



IRISH CATTLE BREEDING FEDERATION

ICBF Dairy Industry Meeting

9th December 2009.

Agenda.

- Economic Values - Laurence
- Female Fertility - Ross
- Calving Evaluations – Francis
- Genomics – Francis.
- Implementation – Andrew
- Ongoing research – Andrew.
- Gene Ireland – Andrew/Brian



IRISH CATTLE BREEDING FEDERATION

EBI Update

Teagasc, Moorepark

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Overview

- **Update costs and prices**
- **Live weight-beef**

Update costs and price

- Last update carried out in 2007
 - Milk price was set at 30c/l
 - Milk price increased from 22c/l
 - FAPRI
 - Long term projections

Fluctuations

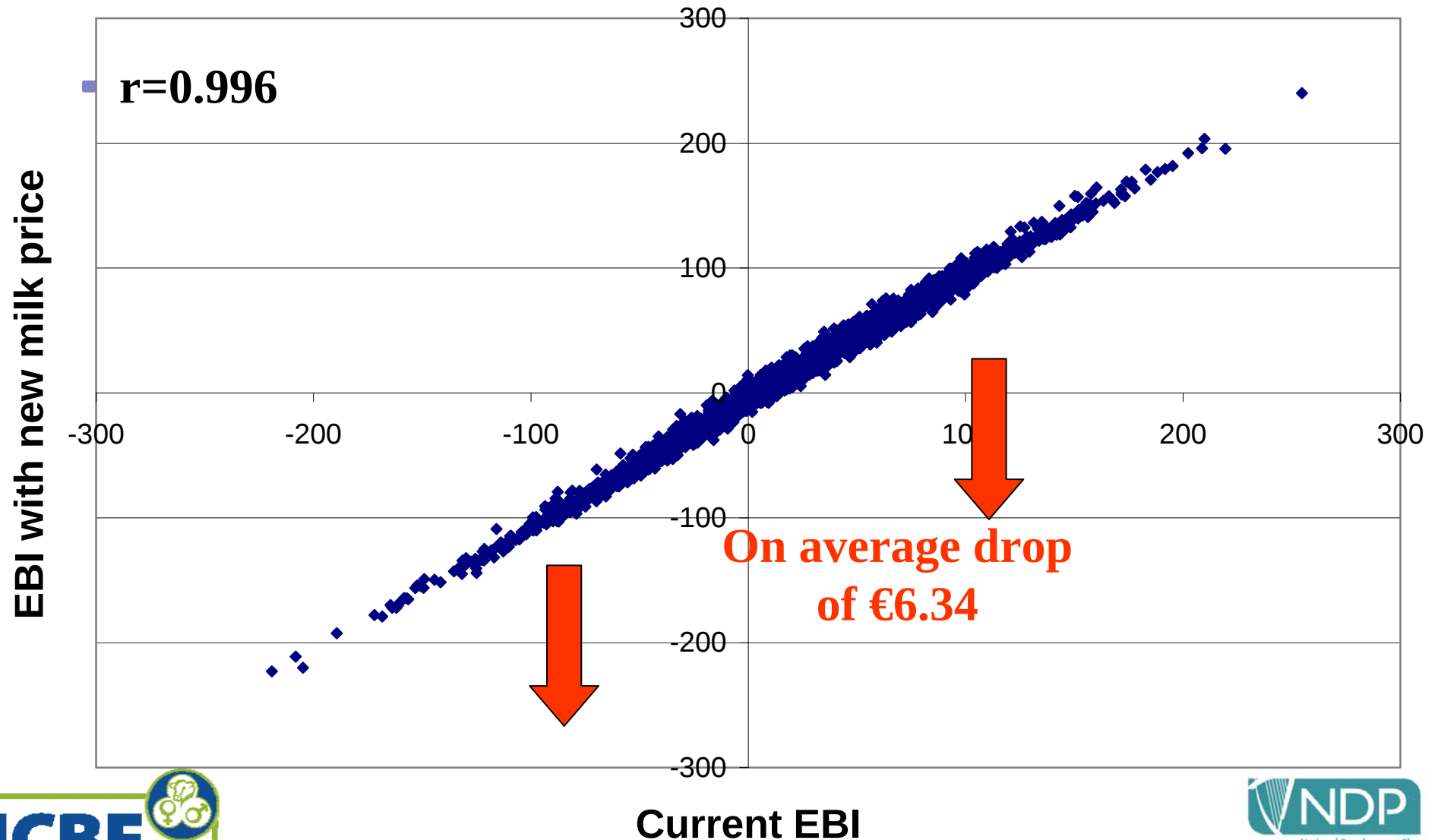
Update costs and price

- Milk price – FAPRI projections 27c/l
- Fertiliser costs increased
- Energy costs increased
- Replacement heifer costs increased

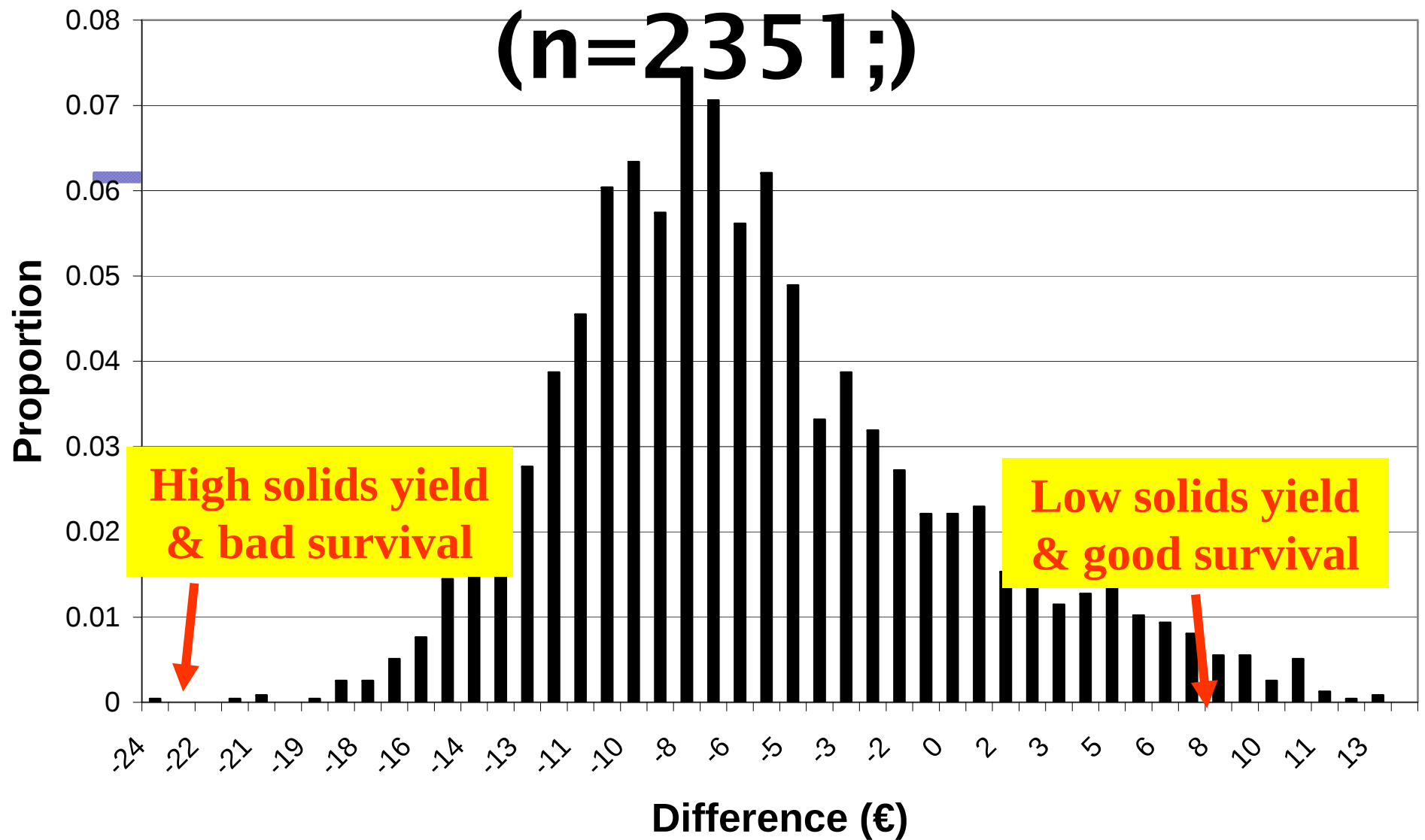
			2008-2009	
	Yield	Protein	6.91	
		Fat	1.26	
		Milk	-0.09	
	Fertility	Survival	11.17	
		Calving Interval	-11.97	
	Calving	Maternal	-1.73	
		Direct calving	-3.65	
		Direct gestation	-7.54	
		Calf mortality	-2.58	
	Beef	Cow carcass wgt	-0.51	
		Carcass weight	1.38	
		Conformation	10.32	
		Fat score	-11.71	
	Health	Locomotion	1.13	
		Udder	-57.21	

			2008-2009	2010
	Yield	Protein	6.91	6.26
		Fat	1.26	1.01
		Milk	-0.09	-0.09
	Fertility	Survival	11.17	12.05
		Calving Interval	-11.97	-11.89
	Calving	Maternal	-1.73	-1.73
		Direct calving	-3.65	-3.52
		Direct gestation	-7.54	-7.49
		Calf mortality	-2.58	-2.58
	Beef	Cow carcass wgt	-0.51	-0.51
		Carcass weight	1.38	1.38
		Conformation	10.32	10.32
		Fat score	-11.71	-11.71
	Health	Locomotion	1.13	1.13
		Udder	-57.21	-56.35

Impact on sire-proofs (n=2351;)



Impact on sire-proofs (n=2351;)



Cow live weight - Efficiency

Cow live weight - 2007

- 2007 changes
- Revenue → more carcase and higher price
 - No change
- Feed costs based on land limiting
 - Costs → growth & maintenance
 - Feed costs increased to €176/tDM
 - Feed costs €0.163/UFL
- Old economic weight = +€0.04
- New economic weight = -€0.513

Cow live weight

- Analysis carried out outside the Moorepark Dairy Systems Model currently
- Calculations completed using net energy system
- Costs;
 - Energy for growth
 - Energy for maintenance
- Revenue
 - Carcase sales

Analysis Feed efficiency Sub - Index

- Bring inside the model
- Develop new sub index – Feed efficiency
 - Economic value live weight
 - 1kg change in live weight
 - Farm output maximized
 - Optimize cow numbers for change therefore no change in the herbage on the farm that will be utilised
 - Carcass value captured in beef sub index

New Development

- Beef sub index
 - Costs associated with rearing a heifer with an additional kg of live weight
 - The associated additional revenue associated with the additional kg of live weight

New Development

- Efficiency sub index
 - In a fixed land scenario its the costs associated with carrying an additional kg live weight
 - Increased feed costs
 - Reduced milk sales

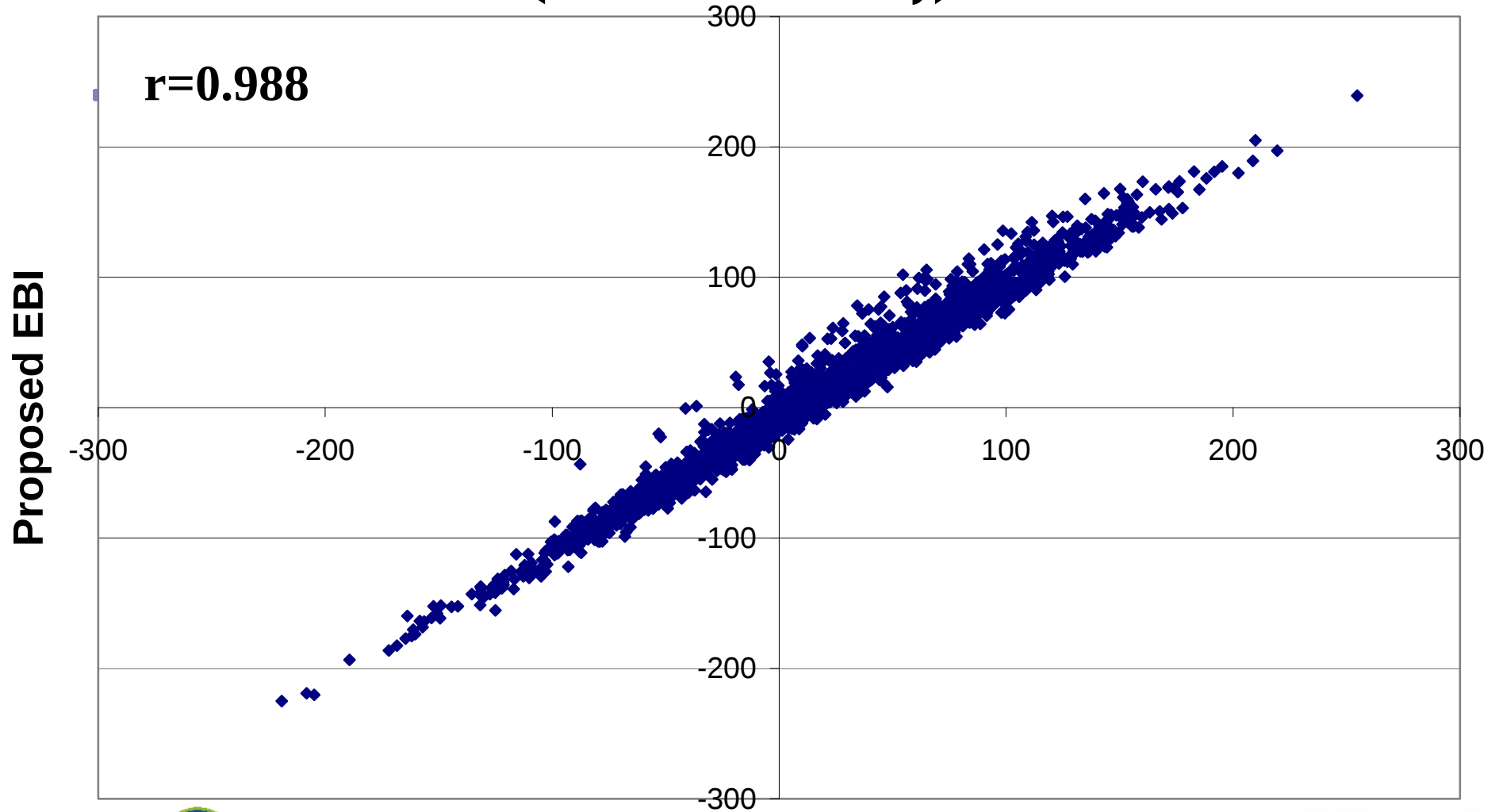
New Development

- Beef
 - Was -€0.51/kg carcass
 - Now +€0.15/kg carcass
- Efficiency
 - -€0.67/kg live weight
 - Kill out percentage 45%
 - Convert to carcass weight
 - Economic value -€1.49/kg carcass weight

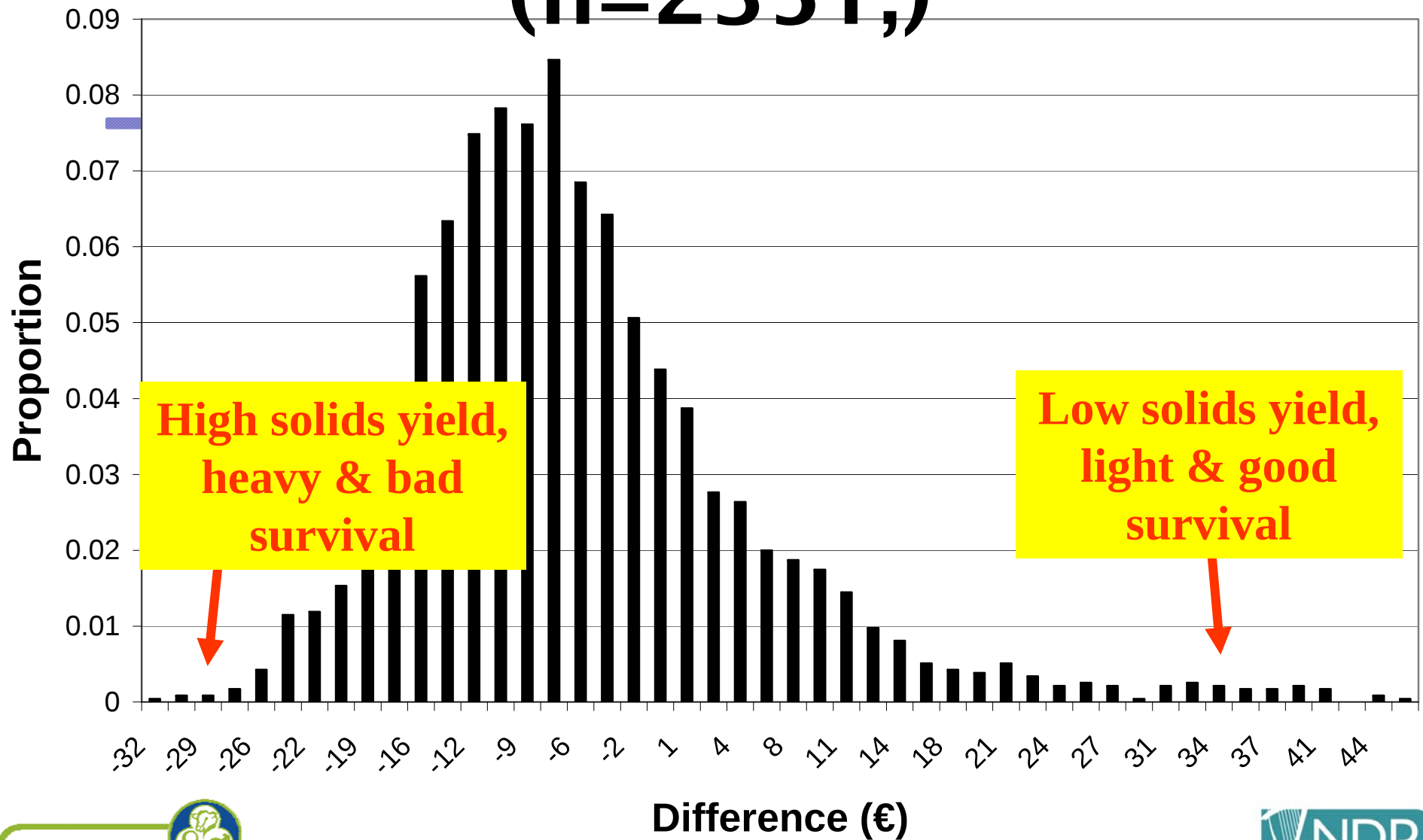
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		2008-2009	2010
Yield	Protein	6.91	6.26
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Efficiency	Cow Carcase weight	-	-1.49
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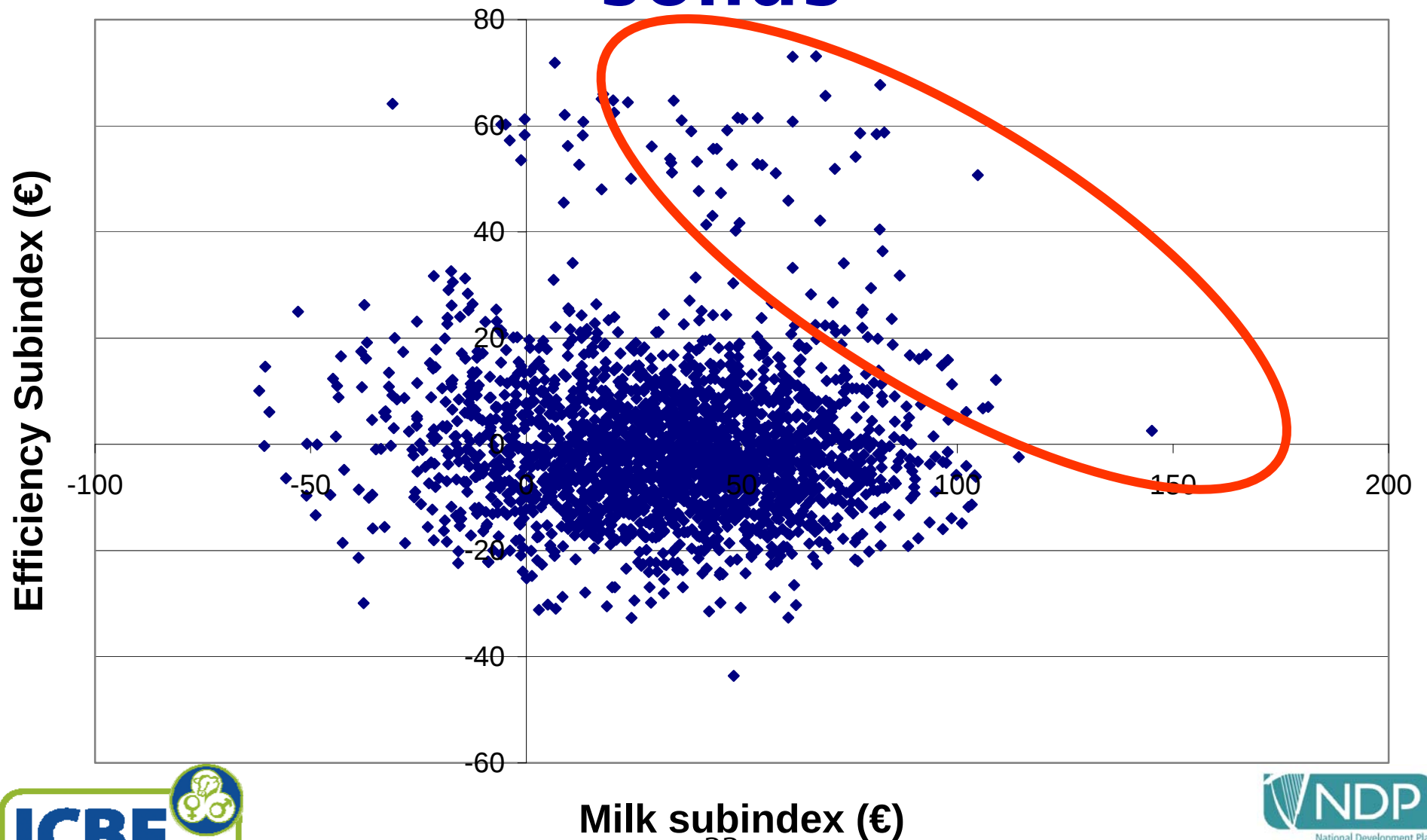
Impact on sire-proofs (n=2351;)

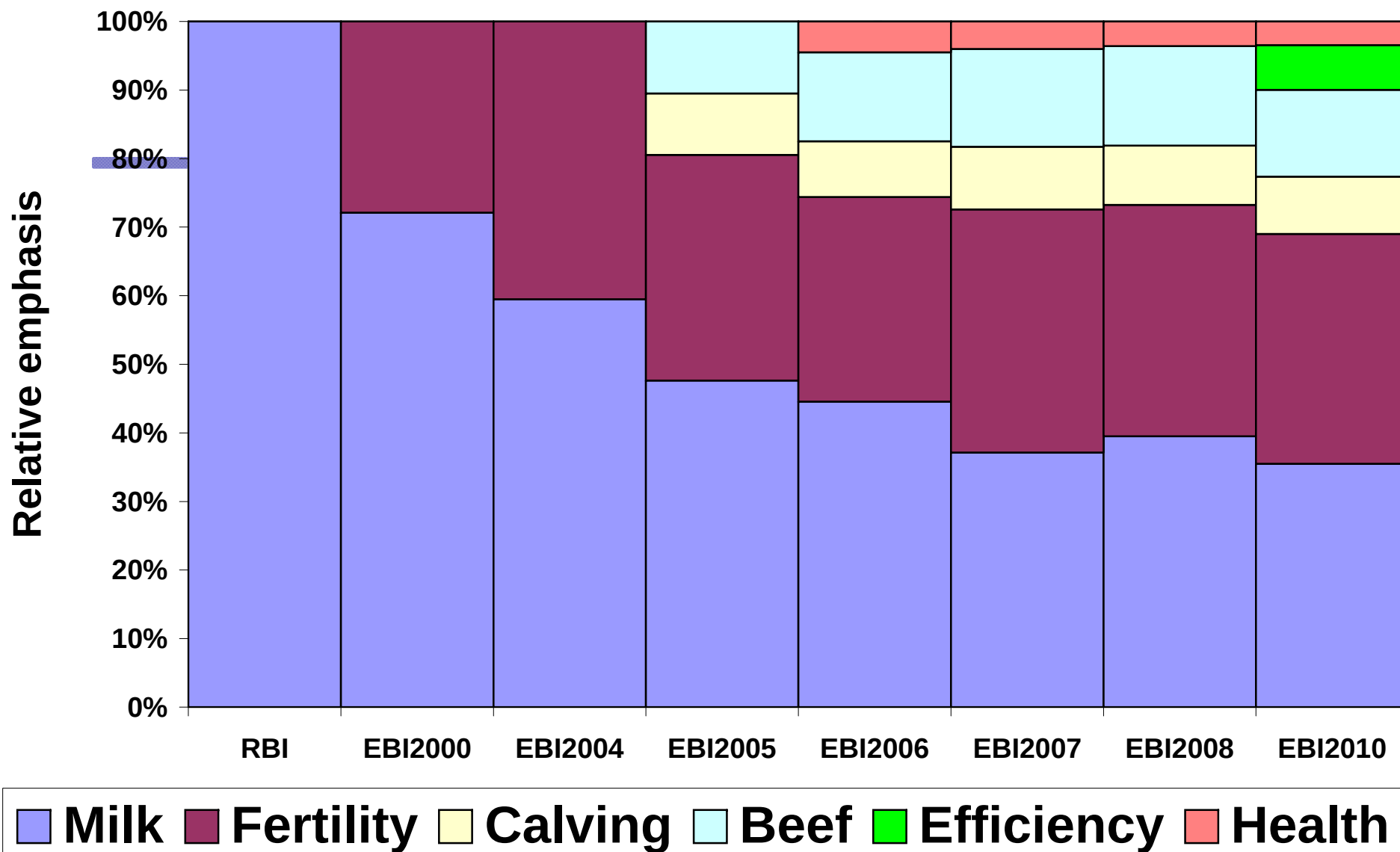


Impact on sire-proofs (n=2351;)



Efficiency does not mean low milk solids





Sensitivity analysis

- Milk price

- Base 27c/l FAPRI Projections

- 24c/l

- 30c/l

Milk price

		27c/l	24c/l	30c/l
Yield	Protein	6.26	5.62	6.91
	Fat	1.01	0.76	1.25
	Milk	-0.09	-0.09	-0.09
Fertility	Survival	12.05	11.39	12.67
	Calving Interval	-11.89	-11.80	-12.02

Summary

- Milk price at 27c/l
- Beef sub index
- Efficiency

New fertility evaluation

- Genetic parameter estimation:
Donagh
 - New traits based on inseminations
 - Extension of existing traits: more parities
- Since last meeting:
 - Incorporate new changes into existing evaluation framework
 - Breeding Value Estimation: Now running

Old (existing) evaluation

- **14 traits**
 - **calving interval 1 to 3**
 - **Survival 1 to 3**
 - **Milk yield 1 to 3**
 - **4 linear type traits**
 - **lifespan**

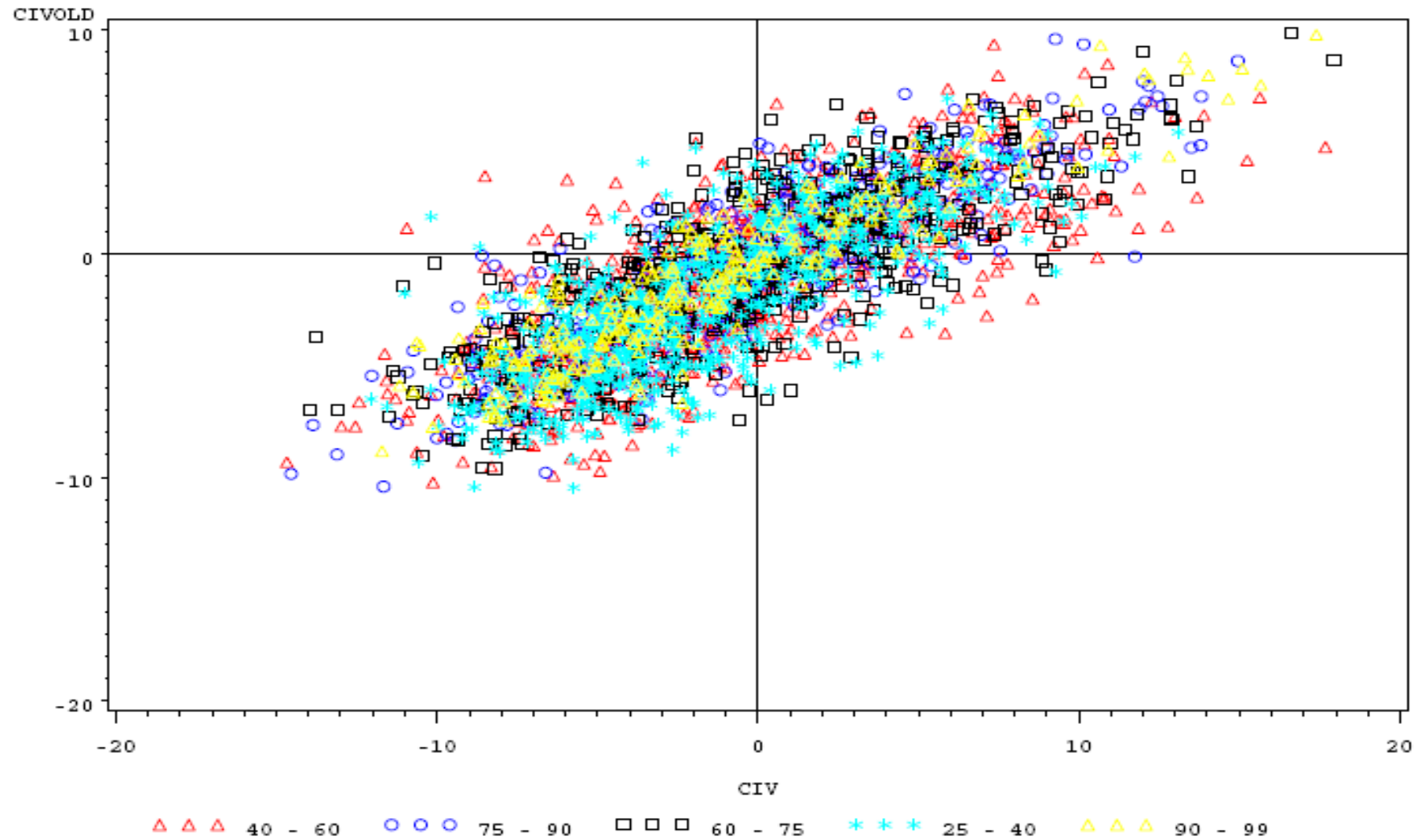
New evaluation: Extra traits

- 25 traits
 - calving interval 1 to 5
 - Survival 1 to 5
 - Milk yield 1 to 5
 - Lifespan
 - Calving to first service 1 to 3
 - Number of services 1 to 5

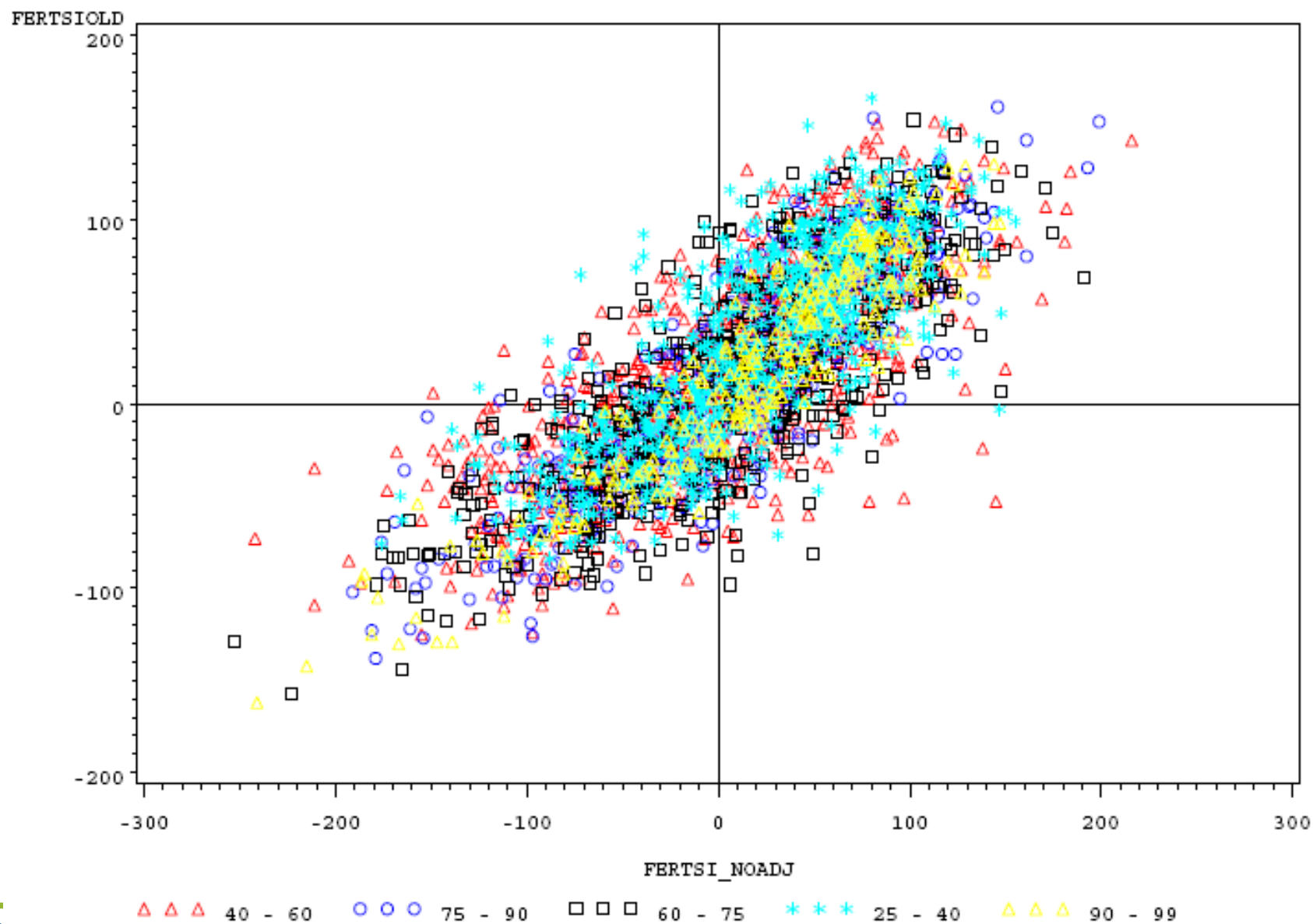
New Evaluation: Extra data

- **Calving intervals 600 to 800 if inseminated**
- **Cows with no milk recording but has calving intervals**
 - **Currently each cow has to have at least 1 lactation in first 3**
- **CMMS update in July 09**

AI sires calving interval old v new



AI sires FERTILITY sub-index old v new no su adj



New Evaluation: Test run 1

- Reason: Test the impact of new evaluation software
 - 2 Test runs same dataset
 - PEST v MIX99
 - Noticed some changes
 - Too large to ignore
 - Further testing needed

New Evaluation: Test run 2

- **Reason: Test the impact of new genetic parameters**
 - **2 Test runs both in MIX99**
 - Old genetic parameters
 - New genetic parameters
 - **Effect on calving interval of CFS addition and reduction in effect of milk pd**
 - **Possible increase in scale and variation of fertility proofs with decreased milk influence**

New Evaluation: Test run 3

- Reason: Test the impact of adding extra data
 - 600 – 800 day CIVs
 - Cows with no milk recording but have fertility
 - Not known yet

New Evaluation: Test run 4

- Reason: Test the impact of specific heterosis effects
 - Main breed crosses
 - HOxFR, HOxJE, HOxMO, HOxNR

Impact:

- Not known yet

Weighting of parities

- **Previously:**
 - Published CIV = (CIV1 + CIV2 + CIV3)/3
 - Published SU =(SU1 + SU2 + SU3)/3
- **Proposed:**
 - Published CIV = 0.35*CIV1 + 0.25*CIV2 + 0.20*CIV3 + 0.12*CIV4 + 0.08*CIV5
 - Published SU = 0.35*SU1 + 0.25*SU2 + 0.20*SU3 + 0.12*SU4 + 0.08*SU5

Conclusions

- Good progress on breeding value estimation
 - System can handle increase to 25 traits and increased data volume
- Several test runs to be performed and validated
- Test proofs out in January



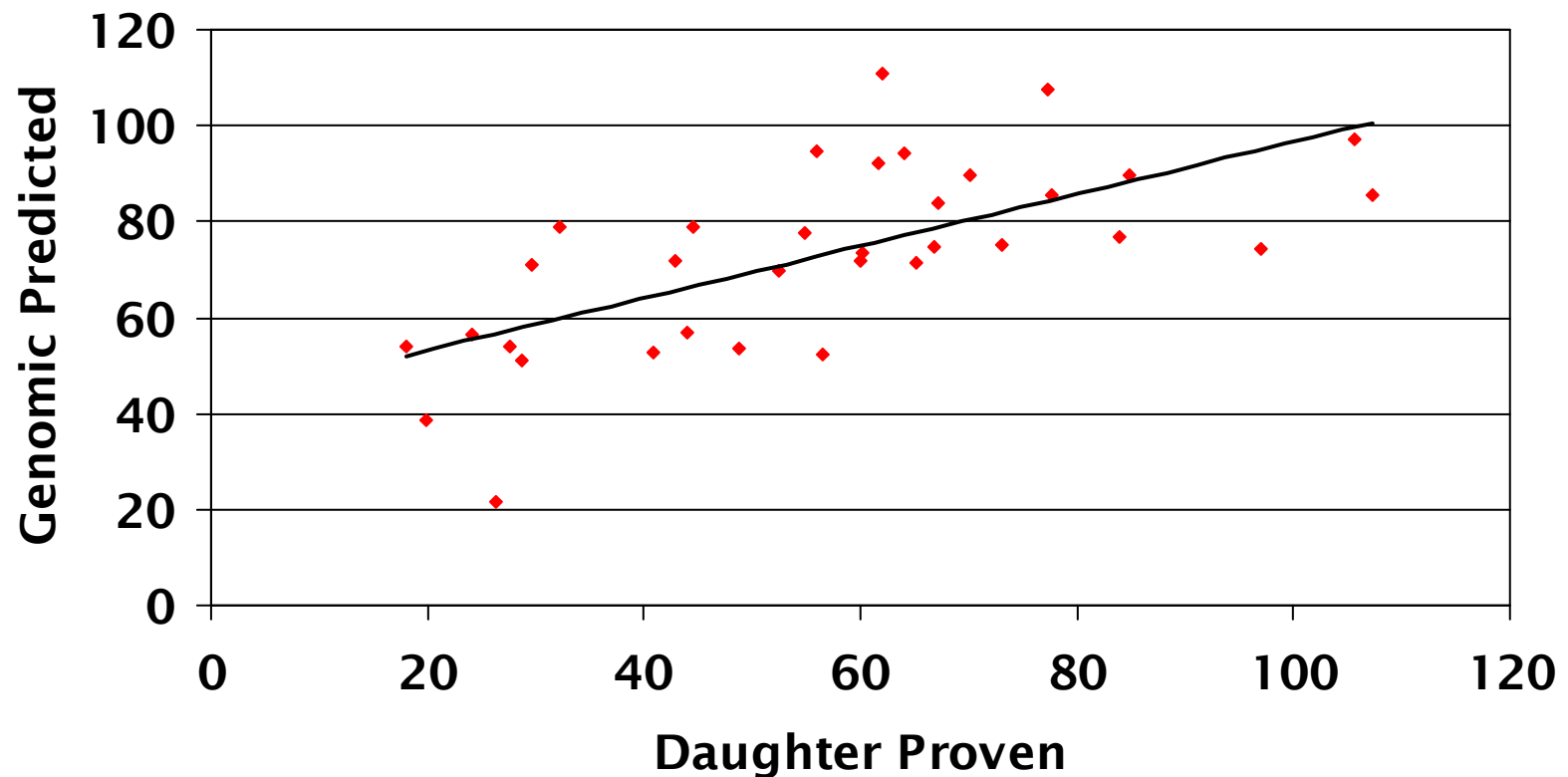
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Genomic Update

9th December 2009.

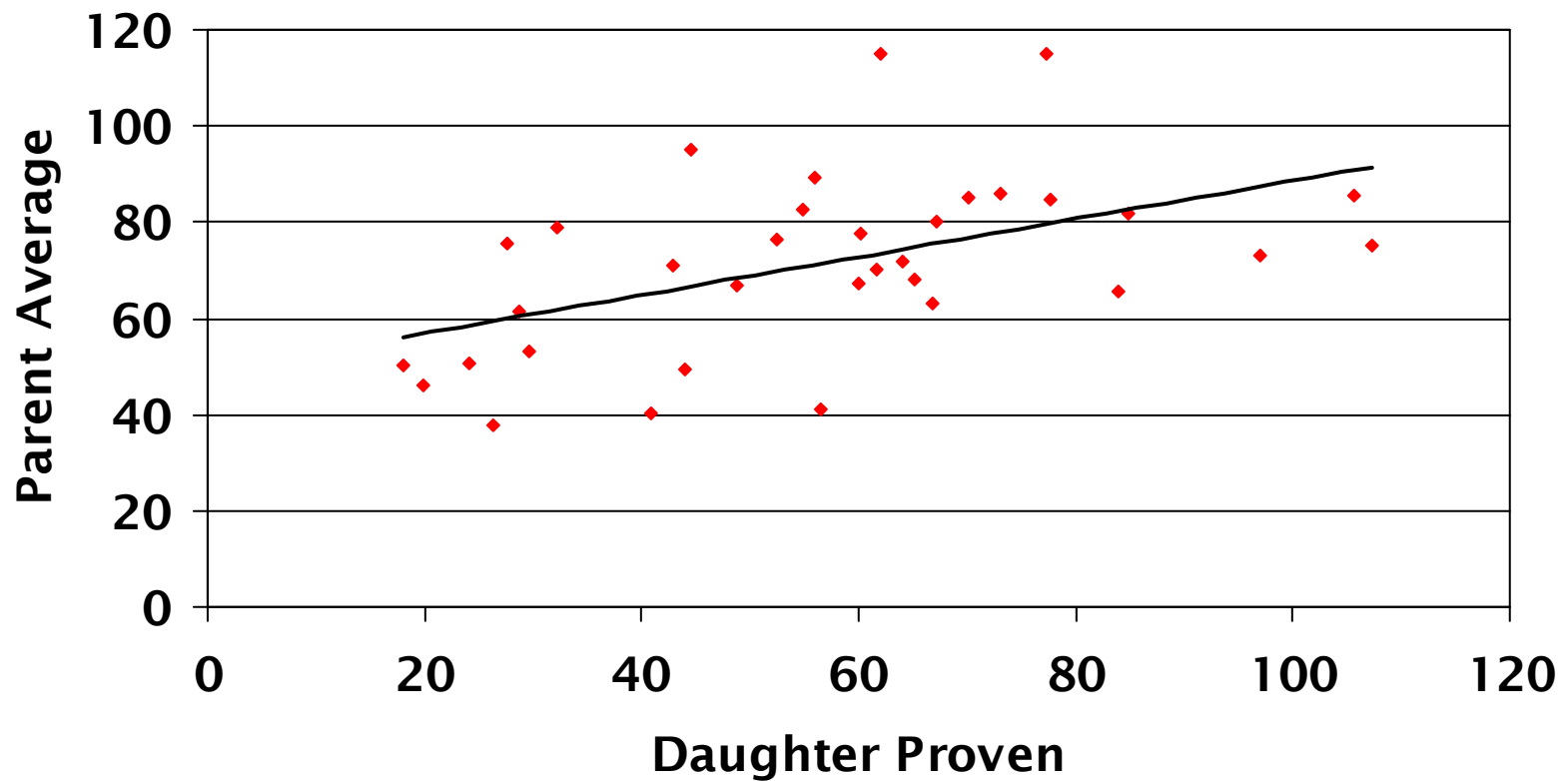
Milk Sub Index

Correlation = 67%



Milk Sub Index

Correlation = 50%



Correlations

	GS	Parent Ave
Milk SI	67%	50%
Milk kg	61%	66%
Fat kg	69%	46%
Prot kg	64%	58%
Fat %	78%	77%
Prot %	69%	68%
SCC	70%	60%

Implementation Plan.

- Developments in EBI
 - New Sub-Index. Agree to-day?
- New Fertility evaluations.
 - Test proofs & feed-back.
- New Calving evaluations.
 - Test proofs & feed-back.
- Industry meeting to review test proofs.
 - ~ 25th January.
 - Official release ~ 1st February.

Research Update.

- Priority is implementation work around fertility & calving.
 - Genomics.
 - Male fertility
 - Health traits
 - Beef evaluations
 - Cross breeding
- Update in January & plans for 2010.

GENE IRELAND - Update

- Procurement service.
 - User-pays service for AI companies.
 - Top cow list, pregnancies...
 - *Agreed in principle.*
- Genomics Service.
 - User-pays service for industry.
 - Two levels; (i) Genotype + Genomic EBI service, & (ii) Genomic EBI service only.
 - Volume discounts to apply.
 - *Agreed in principle.*

GENE IRELAND - Update

- Progeny Test Service.
 - “As-is” relative to 2009, with following additions;
 - Upper limit on straw usage.
 - Slight increase in semen charge (reflecting extra costs & higher value of product).
 - Equivalence required (bulls tested versus herds provided).
- Breeder support payments.
 - On-hold pending completion of research work and further consultation with industry.

GENE IRELAND - Update

- Research work.
 - Balancing EBI gain & genetic diversity.
 - Selection of bull mothers, sires of sons, communication with herd-owners.
 - Work on-going.
 - Optimal Program for Ireland.
 - Level of genotyping, number of bulls for progeny testing, level of genomic versus daughter proven bulls.
 - Work on-going.

Major Dairy Breeding Day.

- Tomorrow at Corrin, Fermoy.
- 10 Am – 4 PM.
- AM. GENE IRELAND & HerdPlus Meeting.
- PM. Results of EBI100 competition.
- Complimentary lunch.
- Book to confirm. Text CONF to 51101.