IRISH CATTLE BREEDING FEDERATION

New beef performance evaluation

Beef Industry Meeting 01/09/09
Abbeyleix

NATIONAL DEVELOPMENT PLAN

Overview

- **Now 1.38 million performance records in evaluations.**
- **New data since May run**
  - **108k carcass records.**
  - **101k cull cow records**
  - **~30k weaning & liveweight records.**
  - **5k linear score records**

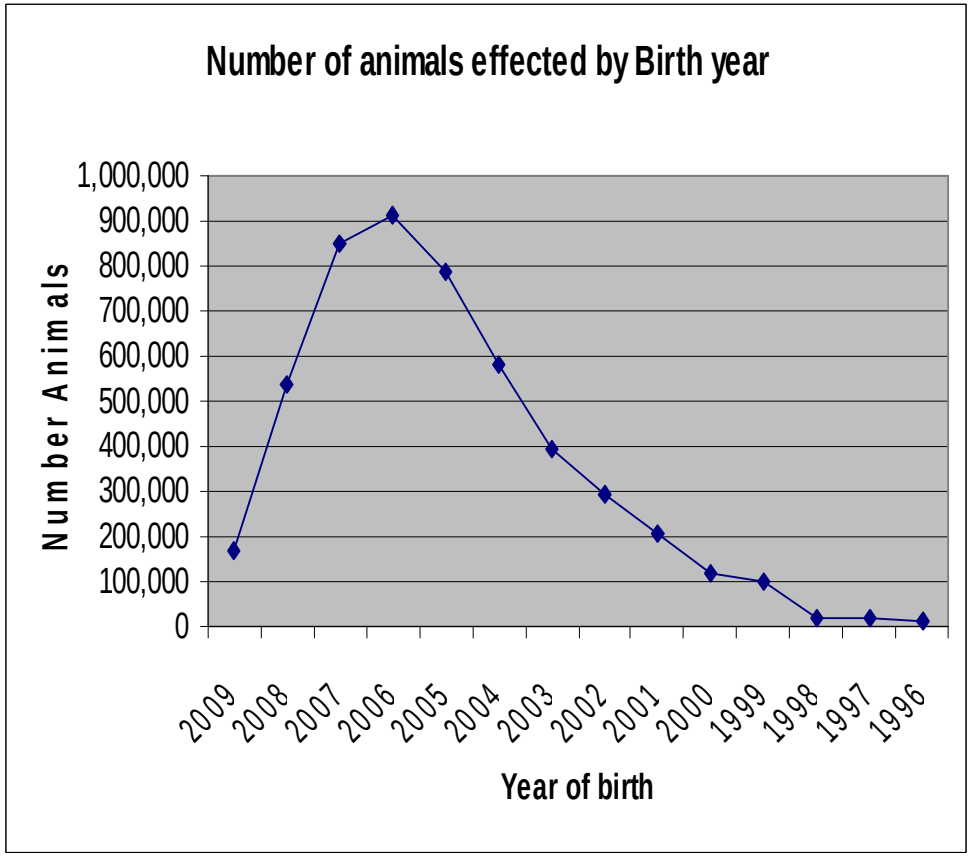
- *CMMS update of historical records*
- *Use of farmer recorded calf quality.*

(i) CMMS Changes

- **When animals move to/from herds, that data is received by ICBF from dept**
- **When animals move to/from non-ICBF herds, a generic herd (referred to as IEIRELAND) was used to hold all those movement. This was then one huge "herd"**
- **The change was that these movements were broken into the individual herds, via an anonymous "herd id" assigned to the herd by dept.**
- **ICBF have no visibility on what the actual herd is, the "herd id" used is completely anonymous.**

Details

- **20 million animals in database.**
- **5,101,346 animals affected**
- **7,178,848 movements modified**
- **Implemented in July 2009**

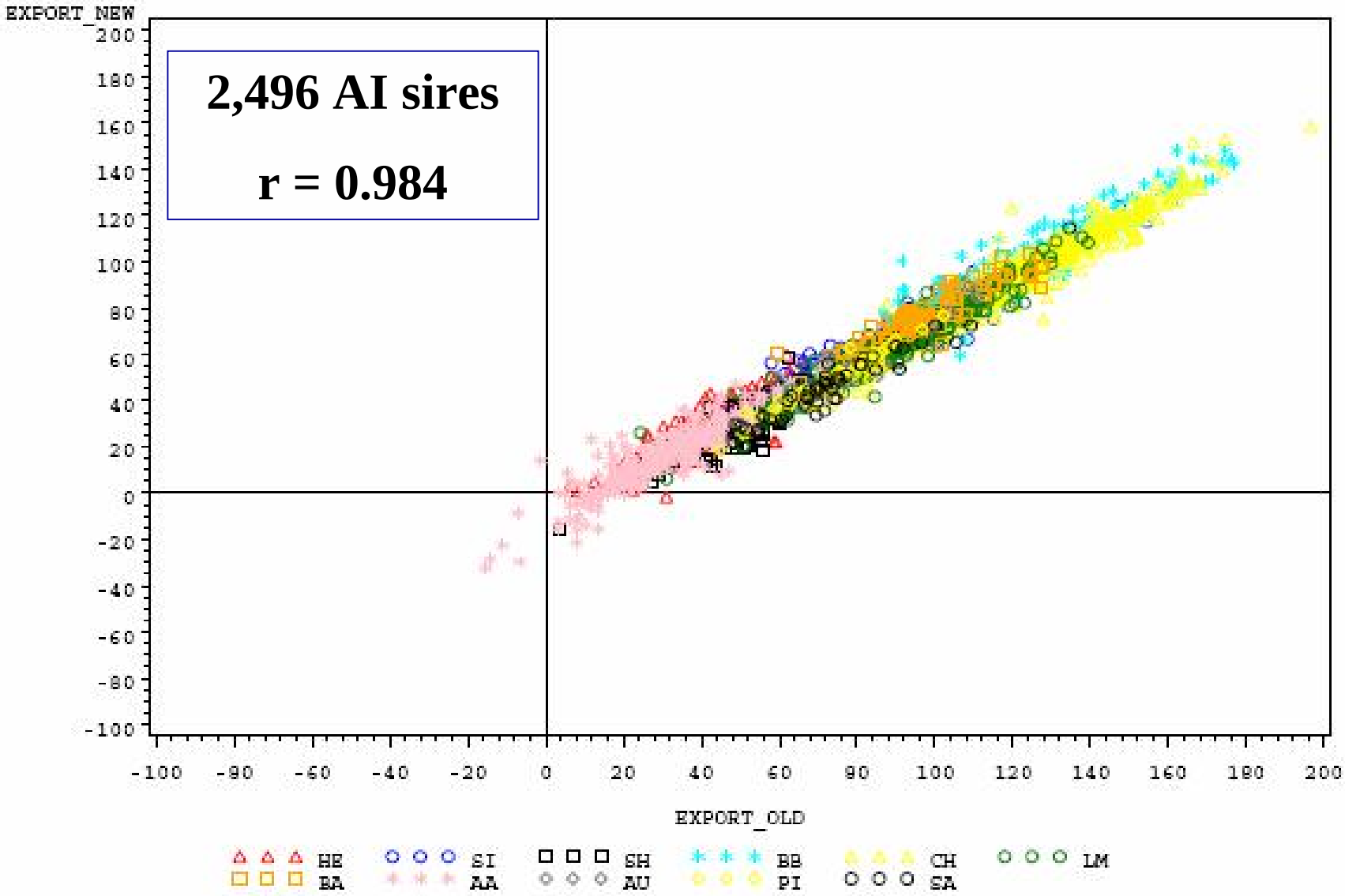


Effect on evaluations?

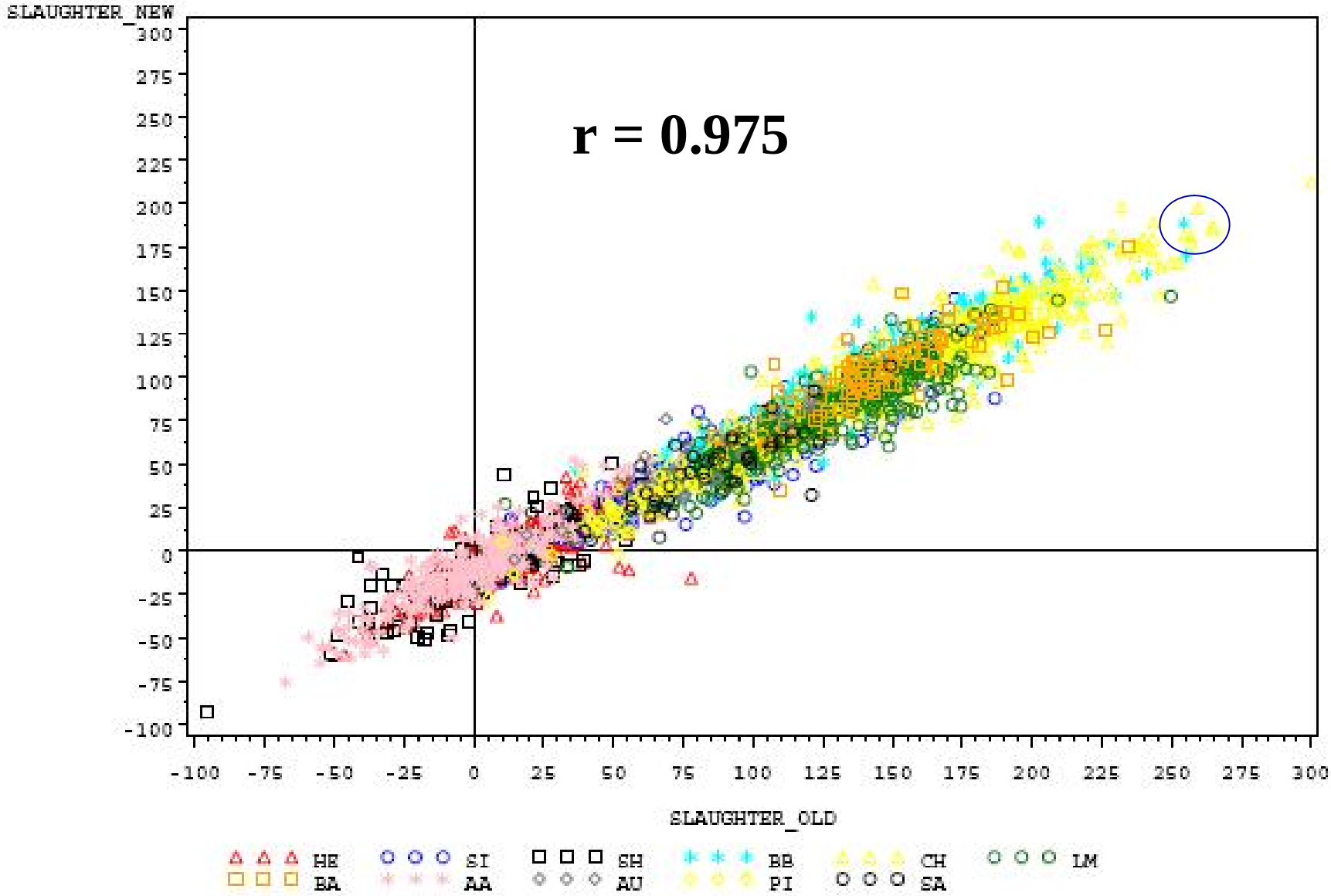
- Calving evaluations – no effect
- 150,000 historic records (pre-2009) in May beef evaluation got CMMS herd update

animal	Carcass weight	herd reared	Mar-09 fattened	Jul-09 fattened
1	330	IE1112222	IE1234567	IE1234567
2	340	IE1112222	IE1234567	IE1234567
3	310	IE1112222	IE1234567	IE1234567
4	290	IE1222333	IE1234567	IE1234567
5	340	IE1222333	IE1234567	IE1234567
6	325	IE4444444	IEIRELAND	IE555555
7	315	IE4444444	IEIRELAND	IE555555
8	335	IE4444444	IEIRELAND	IE555555
9	295	IE4444444	IEIRELAND	IE555555
10	301	IE4444444	IEIRELAND	IE555555
11	340	IE4444444	IEIRELAND	IE666666
12	345	IE4444444	IEIRELAND	IE666666

AIsires Export Index old pd v new pd



Alsires Carcass Index old pd v new pd



Summary

- CMMS updates allow better accounting for herd-year-season CG effects in subset of evaluation records affected
- Correlations high with previous evaluation
- Some reduction in scale of most proofs.
  - "Mopping up" variance which was previously being assigned as sire differences.
  - Now correctly identified as herd effects.
- Positive development for evaluations.

(ii) Suckler scheme calf quality

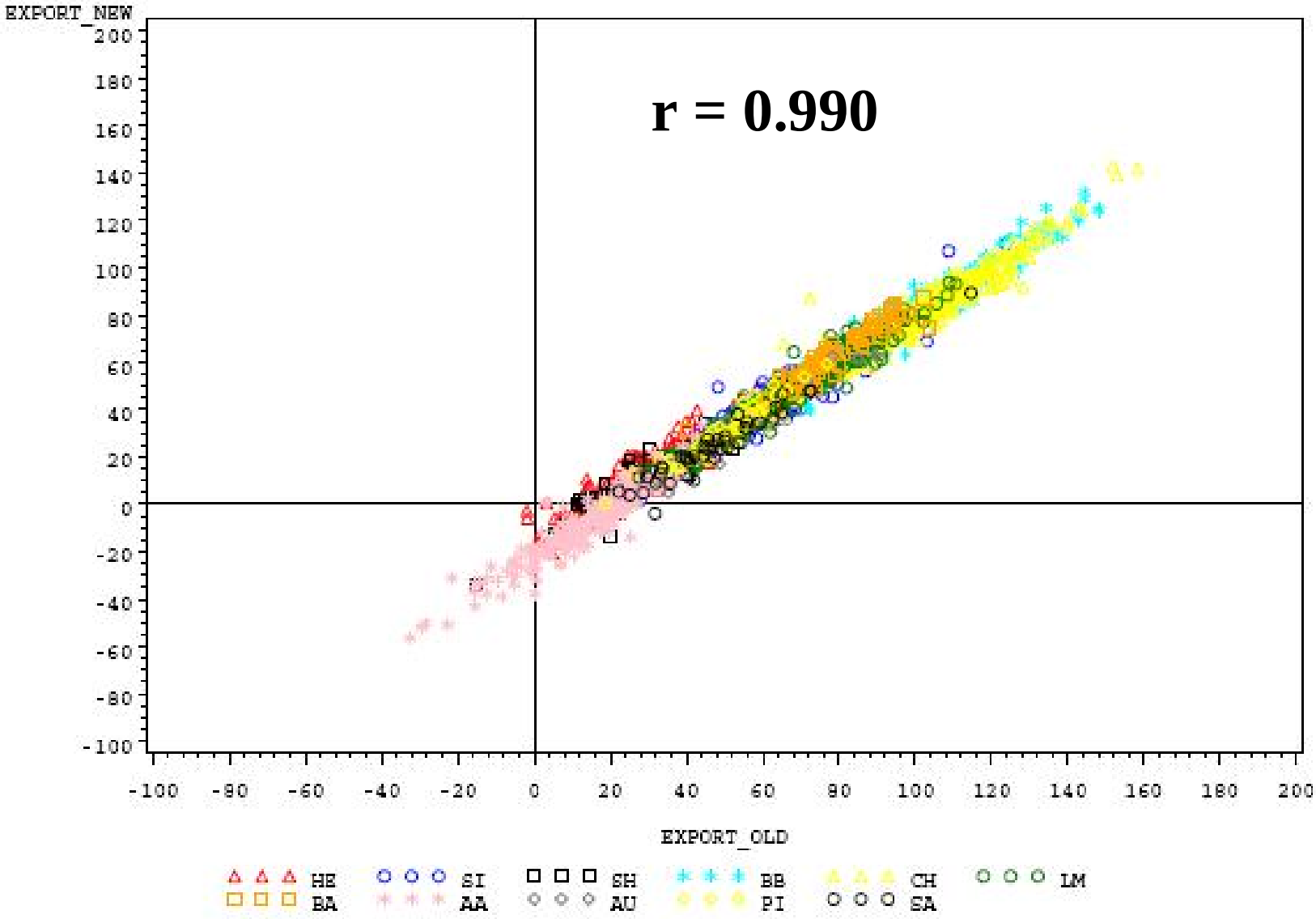
- **Is it a useful trait to predict beef performance?**
- **733,479 records available**
- **Genetic parameter estimates with existing traits in beef performance evaluation**

Suckler scheme calf quality

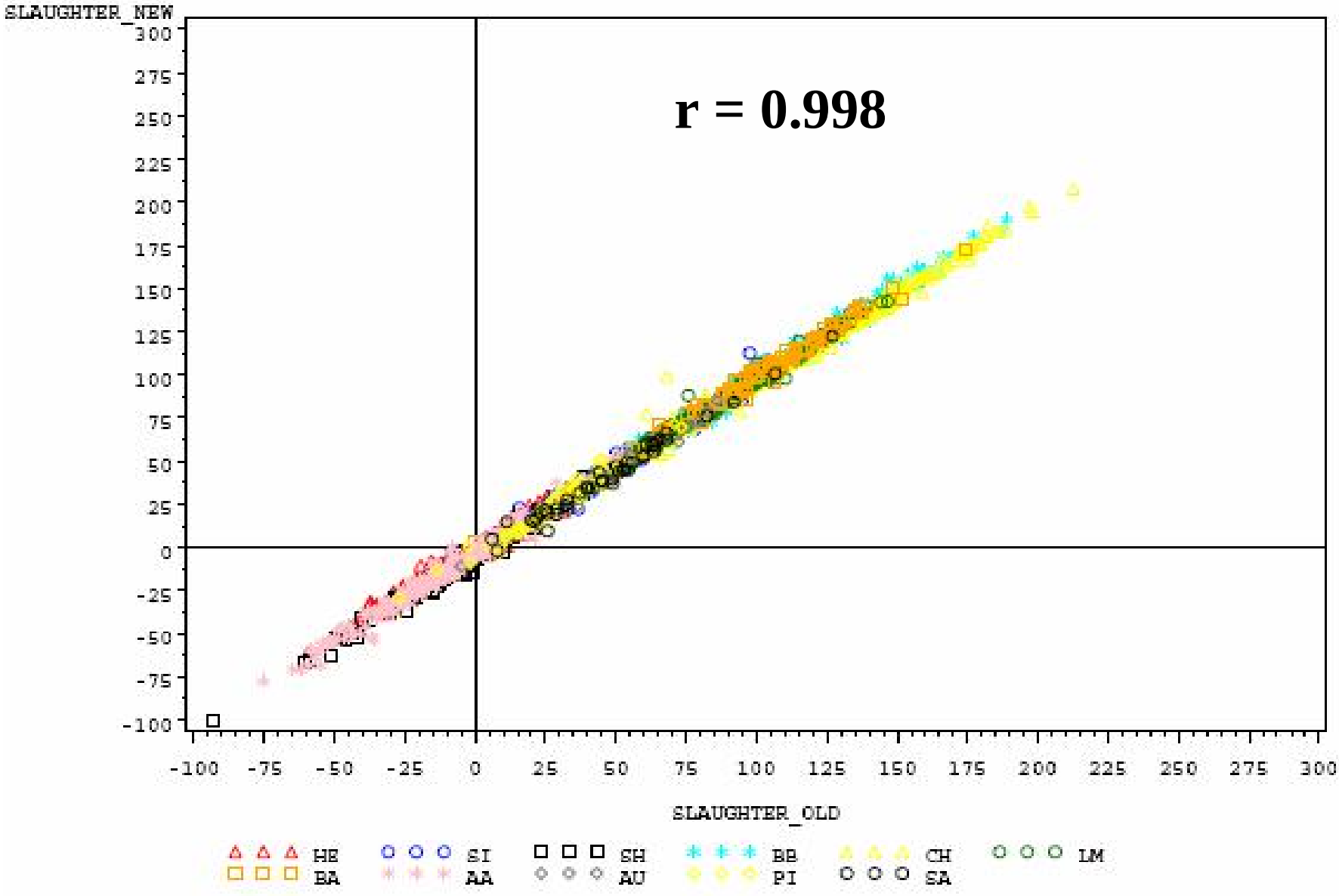
Trait	heritability	genetic corr	phen corr
AWRBS calf quality	0.36		
Carcass weight	0.58	0.54	0.28
Carcass conformation	0.49	0.49	0.15
Carcass fat	0.33	-0.49	-0.13
Cull Cow Carcass weight	0.52	0.35	0.13
weaning weight	0.44	0.41	0.35
liveweight	0.40	0.34	0.32
feed intake	0.34	-0.07	0.19
development hind quarter	0.32	0.56	0.41
height at withers	0.35	0.19	0.25
length of back	0.33	0.25	0.22
length of pelvis	0.25	0.13	0.21
loin development	0.23	0.62	0.40
width at withers	0.28	0.56	0.38
width behind withers	0.26	0.59	0.38
mart price per kg	0.27	0.73	0.24

- **171,314 in evaluation after edits**

Alsires Export Index old pd v new pd



Alsires Carcass Index old pd v new pd



Summary

- Addition of calf quality as a predictor trait:
- Minimal influence on ranking of AI sires with info already
- Will have positive effect on rankings of young AI bulls, stock-bulls & cow proofs where farmer records the information.
- Major increase in quantity & quality of data for genetic evaluations.
- Proofs available on website tomorrow.

IRISH CATTLE BREEDING FEDERATION

Development of an across breed linear type evaluation

Beef Industry Meeting 01/09/09
Abbeyleix

NATIONAL DEVELOPMENT PLAN

Current situation

- Within breed blups for CH, LM, SI
- Pedigree animals only
- Certain known limitations
  - Small hys sizes affecting proofs
  - Rough adjustment for age
  - Unable to use crossbreds scored in same visit
  - Composite index breeding values only
  - Genetic parameters >7 years old

New evaluation

- **Need to estimate genetic parameters: commenced June 09**
- **13 linear traits + predictors?**

	wwt	lwt	devhq	hw	lenb	lenp	loind	watw	wbehw	thigh	flegfv	hlegsv	wahps	hlegrv	loco	calf quality
wwt	687.332	647.549	5.804	7.384	6.688	5.567	7.398	8.292	7.311	6.801	1.098	1.031	5.598	1.033	0.553	4.46
lwt	647.549	779.017	7.512	7.413	6.377	6.152	7.961	9.276	8.120	10.092	1.841	0.792	5.794	0.455	0.638	4.39
devhq	5.804	7.512	0.501	0.061	0.079	0.087	0.430	0.441	0.417	0.356	0.041	0.057	0.162	0.090	0.020	0.15
hw	7.384	7.413	0.061	0.270	0.244	0.204	0.133	0.154	0.140	0.128	0.037	0.029	0.150	-0.011	0.018	0.04
lenb	6.688	6.377	0.079	0.244	0.222	0.199	0.136	0.152	0.140	0.132	0.032	0.018	0.143	-0.011	0.016	0.05
lenp	5.567	6.152	0.087	0.204	0.199	0.169	0.122	0.139	0.134	0.109	0.027	0.024	0.127	-0.020	0.006	0.02
loind	7.398	7.961	0.430	0.133	0.136	0.122	0.433	0.441	0.415	0.333	0.050	0.048	0.196	0.064	0.035	0.14
watw	8.292	9.276	0.441	0.154	0.152	0.139	0.441	0.546	0.468	0.374	0.056	0.055	0.246	0.059	0.040	0.15
wbehw	7.311	8.120	0.417	0.140	0.140	0.134	0.415	0.468	0.435	0.743	0.051	0.053	0.203	0.074	0.039	0.14
thigh	6.801	10.092	0.356	0.128	0.132	0.109	0.333	0.374	0.743	0.327	0.029	0.040	0.178	0.057	0.020	0.2032
flegfv	1.098	1.841	0.041	0.037	0.032	0.027	0.050	0.056	0.051	0.029	0.041	0.020	0.036	0.011	0.013	-0.006
hlegsv	1.031	0.792	0.057	0.029	0.018	0.024	0.048	0.055	0.053	0.040	0.020	0.048	0.030	0.013	-0.022	0.0049
wahps	5.598	5.794	0.162	0.150	0.143	0.127	0.196	0.246	0.203	0.178	0.036	0.030	0.155	0.017	0.022	0.0887
hlegrv	1.033	0.455	0.090	-0.011	-0.011	-0.020	0.064	0.059	0.074	0.057	0.011	0.013	0.017	0.064	-0.003	0.0346
loco	0.553	0.638	0.020	0.018	0.016	0.006	0.035	0.040	0.039	0.020	0.013	-0.022	0.022	-0.003	0.047	0.0126
calfquality	4.46	4.39	0.15	0.04	0.05	0.02	0.14	0.15	0.14	0.203	-0.0062	0.0049	0.0887	0.0346	0.0126	0.16

h^2 Muscle & Skeletal traits 0.29-0.37, 4 Functional traits 0.07-0.09

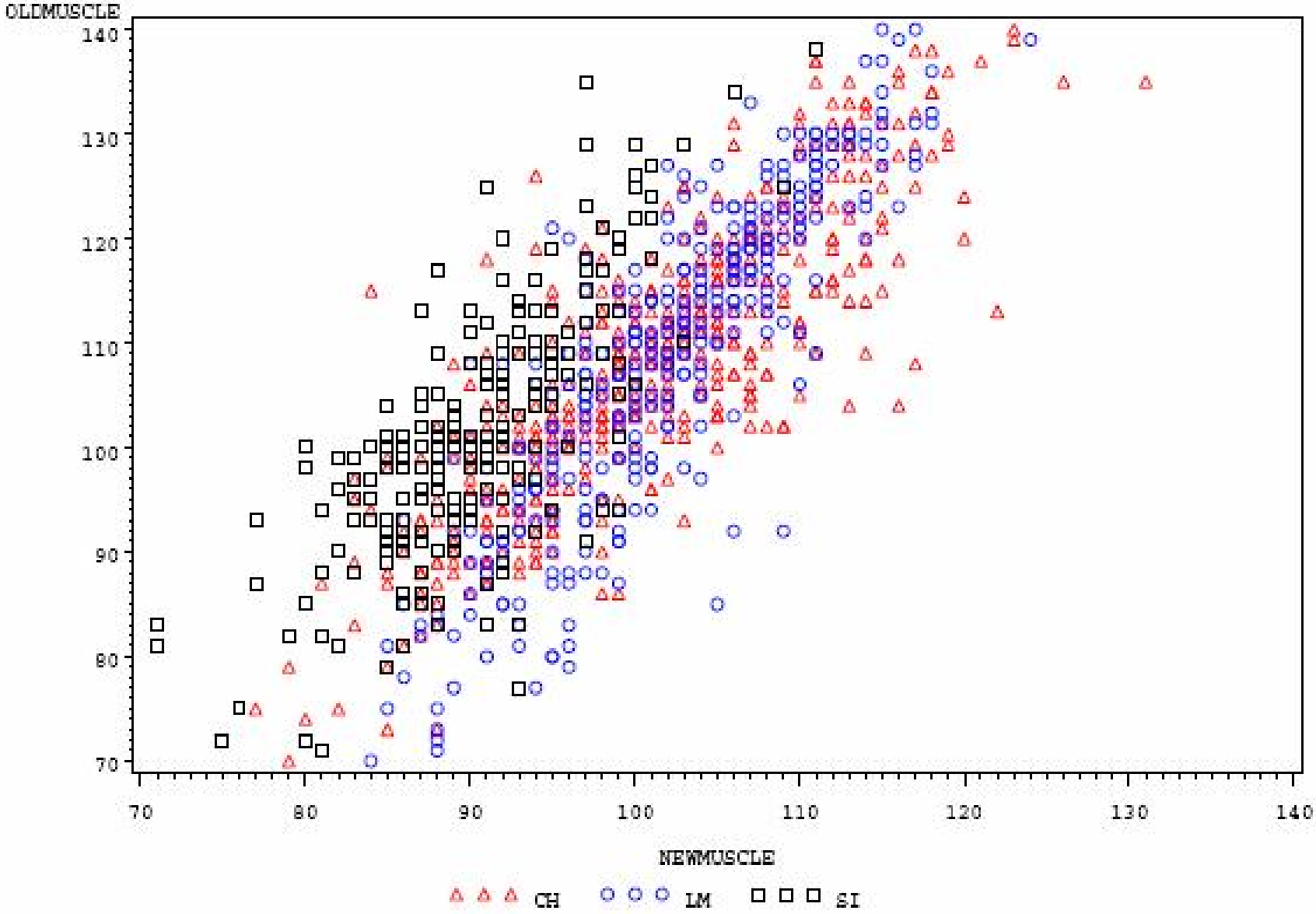
Breeding value estimation

16 trait, 13 linear, 3 predictor traits

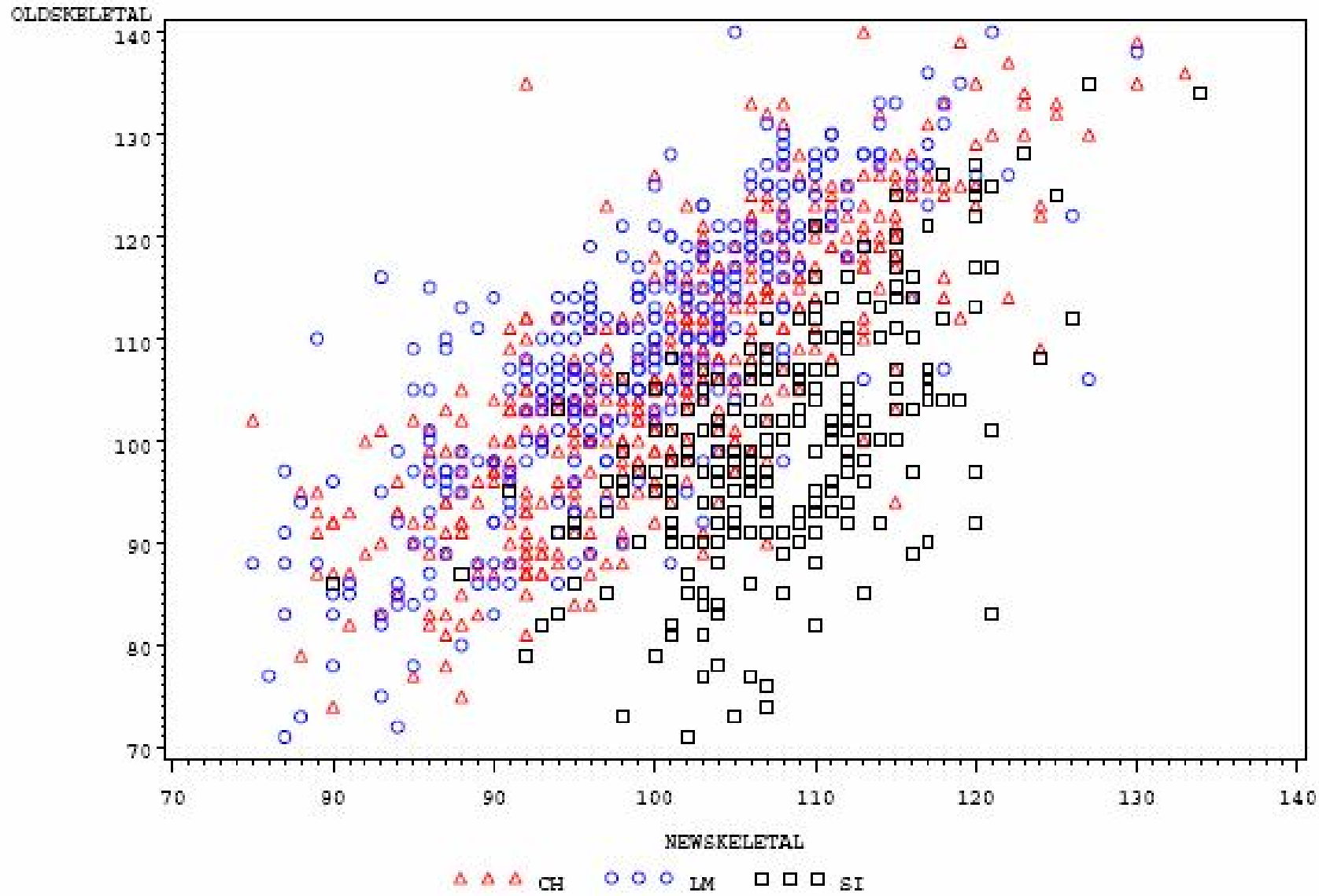
- **All previous linear scores used if they met the criteria of 5 animals per hys contemporary group**

Type of record	All animals	% crossbred
linear score	112,845	15%
weaning weight	134,832	62%
liveweight	124,552	54%
score calf quality	171,314	88%

ALL Alsires CURRENT WITHIN BREED MUSCLE BLUP v NEW



ALL Alsires CURRENT WITHIN BREED SKELETAL BLUP v NEW



Results

- **AI sires >80% reliability currently**
- **167 Limousine sires 0.91 for MUSCLE and 0.85 for SKELETAL**
- **123 Charolais sires 0.93 for MUSCLE and 0.88 for SKELETAL**
- **38 Simmental sires 0.88 for MUSCLE and 0.83 for SKELETAL**

Where to from here?

- **File of proofs to be sent out this evening**
- **We require feedback.**
- **Decisions to be made if proofs are acceptable**
  - **Initial base: all animals scored from 2003-07?**
  - **Only animals scored in 150-300 day range and in a contemporary group of 5 in evaluation.**
    - **Some loss of “old” data (~35%)**
  - **Individual traits – presented as PTA’s**
  - **Composites - mean of 100 and SD of 10.**
  - **ICBF website designed for all linear traits**
  - **Update sales catalogues – composites only.**

Conformation Traits

Muscle	PTA		Percentile	
Width at Withers	0.277	Narrow		Wide
Width behind Withers	0.193	Narrow		Wide
Loin Development	0.235	Low		High
Development Hind Quarter	0.452	Narrow		Wide
Thigh Width	0.360	Narrow		Wide
Skeletal	**PTA**		**Percentile**	
Height Withers	-0.276	Small		Tall
Length of Back	0.084	Short		Long
Length of Pelvis	0.090	Short		Long
Width at Hips	0.048	Narrow		Wide
Functionality	**PTA**		**Percentile**	
Fore Leg - Front View	0.182	Turned Out		Turned In
Hind Leg - Side View	0.066	Straight		Sickle
Hind Leg - Rear View	0.055	Hock In		Hocks Out
Locomotion	-0.053	Poor		Good
Docility	**PTA**		**Percentile**	
Docility	0.600	Poor		Good

Summary

- Benefits of switch to new evaluation
- Multi breed evaluation
  - All breeds can receive proofs if scoring.
  - Crossbreds will contribute information
  - Use of predictor traits
  - Information on individual linears.
  - Better accounting for age effect
  - Better accounting for contemporary group through stricter entry criteria.
- Propose to have new evaluations in place for Autumn sales.

IRISH CATTLE BREEDING FEDERATION

Update on docility evaluation

Beef Industry Meeting 01/09/09
Abbeyleix

NATIONAL DEVELOPMENT PLAN

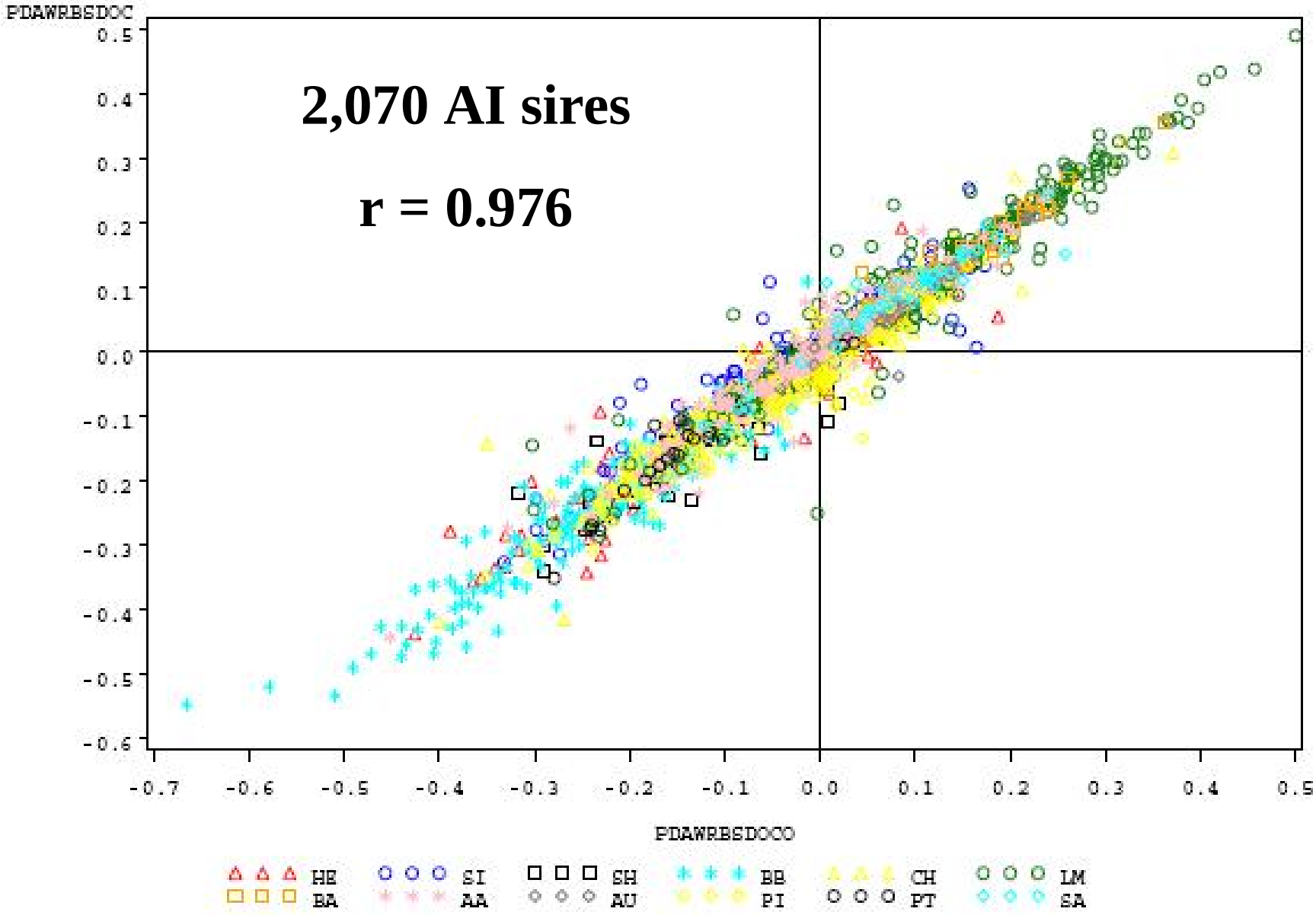
Background

- New joint evaluation presented at last meeting
  - Using 2008 animal welfare data
  - Using Linear scoring data
  - Using new genetic parameters estimated
- Proofs released based on animals welfare pd on Active bull list Spring 2009.
  - Positive feedback from farmers & industry.

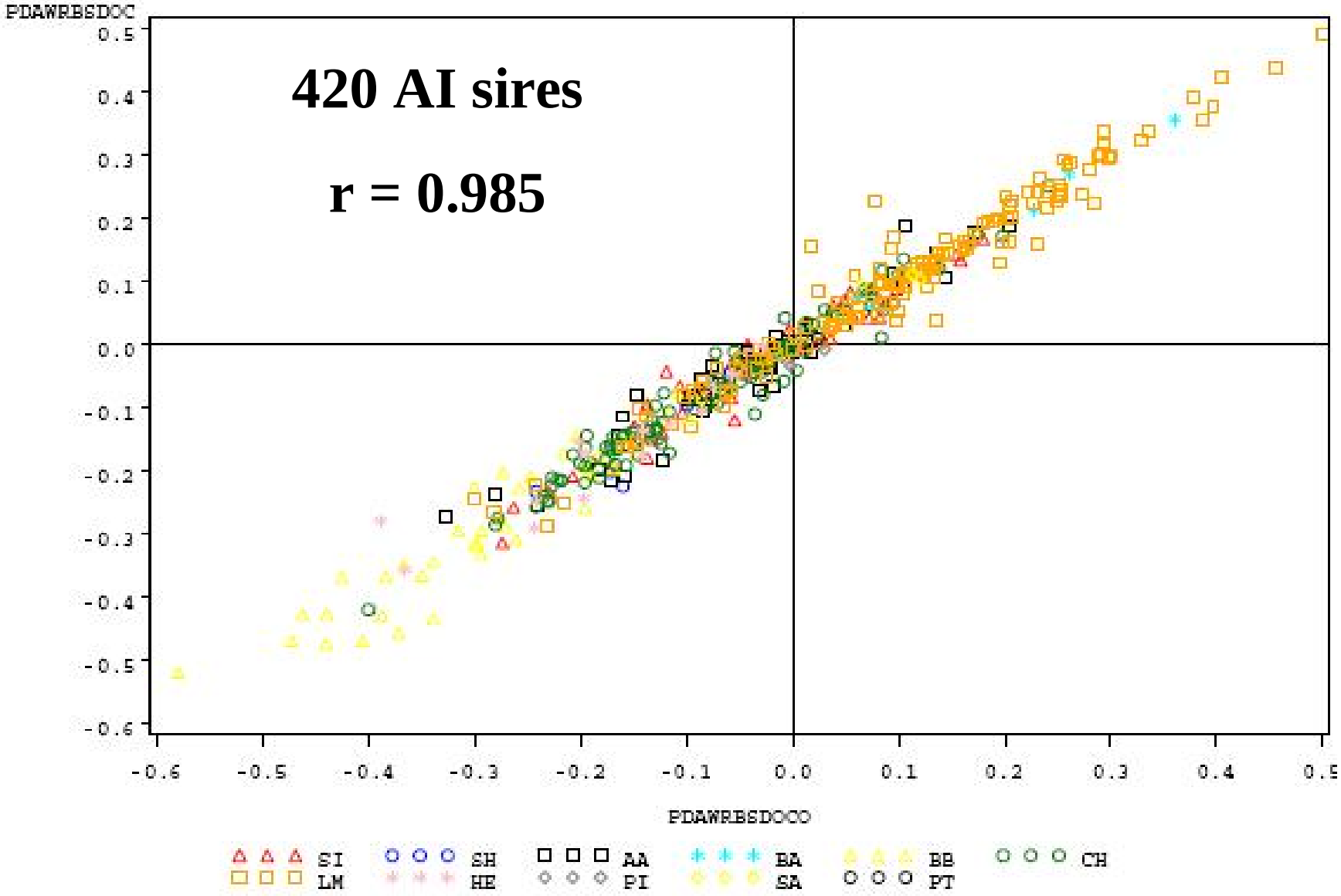
Additional records since Mar09

- **AWRBS: 119,362 increase to 121,589**
- **LINEAR: 78,363 increase to 82,662**

AI sires for pd AWRBS Aug09 v Mar09



AI sires for pdi AWRBS Aug09 v Mar09 70% rel in Mar



Summary

- New data only.
- Evaluation is stable based on correlations for AI sires with high reliability.
- Evaluations are also available for young bulls & cows.
- Increasing farmer & industry demand for these proofs.
  - Docility is a major & growing issue for all breeds.
- Propose to make this data available for Autumn sales.
  - Additional trait on SBV €uro-star template.
  - Some further work still required on economic value.