year's fertility results

Very disappointing results from three year trial

EIGHT of the twenty-three empty cows were scanned in calf at 30 days. Embryo loss struck to see the eight repeat near the end of the breeding season. That's the hardest pill to swallow for Jack Kennedy, Flor Flynn and the rest of the team that put in huge effort into getting the cows in calf. "It was hugely disappointing. The cows were well fed since they went out day and night on March 10, and they settled very well," said Jack. There was just one embryo loss last year. The biggest problem for them, and for all farmers, is that there is still little known in terms of answers. Feeding more meals is not the solution. The three-year trial clearly shows that there is no effect of feeding level on fertility.

The 96 cows were split into three herds. Each herd contained half-high genetic merit cows (RBI 00 X) and half-

Medium merit (RBI 00 Y). The herds were fed either

- 400kg meal (low concentrates, LC)
- 800kg meal (medium concentrates, MC)
- 1500kg meal (high concentrates HC)

The average infertility rate for the different levels of meal was 23 per cent, 25 per cent and 22 per cent respectively.

Jack Kennedy oversees where based Dillon. "We nationalities has nothing to do with it. The results clearly show that poorer fertility is linked to high index Holstein percentage, in the cows

answer for helping to select cows with higher fertility. These cows were bred in Ireland and bought from farmers. The previous high merit cows had been bought in from Holland and France. "However it shows that answer season allow to spread option,

infertility.

Table 1
Milk production for medium and high merit cows (1998-2000)

	High merit	Medium merit
1998	1,498	1,213
1999	1,675	1,464
2000	1,770	1,564

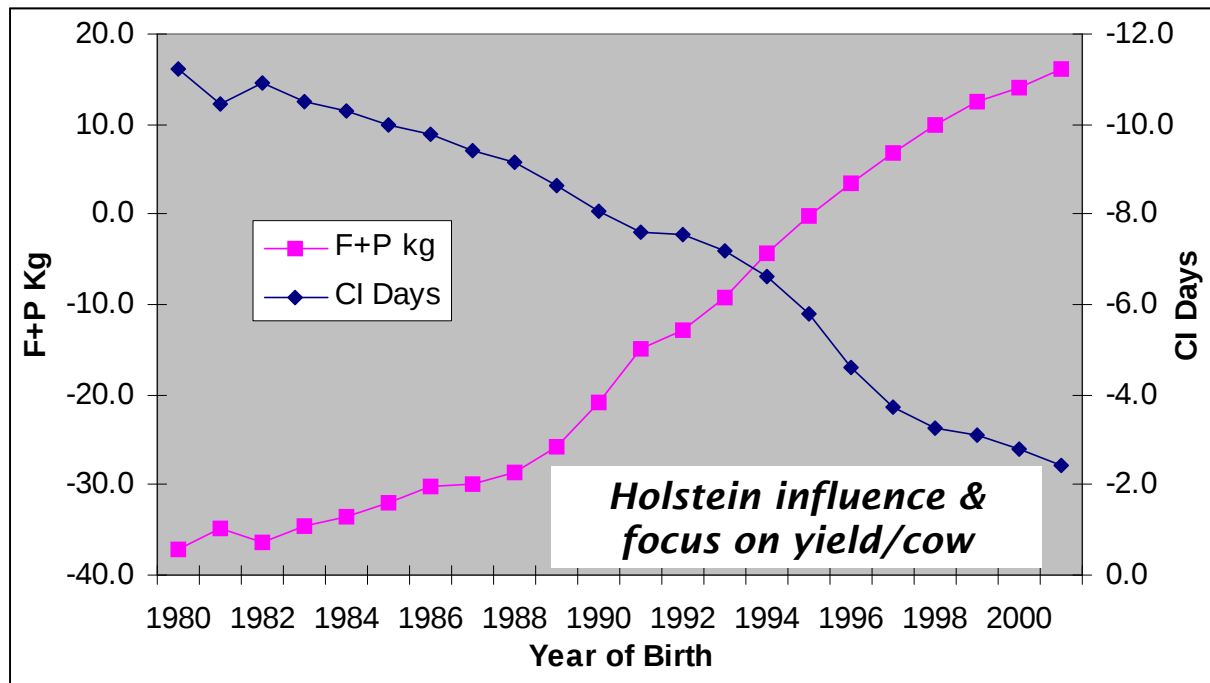
Table 2

	Current trial (1998-2000)		Previous trial (1995-1997)	
	HGI	MGI	HGI	MGI
Submitted in 1st 3 weeks (%)	88	90		
Calving to service interval (days)	77	77	70	71
Calving to conception interval (days)	93	90	86	88
Pregnancy 1st service (%)	49	57	41	53
Pregnancy 2nd service (%)	42	44	37	58
Services/cow	1.83	1.68	1.75	1.7
Infertile rate (%)	17	12	23	6
Percentage Holstein (%)	80	60	92	52

Measures of fertility needed in index

IRISH farmers desperately need an Index that includes measures of fertility. The Moorepark research increases the urgency of the new index being drawn up by the ICBF and due to be released in late November. For the first time the index will be produced that will include traits linked to fertility. "Other countries are starting to record traits that are linked to fertility. With our compact calving system the need in Ireland is much greater," said ICBF geneticist Dr.

How did it happen? *Female Genetic Trends for F+P & CI Days*

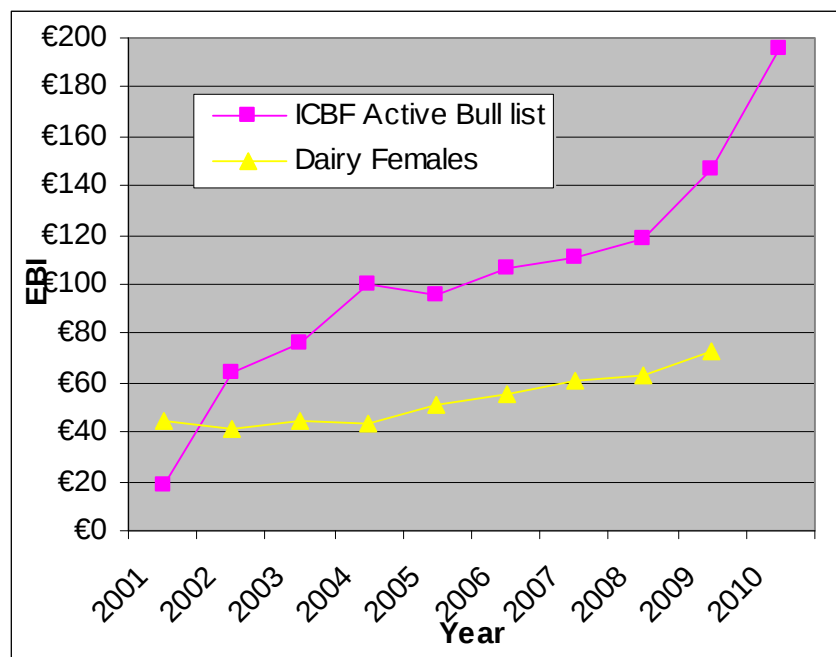


5



Genetic Gain in EBI.

- Past = No genetic gain.
 - Milk gains - fertility loss.
- Now €20/year and increasing.
 - Influence of genomics.
 - Use of younger bulls
 - €€€ IRELAND.
 - Better imported sires available.



6



EBI - 2011

Sub-Index	Trait	Economic Weight	Trait Emphasis	Overall Emphasis
Production	Milk	-0.09	12.1	38.1%
	Fat	1.01	4.0	
	Protein	6.26	22.0	
Fertility	Calving Interval	-11.89	23.2	34.8%
	Survival	12.05	11.5	
Calving	Direct Calving Difficulty	-3.52	3.5	10.3%
	Maternal Calving Difficulty	-1.73	1.6	
	Gestation Length	-7.49	4.6	
	Calf Mortality	-2.58	0.6	
Beef	Cull Cow Carcase Weight	0.15	0.6	7.2%
	Carcase Weight	1.38	3.7	
	Carcase Conformation	10.32	1.5	
	Carcase Fat	-11.71	1.4	
Maintenance	Cow Weight	-1.49	6.1	6.1%
Health	Lameness	1.13	0.3	3.6%
	SCC	-56.35	3.2	

ICBF Active Bull List – Feb 11

Rk	Tag	Bull Name	Brd	HB	HO %	EBI	Rel %	Proof	Milk	Fert	Calv	Beef	Maint	Health
1	SOK	(IG) SUNNYBANK OMAN	HO	PED	63	€279	55	GS	€73	€170	€32	-€7	€2	€8
2	KOZ	KEVINSFORT OJI HAZE	HO	PED	94	€264	61	GS	€59	€159	€43	-€4	-€2	€10
3	MJI	MORRISHEEN OJI FRANK	HO	PED	88	€262	55	GS	€121	€108	€36	-€20	€12	€4
4	LRW	HSS VHA LOCHINVAR-ET S3F	HO	SRM	100	€260	45	GS	€129	€118	€33	-€27	€9	-€1
5	TIO	TIRONUI OM JOSKIN	JE	PED	0	€248	41	DP-INT	€105	€127	€15	-€27	€27	€1
6	HYZ	SCOTTS VHA HYDRAULIC S2F	HO	SRM	100	€237	45	GS	€86	€141	€27	-€43	€30	-€4
7	FLT	(IG) FOWLERSTOWN STAN	HO	PED	91	€234	62	GS	€84	€120	€44	-€15	-€1	€2
8	MDW	MONOWAI HOM DELUCA-ET SI	HO	SRM	88	€233	47	GS	€88	€124	€34	-€21	€12	-€4
9	ROF	RALMA O-MAN CF CRICKET-ET	HO	PED	100	€225	67	DP-INT	€66	€118	€38	-€4	-€9	€17
10	WGB	WAIKARE MAUNGA BIGGLES	JE		0	€221	37	DP-INT	€104	€119	€7	-€50	€44	-€3
11	GJM	GRAN-J OMAN MCCORMICK	HO	PED	100	€220	64	DP-INT	€77	€116	€34	-€12	-€7	€11
12	LXK	LYNBROOK EXPOSE TREAT ET	JE	PED	0	€219	40	DP-INT	€78	€141	€5	-€70	€66	-€1
13	HRJ	(IG) HILLSDALE RUDE JUSTICE	HO	PED	94	€214	62	GS	€65	€126	€40	€3	-€22	€2
15	BQN	BRIDEPARK OMAN	HO	PED	97	€212	56	GS	€99	€83	€45	-€15	-€1	€1
14	OMS	OMALLIS	HO	PED	100	€212	51	DP-INT	€80	€109	€32	-€9	-€4	€4
16	CFD	CUTFORTHS LORD BRIAN	JE		16	€210	38	DP-INT	€113	€77	€19	-€32	€31	€1
17	BUG	BUSY BROOK RASTUS-ET S3F	HO	SRM	50	€209	41	GS	€103	€94	€26	-€32	€23	-€5
18	MJS	MULLINS MAUNGA ORION S2J	JE	PED	0	€208	48	DP-INT	€102	€107	€7	-€67	€62	€4
20	RVW	RAYNHAM TGM AVAGO ET S3J	JE		0	€204	40	DP-INT	€84	€118	€6	-€35	-€33	-€1

EBI & Winter Milk Herds

	Top 20%	Mid 20%	Btm 20%
	€104 €42/€53	€37 €35/€1	-€26 €26/€-44
Milk litres	20,672	19,808	19,029
Milk Solids kg	1,540	1,378	1,302
Survival % (1-4)	61%	53%	32%
CI Days (1-3)	404	418	452

- Analysis of over 1,000 cows from 10 Winter Milk Herds (Monitor Farms Program).
- How did top 20% on EBI perform compared to bottom 20%, based on performance over 1st 3 lactations?
- **EBI = better lifetime performance = more profit.**

9



Increasing EBI – How?

- Stick to bulls on ICBF Active Bull List.
- No shortage of choice.
 - Breed, milk kg, type, price....
- Use enough AI straws.
 - 1.5 straws for each cow & 1.0 straws for each heifer.
- Target 40 dairy heifers per 100 cows.
- North Eastern breeding initiative.
 - Targeted “Sire Advice” for herdowners.

10



What is “Sire Advice”?

- Selecting AI bulls can be off-putting.
- Input “team of bulls” (farmer and/or advisor).
- Bulls allocated to your cows on basis of;
 - Minimum inbreeding.
 - Maximise EBI.
 - Balance milk & fertility indexes.
- Report generated (list of bulls, straws per bull & breeding chart detailing cow & bull choice).
- Matings also allocated to technician handheld.
- The breeding season made simpler!

11



North Eastern Sire Advice

- Team of bulls selected by NE partners
 - 10 high EBI bulls from across AI companies.
- Example – Town of Monaghan.
 - 190 suppliers on ICBF database
 - 66 on technician service – will get “team of bulls” from relevant AI company.
 - 45 on DIY AI – will get “team of bulls” from across AI companies.
 - 76 did not use AI – will get “team of bulls” from across AI companies.
- Farmers “own choice” will over-ride above.
- Reports posted in next 2-3 weeks.

12



Co-op Performance Report

- Combination of 2 databases;



Cow Numbers, EBI, Calv Int.,
Culling, Repl. rate, etc.

Town of
Monaghan
Co-op

Bulk tank info - Ltrs milk, Fat,
Prot, SCC, Milk Price



Key Bench-mark Data.

	Liquid (n=74)		Creamery (n=137)	
	Average	Top 10%	Average	Top 10%
F+P Kg	428	512	368	474
Litres/day	16.2	19.3	13.9	17.9
Fat%	3.76	3.91	3.75	3.93
Ptn%	3.27	3.31	3.26	3.38
CI Days	420	386	424	379
Days to calve 50%	62	30	60	27
AI replacements	13%	42%	8%	19%
EBI	€24	€60	€31	€61
EBI 2010 insems	€134	€191	€153	€194



Example Report.

- Eamon McMahon, Knockaturley, Monaghan.
- High EBI (top 1% in Town Monaghan)
Spring Calving dairy herd (40 cows)
- Using full range of cattle breeding & support services.
 - HerdPlus, AI, milk recording, IHFA.
 - Teagasc, discussion group.
- Farm walk on farm on.....

15



Milk Delivered in 2009/2010 (i)

Table 1: Your Herds Milk Deliveries to for 2009/2010

Month	Litres			Fat %			Protein %			SCC ('000)			Total Cows	
	2010	2009	Diff '09-'10	2010	2009	Diff '09-'10	2010	2009	Diff '09-'10	2010	2009	Diff '09-'10	2010	2009
Jan	8,113	10,131	-19.9%	4.41	4.33	0.08	3.54	3.59	-0.05	222	61	161	44	39
Feb	16,940	16,334	3.7%	4.23	4.1	0.13	3.18	3.28	-0.1	159	156	3	49	42
Mar	20,729	25,231	-17.8%	4.24	3.99	0.25	3.18	3.11	0.07	51	100	-49	44	43
Apr	25,416	28,569	-11%	4.18	3.83	0.35	3.07	3.22	-0.15	83	185	-102	42	43
May	35,687	30,387	17.4%	3.9	3.83	0.07	3.33	3.12	0.21	191	232	-41	38	40
Jun	34,044	31,064	9.6%	3.75	3.92	-0.17	3.34	3.25	0.09	101	209	-108	38	40
Jul	33,035	33,942	-2.7%	3.86	3.77	0.09	3.38	3.39	-0.01	222	342	-120	38	38
Aug	32,226	26,553	21.4%	4.01	3.89	0.12	3.45	3.45	0	289	207	82	38	38
Sep	25,839	22,625	14.2%	4.22	4.19	0.03	3.58	3.63	-0.05	322	241	81	38	36
Oct	21,792	20,091	8.5%	4.38	4.41	-0.03	3.68	3.7	-0.02	343	278	65	38	36
Nov	17,639	10,563	67%	4.39	4.35	0.04	3.66	3.75	-0.09	314	211	103	38	36
Dec	13,430	6,389	N/A	4.49	4.44	0.05	3.68	3.82	-0.14	355	369	-14	38	36
Total	284,890	261,879	8.8%	4.1	4	0.1	3.4	3.37	0.03	213	219	-6	40	39

16



Milk Delivered in 2009/2010 (ii)

Table 2: Milk output per month for 2009/2010

Month	Total Milk Solids			Milk Output - Total Cows					
	Fat + Protein (Kg)			Litres / Cow / Day			Fat + Prot Kg / Cow / Day		
	2010	2009	Diff '09-'10	2010	2009	Diff '09-'10	2010	2009	Diff '09-'10
Jan	664	827	-19.7%	5.95	8.38	-29%	0.49	0.68	-27.9%
Feb	1,293	1,242	4.1%	12.35	13.89	-11.1%	0.94	1.06	-11.3%
Mar	1,584	1,845	-14.1%	15.2	18.93	-19.7%	1.16	1.38	-15.9%
Apr	1,897	2,074	-8.5%	20.17	22.15	-8.9%	1.51	1.61	-6.2%
May	2,657	2,174	22.2%	30.29	24.51	23.6%	2.26	1.75	29.1%
Jun	2,486	2,294	8.4%	29.86	25.89	15.3%	2.18	1.91	14.1%
Jul	2,463	2,503	-1.6%	28.04	28.81	-2.7%	2.09	2.12	-1.4%
Aug	2,476	2,007	23.4%	27.36	22.54	21.4%	2.1	1.7	23.5%
Sep	2,076	1,822	13.9%	22.67	20.95	8.2%	1.82	1.69	7.7%
Oct	1,809	1,677	7.9%	18.5	18	2.8%	1.54	1.5	2.7%
Nov	1,462	881	65.9%	15.47	9.78	58.2%	1.28	0.82	56.1%
Dec	1,130	543	N/A	11.4	5.72	99.3%	0.96	0.49	95.9%
Total	21,997	19,889	10.6%	19.51	18.4	6%	1.51	1.4	7.9%

1 /



(i) Milk Performance Data

Table 3: Your /ICBF Performance Score Card

	Your Herd	Average	Top 10%	Your Rank out of 100	Your Star Rating ¹
Your Milk performance for 2010 (Jan - Dec) based on data					
Fat + Protein (Kg/cow) Average Fat and Protein yield per cow for your herd	550	368	474	100%	* * * * *
Litres per Cow per Day Avg litres of Milk per cow from Jan - Dec 2010	19.51	13.94	17.9	97%	* * * * *
Fat % to end December 2010 Weighted average Fat % from Jan - Dec 2010	4.1	3.75	3.93	99%	* * * * *
Protein % to end December 2010 Weighted average Protein % from Jan - Dec 2010	3.4	3.26	3.38	96%	* * * * *
Average Milk Value (cpl) Incl. VAT Average milk value received from Jan - Dec 2010, on your farm performance.	29.6	27.8	28.7	100%	* * * * *
SCC (,000 cells/ml) The weighted average Somatic Cell Count for Jan - Dec 2010	213	291	160	81%	* * * * *



(ii) Fertility Performance Data

Your Fertility & Culling based on HerdPlus 2010 Calving Report					
Calving Interval (days) Average number of days between successive calvings for cows calved during the period	386	424	379	88%	* * * * *
Days to calve 50% of herd Start 13/01/2010 - Median 02/03/2010	49	60	27	67%	* * * *
Culling Rate Number of cows culled (Factory/Died) in the period (3) as a proportion of eligible cows (38)	8%	12%	0%	61%	* * * *
%AI bred replacements %female calves born in the period from dairy AI (13) as a proportion of eligible cows (38)	34%	8%	29%	95%	* * * * *

19



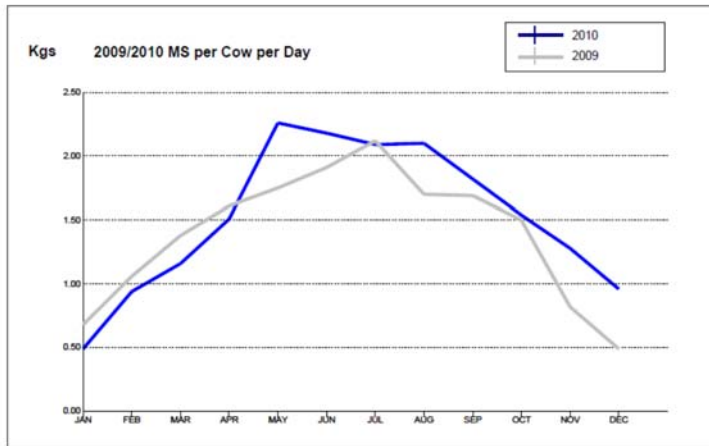
(iii) EBI Data

Your EBI Statistics based on Herdplus EBI Report January 2011					
Herd EBI 2011 Average EBI for cows with EBI data	€ 82	€ 31	€ 61	98%	* * * * *
Yearly EBI Gain (2010-2011) Gain in Herd EBI based on; 0-1yr old, 1-2yr old & 22% replacement rate	€ 2	€ 3	€ 8	49%	* * *
EBI of 2010 Inseminations Weighted Average EBI of dairy AI bulls recorded in Spring 2010	€ 164	€ 153	€ 194	64%	* * * *
¹ * = 0 - 20% * * = 21 - 40% * * * = 41 - 60% * * * * = 61 - 80% * * * * * = 81 - 100%					

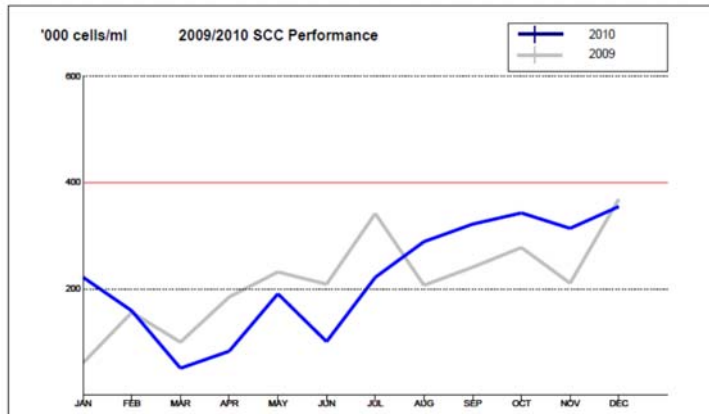
20



Milk Solids per Cow per Day 2009-2010



Monthly Somatic Cell Count (SCC) 2009-2010



21



- **Graphs.**
- Milk Solids per cow per day.
- SCC Performance

Summary

- Strong desire to “grow” cattle breeding in North East.
- Keep focused on EBI. It will increase profit. Use additional data, e.g., sub-indexes.
- Use new tools available through co-op.
 - Co-op performance report.
 - Sire Advice facility.
- If you have not received co-op report, please sign authorisation form and return.
- Farm walk on Eamon McMahon.
- Best wishes in your breeding season.

22

