



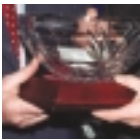
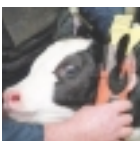
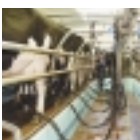
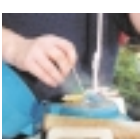
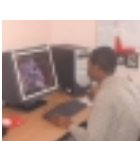
Irish Cattle Breeding Federation

Irish Cattle Breeding Statistics 2001





Irish Cattle Breeding Federation Society Limited
Shinagh House, Bandon, Co. Cork, Ireland
Tel: + 353 (0) 23 20222, Fax: + 353 (0) 23 20229
Email: enquiry@icbf.com Website: <http://www.icbf.com>

	Foreword Dr Brian Wickham	2
	National Cattle Breeding Awards	3
	Section 1 National Cattle Breeding Statistics	4
	<i>(i) Cattle population statistics</i>	4
	<i>(ii) Calf registration statistics</i>	4
	Section 2 Herdbook Association Statistics	9
	<i>(i) Calf registration and membership</i>	9
	Section 3 Dairy Recording Statistics	10
	<i>(i) Participation in milk recording</i>	10
	<i>(ii) Analysis of individual cow performance data</i>	11
	<i>(iii) Participation in linear assessment schemes</i>	13
	Section 4 Beef Recording Statistics	14
	<i>(i) Beef industry statistics</i>	14
	<i>(ii) Participation in beef recording schemes</i>	15
	<i>(iii) Suckler herd replacement policy</i>	17
	Section 5 AI Statistics	18
	<i>(i) Trends in first insemination AI usage</i>	18
	<i>(ii) DIY AI licensing</i>	20
	<i>(iii) Importation of bovine semen</i>	20
	<i>(iv) Participation in ICBF progeny test programme</i>	20
	Section 6 Animal Evaluation Statistics	22
	<i>(i) Dairy cattle</i>	22
	<i>(ii) Beef cattle</i>	23

Reference Information

Title: Irish Cattle Breeding Statistics 2001

ISSN: 1649-0991

Date of publication: 1st June 2002

Editor: Andrew Cromie

Printed by: Print Run Limited, Unit 72 Western Parkway Business Park, Ballymount, Dublin 12.

The purpose of this publication is to provide the cattle breeding industry with accurate information for decision making. Providing such information is in keeping with ICBF's mission of achieving increased rates of genetic improvement in the national herd. By compiling statistics relevant to the main aspects of cattle breeding I believe that organizations and individuals wishing to make investments in the industry can be better informed when making their decisions and thus achieve better returns on their investments.



The data used in compiling these statistics comes from a wide range of sources including:

- Department of Agriculture, Food & Rural Development
- South Western Services Co-op
- Irish Dairy Records Co-op
- Herd Book Associations
- Bord Bia
- Irish Farmers Journal

The support of these organizations in making data available and in compiling relevant summaries is gratefully acknowledged. This cooperation is a most important contribution to assisting the cattle breeding industry achieve greater effectiveness and efficiency.

In compiling this publication we have endeavoured to cover the key elements of successful cattle breeding including the breeding population, performance recording, and current rates of genetic improvement. These statistics are the best that we can currently compile. Improvements can be expected in the future as the cattle breeding database becomes fully operational, feedback from readers is acted on and research identifies better ways of summarising the available data.

Please contact us with any suggestions you have for improvement or requests for greater detail or further breakdowns. You are recommended to also refer to the ICBF website www.icbf.com where further information is freely available.

A stylized, handwritten signature in black ink that reads "Brian".

Brian Wickham
Chief Executive



L-R: Mr. Maurice Keane, Bank of Ireland (Sponsor), Minister for Agriculture, Mr. Joe Walsh, Mr Joe Duignan (Top Charolais Herd award winner), Dr. Brian Wickham (ICBF)



L-R: Mr. Maurice Keane, Bank of Ireland (Sponsor), Minister for Agriculture, Mr. Joe Walsh, Mr. Dennis O' Connell (Top Holstein Friesian Herd award winner), Dr. Brian Wickham (ICBF)



L-R: Mr. Maurice Keane, Bank of Ireland (Sponsor), Minister for Agriculture, Mr. Joe Walsh, Mr. Mac Murphy, collecting on behalf of Mrs. Bernadette Tynan (Top Limousin Herd award winner), Dr. Brian Wickham (ICBF)



L-R: Mr. Maurice Keane, Bank of Ireland (Sponsor), Minister for Agriculture, Mr. Joe Walsh, Mr. Joseph Ryan (Top Simmental Herd award winner), Dr. Brian Wickham (ICBF)



L-R: Dr. Brian Wickham (ICBF), Minister for Agriculture, Mr. Joe Walsh, Mr. John Malone- Secretary General, Dept of Agriculture, Mr. Gerry Grelly (ICBF)

(i) Cattle population statistics

- *Small increase in overall breeding females*
- *6% increase in stock bulls*

The size of the National cattle breeding herd (in-calf heifers and cows) increased slightly in 2001, up from 2.67 million in 2000 to 2.68 million in 2001 (Table 1.1 and Figure 1.1). This increase was due to an increase in the overall number of beef breeding females, up from 1.23 million to 1.24 million. There was little change in the number of dairy breeding females, which remained constant at about 1.45 million.

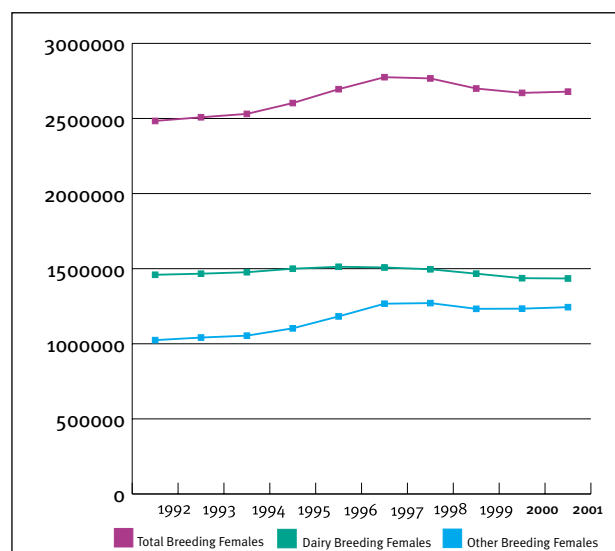


Table 1.1 Cattle Population Figures (1992-2001)

	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Dairy Cows	1,261,500	1,274,100	1,269,100	1,267,100	1,272,400	1,268,300	1,276,500	1,260,900	1,238,300	1,233,100
Other Cows*	911,800	928,300	956,700	988,700	1,062,500	1,137,300	1,165,000	1,132,300	1,121,100	1,125,400
In calf Dairy Heifers	197,900	192,500	207,400	232,600	240,300	239,800	219,500	205,800	198,400	201,700
In calf Other Heifers	112,400	113,200	97,300	114,200	119,800	129,500	105,800	100,400	112,600	118,300
Total Cows	2,173,400	2,202,400	2,225,800	2,255,800	2,334,900	2,405,600	2,441,500	2,393,200	2,359,400	2,358,500
Total In calf Heifers	310,200	305,700	304,700	346,900	360,100	369,300	325,300	306,200	311,000	320,00
Total Breeding Females	2,483,600	2,508,100	2,530,500	2,602,700	2,695,000	2,774,900	2,766,800	2,699,400	2,670,400	2,678,500
Bulls	31,100	32,200	32,700	34,200	35,900	37,800	38,500	38,200	40,100	42,600

source: Department of Agriculture, Food & Rural Development 2001
* Includes suckler and dual purpose animals

Fig 1.1 Trends in number of breeding females (1992-2001)



The number of dairy female replacements on Irish farms increased slightly last year, up from 198,400 in 2000 to 201,700 in 2001. This is in contrast to recent trends in this sector, which had seen a 20% drop in numbers between 1996 and 2000. The increase in numbers of beef female replacements continued in 2001, with a further 5% increase in the number of animals in this sector (up from 112,600 in 2000 to 118,300 in 2001).

The trend of increasing stock bull numbers continued in 2001, with a 6% increase in the number of breeding bulls (up from 40,100 in 2000 to 42,600 in 2001). This substantial increase may be due to the short-term impact of FMD and the subsequent closure of the National AI service during the early part of the 2001 breeding season (see table 5.2). Alternatively, the trend could be viewed as long term (the number of stock bulls has increased by some 37% over the last 10 years) and reflect a gradual movement towards greater use of stock bulls as herd sizes get larger and the availability of farm labour declines.

(ii) Calf registration statistics

- *1.0% drop in calf registrations*
- *Shift in calving pattern within dairy and beef herds*
- *Continued decline in the number of cattle breeding herds*
- *Increasing influence of certain beef breeds*

The total number of calves registered in Ireland last year was 2,152,817 (Table 1.2). This figure was down slightly on 2001 (some 20,000) and is consistent with recent trends in calf birth numbers (1998-2001).

The seasonal nature of calf births was again evident in 2001, with over 72% of all calf births (about 1.55 million births in total) occurring in the months of February, March, April and May.

Table 1.2 National Bovine Calf Registration Figures, by month (1997-2001)

	1997	1998	1999	2000	2001
January	283,531	290,593	222,503	162,109	163,815
February	484,195	529,306	460,217	393,117	376,301
March	578,726	577,038	570,908	553,566	506,891
April	390,882	382,679	384,458	426,992	411,497
May	210,599	217,493	216,243	261,472	258,961
June	101,353	92,945	90,541	98,460	126,109
July	56,714	55,151	50,108	56,719	63,918
August	42,155	41,216	34,682	40,342	43,501
September	47,462	45,771	39,034	44,047	50,121
October	58,273	53,993	45,993	46,469	51,352
November	55,745	53,810	44,448	43,906	50,167
December	75,525	85,533	49,031	45,389	50,184
Total	2,385,160	2,425,528	2,208,160	2,172,588	2,152,817

source: Department of Agriculture, Food & Rural Development 2001

Table 1.3 Seasonality in milk & beef production systems (1997-2001)

	Number of births to dairy cows					Number of births to beef cows				
	1997	1998	1999	2000	2001	1997	1998	1999	2000	2001
JAN	186,830	181,484	138,040	106,933	105,461	96,937	109,710	85,724	55,985	58,354
FEB	319,427	337,550	306,318	288,533	269,131	165,239	192,794	156,029	108,239	107,170
MAR	292,318	281,210	289,958	291,342	264,017	287,031	297,428	284,480	265,098	242,874
APR	158,564	154,821	154,900	169,033	160,679	232,948	229,505	233,727	261,188	250,818
MAY	76,845	79,628	79,143	89,969	89,077	134,179	139,035	140,298	174,725	169,884
JUN	37,586	35,822	35,987	38,278	40,346	64,027	57,879	56,492	62,237	85,763
JULY	18,842	18,405	17,650	19,257	19,048	38,044	37,212	33,580	39,013	44,870
AUG	14,677	14,068	12,739	14,292	13,283	27,640	27,575	22,961	27,416	30,218
SEP	23,185	21,654	20,920	22,774	23,381	24,435	24,505	19,134	22,843	26,740
OCT	32,158	30,880	28,489	27,796	26,705	26,279	23,599	18,886	20,635	24,647
NOV	31,313	29,771	26,850	25,241	24,916	24,604	24,525	18,875	20,731	25,251
DEC	40,420	45,292	26,497	23,660	20,849	35,331	41,130	24,299	24,642	29,335
TOTAL	1,232,165	1,230,585	1,137,491	1,117,108	1,056,893	1,156,694	1,204,897	1,094,485	1,082,752	1,095,924

source: Department of Agriculture, Food & Rural Development 2001

There was a notable increase in the number of calf births occurring in winter months during 2001 (i.e., September, October, November and December), up from 179,811 in 2000 to 201,824 in 2001. A closer examination of this trend (Table 1.3) indicates that the shift in calving patterns has happened exclusively in beef herds (the number of calves born to beef cows during these winter months increased by some 17,122 between 2000 and 2001). This trend probably reflects an increased specialisation within the Irish beef industry as herd-owners strive to fill contracts for those European markets which require Irish beef on a year round basis.

In contrast, there has been a marked swing away from winter calving on Irish dairy farms, with the number of cows calving in winter months, having declined by some 25% over the last four years, from 127,597 in 1998 to 95,851 in 2001. This is a major concern for the Irish dairy industry, given our already over-reliance on the production of “lower-value” products such as butter, butter oil, milk powders and casein (about 70% of milk produced in Ireland is currently utilised to produce these products compared to an EU average of about 35%). Further penetration into “value added” markets (i.e., cheese, yoghurts and fermented milk), will necessitate a reversal in this trend over the coming years.

Table 1.4 Number of cattle breeding herds and registrations by herd type (2001)

Type	Herds	No. reg.	Ave/herd
Dairy	24,217	971,863	40.1
Beef	69,637	1,007,440	14.5
Mixed	7,428	173,514	23.4
Overall	101,282	2,152,817	21.3

source: Department of Agriculture, Food & Rural Development 2001

A total of 101,282 herds registered calves in 2001 (Table 1.4). The average number of calves registered across all herds was about 21, giving an indication of the average size of the National herd. Of the 101,282 herds registering calves in 2001, some 24% were of dairy origin (24,217 herds), 69% were of beef origin (69,637 herds) and 7% (7,428 herds) were of mixed dairy and beef origin. Average herd size for each of these herd types was 40, 14 and 23 respectively.

Looking at recent trends in the number of cattle breeding herds (Table 1.5 and Figure 1.2) indicates that the number of herds registering calves has dropped by over 13% in the last five years, from 116,560 in 1997 to 101,282 in 2001. The decline is even more marked within the dairy sector, where the number of herds registering births has fallen by over 17% (a drop of 5,023 herds since 1997) compared to only 7% within the beef sector (a drop of 4,903 herds during the same period).

Table 1.5 Number of cattle breeding herds by herd type (1997-2001)

Type	1997	1998	1999	2000	2001
Dairy	29,240	28,029	26,677	25,087	24,217
Beef	74,542	75,109	73,194	70,765	69,637
Mixed	12,778	11,336	9,544	8,155	7,428
Total	116,560	114,474	111,414	104,007	101,282

source: Department of Agriculture, Food & Rural Development 2001

Fig 1.2 Trend in number of cattle breeding herds by herd type (1997-2001)

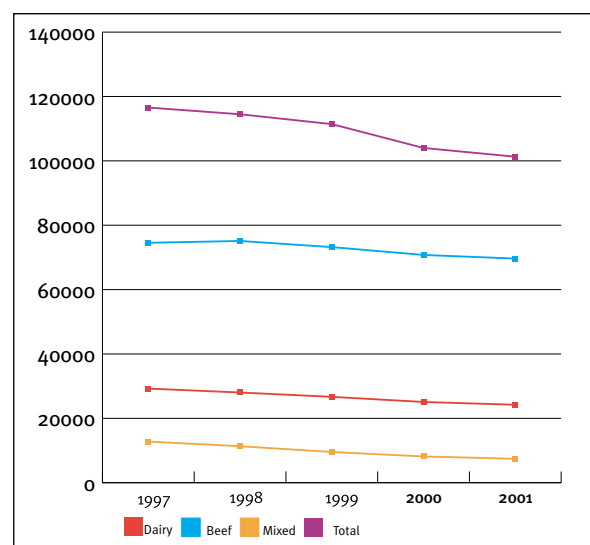


Table 1.6 Analysis of calf births by county and by herd type (2001)

Overall	Total Births	Total Herds	Dairy Births	Beef Births	Dairy Herd	Beef Herd	Mixed Herd
CARLOW	25,555	1,132	10,026	15,529	227	845	60
CAVAN	83,106	4,515	33,259	49,847	959	3,102	454
CLARE	111,319	5,670	32,060	79,259	761	4,248	661
CORK	345,051	10,513	260,312	84,739	5,687	3,926	900
DONEGAL	61,736	5,289	14,655	47,081	317	4,842	130
DUBLIN	6,770	318	3,399	3,371	68	225	25
GALWAY	137,336	10,256	29,363	107,973	739	9,044	473
KERRY	146,949	6,307	92,762	54,187	2,423	3,378	506
KILDARE	29,163	1,272	12,115	17,048	247	931	94
KILKENNY	87,868	2,740	51,407	36,461	1,024	1,414	302
LAOIS	60,481	2,269	26,527	33,954	516	1,532	221
LEITRIM	36,229	3,214	2,804	33,425	83	3,059	72
LIMERICK	129,879	4,473	93,759	36,120	2,207	1,797	469
LONGFORD	36,842	2,185	7,552	29,290	194	1,852	139
LOUTH	21,408	908	12,455	8,953	274	567	67
MAYO	108,855	9,385	23,025	85,830	766	8,139	480
MEATH	73,673	2,699	40,206	33,467	824	1,632	243
MONAGHAN	67,915	3,427	34,929	32,986	967	2,101	359
OFFALY	51,472	2,366	20,430	31,042	486	1,686	194
ROSCOMMON	64,487	4,750	6,784	57,703	173	4,408	169
SLIGO	46,600	3,518	10,338	36,262	306	2,995	217
TIPPERARY	173,469	5,528	106,593	66,876	2,362	2,567	599
WATERFORD	78,772	1,942	52,215	26,557	905	869	168
WESTMEATH	49,825	2,332	14,869	34,956	347	1,804	181
WEXFORD	77,909	2,762	47,562	30,347	1,022	1,555	185
WICKLOW	40,148	1,512	17,487	22,661	333	1,119	60
	2,152,817	101,282	1,056,893	1,095,924	24,217	69,637	7,428

source: Department of Agriculture, Food & Rural Development 2001

Table 1.7 Dairy and Beef Cow herds by size class (2001)

	1-9	10-19	20-49	50 & Over	Totals
Dairy Cow Herds	2,009	3,143	12,446	6,619	24,217
Beef Cow Herds	33,350	18,987	15,190	2,110	69,637
Mixed Cow Herds	2,369	1,601	2,765	693	7,428

source: Department of Agriculture, Food & Rural Development 2001

Looking at trends in registration numbers by herd type (Table 1.7 and Figure 1.3) indicates that over 48% of beef herds had fewer than 10 registrations in 2001, with a further 27% of herds having between 10 and 19 registrations (the number of birth registrations is an indication of overall herd size). In contrast only 3% of beef herds had greater than 50 registrations (2,110 herds of the total 69,637 herds). Nevertheless, these 3% of herds accounted for 145,419 of the total beef registrations, indicating considerable scope for beef progeny testing.

A somewhat different trend is apparent for dairy herds, with only 21% of herds having fewer than 20 registrations in 2001 (5,152 of the total 24,217 dairy herds). About 51% of herds had between 20 and 49 registrations (12,446 herds in total) and a further 27% of herds had greater than 50 registrations (6,619 herds in total). This last group of herds (those with greater than 50 registrations) accounted for some 493,000 of the total 971,863 registrations in Irish dairy herds during 2001.

Analysis of calf births by county and by herd type (Table 1.6) indicates that Cork, Tipperary and Kerry are the three largest counties in Ireland, based on total calf births and total cattle breeding herds (almost 31% of all calf births took place in these counties during 2001). In contrast, Dublin, Louth and Carlow were the three smallest counties based on each of these statistics, with only 2.4% of all calf births taking place in each of these three counties. Further analysis on the basis of herd type, indicates that Cork is by some way the largest county in terms of dairy cow calvings (24.6% of the total 1,056,893 dairy cow births occurred in this county), followed by Tipperary and then Limerick (10.1% and 8.9% respectively). In contrast, Galway is the largest in terms of beef cow calving (9.9% of the total 1,095,924 beef cow births occurred in this county), followed by Mayo and then Cork (7.8% and 7.7% respectively).

Fig 1.3 Size distribution of dairy and beef herds (2001)

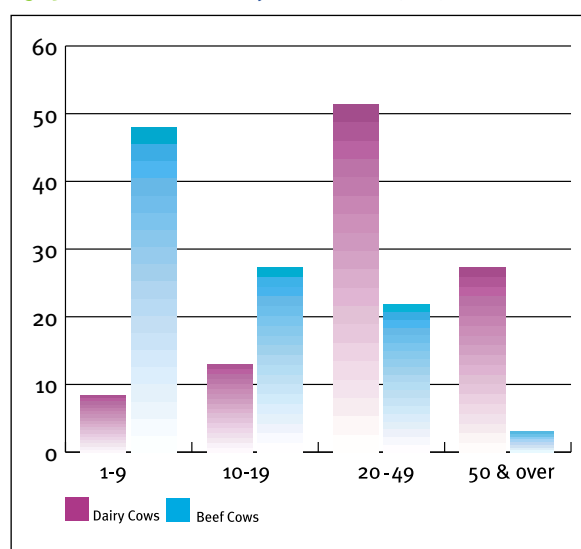
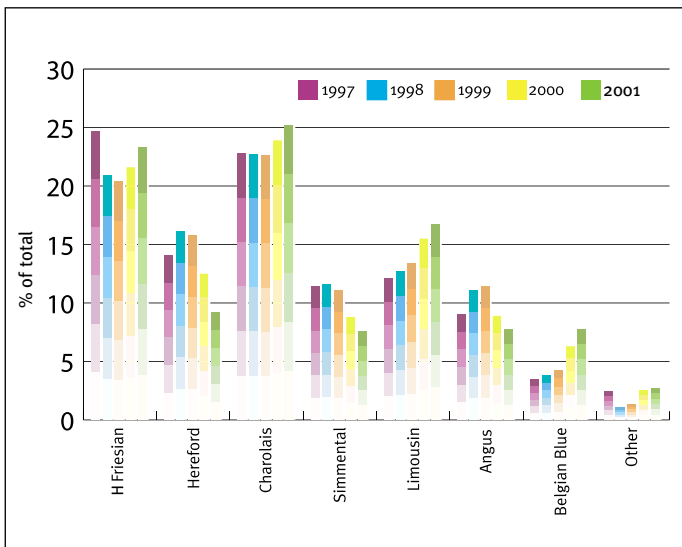


Table 1.8 Analysis of calf births, by breed of sire (1997-2001)

	1997	1998	1999	2000	2001
H Friesian	589,900	507,105	449,478	468,495	501,317
Hereford	337,245	389,564	348,030	270,942	197,611
Charolais	543,138	551,566	497,959	519,960	541,917
Simmental	271,621	281,067	245,732	190,721	162,759
Limousin	289,067	307,608	295,647	336,538	359,656
Angus	213,968	269,555	250,844	194,098	166,216
Belgian Blue	83,942	91,796	92,632	136,797	166,243
Other	56,279	27,267	27,844	55,037	57,098
Total	2,385,160	2,425,528	2,208,166	2,172,588	2,152,817

source: Department of Agriculture, Food & Rural Development 2001

Fig 1.4 Analysis of calf births, by breed of sire (1997-2001)



The Holstein Friesian breed continues to be the major dairy breed in this country, with 494,933 of the total 516,760 dairy calves born in 2001 being by sires from this breed (Table 1.9). This was followed by the Montbeliarde breed (12,268 calves) and MRI breed (6,743 calves) respectively. Looking at trends over time (Table 1.9) indicates that, whilst there has been some growing interest in other breeds (notably the Montbeliarde, MRI and Jersey breeds), the proportion of calves born to Holstein Friesian sires has remained at about 96% since 1998, underlining the pivotal role that this breed must play in future dairy breeding programmes in this country.

Table 1.9 Choice of dairy sire used on dairy cows (1998-2001)

	1998	1999	2000	2001
Ayrshire	490	543	432	354
Brown Swiss	41	225	226	287
H Friesian	508,145	445,362	462,061	494,933
Jersey	862	1,085	1,160	1,474
Kerry	356	227	229	297
Montbeliarde	6,692	9,112	11,515	12,268
Normande	981	668	587	404
MRI*	5,921	3,499	5,452	6,743
Totals	523,488	460,721	481,662	516,760

source: Department of Agriculture, Food & Rural Development 2001
* Includes also registrations for the Rotbunte breed

Table 1.10 Choice of beef sire used on Holstein Friesian Cows (1997-2001)

	1997	1998	1999	2000	2001
Hereford	216,389	261,832	241,444	188,740	132,239
Charolais	72,241	68,194	57,688	57,665	55,027
Simmental	95,964	97,769	86,462	76,072	62,983
Limousin	84,108	88,181	84,435	99,349	93,736
Angus	114,407	145,577	143,201	118,072	100,373
Belgian Blue	41,885	46,246	48,296	71,357	82,531
Total	2,385,160	2,425,528	2,208,166	2,172,588	2,152,817

source: Department of Agriculture, Food & Rural Development 2001

The Hereford breed was the most popular beef breed for crossing on Holstein Friesian cows in 2001 (Table 1.10 and Figure 1.5), with some 132,239 of the total 2.15 million calves born being as a result of this type of cross (about 6.1% of the total calves born). This was followed by the Angus breed (4.7%), the Limousin breed (4.4%) and Belgian Blue breed respectively (3.8%).

Table 1.11 Choice of beef sire used on beef cows (1997-2001)

	1997	1998	1999	2000	2001
Hereford	118,805	126,611	105,586	78,479	64,512
Charolais	465,035	482,387	439,291	442,777	485,846
Simmental	172,568	182,439	158,308	110,862	99,117
Limousin	201,568	218,315	210,041	226,204	264,331
Angus	97,616	122,881	106,470	70,748	64,328
Belgian Blue	48,631	54,564	53,332	62,078	82,585
Total	2,385,160	2,425,528	2,208,166	2,172,588	2,152,817

source: Department of Agriculture, Food & Rural Development 2001

Whilst the Hereford breed is still the most popular beef breed for use within the dairy herd, its popularity has declined somewhat over the past 4 years, from a high of 261,832 calves in 1998 to just over 132,000 in 2001, a drop in calf birth numbers of almost 50%. Similar trends, albeit to a lesser extent, are apparent for the Angus, Charolais and Simmental breeds, with only the Belgian Blue breed showing any notable increase in the number of progeny born to Holstein Friesian cows (up from 41,885 calves in 1997 to 82,531 calves in 2001)

Trends from the National beef herd (Table 1.11 and Figure 1.6) indicate that the Charolais breed is by some way the most popular breed for mating on beef cows, with almost 22.6% of all calves born in 2001 being as a result of this type of cross (485,846 calves in total). This was followed by the Limousin breed (12.3%), the Simmental breed (4.6%) and the Belgian Blue breed respectively (3.8%). Trends over time (Figure 1.6) underline the increasing role of a number of breeds as sires within the National beef herd, most notably the Charolais breed (up from 19.5% in 1997 to 22.6% in 2001), the Limousin breed (up from 8.5% to 12.3% over the same period) and the Belgian Blue breed (up from 2.0% to 3.8% over the same 5 year period).

Fig 1.7 Analysis of calf births, by breed of dam (1997-2001)

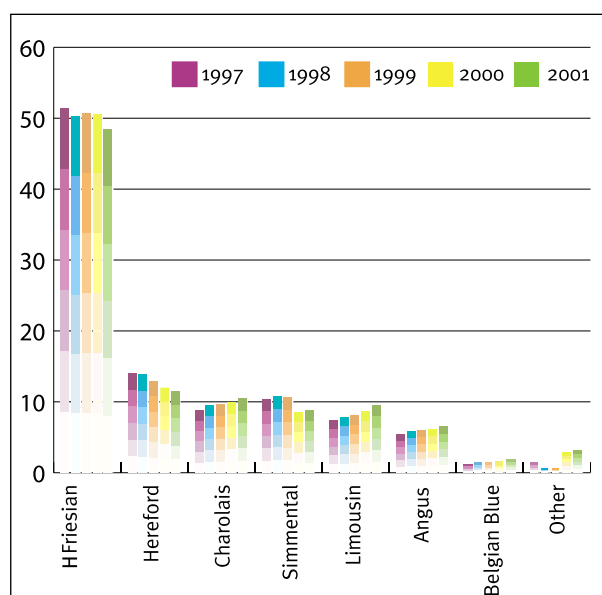


Fig 1.5 Choice of beef sire used on Holstein Friesian dairy cows (1997-2001)

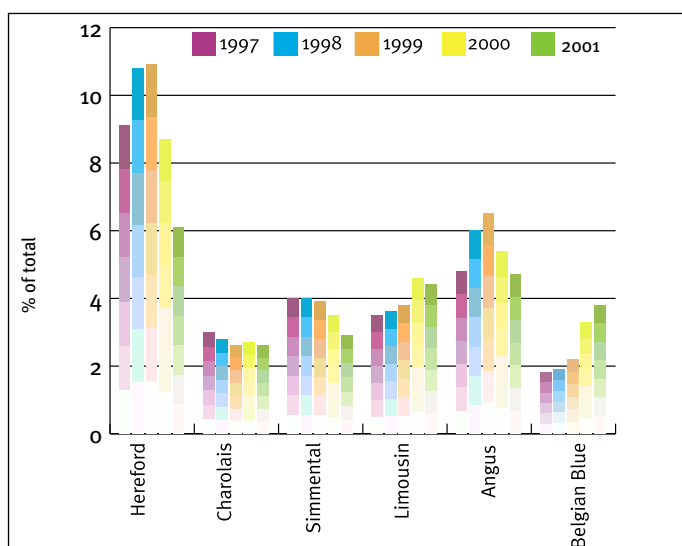
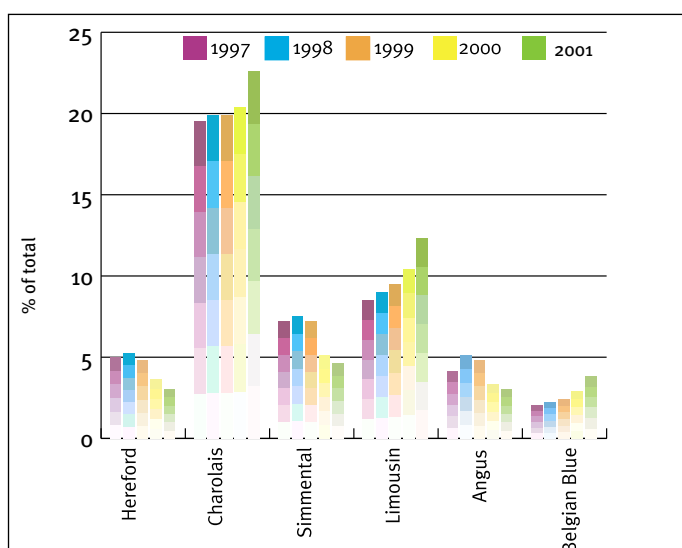


Fig 1.6 Choice of beef sire used on beef cows (1997-2001)



The Holstein Friesian breed was by far the most dominant breed of dam during 2001, with almost 50% of all calves born being from dams of this breed (Table 1.12 and Figure 1.7). The next most popular breed, in terms of breed of dam, was the Hereford breed (11.5% of all calves registered), followed by the Charolais (10.5%), Limousin (9.5%) and Simmental breeds respectively (8.8%).

Table 1.12 Analysis of calf births, by breed of dam (1997-2001)

	1997	1998	1999	2000	2001
H Friesian	1,226,643	1,216,80	1,116,64	1,092,785	1,042,184
Hereford	333,156	336,996	285,673	261,047	246,966
Charolais	209,972	230,043	212,700	214,509	225,595
Simmental	245,968	263,030	235,068	184,901	188,704
Limousin	173,6672	189,966	179,424	187,765	203,637
Angus	129,324	140,870	131,423	132,042	139,047
Belgian Blue	29,566	34,293	33,496	35,819	39,046
Other	36,864	13,530	13,742	63,720	67,638
Total	2,385,160	2,425,528	2,208,166	2,172,588	2,152,817

source: Department of Agriculture, Food & Rural Development 2001



Calf registration and membership.

- 4.8% increase in pedigree registrations.
- 5.4% increase in number of pedigree breeders.

A total of 85,416 calves were registered with 17 different herdbooks in Ireland during 2001 (Table 2.1). This represents an increase in total herdbook registrations of 3,945 (up some 4.8%). There was also a considerable increase in overall herdbook membership in 2001, up from 10,675 in 2000 to 11,263 in 2001, an increase of 580 members (up 5.4%). Expressing both of these figures (herdbook registrations and membership) as a proportion of National statistics (Section 1), indicates that about 4% of calves born in the country are registered within a herdbook and about 10% of all cattle breeding herds are involved in herdbook activities.

Table 2.1 Number of birth registrations and members by breed (1997-2001)

Breed	1997		1998		1999		2000		2001	
	Births	Members	Births	Members	Births	Members	Births	Members	Births	Members
Belgian Blue Cattle Breeding Society	389	107	333	127	369	135	420	153	298	184
Jersey Cattle Society of Ireland	175	16	156	14	181	15	124	10	189	13
Irish Aberdeen Angus Association	1479	351	1623	379	1649	376	1501	356	1512	439
Irish Angus Cattle Society	-	700	3011	850	2236	933	2200	890	2300	860
Irish Aubrac Cattle Society	-	-	15	10	27	14	78	18	107	21
Irish Blonde d'Aquitaine Breed	254	84	187	71	202	78	204	85	208	90
Irish Charolais Cattle Society	7026	1941	7689	2124	8402	2268	9645	2524	10921	2965
Irish Hereford Breed Society	4196	826	4448	861	3837	892	2840	730	2516	735
Irish Holstein Friesian Association	42793	3435	45254	3542	49797	3630	55231	3342	57452	3513
Irish Limousin Cattle Society Ltd	3379	878	3762	984	4306	1050	5247	1474	6162	1704
Irish Normande Cattle Society	-	-	129	20	122	21	50	7	85	7
Irish Piemontese Cattle Society Ltd	22	13	10	13	37	11	40	12	38	15
Irish Simmental Cattle Society Ltd	3694	900	3732	840	2772	795	2782	820	2515	529
Kerry Cattle Society of Ireland	-	-	-	-	135	90	146	101	108	22
Meuse Rhine Issel Cattle Society	145	71	126	74	91	80	209	23	255	27
Montbéliard Cattle Society	174	-	353	-	390	83	559	65	570	67
Salers Cattle Society	-	30	-	42	-	55	195	65	180	72
Total	63726	9352	70828	9951	74553	10526	81471	10675	85416	11263

source: Herdbook Associations

In terms of overall membership, beef herdbooks accounted for the largest proportion of herdbook membership in 2001 (about 68%), with IHFA and the other dairy and dual-purpose breeds accounting for 31% and 1% of the total members involved in herdbook activities. Of the beef herdbooks, the Charolais herdbook was the largest beef herdbook in terms of overall membership (2,965 members), followed by the Limousin herdbook (1,704 members), the Irish Angus herdbook (820 members), the Hereford herdbook (735 members) and the Simmental herdbook (529 members).

Fig 2.1 Trends in herdbook registrations (1997-2001)

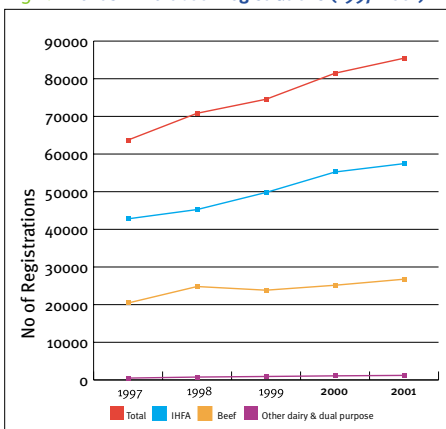
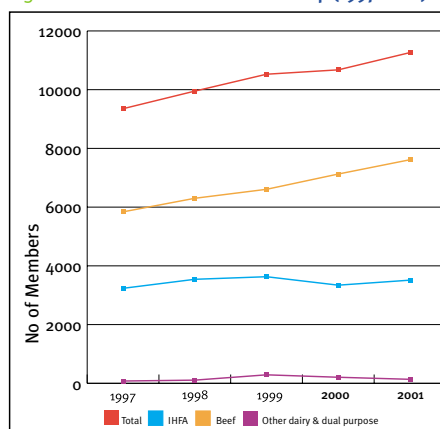


Fig 2.2 Trends in herdbook membership (1997-2001)



Looking at trends in herdbook registrations over the past 5 years (Figure 2.1), indicates a steady increase in the number of registrations, from 63,726 in 1997 to 85,416 in 2001. The increase in registration numbers is evident for both dairy and beef herdbooks, with the rate of increase being

slightly higher in the Holstein Friesian herd book (about 7%/year) compared to the beef herdbook (about 6%/year). A similar trend is also evident for herdbook membership (Figure 2.2), although here the pattern is due principally to the increasing number of farmers becoming involved in beef herdbooks.

(i) Participation in milk recording

- 14% drop in number of cows involved in milk recording
- 13% drop in number of herds involved in milk recording

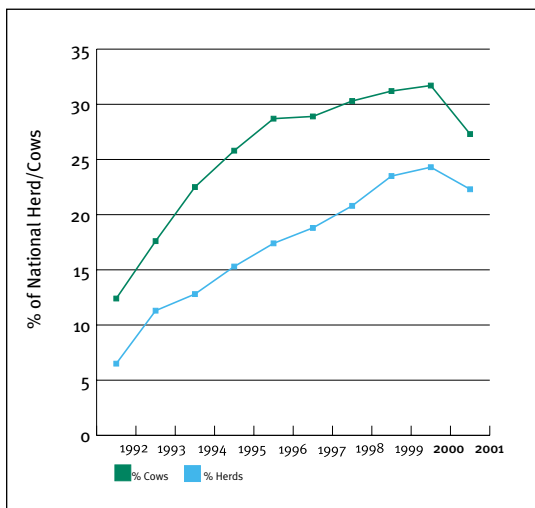
Some 337,000 cows in 6,140 herds were involved in milk recording in 2001 (Table 3.1). Expressing these figures as a proportion of all dairy cows and herds in Ireland (Figure 3.1), indicates that about 27% of cows and 22% of herds in the National dairy population, are involved in milk recording.

Table 3.1 Total cows and herds recorded in Ireland (1992-2001)

Year	Milk recorded herds Cows	Herds	National Dairy Population Total Cows	Total herds
1992	156,378	2,931	1,261,500	45,000
1993	223,714	4,740	1,274,100	42,000
1994	285,172	5,000	1,269,100	39,000
1995	327,172	5,904	1,267,100	38,500
1996	364,826	6,430	1,272,400	37,000
1997	366,507	6,568	1,268,300	35,000
1998	386,611	6,982	1,276,500	33,500
1999	392,960	7,046	1,260,900	30,000
2000	391,975	7,047	1,238,300	29,000
2001	336,868	6,140	1,233,100	27,500

source: Irish Dairy Records Co-op 2001

Fig 3.1 Trends in cows and herds milk recorded in Ireland (1992-2001)



There was a substantial drop in the number of cows (-55,107) and herds (-907) involved in milk recording during 2001. This is against recent trends in this sector and can be explained by the outbreak of FMD and the resultant movement restrictions on Irish dairy farms (FMD movement restrictions resulted in no technician recording service being offered by milk recording organisations during the months March & April 2001). Given that this period also covered the time when most herd-owners were restarting milk recording (after the winter lay-off), this would suggest that a proportion of herd-owners opted not to restart milk recording.

Table 3.2 Herds and cows recorded by recording societies (2001)

Milk Recording Society*	A4 Herds	A4 Cows	A6 Herds	A6 Cows	A8 Herds	A8 Cows	Total Herds	Total Cows	Herd Size	% of Total
Progressive Genetics	1634	96,471	9	637	160	9,176	1,803	106,284	58.9	31.6%
Dairygold Co-op	376	23,412	956	50,891	121	7,616	1,453	81,919	56.4	24.3%
SWS	357	19,724	486	24,104	48	2,426	888	46,254	52.1	13.7%
Kerry Agribusiness	267	15,838	345	17,613	148	6,114	760	39,565	52.1	11.7%
NECBS	343	14,108	40	1,374	17	763	400	16,245	40.6	4.8%
Golden Vale Plc	178	9,695	68	3,783	6	310	252	13,788	54.7	4.1%
Tipperary Co-op	104	5,658	29	1,370	2	99	135	7,127	52.8	2.1%
C.D.A.I.S	110	8,406	23	1,477	3	123	136	10,006	73.6	3.0%
Connacht Gold	116	5,397	10	425	2	89	128	5,911	46.2	1.8%
Arrabawn Co-op	17	830	53	2,878	3	164	73	3,872	53	1.1%
Donegal Co-op	27	1,534	0	0	0	0	27	1,534	56.8	0.5%
North Cork Co-op	22	1,309	13	698	0	0	35	2,007	57.3	0.6%
Newmarket Co-op	10	493	22	999	3	116	35	1,608	45.9	0.5%
Boherbue Co-op	7	315	8	433	0	0	15	748	49.9	0.2%
All Societies Total 2001	3568	203,190	2062	106,682	513	26,996	6,140	336,868	54.9	100.0%

source: Irish Dairy Records Co-op 2001
* See Appendix for location of recording centres

Fourteen organisations offered a milk recording service to farmers during 2001 (Table 3.2). The largest of these organisations (in terms of number of cows recorded) was Progressive Genetics with 32% of the total cows recorded in the country (some 106,300 cows). This was followed by Dairygold (24.3% of all cows recorded), South Western Services (13.7% of all cows recorded), Kerry (11.7% of all cows recorded), NECBS (4.8% of all cows recorded) and Golden Vale (4.1% of all cows recorded).

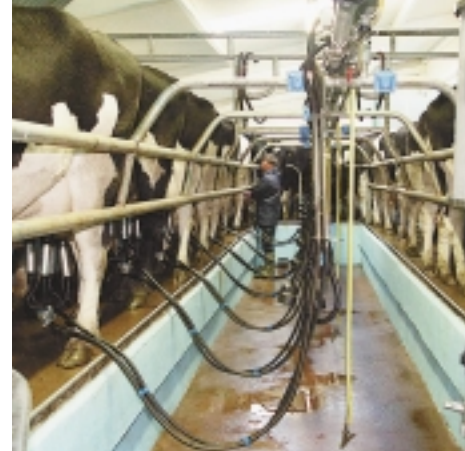


Table 3.3 Impact of F&M on milk recording by society (2001)

Milk Recording Society	Herds in Milk Recording				Cows in Milk Recording			
	2000	2001	Difference	% Change	2000	2001	Difference	%Change
Progressive Genetics	2,009	1,803	-206	-10.3%	120,300	106,284	-14,016	-11.7%
Dairygold Co-op	1,613	1,453	-160	-9.9%	95,339	81,919	-13,420	-14.1%
SWS	1,002	888	-114	-11.4%	52,144	46,254	-5,890	-11.3%
Kerry Agribusiness	972	760	-212	-21.8%	50,050	39,565	-10,485	-20.9%
NECBS	459	400	-59	-12.9%	19,111	16,245	-2,866	-15.0%
Golden Vale Plc	273	252	-21	-7.7%	15,649	13,788	-1,861	-11.9%
Tipperary Co-op	186	135	-51	-27.4%	10,112	7,127	-2,985	-29.5%
C.D.A.I.S	141	136	-5	-3.5%	10,005	10,006	1	0.0%
Connacht Gold	135	128	-7	-5.2%	6,278	5,911	-367	-5.8%
Arrabawn Co-op	125	73	-52	-41.6%	6,267	3,872	-2,395	-38.2%
Donegal Co-op	31	27	-4	-12.9%	1,758	1,534	-224	-12.7%
North Cork Co-op	44	35	-9	-20.5%	2,293	2,007	-286	-12.5%
Newmarket Co-op	39	35	-4	-10.3%	1,811	1,608	-203	-11.2%
Boherbue Co-op	18	15	-3	-16.7%	858	748	-110	-12.8%
All Societies Total	7,047	6,140	-907	-12.9%	391,975	336,868	-55,107	-14.1%

source: Irish Dairy Records Co-op 2001
* See Appendix for location of recording centres

A closer examination of the impact of FMD on the level of recording by society indicates that all organisations were affected by the outbreak of the disease (Table 3.3). Arrabawn Co-op, Tipperary Co-op and Kerry Agribusiness were most affected, reflecting the high proportion of spring calving herds in each of these areas.

Fig 3.2 Trends in milk recording method (1997-2001)

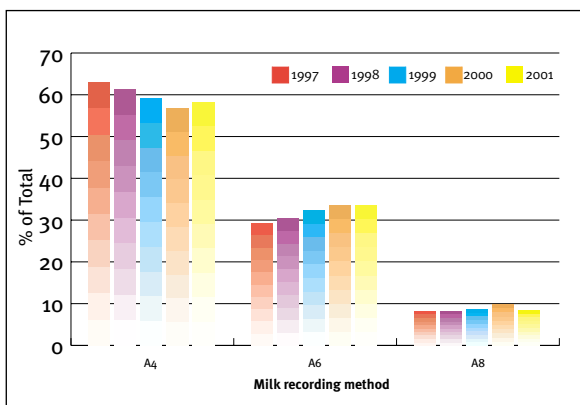


Table 3.4 Trends in milk recording method (1997-2001)

	A4 herds	A6 herds	A8 herds	Total herds
1997	4,192	1,939	537	6,667
1998	4,279	2,128	575	6,982
1999	4,169	2,268	609	7,046
2000	3,996	2,364	687	7,047
2001	3,568	2,062	513	6,140

source: Irish Dairy Records Co-op 2001

There are presently three types of recording scheme offered to farmers in milk recording; the A4 scheme (recording every 4 weeks), the A6 scheme (recording every 6 weeks) and the A8 scheme (recording every 8 weeks). The A4 scheme is the most popular form of recording scheme, with 58% of farmers opting

for this type of scheme in 2001 (Table 3.4). Recent trends had indicated a gradual movement away from the A4 scheme, towards the A6 and A8 schemes in latter years (Figure 3.2). However, this downward trend was reversed in 2001, due to the probability that a higher proportion of A4 herd-owners had restarted normal milk recording before the FMD outbreak.

(ii) Analysis of individual cow performance data.

- *Total fat + protein yield increased by 4.9 kg (up 1.2%).*
- *Better breeding and management decisions from milk recording.*
- *Gradual decline in fertility performance.*

Total solids production (fat + protein kg) increased by 1.2% in 2001, from 411.7 kg in 2000 to 416.6 kg in 2001 (Table 3.5). This increase in total solids production is consistent with recent trends in this area (Figures 3.3 and 3.4), which have indicated a steady increase in fat and protein production over the last 5 years (although there was a slight reduction in protein content during 2001)

Table 3.5 Average production for all milk recorded cows (1992-2001)

	Records	Days	Milk kg	Fat kg	Fat %	Ptn kg	Ptn %
1992	119,709	281	5,484	198.1	3.61	179.0	3.26
1993	177,605	277	5,363	190.8	3.56	175.9	3.28
1994	248,638	272	5,263	187.3	3.56	172.5	3.28
1995	330,544	266	5,259	187.2	3.56	170.6	3.24
1996	355,105	262	5,215	186.6	3.59	169.5	3.26
1997	346,560	266	5,302	190.8	3.61	173.0	3.27
1998	369,919	267	5,293	193.3	3.67	173.8	3.29
1999	363,871	272	5,534	202.3	3.67	182.7	3.31
2000	350,263	277	5,884	216.2	3.67	195.5	3.33
2001	303,313	267	5,954	220.0	3.70	196.6	3.31

source: Irish Dairy Records Co-op 2001



Fig 3.3 Trends in average fat yield and protein yield (1997-2001)

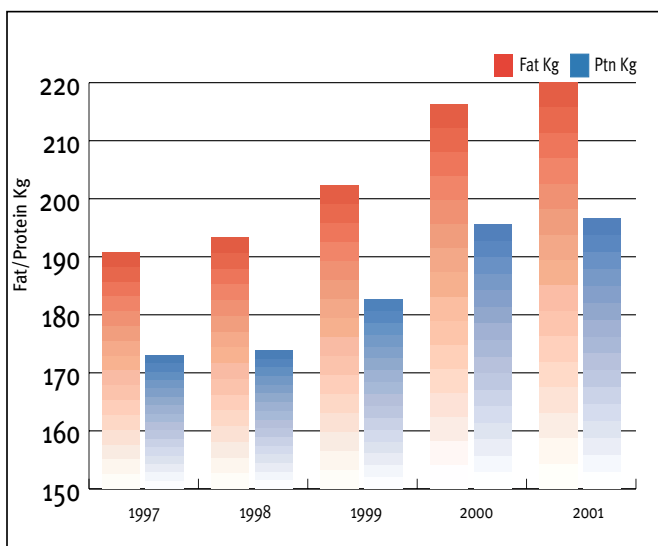
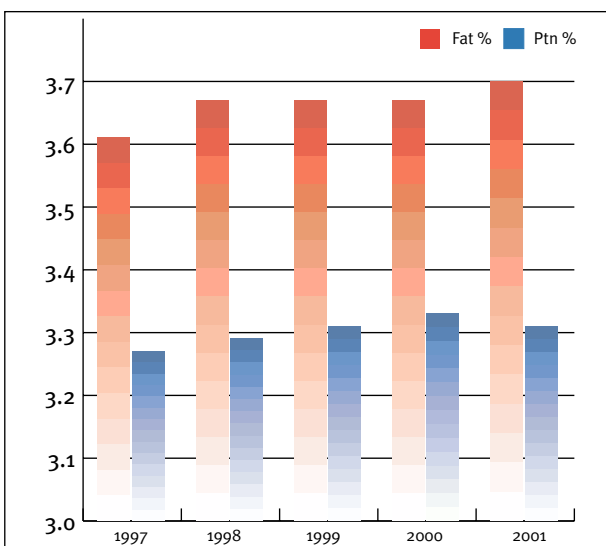


Fig 3.4 Trends in average fat % and protein % (1997-2001)



The Holstein Friesian breed is by far the most dominant breed of cow in milk recording with 99% of all cows in milk recording from this breed (Table 3.6). Cows contained within the IHFA herdbook (Holstein Friesian – Ped) yielded, on average, 465.1 kg of solids, which is some 50 kg higher than any of the other categories of animal. On the downside, average calving interval was also slightly longer for this category (394 days), although the same pattern is evident for all other pedigree sections within each of the defined breeds.

Table 3.6 Average yield by breed and pedigree status (2001)

BREED	Records	Milk kg	Fat Kg	Ptn Kg	Fat%g	Ptn %	Lact Leng	CI
Ayrshire NP	44	4896	181.2	160.4	3.70	3.28	260	364
Ayrshire Ped	175	5280	201.8	171.1	3.85	3.25	263	398
Brown Swiss	37	4814	186.8	167.9	3.89	3.50	260	400
H Friesian NP	222,506	5732	210.7	189.7	3.69	3.31	265	377
H Friesian Ped	77,242	6638	247.6	217.5	3.74	3.28	270	394
Jersey NP	80	4024	199.2	154.6	5.04	3.87	273	364
Jersey Ped	415	4318	252.4	171.1	5.80	3.96	268	397
Kerry	77	2832	104.2	91.4	3.68	3.23	230	360
MRI NP	699	5066	188.8	171.7	3.74	3.40	262	367
MRI Ped	159	4764	184.7	165.2	3.88	3.46	265	367
Montbeliarde NP	283	4942	185.9	166.0	3.77	3.36	262	361
Montbeliarde Ped	703	5359	196.8	182.0	3.67	3.40	266	388
Normande NP	81	5275	200.8	180.6	3.82	3.43	269	371
Normande Ped	33	4611	173.8	159.5	3.79	3.46	265	376
Rotbunte	74	5005	188.9	175.4	3.77	3.50	265	384
Shorthorn NP	97	5144	180.0	171.0	3.53	3.32	267	366
Shorthorn Ped	169	4910	179.6	163.1	3.66	3.33	257	386
Simmental	282	5156	186.8	174.2	3.63	3.38	262	368
Others	157	5848	220.9	192.0	3.76	3.29	265	372

source: Irish Dairy Records Co-op 2001

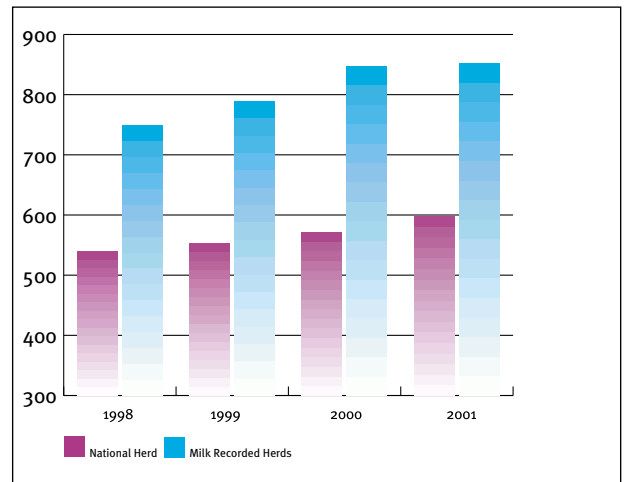
Comparing production figures for cows in milk recording with those from National population statistics (Table 3.7.), suggests that cows in milk recorded herds have a substantially higher solids production (fat + protein kg) than cows in the National herd profile (the difference in total solids production between these 2 groups of animals is 121.5 kg). Equating this in financial terms (i.e., after accounting for feed costs, transport & processing costs and the cost of extra quota) indicates that milk recorded cows have an advantage in financial terms of some €251 (Table 3.7) Whilst it is to far-reaching to suggest that this improvement is due solely to milk recording, it does underline the role that milk recording must play in helping herd-owners make better breeding and management decisions.

Table 3.7 Trends in performance for cows in milk recording and cows in the National herd profile (1998-2001)

	1998	1999	2000	2001
National Herd Profile				
Average Yield (Kg)	3873	3944	4047	4204
Average Fat Kg	142.2	145.9	149.7	157.2
Average Ptn Kg	125.5	128.2	132.3	137.9
Average Fat%	3.67	3.7	3.7	3.74
Average Ptn%	3.24	3.25	3.27	3.28
Relative Margin (€)	539	552	571	597
Milk Recorded Herds				
Average Yield (Kg)	5,293	5,534	5,884	5,954
Average Fat (Kg)	193.3	202.3	216.2	220
Average Ptn (Kg)	173.8	182.7	195.5	196.6
Average Fat%	3.67	3.67	3.67	3.7
Average Ptn%	3.29	3.31	3.33	3.31
Relative Margin (€)	749	789	847	851

source: Irish Dairy Records Co-op 2001
 Economic margins are based on values from the EBI formula. These are: Milk Kg = €-0.08/kg, Protein kg = €+5.7/kg, Fat kg = €+0.7/kg

Fig 3.5 Difference in economic margin between cows in milk recording and cows in the national herd profile



Calving interval and reappearance were two new traits introduced into genetic evaluations during 2000. Both traits are based on data provided from milk recorded herds. Of the 54,714 heifers that entered milk recording in 1999, 40,078 survived into their second lactation, giving an average survival for heifers calving in 1999 of about 73% (this figure is probably biased downwards due to the fact that a proportion of herds did not restart milk recording in 2001 due to the outbreak of FMD.) The average calving interval of these 40,078 animals was about 395 days. Looking at trends in calving interval and survival over the last 7 years indicates that, there has been a general increase in calving interval from about 389 days in 1993 to 395 days in 1999. This increase in calving interval has been mirrored by a gradual decrease in survival, from about 80% for heifers calving in 1993 to 73% for heifers calving in 1999, suggesting a gradual decline in fertility performance within milk recording herds.

Fig 3.6 Trends in calving interval and survival from 1st to 2nd lactation (1990-1998)

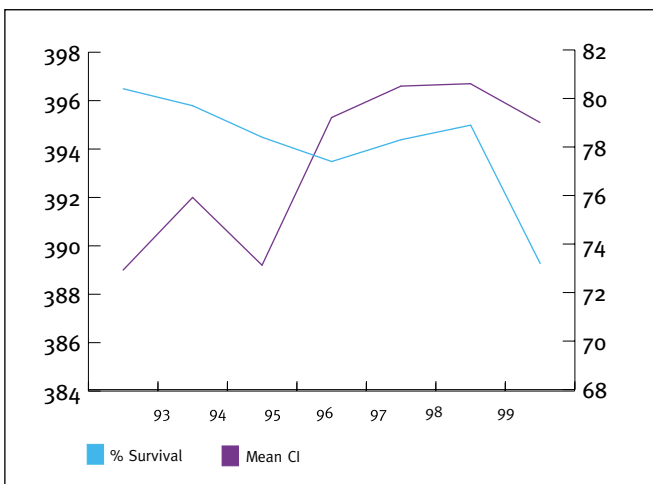


Table 3.8 Trends in calving interval and survival (1993-1999)

	Lact 1	Lact 2	% survival	Calving Interval
1993	31659	25459	80.4	389.0
1994	36857	29375	79.7	392.0
1995	44597	34943	78.4	389.5
1996	49614	38393	77.4	395.3
1997	55809	43723	78.3	396.6
1998	59245	46715	78.9	396.6
1999	54714	40078	73.2	395.1

source: Irish Dairy Records Co-op 2000

(iii) Participation in linear assessment schemes.

Linear assessment of Holstein Friesians in Ireland was carried out by Holstein UK and Ireland (HUKI). This service is offered to members of IHFA and to ICBF for the purpose of dairy progeny testing (Table 3.9). In total, 15,386 animals in 862 herds were linear assessed last year, the majority of which were in IHFA herds (about 78% of the total animals).

Table 3.9 Participation in HUKI linear assessment scheme (1997-2001)

	IHFA herds		ICBF progeny test herds	
	Animals	herds	Animals	herds
1997	9,965	325	-	-
1998	7,898	347	-	-
1999	12,889	418	3,509	638
2000	10,622	417	2,474	463
2001	12,039	451	3,347	411

(i) Beef industry statistics

- 1% increase in total cattle numbers
- 30% reduction in beef exports
- 2% increase in steer carcasses meeting EU market suitability

There was a slight increase in overall cattle numbers in 2001, from 6.46 million in 2000 to 6.52 million in 2001 (up about 1%). Whilst total slaughtering increased slightly in 2001, there was a marked reduction in the volume of live exports, from 401,000 animals in 2000 to just 100,000 in 2001 (Table 4.1). This was due principally to a reduced demand for beef on the continent. The FMD movement restrictions for part of the year also contributed to the overall decline in live exports.

Table 4.1 Stock and flow of Irish cattle (1997-2001)

	1997	1998	1999	2000	2001
Total cattle ('000 head)	6,992	7,093	6,707	6,459	6,518
- Breeding Cattle ('000 head)	2,813	2,806	2,737	2,710	2,721
- Non breeding cattle ('000 head)	4,179	4,287	3,970	3,749	3,797
Slaughterings ('000 head)	1,808	1,899	2,132	1,886	1,893
Live exports ('000 head)	57	171	416	401	100
- EU	50	142	342	338	90
- Outside EU	7	29	74	63	10
Total disposals ('000 head)	1,865	2,070	2,548	2,287	1,993

Table 4.2 Destination of Irish beef production (1997-2001)

	1997	1998	1999	2000	2001
Home consumption	63	64	65	62	65
Intervention	56	18	10	0	8
Total exports	450	510	555	495	345
- UK	95	85	95	110	210
- Other EU	90	130	150	135	80
- Third countries	265	295	309	250	55
Total production	569	592	630	557	418

source: Department of Agriculture, Food & Rural Development 2001, Bord Bia 2001

Trends in the destination of Irish beef (Table 4.2 and Figure 4.1) indicate that, due to the closure of a number of key international markets for EU beef exports, the volume of exports declined by almost 30% in 2001 (these markets had accounted for about half of our beef exports in previous years). In contrast, the volume of beef exported to the UK increased dramatically last year, from 110,000 tonnes in 2000 to some 200,000 tonnes in 2001. This increase was due to the FMD situation in the UK, which created additional market opportunities for Irish beef. Exports into intervention remained low (8,000 tonnes), due principally to the strong UK market and the operation of the Purchase for Destruction schemes, which removed some 500,000 cattle from the beef industry.

Fig 4.1 Destination of Irish Beef Production (1997-2001)

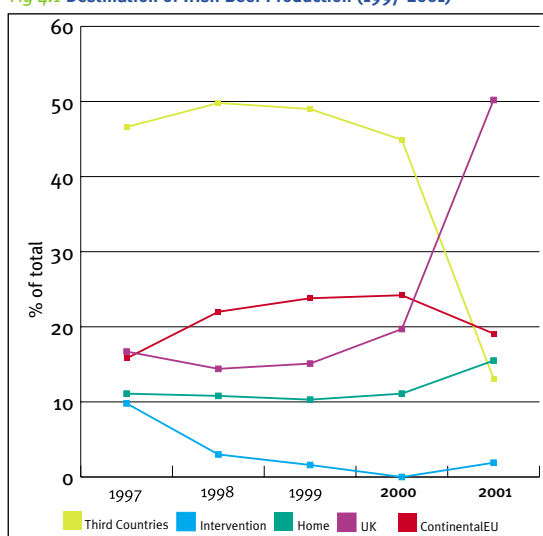


Table 4.3 Trends in carcass merit for steers and heifers (1998-2001)

	No. animals	Carc. Wt.	% EUR Grade	% Fat Grade 5	% EU Suitable
Steers					
-1998	992,000	343.1	42.4%	15.4%	16.6%
-1999	1,061,000	336.5	44.9%	12.4%	20.3%
-2000	898,000	340.2	48.6%	10.1%	23.8%
-2001	952,130	339.3	46.7%	8.6%	25.0%
Heifers					
-1998	352,000	278.7	44.8%	21.9%	17.6%
-1999	461,000	267.7	42.6%	17.2%	19.3%
-2000	430,000	266.7	42.8%	14.1%	20.3%
-2001	376,436	266.4	41.9%	14.0%	20.1%

source: Department of Agriculture, Food & Rural Development 2001

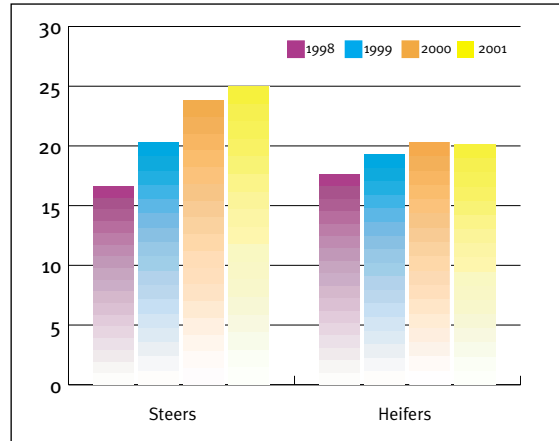
One of the major priorities for the Irish beef industry is to reduce its reliance on volatile non EU markets and concentrate on producing cattle that meet the requirement of countries within the EU, i.e., high muscling with modest fat cover. Looking at trends from beef carcass classification indicates that over the past few years, there has been a gradual improvement in the quality of beef cattle slaughtered in this country (Table 4.3 and Figure 4.2).





Examination of carcass grades for steers indicates that the proportion of steers meeting EU market requirements in 2001 (i.e. grades U3, U4L, R3 and R4L) was 25.0%, which is considerably higher than the figure of 16.6% in 1998. However, improvements in 2001 were due principally to a reduction in fat cover rather than any improvements in conformation grade, which must be of some concern to the cattle breeding industry (table 4.3). Similar trends, albeit not to the same extent, are evident for heifers.

Fig 4.2 Trends in carcass merit for steers and heifers (1998-2001)



(ii) Participation in beef recording schemes

- *Decrease in number of bulls through Tully*
- *Increase in level of linear scoring and weight recording for a number breeds.*
- *40% of pedigree beef animals participating in beef recording schemes.*

Three of the main areas through which genetic improvement can be delivered to the Irish beef industry are; (i) Tully performance test station, (ii) on-farm weight & linear recording in pedigree herds, (iii) AI progeny testing (either centralised or on-farm test).

Table 4.4 Participation in Tully by breed (1997-2001)

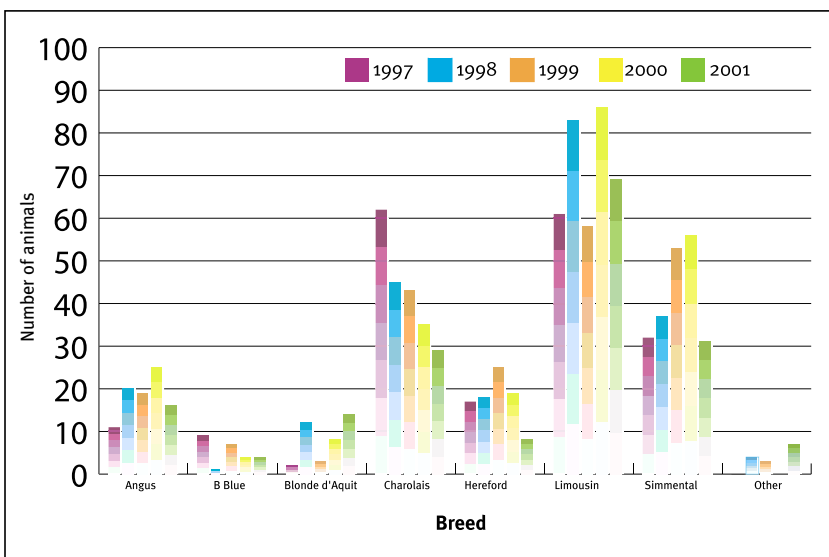
YEAR	Angus	Belgian Blue	BI d'Aquitaine	Charolais	Hereford	Limousin	Simmental	Others	Total
1997	11	9	2	62	17	61	32	0	194
1998	20	1	12	45	18	83	37	4	220
1999	19	7	3	43	25	58	53	11	219
2000	25	4	8	35	19	86	56	12	245
2001	16	4	14	29	8	69	31	31	202
Totals/breed	91	25	39	214	87	357	209	54	

source: ICBF Animal Evaluation Unit 2001

Participation in Tully

The number of bulls participating in Tully last year declined by 17%, from 245 in 2000 to 202 in 2001 (Table 4.4). This was due principally to FMD movement restrictions, which resulted in a much smaller intake in early Summer (many potential test bulls had gone over the entry age requirement by the time FMD movement restrictions were removed). Looking at trends over time (Figure 4.3) indicates that the Limousin breed has been the most prevalent breed in Tully over the last five years (33% of all bulls tested), followed by the Charolais breed (20%), the Simmental breed (19%) and Angus breed respectively (8%).

Fig 4.3 Participation in Tully by breed (1997-2001)



Participation in linear scoring and weight recording

There are presently three herdbook associations offering a linear scoring and weight recording service to their members, the Charolais breed society, the Limousin breed society and the Simmental breed society (Table 4.5). Looking at animals born in 2000 (the majority of which will have been scored in 2001) indicates that some 4,028 animals were scored by the Charolais society, 4,545 were scored by the Limousin society and 1,236 were scored by the Simmental society.

In addition to a linear scoring service, weight recording services are also available to members of these herdbooks, with some 3,713, 1580 and 746 animals weight recorded in the Charolais, Limousin and Simmental breeds during 2001 (the Charolais herdbook offers its own service, whilst the Limousin and Simmental herdbooks use the service offered by DAFRD). Looking at trends over the last number of years (Table 4.5) indicates a general increase in the number of animals participating in these schemes within each of these organisations.

Table 4.5 Total number of animals undergoing linear scoring and weight recording, by year of birth, for a number of breeds

	Charolais		Limousin		Simmental	
	Linear	Weight	Linear	Weight	Linear	Weight
1992	1	509	1,500	367	0	387
1993	0	554	1,711	377	0	389
1994	279	586	2,037	383	0	444
1995	1,758	697	2,272	628	0	426
1996	3,683	797	2,694	711	0	404
1997	2,398	1,393	3,009	1,008	3	360
1998	3,658	3,683	3,309	1,425	293	276
1999	3,825	3,544	3,207	1,577	717	443
2000	4,028	3,713	4,545	1,580	1,236	746
2001	1,459	1,096	2,118	1,189	607	603

source: Herdbook Associations 2001
* Not all animals born in 2000 have been scored at this stage

In addition to the Limousin and Simmental breeds, DAFRD offer a weight-recording scheme to a number of other breeds, notably the Angus, Hereford, Belgian Blue, Salers and Blonde d'Aquitaine breeds. The number of animals weight recorded across these breeds is about 500 per year. Combining this figure with the number of animals linear scored by the Charolais, Limousin and Simmentals herdbooks in 2001 (9,809) and the number of bulls performance tested through Tully (202), suggests that some 10,500 pedigree animals were performance recorded in 2001 i.e., about 40% of the total animals born into the beef herdbooks on an annual basis.

Table 4.6 Level of progeny testing by breed (1990-2001)

Breed	No. crossbred progeny	Calving survey
Angus	288	17,361
Hereford	317	15,500
Charolais	524	16,004
Simmental	343	10,555
Limousin	263	10,711
Bl. d'Aquitaine	33	706
Belgian Blue	311	10,771

The most popular breed involved in conventional AI progeny testing (based on crossbred progeny evaluated for carcass traits) has been the Charolais breed with carcass information on 524 crossbred progeny (Table 4.6). This is followed by the Simmental breed (343 progeny), the Hereford breed (317 progeny), and the Belgian Blue breed respectively (311 progeny). Similar trends are apparent for calving survey traits, with all of the above breeds having in excess of 10,000 calving survey records. However, looking at trends over time (1992-2001) suggests a general decline in the number of animals evaluated as part of these beef progeny test programmes (Table 4.7).

Combining data from AI progeny test (some 2500 recordings per annum) with data from performance recording in pedigree herds suggests that the total number of beef animals involved in beef recording schemes is approximately 10500. Expressing this figure as a proportion of total beef calves born in 1999 (some 1.6 million registrations), suggests that about 0.8% of all beef calves born are presently involved in beef performance recording.

Trends in AI progeny Testing.

Traditionally there have been two aspects to beef progeny testing in Ireland; (i) centralised progeny testing for carcass traits, and (ii) collection of calving survey details from progeny test farms. A further dimension was added in 2001; the introduction of a new targeted on-farm progeny test scheme. To date some 1700 crossbred progeny from beef test sires have been performance recorded as part of this new scheme.

Table 4.7 Trends in level of beef progeny testing recording (1992-2001)

Year Started Test	Number of Progeny	No. of calvings
1992	587	18377
1993	373	21903
1994	372	17855
1995	332	20152
1996	559	25048
1997	517	22489
1998	302	10996
1999	476	15837
2000	763	18183
2001	0*	12064

source: AI organisations 2001
* Progeny not yet slaughtered



(iii) Suckler herd replacement policy

- Increase in suckler herd replacement rate in 2001
- Move towards more continental blood in suckler herd replacements

The number of female replacements entering the National beef herd in 2001 was 179,255 (based on data from National calf registration), suggesting a suckler herd replacement rate of some 16.2% (the total number of calves born from beef cows last year was 1,095,924 – Table 1.3). This figure is considerably higher than the comparable figure for 2000 (13.1%), suggesting a gradual shift in age profile of the National beef herd (Table 4.8). This shift in age profile is most probably due to recent changes in beef premia requirements, which specify that all herds applying for suckler beef premia must have a minimum of 15% heifers for full premia entitlement.

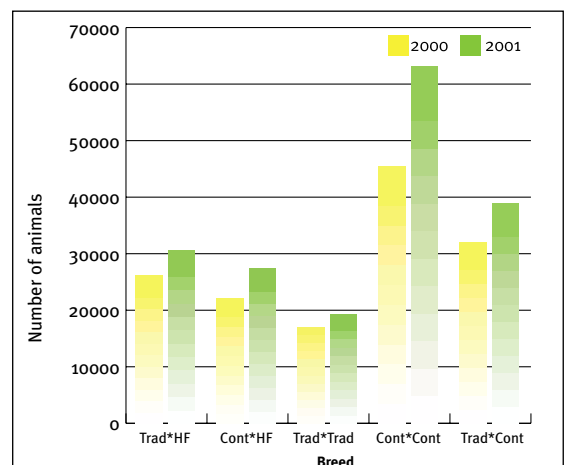
Table 4.8 Breed composition of suckler female replacements (2001)

Dam	Sire						Total
	Hereford	Angus	Charolais	Simmental	Limousin	Belgian B	
H Friesian	17,599	13,043	4,646	9,771	9,587	3,431	58,077
Hereford	8,704	3,319	7,585	5,193	6,556	1,128	32,485
Angus	933	6,204	2,671	1,539	2,972	630	14,949
Charolais	1,113	1,853	14,962	2,477	3,542	775	24,722
Simmental	1,366	1,821	5,656	9,133	4,008	1,001	22,985
Limousin	1,446	2,137	4,636	2,643	10,019	973	21,854
Belgian Blue	294	622	942	519	986	820	4,183
TOTAL	31,455	28,999	41,098	31,275	37,670	8,758	179,255

Table 4.9 Breed composition of suckler herd replacements (2000-2001)

	2000	2001
1st Cross Beef		
- Trad*H	26,084	30,642
- Cont*H	22,130	27,435
2nd Cross Beef		
- Trad*T	17,000	19,160
- Cont*C	45,393	63,092
- Trad*C	31,901	38,926
Totals	142,508	179,255

Fig 4.4 Breed composition of suckler replacements (2000-2001)



A closer examination of the “type” of replacement heifer coming into suckler herds, indicates that about 32% of these animals are 1st cross beef from the dairy herd, i.e., a beef sire crossed onto a dairy cow, and the remaining 68% are 2nd cross beef from the suckler herd (Table 4.9 and Figure 4.4). The most popular cross as a beef replacement is the three quarter bred continental animal, representing some 35% of all beef replacements in 2001. It also prudent to note that of the extra 36,747 heifers entering the National beef herd in 2001, almost 50% were three quarter bred continental or greater, underlining the importance that conformation plays in the selection of replacements amongst suckler herd-owners.

Table 4.10 Average calving interval for suckler beef breeds (2001)

Breed of dam	Breed of Sire					
	Hereford	Angus	Charolais	Simmental	Limousin	Belgian B
H.Friesian	380	381	381	381	380	383
Hereford	382	379	381	382	379	385
Angus	380	383	381	380	382	383
Charolais	380	382	388	382	379	385
Limousin	381	379	382	386	380	386
Simmental	379	378	382	380	384	384
Belgian B	379	383	382	381	382	388

*Figures represents days from previous calving

**Based on cows that calved in 2001 with a previous calving in less than 600 days

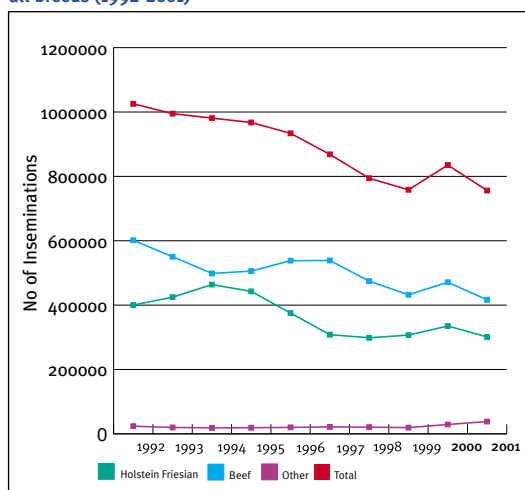
Maternal traits are also of interest to suckler herd-owners when selecting female replacements (Table 4.10). Trends from National calf

registration, underline the role of the traditional breeds (and the Holstein Friesian breed) in retaining maternal characteristics within suckler herd replacements (values presented are based on calves born in National calf registration since 1997, where the animal has had at least 2 subsequent calvings). First cross beef animals had an average calving interval of about 380 days. This is in comparison to purebred continental animals (e.g., CH*CH) which had calving intervals of 384 days or greater. The fertility performance of three quarter bred continental animals (where more than one breed is present), is also of note. In general, the calving intervals for these types of breed cross was about 382 days, suggesting some level of hybrid vigor for fertility traits between the various continental breeds.

(i) Trends in first insemination AI usage

- 9.5% drop in first insemination usage
- 10.1% drop in Holstein Friesian usage
- 11.6% drop in overall beef usage
- Shift towards certain beef breeds

Fig 5.1 Number of HF, beef and total inseminations for all breeds (1992-2001)



Total first inseminations decreased by 9.5% in 2001, from 835,190 in 2000 to 756,091 in 2001 (Table 5.1 and Figure 5.1). The reason for this drop can be attributed to the impact of FMD and subsequent movement restrictions which resulted in the closure of the National AI service during the restriction period (early March to late April). The decline in first insemination usage was apparent for both Holstein Friesian (down 33,781) and the main beef breeds (down 54,495), with only the other beef, dairy and dual purpose breeds, reporting an increase in first insemination usage (up 9,177). The decline in first insemination usage in 2001 is a reversal in trends from 2000, which had shown a substantial increase in first insemination usage in that year (up 10.1% compared to 1999). It is hoped that this decline can be attributed to the short-term impact of FMD.

Table 5.1 Number of Holstein Friesian inseminations, beef inseminations and total inseminations for all breeds (1992-2001)

Year	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Total Holstein Friesian Inseminations	400,183	424,658	463,861	442,751	375,356	308,126	298,669	306,862	335,009	301,228
Total Beef Inseminations	601,403	550,421	498,484	505,631	538,209	538,650	474,578	432,171	471,078	416,583
Other Breeds	23,876	19,842	18,693	19,092	20,208	21,624	20,689	19,421	29,103	38,380
Total Inseminations	1,025,462	994,921	981,038	967,474	933,773	868,400	794,116	758,454	835,190	756,091

source: Department of Agriculture, Food & Rural Development 2001

The highly seasonal aspect to milk and beef production systems in Ireland is also evident from analysis of AI data, with 69% of all first inseminations taking place during months of April, May and June (Table 5.2). The seasonality of AI usage is particularly evident for the dairy sector, with 84% of all Holstein Friesian inseminations occurring within this three-month period.

Table 5.2 Seasonality of AI usage 2001

	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Total
Holstein Friesian	7,299	5,708	551	44,803	16,494	43,782	13,797	5,031	2,117	1,149	3,175	8,867	301,228
Beef	13,133	12,578	1,112	20,153	110,441	108,556	74,479	34,703	15,442	8,460	8,155	9,371	416,583
Other Breeds	3,133	2,059	221	6,296	13,166	6,310	3,688	1,422	632	361	436	559	38,283
Total	23,565	20,345	1,884	71,252	288,556	158,648	91,964	41,156	18,191	9,970	11,766	18,797	756,094

source: Department of Agriculture, Food & Rural Development 2001

A closer examination of first inseminations by month (Table 5.2 and Figure 5.2), underlines the impact of FMD on technician AI usage during 2001, with first inseminations down by almost 110,000 during the months of March and April (the period spanning the closure of the service). This was followed by an intense period of insemination activity during the month of May as farmers attempted to recover the time lost due to the impact of FMD.

Fig 5.2 Impact of FMD on AI inseminations

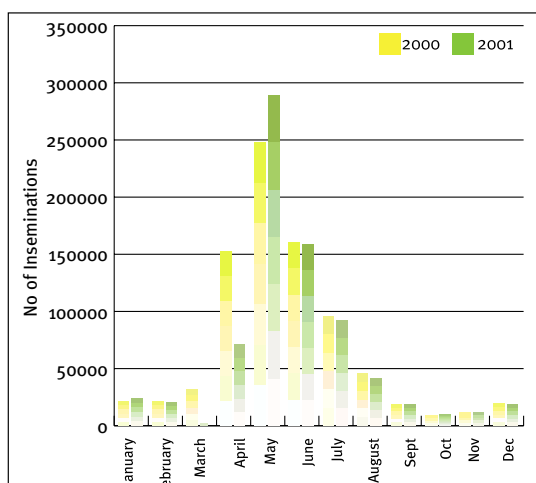


Table 5.3 Artificial Inseminations by breed (1992-2001)

Breed of AI Sire	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Holstein Friesian	400,183	424,658	463,861	442,751	375,356	308,126	298,669	306,862	335,009	301,228
Hereford	82,640	82,797	75,694	77,836	93,561	100,030	81,114	36,488	25,260	29,824
Angus	89,035	93,082	93,498	100,806	118,563	142,784	124,998	77,032	67,149	61,950
Charolais	179,570	154,796	136,245	134,701	127,308	110,901	97,039	99,648	108,763	94,248
Simmental	95,125	72,645	56,464	52,505	50,853	42,454	33,254	23,533	20,456	17,969
Limousin	119,395	107,237	92,22	91,697	93,419	84,920	80,377	100,804	116,821	105,116
Belgian Blue	35,638	39,864	44,357	48,086	54,505	57,561	57,796	94,666	132,629	107,476
Others	23,876	19,842	18,693	19,092	20,208	21,624	20,869	19,421	29,103	38,280
Total AI	1,025,462	994,921	981,038	967,474	933,773	868,400	794,116	758,454	835,190	756,091

source: Department of Agriculture, Food & Rural Development 2001

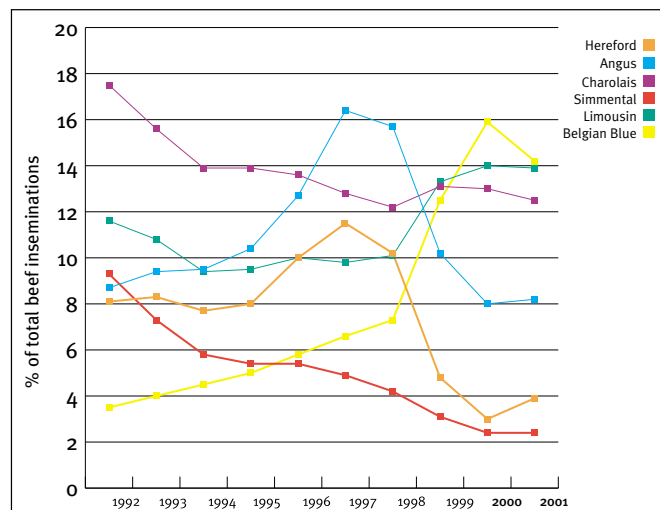
Looking more closely at trends for a number of beef breeds (Table 5.3 and Figure 5.3) indicates that the decline in first insemination usage was most prevalent for the Belgian Blue breed (down some 25,123 first inseminations compared to 2000). Again this decline is most probably due to the impact of FMD and the fact that inseminations to this breed occur principally in dairy herds (dairy herds have a much more compact breeding season than beef herds – Table 5.2). Nevertheless, the Belgian Blue breed still remained the most popular breed of beef sire used in AI in 2001 (107,476 first inseminations), followed by the Limousin

Table 5.4 Artificial Insemination usage for dairy breeds (2001)

	Total	% of Total
H Friesian	301,228	93.8%
MRI	1,450	0.5%
Ayrshire	328	0.1%
Jersey	1,961	0.6%
Brown Swiss	203	0.1%
Montbelliarde	9,893	3.1%
Normande	368	0.1%
Kerry	110	0.0%
Norwedgian Red	413	0.1%
Rotbunt	5,078	1.6%
Total	321,032	100.0%

breed (105,116), the Charolais breed (94,248), and the Angus breed respectively (61,950 first inseminations).

Fig 5.3 Total beef inseminations by breed (1992-2001)



An examination of first insemination usage for dairy breeds (Table 5.4) indicates that the Holstein Friesian breed, is the most popular choice for breeding dairy herd replacements from AI, accounting for 94% of the total inseminations to dairy breeds. This is followed by the Montbelliarde breed (9,893 inseminations), the Rotbunt breed (5,078) and the Jersey breed respectively (1,961). These trends are consistent with trends from National calf registrations (Table 1.9).

Table 5.5 Artificial Inseminations by breed for each AI organisation (2001)

AI Organisations	H Friesian	Hereford	Angus	Charolais	Simmental	Limousin	Belgian Blue	Others	Total
South Western Services Co-op	34,996	2,192	6,032	2,446	993	3,194	6,808	1,855	58,516
Kerry co-op	30,200	2,054	4,041	3,555	914	5,201	9,848	1,766	57,579
Goldenvale Plc	13,943	2,501	3,805	9,396	1,277	16,293	7,793	1,983	56,991
Progressive Genetics	41,744	2,495	7,832	9,538	1,955	11,620	21,126	10,193	106,506
North Eastern CBS	17,871	1,619	4,534	9,671	1,958	11,489	12,009	1,533	60,684
Dovea AI	37,894	4,098	7,577	9,150	2,832	12,676	6,633	2,516	83,376
Dairygold Co-op	98,524	5,357	14,135	4,184	1,829	8,070	17,062	5,413	154,574
Sligo AI	10,634	6,939	7,342	31,991	4,483	20,742	13,360	2,880	98,371
Eurogene/AI services	8,893	427	1,896	1,801	300	2,752	3,699	6,907	26,675
Bova AI	6,529	2,142	4,756	12,516	1,428	13,079	9,138	3,234	52,822
Total	301,228	29,824	61,950	94,248	17,969	105,116	107,476	38,280	756,094
% of overall	39.8%	3.9%	8.2%	12.5%	2.4%	13.9%	14.2%	5.1%	100.0%

source: Department of Agriculture, Food & Rural Development 2001

A total of 10 organisations were licensed by the Department of Agriculture to provide a National AI service in 2001 (Table 5.5). The largest of these organisations was Dairygold with 154,574 first inseminations (20.4% of all first inseminations), followed by Progressive Genetics (14.1%), Sligo (13.1%), South Western Services (7.7%) and Kerry Agribusiness (7.6%). Holstein Friesian inseminations accounted for the major part of the Dairygold AI business last year (about 64% of first inseminations), reflecting the high proportion of dairy herds in the Cork and Limerick areas (Table 1.6). Likewise, almost 90% of the first inseminations in the Sligo AI area were to beef bulls, reflecting the high proportion of beef herds in the west of the country.

(ii) DIY AI licensing

- *Increase in number of AI licenses*

In addition to inseminations through licensed AI organisations, some 2,923 dairy and beef farmers are presently licensed by the Department of Agriculture to carry out AI on their farm (DIY AI). The number of licensed AI operators continued to increase in 2001, principally due to the large number of farmers renewing their AI license (Table 5.6).

The average herd size of licensed AI herdowners is 87 animals, suggesting that some 255,000 animals are covered by DIY AI. Assuming that all cows in DIY AI herds are artificially bred, this figure suggests that the total number of first inseminations in Ireland last year was about 1 million. Expressing this figure as a proportion of the total breeding females in Ireland (2.68 million), suggests that the number of breeding females being bred to AI (termed AI penetration rate) is about 37%. This figure is substantially lower than figures for other developed dairy and beef countries, where levels of AI penetration rate are typically in excess of 60%.

Table 5.6 DIY AI licenses (1992-2001)

	New licenses	Renewed licenses	Total
1992	267	262	529
1993	351	261	612
1994	455	376	827
1995	451	380	830
1996	378	299	677
1997	430	394	824
1998	317	546	863
1999	237	422	688
2000	315	813	1128
2001	269	867	1136

source: Department of Agriculture, Food & Rural Development 2001

Table 5.7 Artificial Inseminations by breed (1992-2001)

Breed of AI Sire	2000	2001
H Friesian	157,499	171,232
Montbeliarde	2,045	7,975
MRI	5,766	1,500
Hereford	1,380	1,300
Angus	3,059	5,434
Charolais	6,303	11,816
Simmental	1,671	515
Limousin	15,344	26,500
Belgian Blue	6,507	18,824
Total	199,574	245,096

(iii) Importation of bovine semen

- *23% increase in level of semen notified for importation*

The level of bovine semen imported into Ireland last year (from all other countries) increased from 199,574 in 2000 to 245,096 in 2001, an increase of some 23% (Table 5.7). The level of semen imported is consistent with figures from DIY AI licensing, confirming that some 37% of breeding females were bred to AI in 2001. The level of semen imported was highest for the Holstein Friesian breed (171,232 doses), followed by the Limousin (26,500 doses), Belgian Blue (18,824 doses) and Charolais breeds respectively (11,816 doses). Taking the importation figures for dairy breeds alone, suggests that the AI penetration rate in the National dairy herd is slightly lower than the National figure and is more typically about 35%.

(iv) Participation in ICBF progeny test programme

- *Slight increase in number of dairy/dual purpose bulls on progeny test in 2001*
- *35% of dairy/dual purpose bulls on progeny test in 2001 are pure Friesian*
- *Decrease in number of beef bulls on progeny test in 2001*

At present seven organisations are actively involved in ICBF's progeny test programme for dairy and/or dual-purpose breeds (Table 5.8). The number of bulls going onto test in 2001 was 43, which is a slight increase on figures for 2000 (38 bulls went on test in 2000). Munster AI (an amalgam of 4 organisations; Dairygold, South Western Services, Kerry and Golden Vale) and Progressive Genetics have been the two largest organisations involved in dairy/dual purpose progeny testing in Ireland over the last 3 years with 61 bulls and 38 bulls going on test within each of these respective organisations.

Table 5.8 Number of dairy and dual purpose bulls on test by organisation (1999-2001)

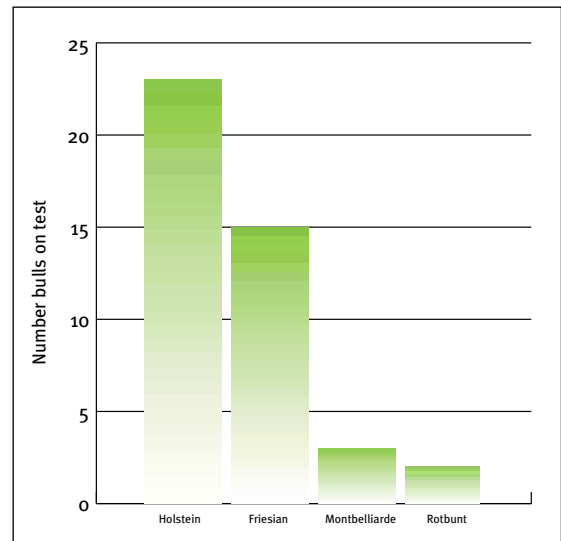
	1999	2000	2001
North Eastern AI	3	0	0
Dovea AI	10	4	9
Progressive Genetics	11	12	15
Eurogene/AI services	10	2	6
ILG	8	0	1
Munster AI	30	20	11
Sligo AI	0	0	1
Total	72	38	43

Table 5.9 Dairy and dual purpose test bulls by breed (2001)

	2001
Holstein	23
Friesian	15
Montbelliarde	3
Rotbunt	2
Total	43

Looking at the breakdown of breeds going on test during 2001 (Table 5.9), indicates that the Holstein breed is the most dominant dairy/dual purpose breed going on test last year (23 of the total 43 bulls were notified as Holstein). However, it is interesting to note that a further 15 Friesian bulls (i.e. 35% Holstein) went on test last year, reflecting the increased concern expressed within the dairy industry regarding the fertility performance of Holstein animals that have been selected solely on the basis of production traits (see Chapter 6).

Fig 5.4 Dairy and dual purpose test bulls by breed (2001)



At present nine organisations are actively involved in ICBF's progeny test programme for beef breeds (Table 5.10). In contrast to the scenario for dairy/dual purpose bulls, there was a marked decrease in the number of bulls going on beef progeny test last year, with 67 bulls going on test in 2000 compared to 41 bulls in 2001. Munster AI had the largest number of beef bulls going on test in 2001 (10 bulls) followed by Dovea AI (9 bulls), Progressive Genetics and Sligo AI (both with 8 bulls). The most popular beef breeds going on test last year (Table 5.11) were the Charolais and Belgian Blue breed (both with 12 bulls on test) followed by the Limousin breed (8 bulls on test).

Table 5.10 Number of beef bulls starting test by organisation (1999-2001)

	1999	2000	2001
Dovea AI	9	10	9
Eurogene/AI services	6	13	1
Goulding Genetics	0	3	1
Irish Hereford Society	0	2	1
Irish Simmental Society	0	5	2
Irish Angus Society	0	0	1
Munster AI	14	16	10
Progressive Genetics	18	11	8
Sligo AI	3	7	8
Total	50	67	41

Table 5.11 Beef test bulls by breed (2001)

	2001
Angus	2
Aubrac	1
Blonde	1
B.Blue	12
Charolais	12
Hereford	1
Limousin	8
Shorthorn	2
Simmental	2
Total	41



Introduction

ICBF's mission statement is focused on delivering the greatest possible genetic improvement in our National dairy and beef herds. Much of this improvement will come through the activities of the ICBF animal evaluation unit, which is responsible for the testing, genetic evaluation and publication of results from the National dairy and beef breeding programmes. Details on the operational aspects of these programmes are given on our website (<http://www.icbf.com>). The following are some results from both of these programmes.

(i) Dairy Cattle

- Continued improvement in genetic merit for yield traits
- Marked decline in genetic merit for calving interval and survival within Holstein Friesian population

The Economic Breeding Index (EBI) was introduced in 2000. The index is published in Euros and ranks animals on overall profit. It contains information on five traits related to profitable milk production; milk, fat and protein yield and 2 traits related to fertility performance, calving interval and survival.

Table 6.1 Average genetic merit of progeny test bulls for EBI, calving interval and survival

	EBI	SUV	CI
1986	-20.19	-0.02	-2.25
1987	-14.76	0.183	-1.57
1988	-4.17	-0.106	-1.93
1989	0.96	0.097	-1.73
1990	-3.04	-0.169	-2.28
1991	10.25	0.009	-0.337
1992	12.78	0.253	-0.23
1993	13.92	0.032	-0.105
1994	11.70	-0.26	0.52
1995	6.54	-0.613	1.093

source: ICBF Animal Evaluation Unit 2001

Looking at trends in EBI value for cows and progeny test sires (Table 6.1 and Figure 6.1), indicates a steady increase in the average EBI value of milk recorded cows during the past 10 years, from a value of €-10.5 for cows born in 1989 up to a value of €14.2 for cows born in 1999. This represents an increase in EBI value of some €2.5/year for the 10 year period.

Fig 6.2 Genetic trend of progeny test bulls for calving interval and survival

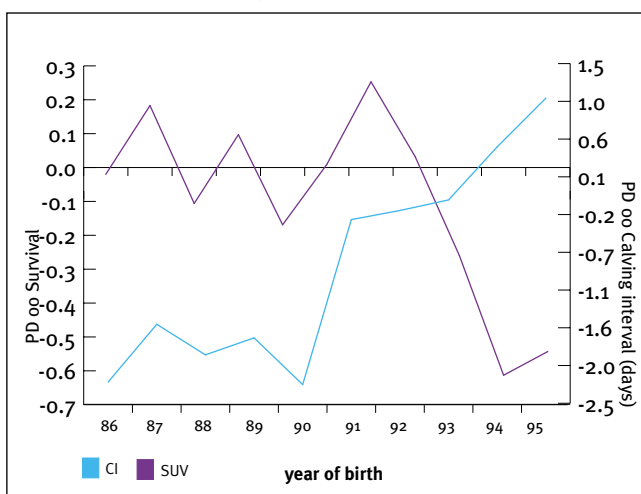
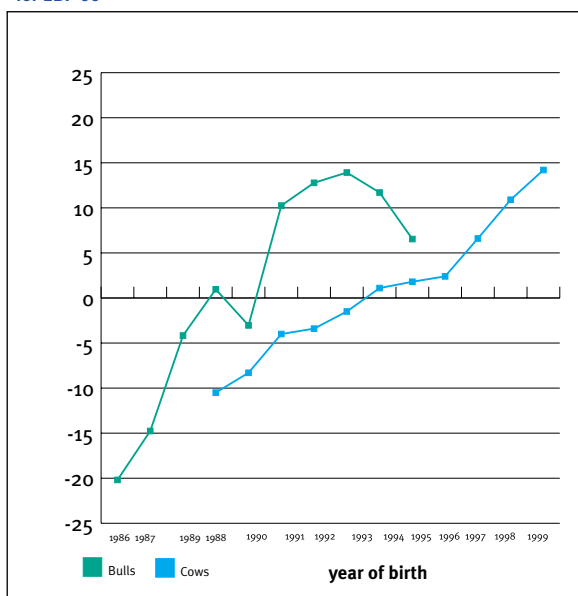


Fig 6.1 Genetic trend of progeny test bulls and cows by year of birth for EBI '00



The trend for progeny test sires is not as sustained, reflecting the downward trend in calving interval and survival performance for test sires in latter years (Table 6.1 and Figure 6.2). A closer examination of these trends clearly demonstrates the decline in fertility performance (Figure 6.2), with values for calving interval having increased by about half a day/year for the last 5-6 years and values for survival having declined by almost 1% unit during the same period. The trend is not apparent in the National cow population as EBI values for cows are based on production traits only. It is envisaged that within the next twelve months, calving interval and survival proofs will be available for both sires and cows.

This decline in fertility performance with the National dairy herd is not surprising, given past emphasis on production traits. Furthermore it is consistent with data from many other countries which have investigated the relationship between milk production and fertility traits. Addressing this decline in fertility performance, whilst maintaining genetic improvement in protein kg, is the major objective of the ongoing EBI project.



Table 6.2 Average genetic merit of cows by year of birth for EBI and milk production traits

	Records	Milk	Fat	Prot	Fat%	Prot%	EBI
1989	1388	-117.9	-2.59	-3.02	0.039	0.018	-10.5
1990	3056	-93.3	-1.87	-2.41	0.035	0.014	-8.3
1991	6235	-65.3	-0.75	-1.46	0.035	0.014	-4.0
1992	10163	-56.7	-0.67	-1.24	0.030	0.013	-3.4
1993	16865	-38.5	-0.48	-0.70	0.021	0.012	-1.5
1994	25376	-7.8	0.22	0.06	0.011	0.007	1.1
1995	34831	12.9	0.46	0.41	0.001	0.000	1.8
1996	42119	30.2	0.75	0.71	-0.006	-0.005	2.4
1997	44809	57.2	1.34	1.72	-0.015	-0.003	6.6
1998	41040	80.2	2.15	2.66	-0.016	0.001	10.9
1999	18565	79.8	2.47	3.18	-0.010	0.011	14.2

source: ICBF Animal Evaluation Unit 2001

Trends for individual production traits (Table 6.2 and Figure 6.3), indicate a positive genetic trend for the each of the yield traits, with yields of milk, fat and protein improving at an annual rate of some 18 kg, 0.46 kg and 0.56 kg respectively. Trends for fat and protein content (Figure 6.4) have declined over the past 10 years, although trends for protein % have improved slightly in latter years (for cows born since 1996).

Fig 6.3 Genetic trend of cows by year of birth for milk kg, fat kg and protein kg

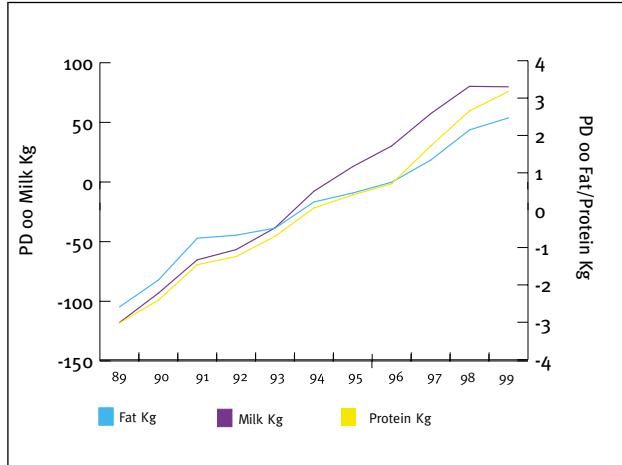
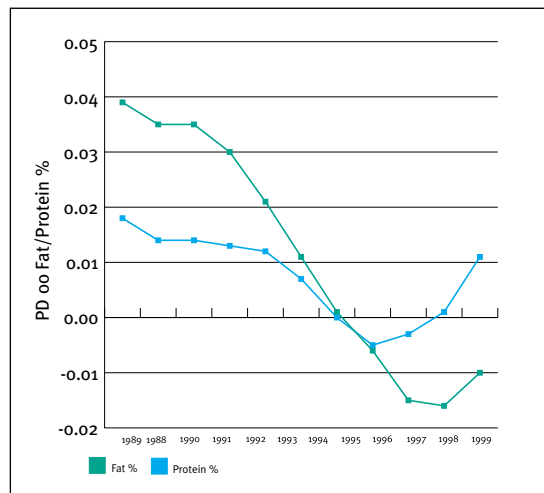


Fig 6.4 Genetic trend of cows by year of birth for fat and protein content



(ii) Beef Cattle

- Sustained improvement in muscle and skeletal EBV within the Limousin, Charolais and Simmental breeds.
- Substantial genetic differences between breeds for carcass traits

At present, three herdbooks offer an on-farm linear scoring service to its members, the Charolais, Limousin and Simmental herdbooks (Section 4). Looking at genetic trends in muscle and skeletal EBV for each of these breeds indicates substantial genetic improvement within each of the breeds for these traits (Figures 6.5, 6.6 and 6.7). For example, within the Limousin breed, EBV for muscle has increased from 100, for animals born in 1995, to 108.8 for animals born in 2001, an increase of some 1.25 units/year over

the last 7 years. Similar results are evident for skeletal EBV, although the rate of improvement has declined in more recent years (1998-2001), presumably in response to market demands for conformation as opposed to growth.

Table 6.3 Limousin genetic trends for muscle and skeletal (1992-2001)

YEAR	MUSCLE	SKELETAL
1992	97.2	95.4
1993	98.2	98.0
1994	98.4	98.9
1995	100.0	100.0
1996	101.5	100.3
1997	101.9	102.3
1998	103.4	103.5
1999	105.6	104.3
2000	107.2	104.6
2001	108.8	105.5

source: ICBF Animal Evaluation Unit 2001

Fig 6.5 Limousin genetic trends for muscle and skeletal (1992-2001)

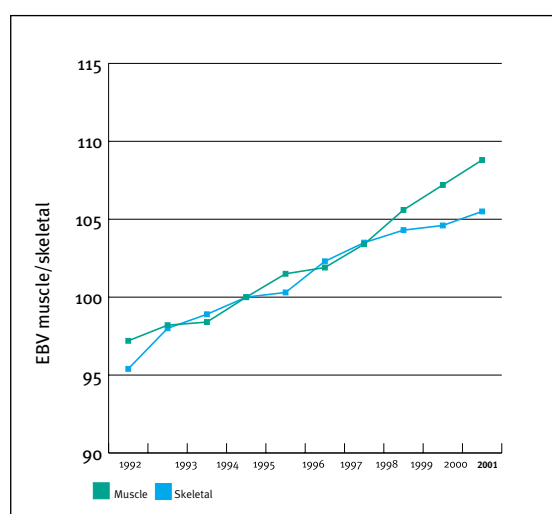


Fig 6.6 Charolais genetic trends for muscle and skeletal (1992-2001)

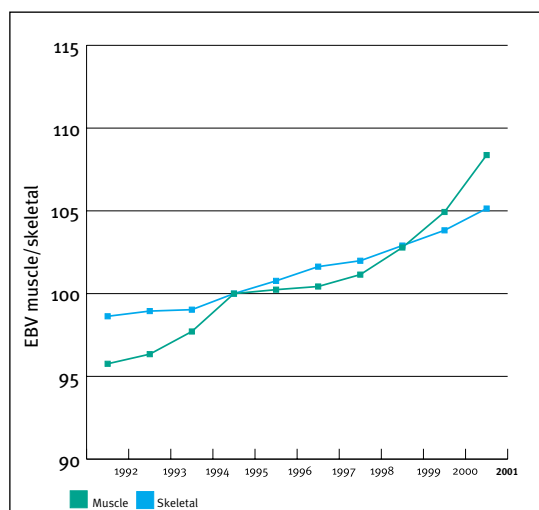
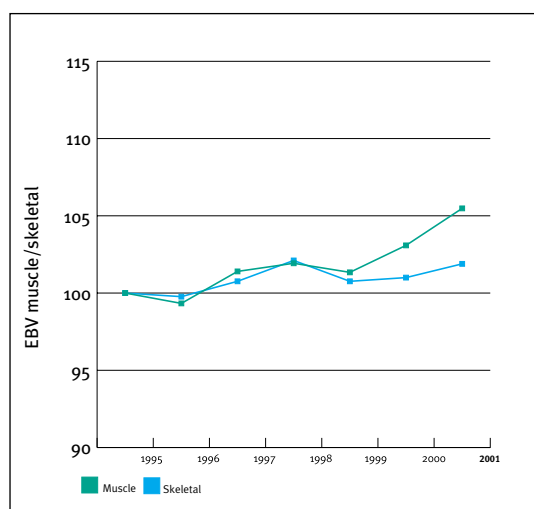


Fig 6.7 Simmental genetic trends for muscle and skeletal (1995-2001)



Trends within the Charolais breed indicate similar levels of genetic improvement to that shown within the Limousin breed for both muscle (1.25 units/year since 1995) and skeletal EBV (0.7 units/year since 1995).

Table 6.4 Charolais genetic trends for muscle and skeletal (1992-2001)

YEAR	MUSCLE	SKELETAL
1992	95.761	98.63
1993	96.341	98.945
1994	97.711	99.03
1995	100	100
1996	100.239	100.777
1997	100.43	101.632
1998	101.148	101.986
1999	102.786	102.903
2000	104.932	103.823
2001	108.371	105.14

source: ICBF Animal Evaluation Unit 2001

Table 6.5 Simmental genetic trends for muscle and skeletal (1995-2001)

YEAR	MUSCLE	SKELETAL
1995	100	100
1996	99.336	99.767
1997	101.401	100.763
1998	101.927	102.109
1999	101.34	100.761
2000	103.085	101.001
2001	105.481	101.895

source: ICBF Animal Evaluation Unit 2001

Trends with the Simmental breed are not as marked (Table 6.5), reflecting the lower number of records on which these evaluations are based (some 4 years of data are included in the Simmental evaluations compared to over 10 years for both the Charolais and Limousin breeds). Nevertheless, trends for both traits are positive, with muscle EBV increasing at a rate of about 0.8 units/year.

In contrast to genetic evaluations for linear traits which are within breed, genetic evaluations for AI progeny test data are across breed. This allows animals and breeds be directly compared in the one genetic evaluation system.

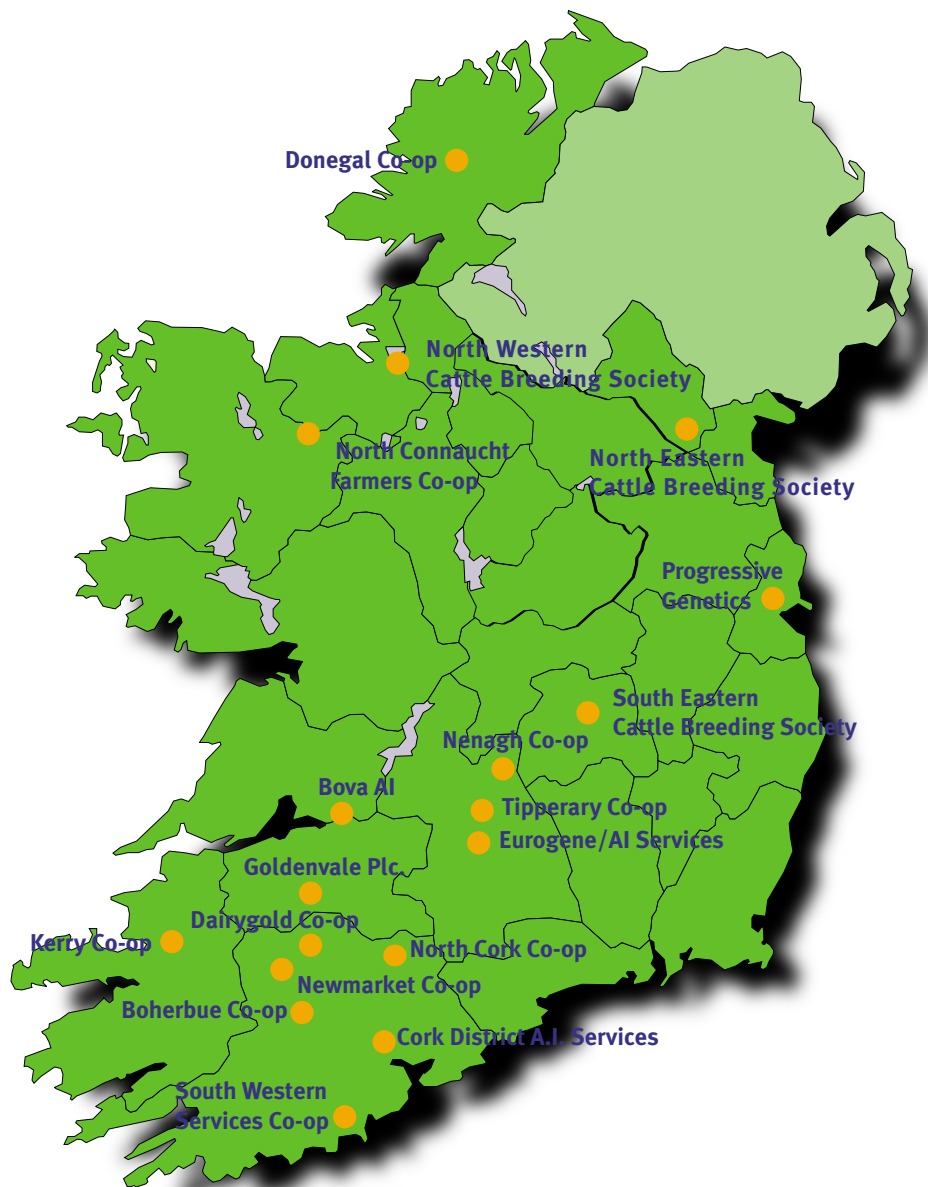
Looking at expected breed differences for each of the traits (Table 6.6) indicates that the Charolais breed is the most superior breed for carcass weight (average carcass weight of crossbred progeny is 391 kg), followed by the Belgian Blue breed (381 kg), and then the Blonde d'Aquitaine (377 kg). Similarly, trends for conformation grade indicate that, based on crossbred progeny performance, the Belgian Blue breed is the leanest breed (3.08 or R grade carcasses) followed by the Charolais breed (3.06), Limousin breed (2.95) and Blonde d'Aquitaine breeds respectively (2.79).

A different ranking order is apparent for fat class, with the Hereford breed resulting in animals in the highest fat class (3.95), followed by the Angus (3.82) and Holstein Friesian breeds respectively (3.39). Trends for kill-out% are similar to those for conformation, with the Blonde d'Aquitaine (57.7%), the Simmental breed (57.0%) and the Belgian Blue breeds (56.7), being the three breed that are expected to result in crossbred progeny with the highest kill-out%.

Table 6.6 Across breed comparisons for beef traits

BREED	Carcass wt.	Conformation	Fat	Kill-out %
Angus	355	2.69	3.82	55.3
Holstein Friesian	350	2.02	3.39	53.9
Hereford	367	2.66	3.95	55.1
Charolais	391	3.06	3.30	55.4
Simmental	376	2.74	3.35	57.0
Limousin	368	2.95	3.26	56.7
Bl. d'Aquitaine	377	2.79	2.97	57.7
Belgian Blue	381	3.08	2.99	56.7

source: ICBF Animal Evaluation Unit 2001



• AI & Milk recording centre

Dairygold Co-op
Goldenvale plc
Kerry Co-op
North Eastern Cattle Breeding Society
Progressive Genetics
South Western Services Co-op Society Ltd.

• Milk recording centre (only)

Boherbue Co-op
Cork District AI services
Donegal Co-op
Nenagh Co-op
Newmarket Co-op
North Connacht Farmers Co-op Ltd
North Cork Co-op
Tipperary Co-op

• AI centre (only)

South Eastern Cattle Breeding Society Ltd
North Western Cattle Breeding Society
Bova AI
Eurogene/AI Services

Proportion of calf registrations and herds, by region (2001)

