

Overview Appendix 5: A quantitative assessment of dairy cow performance within the Castlecomer locality

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1. Introduction

Long-term problems of cattle performance (ill-thrift and stunted growth in growing cattle, poor body condition and reduced milk yield in adult cattle) have been observed on a farm (the 'index farm') in Co. Kilkenny, Ireland. Based on qualitative information, the problems may be limited to the index farm, and potentially several additional neighbouring farms. An understanding of the spatial extent and distribution of the problem is critical to a clearer understanding of reason(s) for this problem. The objective of this work was to gain a clearer understanding of the temporospatial extent of the problem, based on an analysis of milk recording data routinely collected from dairy farms within the locality.

2. Methods

We identified all dairy farms within 8 km of the index farm participating in milk recording between 2005 and 2008, inclusive. A dataset of milk recording data from these herds and from the index herd were provided by the Irish Cattle Breeding Federation (ICBF), based in Bandon, Co. Cork. The dataset included data collected from each cow at each milk recording, including cow identification, recording date, most-recent calving date, total yield (kg), somatic cell count (cells/ml) and concentration (fat, protein, lactose). It was not possible to check data accuracy; for the following analyses, it was assumed to be correct. The data was anonymised to protect the identity of individual farmers.

The data were used to calculate:

- Mean predicted 305 day yield by farm and year,
- Mean yield by farm, year and stage of lactation (early, ≤ 60 d; mid, 61 to ≤ 120 d; late, 121 to ≤ 180 days; end > 180 d), and
- Mean somatic cell counts by farm, year and stage of lactation.

In addition, the minimum, mean and maximum value of each of the following parameters were calculated, by farm and year:

- Predicted 305 d milk yield
- Calving date
- Parity
- *In early stage (ErS) lactation*: milk yield, % cows with low milk protein (<3.05%), % cows with high fat: protein ratio in early lactation (fat/milk >1.4), somatic cell count
- *In mid stage (MS) lactation*: milk yield, % cows with milk fat depression (<2.5%), % cows with (% milk protein) - (% milk fat) < 0.4, somatic cell count
- *In late stage (LS) lactation*: milk yield, somatic cell count
- *In end stage (EnS) lactation*: milk yield, somatic cell count

3. Results and discussion

Milk recording data were available for the index farm and for 12 additional farms within the locality.

The mean predicted 305 day milk yield (kgs) for cows on the index farm and the additional 12 farms for the years 2005, 2006, 2007 and 2008 are presented in Figures 1, 2, 3 and 4, and the median (min and max) predicted 305 day milk yield (kgs) in Tables 1, 2, 3 and 4. In all four years, the index farm had the lowest mean predicted 305 day lactation milk yield (kgs) of all the farms examined. In all four years, farm F had the highest mean predicted 305 day milk yield (kgs). Visually the trend in the predicted 305 day milk yield is similar across all farms in all four years (Figures 1, 2, 3 and 4).

Results for both 24 hour milk yield (kgs) and somatic cell count (SCC, '000) were considered by stage of lactation. Results for the mean 24 h milk yield (kgs) by stage of lactation for 2005, 2006, 2007 and 2008 are presented in Figures 5, 6, 7 and 8 and the median (min and max) 24 h milk yield (kgs) in Tables 1, 2, 3 and 4. In 2005, 2006 and 2007, the index farm had the lowest mean 24 h milk yield by stage of lactation all the farms examined. In 2008, the index farm had the second lowest mean 24 h milk yield (kgs) for ErS and MS cows, but the lowest mean 24 h milk yield (kgs) for LS and EnS cows.

Results for the mean SCC by stage of lactation for 2005, 2006, 2007 and 2008 are presented in Figures 9, 10, 11 and 12 and in Tables 1, 2, 3 and 4. Under EU regulation 853/2004, raw

milk must comply with criteria and standards for SCC. Somatic cell count must not exceed 400,000 cells mL⁻¹, based on a rolling geometric average over a three month period, with at least one sample per month. In all four years, mean SCC by stage of lactation on the index farm were below 400,000. For farms where the mean SCC by stage of lactation exceeded 400,000, the increase in the mean SCC was for the most part due to the inclusion of a small number of individual cows with high SCC. This is reflected in the large standard error associated with the mean. Median (min, max) SCC for all farms for each year are presented in Tables 1, 2, 3 and 4.

Negative energy balance during early lactation has been associated with low milk protein (<3.05%) and high fat: protein ratio (fat/milk >1.4) (Heuer et al., 2000; Mulligan et al., 2006). There was some evidence of negative energy balance on the index farm, however, similar results were found on a number of other local farms during the period of interest (Tables 1, 2, 3, 4), possibly apart from 2008. There is a potential association between subacute ruminal acidosis (SARA; Mulligan et al., 2006) and milk fat depression in mid lactation (milk fat <2.5%; [% milk protein] – [% milk fat] <0.4), noting that the relationship with depressed milk fat is complex and inconsistent (Oetzel, 2007; O'Grady et al., 2008). During the study period, there is evidence of milk fat depression in mid-lactation (which is suggestive of SARA) on several farms, with the index farm being most severely affected (Tables 1, 2, 3, 4).

In this analysis, it was not possible to control for farm differences as a consequence of varying management strategies or differences in the inherent genetic capacity of cows to produce milk. As a consequence, differences in farm performance may be the consequence of a broad range of factors, including management and genetics.

Acknowledgements

The authors wish to thank the Irish Cattle Breeding Federation (ICBF) for access to milk recording data.

4. References

Peer reviewed literature

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Mulligan, F.J., O'Grady, L., Rice, D.A. and Doherty, M.L., 2006. A herd health approach to dairy cow nutrition and production diseases of the transition cow. *Animal Reproduction Science* 96, 331-353.

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EU legislation

Regulation (EC) No 853/2004 of the European Parliament and of the Council of 29 April 2004 laying down specific hygiene rules for food of animal origin. *Official Journal of the European Communities*, L139, 55-205. 30 April 2004 [including subsequent corrigenda and amendments].

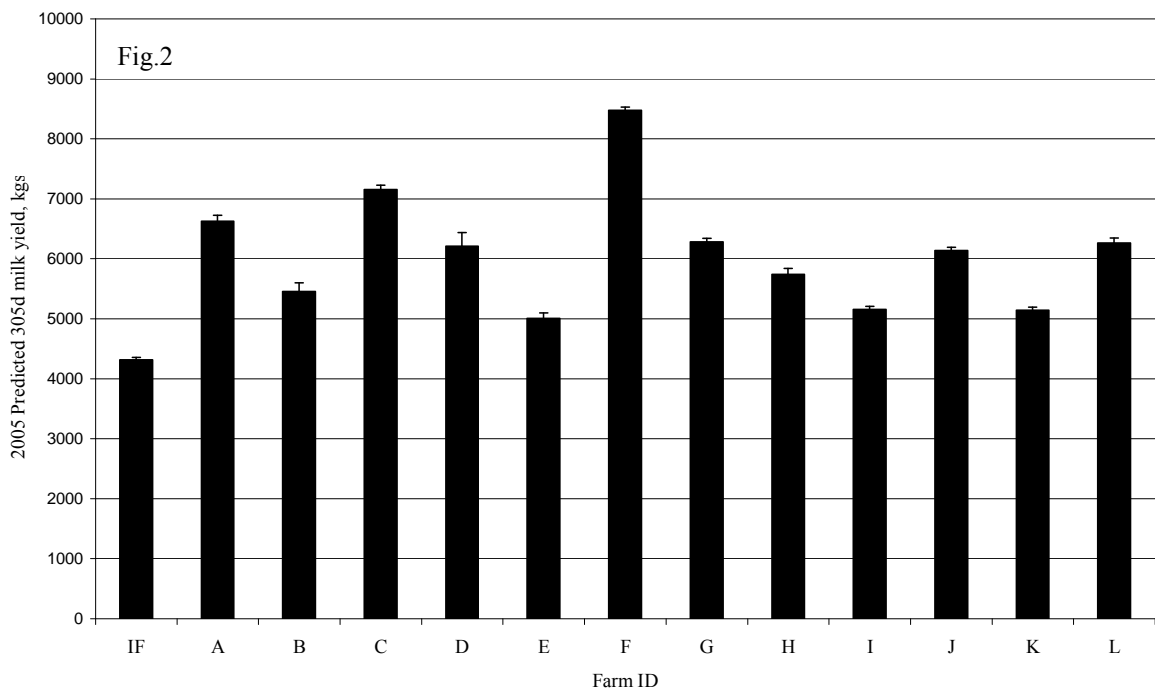
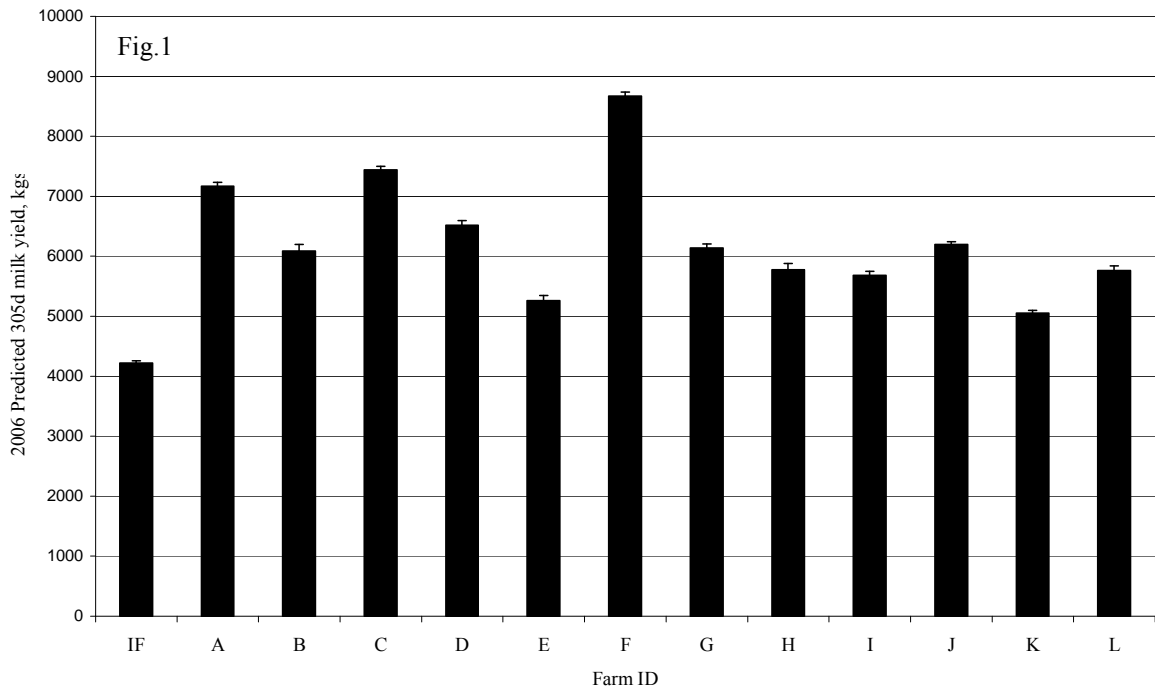


Figure 1 and 2: Mean±SEM predicted 305 day lactation milk yields (kgs) for the years 2005 (Fig.1) and 2006 (Fig.2) for cows on the index farm (IF) and 12 other dairy farms (A-L) within an 8km radius from the index farm.

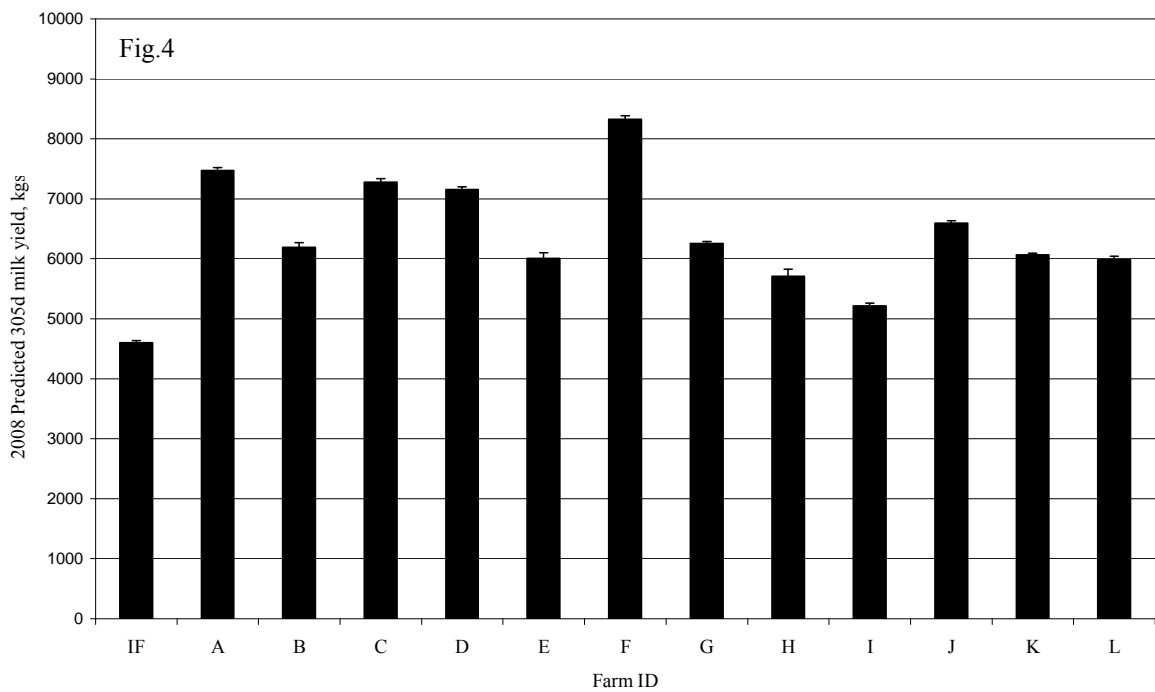
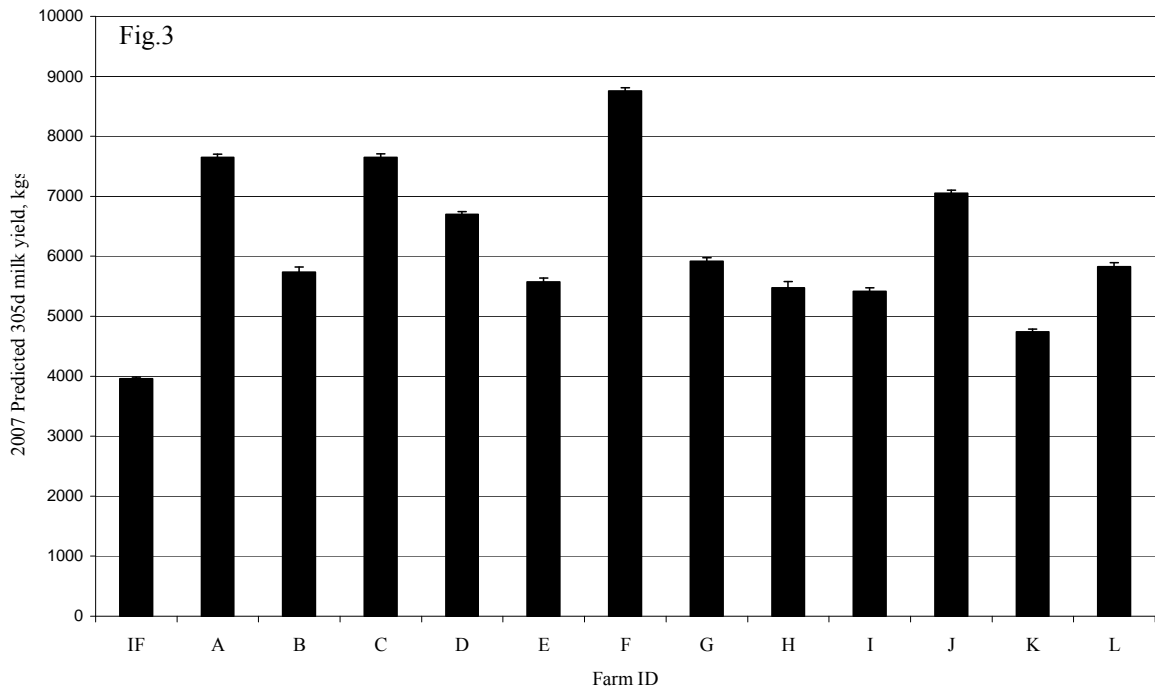


Figure 3 and 4: Mean±SEM predicted 305 day lactation milk yields (kgs) for the years 2007 (Fig.3) and 2008 (Fig.4) for cows on the index farm (IF) and 12 other dairy farms (A-L) within an 8km radius from the index farm.

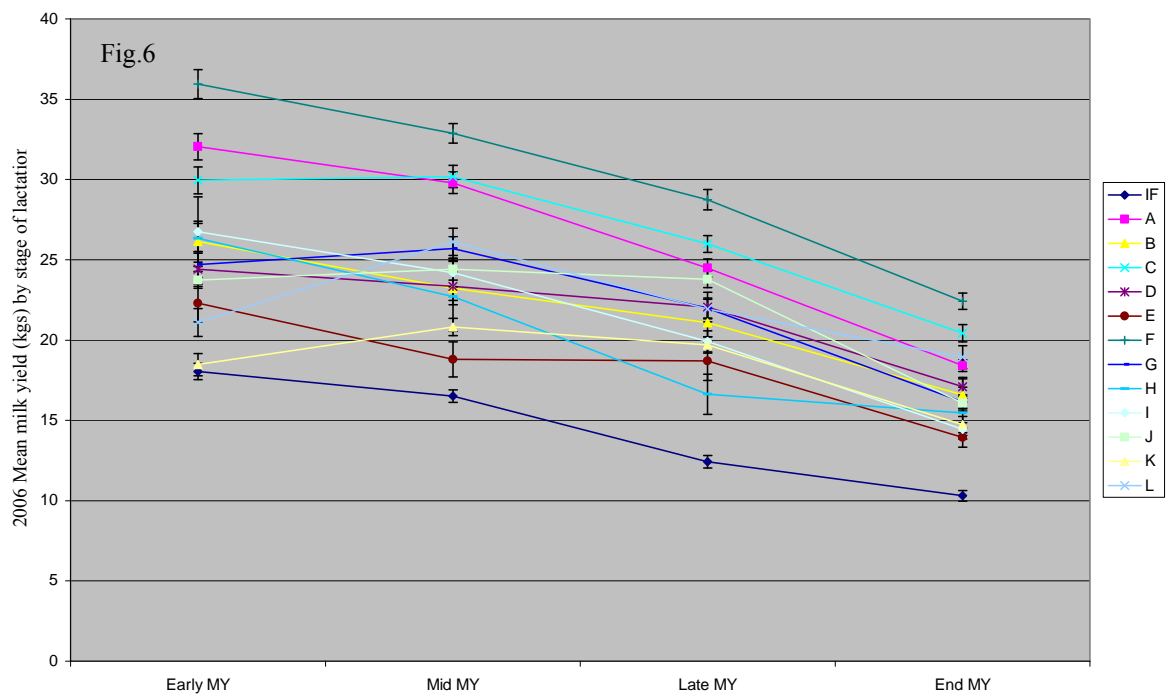
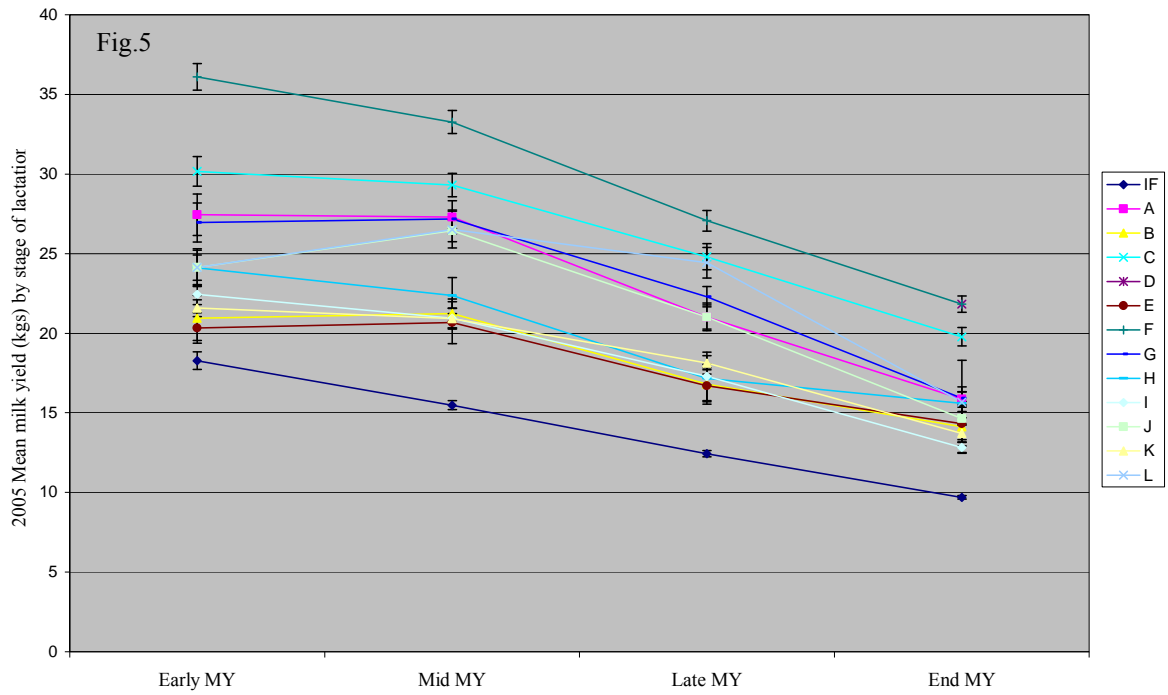


Figure 5 and 6: Mean±SEM milk yield (MY, kgs) by stage of lactation for the years 2005 (Fig.5) and 2006 (Fig.6) for cows on the index farm (IF) and 12 other dairy farms (A-L) within an 8km radius from the index farm. Stages of lactation are as follows: Early, days 1-60; Mid, days 60-120; Late, days 120-180 and End, >180 days.

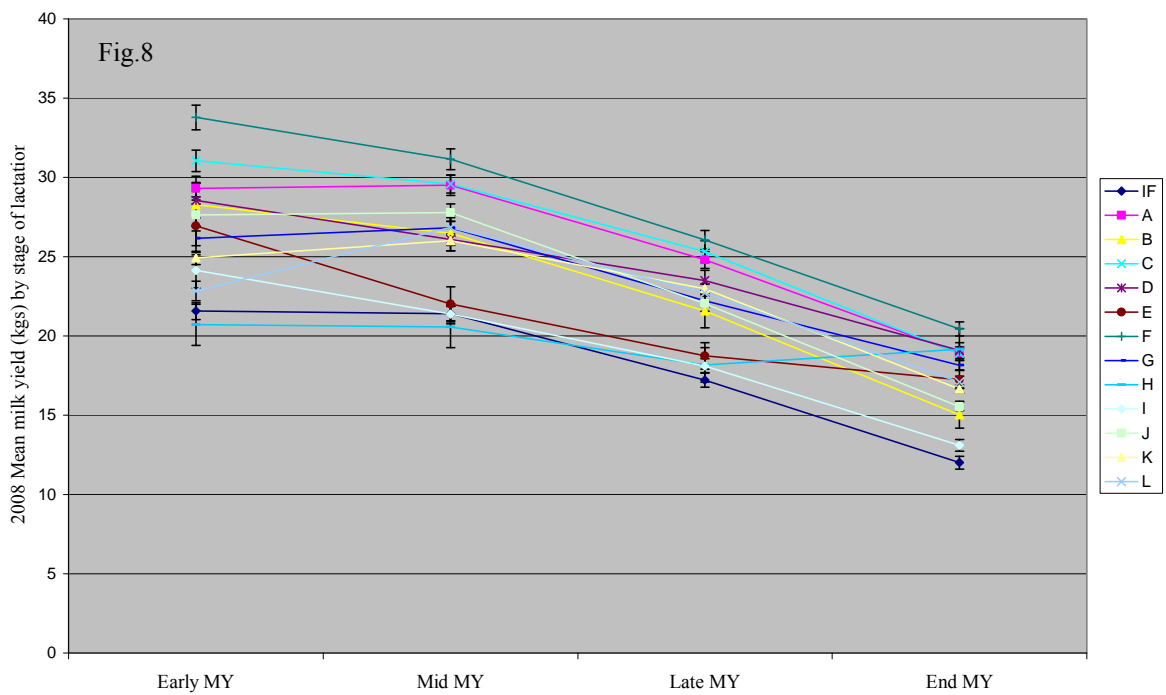
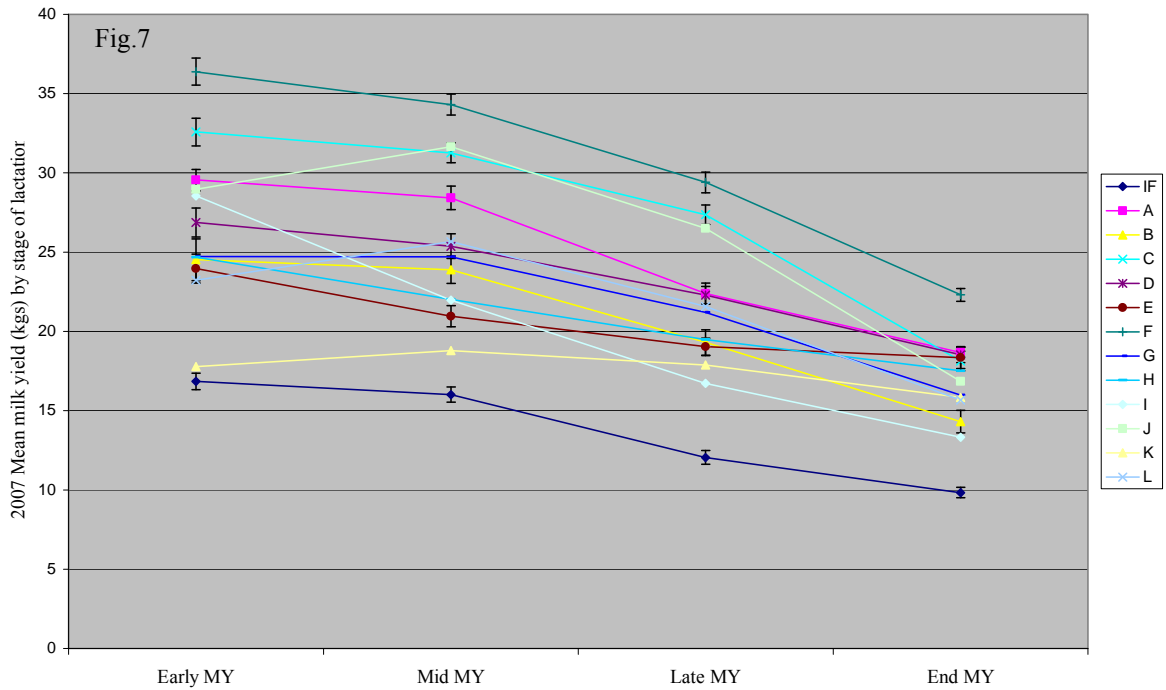


Figure 7 and 8: Mean±SEM milk yield (MY, kgs) by stage of lactation for the years 2007 (Fig.7) and 2008 (Fig.8) for cows on the index farm (IF) and 12 other dairy farms (A-L) within an 8km radius from the index farm. Stages of lactation are as follows: Early, days 1-60; Mid, days 60-120; Late, days 120-180 and End, >180 days.

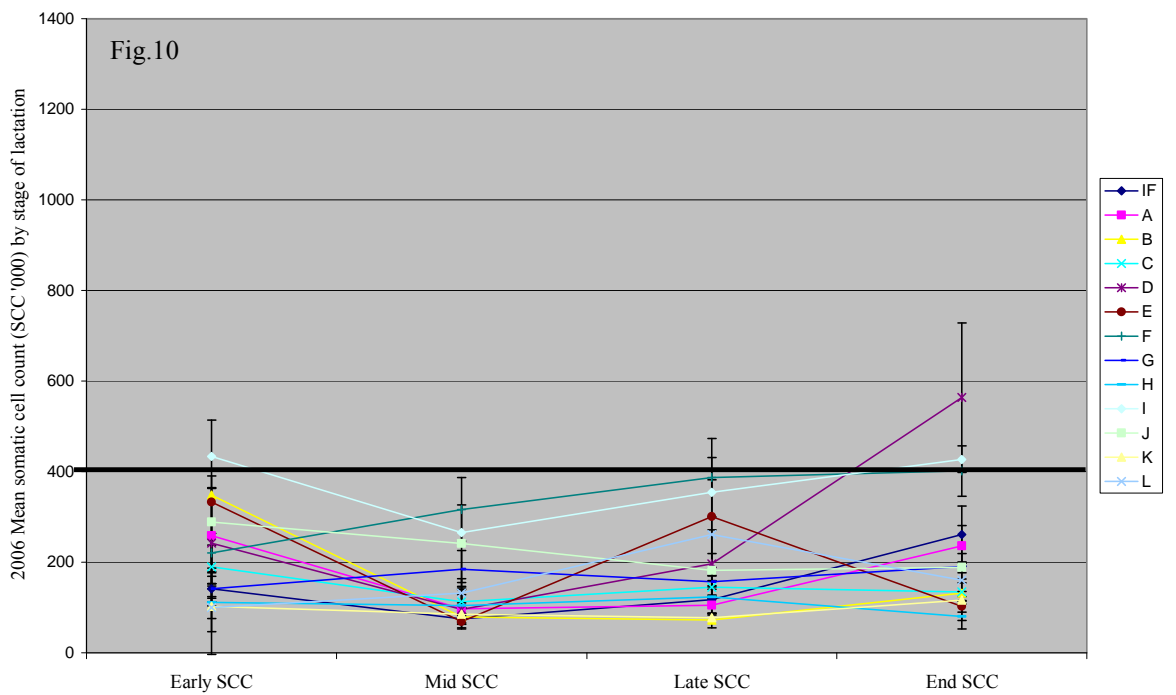
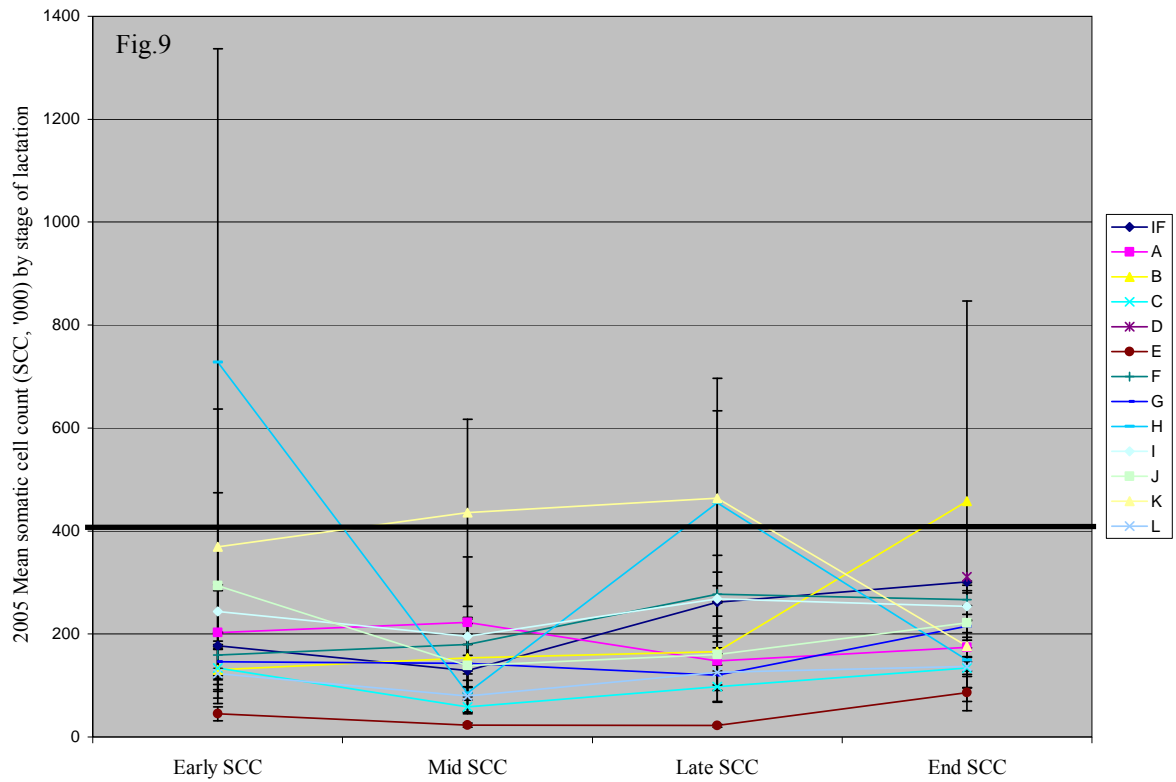


Figure 9 and 10: Mean±SEM somatic cell count (SCC, '000) by stage of lactation for the years 2005 (Fig.9) and 2006 (Fig.10) for cows on the index farm (IF) and 12 other dairy farms (A-L) within an 8km radius from the index farm. Stages of lactation are as follows: Early, days 1-60; Mid, days 60-120; Late, days 120-180 and End, >180 days. The solid black line represents the threshold value that SCC counts must be below.

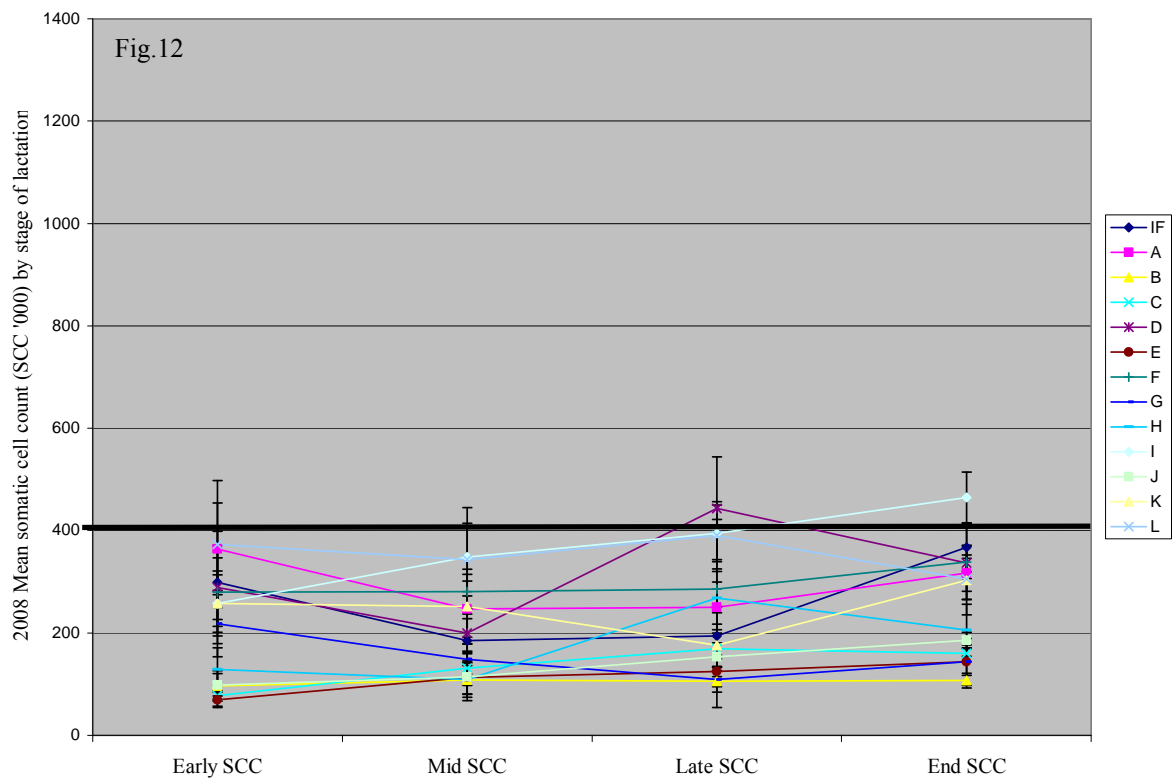
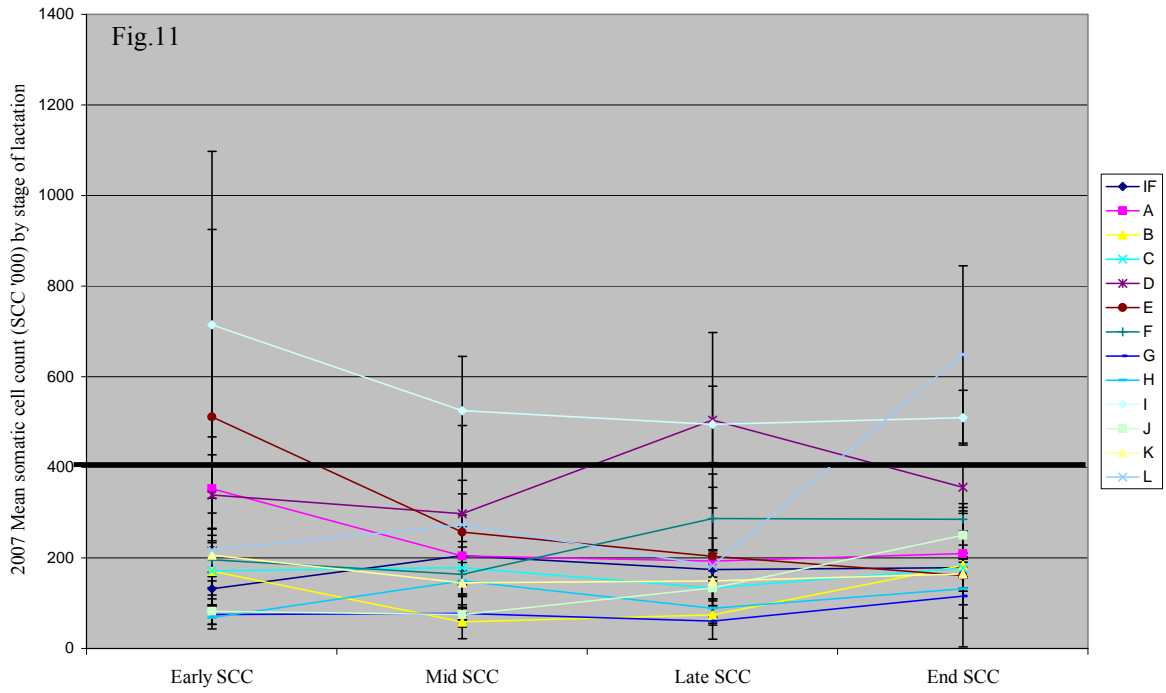


Figure 11 and 12: Mean±SEM somatic cell count (SCC, '000) by stage of lactation for the years 2007 (Fig.11) and 2008 (Fig.12) for cows on the index farm (IF) and 12 other dairy farms (A-L) within an 8km radius from the index farm. Stages of lactation are as follows: Early, days 1-60; Mid, days 60-120; Late, days 120-180 and End, >180 days. The solid black line represents the threshold value that SCC counts must be below.

Table 1: Median (min, max) and percentages for variables extracted from the 2005 Irish Cattle Breeding Federation (ICBF) milk recording records from the index farm (IF) and 12 other dairy farms (A-L) within an 8km radius from the index farm. Stages of lactation are as follows: Early stage (ErS), 1-60 DIM; mid stage (MS) 60-120 DIM; late stage (LS) 120-180 DIM and end stage (EnS) >180 DIM. Predicted 305 day lactation milk yields are taken directly from the ICBF records. Milk protein (MP), milk fat (MF). Differences in herd sizes, cow management, and genetics all contribute to the differences in the data. ND, no data.

Farm ID	Predicted 305 day milk yield (kgs)	Total no. of records per year	Calving date	Parity	ErS milk yield (kgs)	% ErS cows with MP <3.05%	% ErS cows with MF:MP >1.4	MS milk yield (kgs)	% MS cows with MF < 2.5%	% MS cows with %MP-%MF< 0.4	LS milk yield (kgs)	EnS milk yield (kgs)	ErS SCC ('000)	MS SCC ('000)	LS SCC ('000)	EnS SCC ('000)
IF	4303 (2870,6213)	235	15/04/05 (05/01/05,22/11/05)	2 (1,8)	18 (11,27)	41	3.03	15 (7,23)	25.93	53.7	12 (2,24)	9 (5,18)	69 (18,1703)	62 (0,1046)	114 (0,3221)	147 (14,3838)
A	6161 (4092,9805)	199	14/03/05 (20/01/05,08/12/05)	1 (1,5)	25 (12,43)	49	2.33	25 (18,46)	4.55	90.91	20 (11,36)	16 (9,29)	55 (9,3909)	49 (0,5614)	96 (2,748)	119 (0,858)
B	5356 (4142,6910)	33	28/03/05 (06/02/05,25/10/05)	2 (1,6)	21 (14,28)	22	22.2	21 (17,26)	0	100	16 (11,24)	14 (10,19)	86 (11,346)	52 (11,779)	39 (16,906)	64 (43,2014)
C	7299 (5386,9142)	131	18/02/05 (27/01/05,24/04/05)	2 (1,7)	30 (18,39)	30	20	29 (22,37)	6.1	90.9	25 (17,34)	20 (13,28)	44 (10,2071)	26 (9,322)	43 (13,833)	53 (6,1024)
D	6143 (4641,8140)	28	04/02/05 (01/02/05,03/11/05)	2 (1,6)	ND		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
E	4977 (4012,6210)	41	23/02/05 (24/01/05,04/10/05)	2 (1,3)	21 (15,26)	38	0	22 (15,27)	22.2	55.5	16 (12,22)	14 (10,20)	23 (7,160)	21 (8,46)	24 (14,34)	56 (14,359)
F	8317 (6899,11080)	217	15/02/05 (25/01/05,28/11/05)	2 (1,10)	36 (24,49)	48	62.5	33 (21,45)	0	100	27 (15,38)	21 (13,35)	100 (14,762)	129 (16,1842)	213 (31,1474)	206 (37,1643)
G	6235 (4280,8021)	190	10/02/05 (18/01/05,17/03/05)	2 (1,5)	27 (16,40)	29	0	26 (20,36)	22.9	52.1	23 (9,8,33)	16 (7,24)	71 (29,1338)	67 (16,2771)	76 (8,750)	113 (21,4589)
H	5861 (4723,7515)	30	24/02/05 (25/01/05,24/05/05)	1 (1,2)	25 (18,28)	13	37.5	23 (17,26)	0	85.7	17 (13,26)	15 (9,31)	78 (31,4978)	41 (18,291)	124 (66,1978)	106 (23,442)
I	5237 (3201,6989)	220	03/02/05 (01/01/05,01/07/05)	2 (1,11)	23 (14,30)	45	0	21 (11,31)	5.7	77.4	17 (9,26)	13 (6,18)	160 (9,1618)	80 (14,1303)	111 (14,4101)	176 (13,862)
J	6147 (4778,7408)	149	20/01/05 (02/01/05,21/04/05)	2 (1,4)	24 (18,34)	50	12.5	25 (21,34)	3.5	75.9	20 (14,33)	15 (9,24)	56 (11,4349)	68 (12,917)	106 (19,1132)	154 (19,1874)
K	5078 (3758,6146)	114	03/02/05 (03/01/05,21/05/05)	2 (1,3)	22 (15,27)	59	7.4	21 (11,28)	21.4	57.1	19 (12,25)	14 (9,20)	63 (9,7276)	80 (12,4451)	102 (5,3396)	76 (1,1159)
L	6235 (3768,8467)	129	07/02/05 (17/01/05,29/07/05)	3 (1,6)	24 (11,36)	41	6.9	27 (13,37)	18.5	66.7	25 (14,35)	14 (7,26)	36 (7,1151)	28 (8,807)	52 (11,768)	90 (28,549)

Table 2: Median (min, max) and percentages for variables extracted from the 2006 Irish Cattle Breeding Federation (ICBF) milk recording records from the index farm (IF) and 12 other dairy farms (A-L) within an 8km radius from the index farm. Stages of lactation are as follows: Early stage (ErS), 1-60 DIM; mid stage (MS) 60-120 DIM; late stage (LS) 120-180 DIM and end stage (EnS) >180 DIM. Predicted 305 day lactation milk yields are taken directly from the ICBF records. Milk protein (MP), milk fat (MF). Differences in herd sizes, cow management, and genetics all contribute to the differences in the data. ND, no data.

Farm ID	Predicted 305 day milk yield (kgs)	Total no. of records per year	Calving date	Parity	ErS milk yield (kgs)	% ErS cows with MP <3.05%	% ErS cows with MF:MP >1.4	MS milk yield (kgs)	% MS cows with MF < 2.5%	% MS cows with %MP-%MF< 0.4	LS milk yield (kgs)	EnS milk yield (kgs)	ErS SCC ('000)	MS SCC ('000)	LS SCC ('000)	EnS SCC ('000)
IF	4183 (3003,5489)	318	06/03/06 (20/04/05,15/11/06)	2 (1,9)	18 (10,28)	47	2	17 (8,24)	43	56	12 (6,21)	10 (3,22)	57 (10,1245)	43 (4,575)	60 (14,1973)	120 (15,6899)
A	7153 (4701,9929)	382	28/02/06 (02/02/05,28/11/06)	2 (1,6)	31 (13,49)	62	3	30 (20,44)	6	90	24 (16,36)	18 (5,30)	41 (5,6418)	39 (3,1891)	60 (17,1225)	121 (16,7639)
B	6036 (4381,7555)	70	18/01/06 (16/08/05,14/05/06)	3 (1,6)	26 (14,32)	29	0	22 (16,30)	0	94	21 (15,28)	16 (8,26)	52 (15,1378)	65 (7,209)	46 (17,239)	76 (12,514)
C	7519 (5537,9113)	184	09/02/06 (27/01/06,02/04/06)	3 (1,8)	30 (18,40)	7	17	30 (22,37)	6	77	26 (18,32)	20 (12,30)	51 (11,1556)	49 (10,656)	101 (16,948)	92 (20,826)
D	6160 (5014,8522)	138	02/01/06 (16/04/05,10/11/06)	2 (1,7)	22 (14,37)	25	0	22 (16,35)	16	72	21 (17,32)	17 (9,27)	51 (10,3451)	69 (19,312)	92 (15,1299)	172 (20,6830)
E	5139 (3619,7988)	121	03/03/06 (04/10/05,27/11/06)	1 (1,5)	22 (13,39)	15	27	18 (13,35)	12	80	19 (11,32)	14 (7,23)	38 (10,4664)	50 (2,388)	68 (2,2201)	73 (2,365)
F	8480 (6450,11411)	304	22/02/06 (15/03/05,20/11/06)	3 (1,11)	35 (18,51)	36	46	33 (24,47)	6	94	28 (20,42)	22 (7,40)	84 (11,1660)	115 (25,3170)	151 (13,4610)	235 (3,5740)
G	6183 (3883,8781)	211	16/02/06 (31/01/06,26/07/06)	2 (1,6)	24 (12,41)	23	0	26 (13,36)	16	61	22 (14,30)	16 (9,25)	68 (9,1723)	89 (12,1294)	75 (17,1150)	143 (33,1785)
H	5849 (4155,6978)	40	09/04/06 (25/01/05,29/05/06)	1 (1,3)	26 (22,32)		0	25 (8,31)	20	50	17 (10,22)	14 (9,29)	68 (10,313)	45 (12,407)	94 (43,391)	37 (15,222)
I	5606 (3510,8776)	186	25/01/06 (01/07/05,30/05/06)	3 (1,10)	28 (14,36)	44	11	25 (15,30)	0	100	20 (11,39)	14 (7,26)	283 (7,1376)	163 (2,1353)	247 (2,1575)	212 (3,5011)
J	6188 (3875,7988)	307	04/02/06 (05/01/06,17/04/06)	2 (1,5)	23 (16,32)	42	13	24 (12,35)	27	57	24 (14,31)	16 (9,25)	41 (11,3392)	45 (5,3091)	93 (2,1720)	137 (26,849)
K	5089 (3530,6713)	218	03/02/06 (02/01/06,02/04/06)	2 (1,4)	17 (12,28)	83	2	21 (14,27)	19	62	20 (13,29)	14 (7,24)	49 (11,612)	49 (8,477)	51 (10,291)	51 (3,977)
L	5674 (3616,8478)	176	17/02/06 (29/07/05,14/09/06)	3 (1,7)	22 (10,39)	84	4	26 (15,40)	5	75	22 (14,29)	18 (11,31)	36 (7,2407)	40 (8,1138)	60 (9,5460)	74 (10,1152)

Table 3: Median (min, max) and percentages for variables extracted from the 2007 Irish Cattle Breeding Federation (ICBF) milk recording records from the index farm (IF) and 12 other dairy farms (A-L) within an 8km radius from the index farm. Stages of lactation are as follows: Early stage (ErS), 1-60 DIM; mid stage (MS) 60-120 DIM; late stage (LS) 120-180 DIM and end stage (EnS) >180 DIM. Predicted 305 day lactation milk yields are taken directly from the ICBF records. Milk protein (MP), milk fat (MF). Differences in herd sizes, cow management, and genetics all contribute to the differences in the data. ND, no data.

Farm ID	Predicted 305 day milk yield (kgs)	Total no. of records per year	Calving date	Parity	ErS milk yield (kgs)	% ErS cows with MP <3.05%	% ErS cows with MF:MP >1.4	MS milk yield (kgs)	% MS cows with MF < 2.5%	% MS cows with %MP-%MF< 0.4	LS milk yield (kgs)	EnS milk yield (kgs)	ErS SCC ('000)	MS SCC ('000)	LS SCC ('000)	EnS SCC ('000)
IF	3989 (2324,5817)	355	06/02/07 (22/11/05,02/10/07)	3 (1,10)	17 (5,31)	35	1	16 (8,26)	44	43	12 (3,19)	10 (3,22)	41 (2,2204)	38 (3,6844)	93 (3,2408)	103 (2,1427)
A	7639 (94421,10959)	570	05/12/06 (15/12/05,28/11/07)	2 (1,7)	29 (15,46)	44	3	28 (16,51)	4	97	23 (11,40)	19 (4,36)	60 (4,7410)	59 (2,4251)	69 (10,3597)	100 (5,2411)
B	5554 (3556,7538)	107	11/03/07 (30/10/06,05/06/07)	3 (1,7)	26 (11,34)	21	11	23 (16,34)	0	100	19 (11,26)	15 (6,23)	61 (10,1760)	35 (5,266)	53 (93,479)	167 (4,709)
C	7792 (5171,9481)	235	14/02/07 (21/01/07,18/04/07)	3 (1,9)	33 (20,43)	0	23	32 (20,42)	5	66	27 (19,36)	17 (9,30)	47 (6,2144)	42 (12,2682)	55 (16,701)	115 (5,954)
D	6625 (4057,8251)	240	10/01/07 (15/12/05,02/11/07)	1 (1,8)	26 (17,41)	23	2	25 (15,41)	20	64	22 (15,30)	18 (10,38)	78 (10,2792)	97 (9,2623)	100 (8,7607)	138 (9,3370)
E	5436 (3971,7359)	165	08/02/07 (16/10/05,10/09/07)	2 (1,5)	23 (16,34)	29	11	21 (14,31)	3	100	19 (12,31)	18 (8,33)	161 (7,6839)	62 (7,2502)	55 (1,1120)	63 (2,1141)
F	8677 (6399,12256)	499	13/02/07 (27/01/06,14/12/07)	3 (1,7)	37 (16,56)	30	60	34 (19,48)	3	96	29 (14,47)	21 (11,41)	65 (7,1505)	83 (17,1456)	125 (5,3735)	185 (20,3204)
G	5827 (3741,8136)	243	10/02/07 (22/01/07,12/06/07)	2 (1,7)	24 (16,34)	24	2	24 (16,36)	16	67	21 (14,31)	16 (7,29)	41 (2,863)	39 (3,725)	42 (7,543)	90 (17,1328)
H	5635 (3813,7207)	66	12/02/07 (09/04/06,20/04/07)	2 (1,4)	24 (11,37)	38	31	23 (7,31)	0	81	20 (14,29)	16 (10,31)	27 (3,312)	75 (18,874)	71 (12,230)	55 (11,1200)
I	5379 (3177,7946)	242	05/02/07 (05/03/06,27/06/07)	2 (1,11)	28 (16,42)	15	15	22 (10,35)	0	97	17 (6,29)	13 (6,29)	119 (17,9999)	192 (10,5587)	282 (14,4524)	338 (1,2369)
J	7066 (4725,9411)	339	09/02/07 (15/01/07,21/05/07)	3 (1,6)	33 (17,44)	13	0	32 (18,43)	37	45	25 (18,38)	17 (5,29)	22 (7,852)	40 (6,615)	69 (6,2727)	137 (10,4875)
K	4604 (2690,7618)	410	07/02/07 (01/01/07,01/06/07)	1 (1,5)	18 (7,31)	56	3	18 (10,32)	11	69	17 (11,31)	15 (9,27)	55 (3,4236)	40 (9,2082)	51 (6,4063)	71 (20,3853)
L	5903 (3972,7717)355	221	24/02/07 (03/02/07,06/08/07)	3 (1,8)	24 (15,31)	36	4	26 (16,36)	23	53	22 (13,32)	16 (9,24)	36 (5,3822)	113 (13,3212)	87 (12,1669)	203 (35,7816)

Table 4: Median (min, max) and percentages for variables extracted from the 2008 Irish Cattle Breeding Federation (ICBF) milk recording records from the index farm (IF) and 12 other dairy farms (A-L) within an 8km radius from the index farm. Stages of lactation are as follows: Early stage (ErS), 1-60 DIM; mid stage (MS) 60-120 DIM; late stage (LS) 120-180 DIM and end stage (EnS) >180 DIM. Predicted 305 day lactation milk yields are taken directly from the ICBF records. Milk protein (MP), milk fat (MF). Differences in herd sizes, cow management, and genetics all contribute to the differences in the data. ND, no data.

Farm ID	Predicted 305 day milk yield (kgs)	Total no. of records per year	Calving date	Parity	ErS milk yield (kgs)	% ErS cows with MP <3.05%	% ErS cows with MF:MP >1.4	MS milk yield (kgs)	% MS cows with MF < 2.5%	% MS cows with %MP-%MF< 0.4	LS milk yield (kgs)	EnS milk yield (kgs)	ErS SCC ('000)	MS SCC ('000)	LS SCC ('000)	EnS SCC ('000)
IF	4595 (2236,6657)	402	06/02/08 (10/10/06,10/07/08)	4 (1,11)	21 (13,33)	56	0	22 (4,36)	67	27	17 (7,30)	5 (3,27)	101 (2,4183)	66 (3,3292)	80 (3,3149)	176 (2,4465)
A	7475 (4879,10853)	674	23/12/07 (20/11/06,28/10/08)	2 (1,7)	30 (14,46)	35	1	30 (16,46)	18	77	24 (13,40)	18 (6,41)	56 (6,4380)	70 (10,3751)	94 (6,3069)	132 (5,7930)
B	6063 (4467,8532)	132	23/02/08 (22/11/2007,18/08/07)	3 (1,8)	30 (19,41)	11	6	27 (14,41)	3	97	21 (10,35)	13 (7,29)	47 (3,439)	40 (1,795)	42 (1,1741)	75 (1,438)
C	7346 (4585,9032)	325	12/02/08 (22/01/08,23/04/08)	3 (1,10)	31 (19,43)	10	8	30 (20,39)	1	82	26 (12,37)	19 (9,28)	21 (2,1196)	38 (12,2427)	47 (14,1825)	110 (13,761)
D	7219 (4586,8868)	309	10/01/08 (16/09/06,13/10/08)	2 (1,8)	29 (15,49)	19	7	27 (13,35)	14	64	24 (13,32)	18 (8,33)	82 (10,5064)	89 (13,1495)	119 (2,3234)	135 (16,9999)
E	5730 (1918,11145)	221	08/02/08 (15/04/07,25/06/08)	2 (1,6)	25 (14,76)	15	15	21 (2,52)	0	93	18 (4,43)	17 (9,29)	28 (2,476)	37 (2,1473)	37 (2,1056)	53 (2,3076)
F	8377 (5441,11155)	426	08/02/08 (14/12/06,13/10/08)	3 (1,8)	34 (19,48)	49	68	31 (15,44)	1	97	26 (10,43)	21 (9,40)	81 (2,3961)	149 (14,1908)	178 (25,2293)	223 (8,2925)
G	6242 (4876,8179)	378	21/02/08 (30/01/08,29/05/08)	2 (1,8)	26 (17,38)	20	2	27 (17,38)	10	64	22 (14,30)	18 (12,26)	74 (6,5660)	79 (5,2171)	50 (2,2094)	99 (2,2645)
H	5641 (3867,8452)	85	05/02/08 (12/04/06,20/06/08)	2 (1,4)	19 (13,28)	15	15	18 (13,35)	17	78	20 (13,24)	17 (8,36)	54 (13,472)	47 (94,592)	85 (26,2370)	77 (6,1572)
I	5237 (2947,7429)	349	09/02/08 (02/01/07,10/05/08)	3 (1,11)	25 (12,38)	9	9	22 (10,33)	7	98	18 (9,31)	13 (4,25)	147 (3,1322)	172 (1,8296)	217 (1,2996)	299 (1,3580)
J	6567 (4271,8693)	413	12/02/08 (12/01/08,12/05/08)	3 (1,7)	29 (16,46)	19	1	28 (16,39)	16	65	22 (13,37)	15 (9,26)	36 (6,1016)	27 (3,4044)	80 (3,1914)	130 (10,1613)
K	5946 (4194,8736)	668	03/03/08 (02/01/08,25/06/08)	2 (1,6)	25 (13,40)	27	1	26 (17,37)	36	28	23 (14,31)	16 (11,28)	62 (10,7571)	44 (10,8977)	52 (2,4731)	84 (2,7735)
L	5864 (4369,8626)	268	10/02/08 (29/01/08,20/08/08)	3 (1,9)	22 (16,37)	63	0	26 (16,41)	36	19	23 (12,40)	17 (11,25)	96 (19,6760)	183 (17,4210)	218 (24,3536)	258 (43,1780)