New Zealand's Strategy for a more profitable sheep & beef industry

Outline

- New Zealand Production
- Performance recording translates to industry improvement
- Summary

New Zealand Production

Key Land Use Changes
(commercial farms, excludes lifestyle blocks)

	1990-91	2011-12e	
No. Hill Country Farms	7,500	6,245	-17%
No. Finishing Breeding Farms	12,100	6,240	-48%
Hill Country Farms eff. - M ha	6.81	5.98	-12%
Finishing Breed Farms - M ha	3.27	2.29	-30%
Dairy Farms	14,685	11,850	-19%
Dairy - M ha	1.35	2.24	+66%

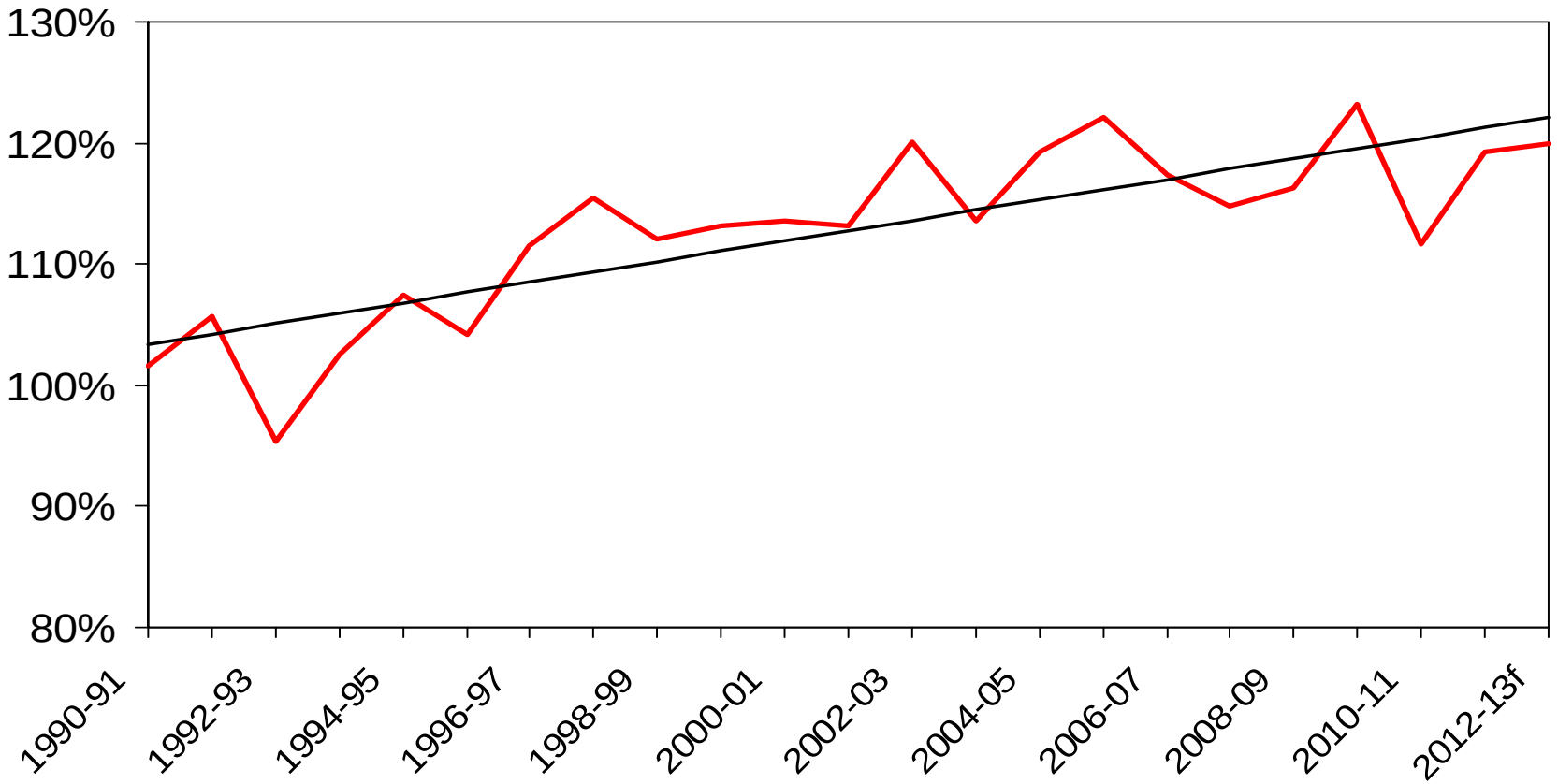
Source: Beef + Lamb New Zealand Sheep & Beef Farm Survey
Statistics New Zealand

Key Performance Indicators
(commercial farms, excludes lifestyle blocks)

	1990-91	2011-12e	
Lambing %	101.6 %	119.3 %	**(123.2/111.7%)**
Kg Lamb/Ewe	9.8 kg	16.4 kg	
Average Lamb Weight	13.9 kg	18.2 kg	
Calving %	81.5 %	83.8 %	
Average Steer Weight	297.3 kg	306.1 kg	

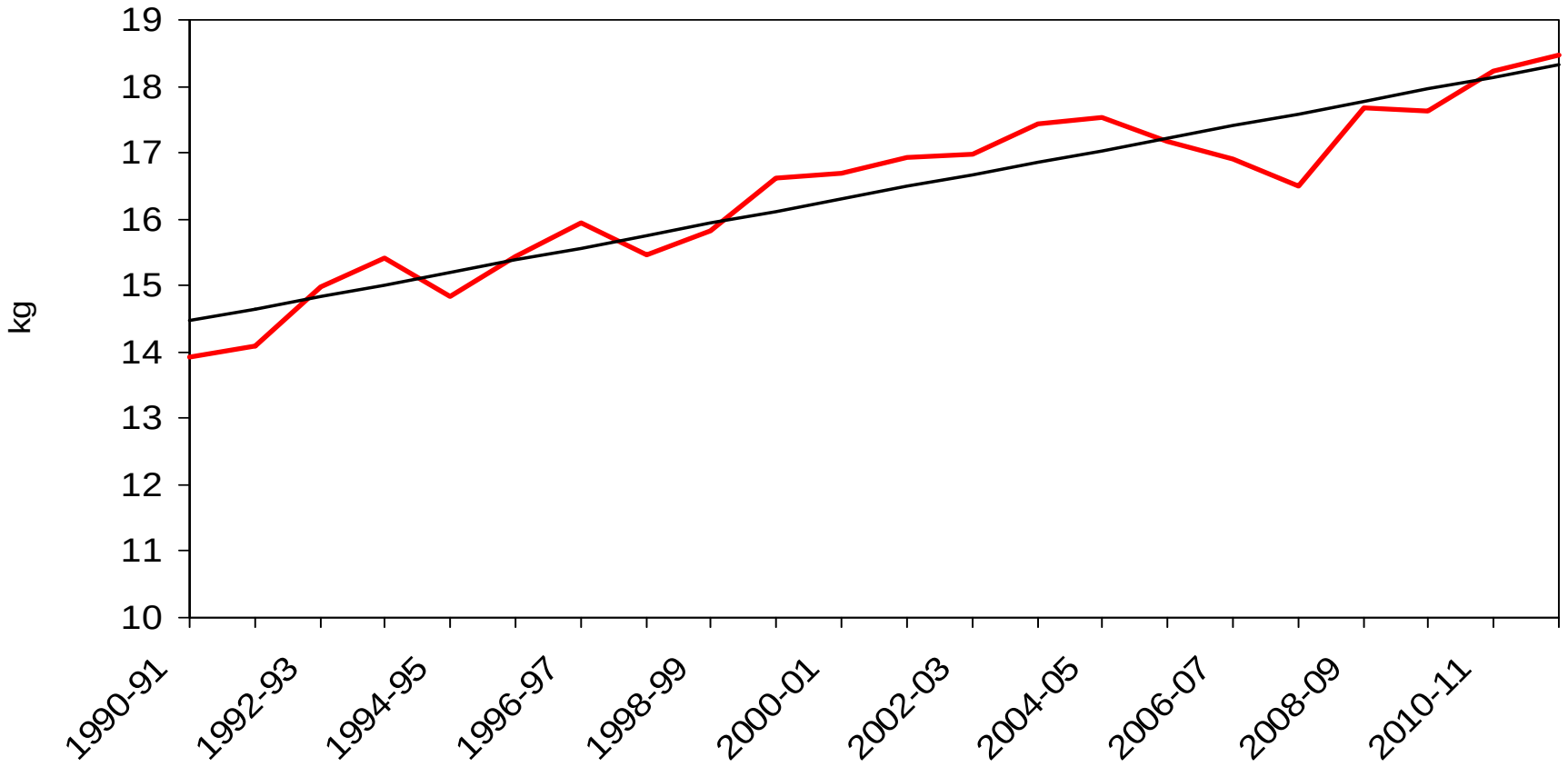
Source: Beef + Lamb New Zealand Sheep & Beef Farm Survey
Statistics New Zealand

Lambing Percentage Trend



Source: Beef + Lamb New Zealand Economic Service

Average Export Lamb Weight



Source: Beef + Lamb New Zealand Economic Service

Targeted improvements

- Lambing %
- Wool production per sheep
- Carcase weights [& growth rates]
- Loss rates
- Fertiliser per ha or per su
- Price levels, meat, wool
- Farm expenditure per ha, su
- Gross Margins sum of above,

- Rate of Return
- Debt : Equity

Pregnancy Scanning

The activity of scanning doesn't increase lambing %

But the information from scanning enables different management that does increase lambing %

Farmer groups for profit - $/ha	% of ewes scanned
Top 20%	**Av. 99.9%** Range 90 to 100%
Middle 20%	**Av. 95%** Range 50 to 100%
Bottom 20%	**Av. 75%** Range 0 to 100%

50 Years of Economic Service Analysis Shows

The Key Features of Top Farms are:

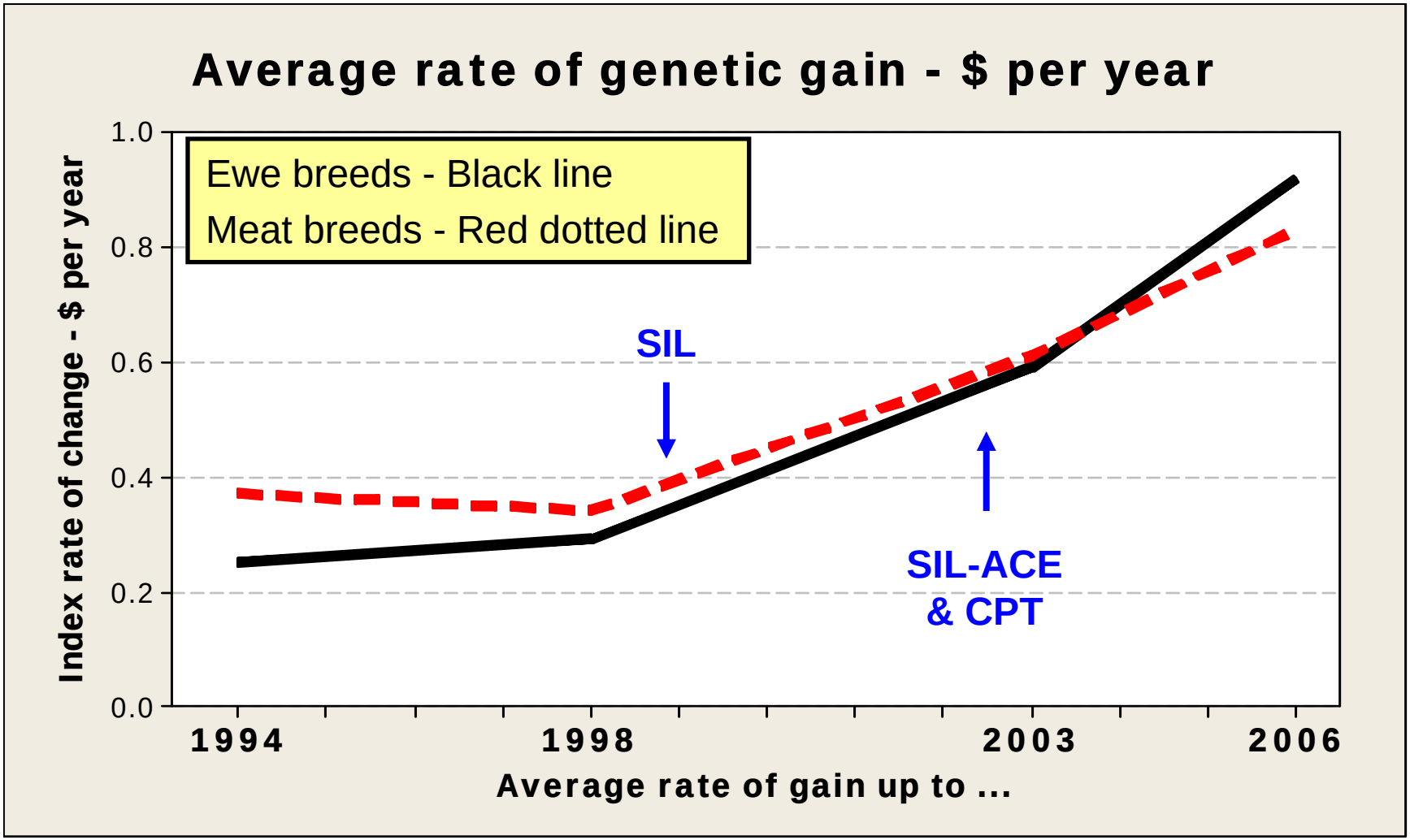
- High Lambing %'s
- High Calving %'s
- High Slaughter Weights
- High Wool Production per Sheep
- High Survival

All impact on economic efficiency

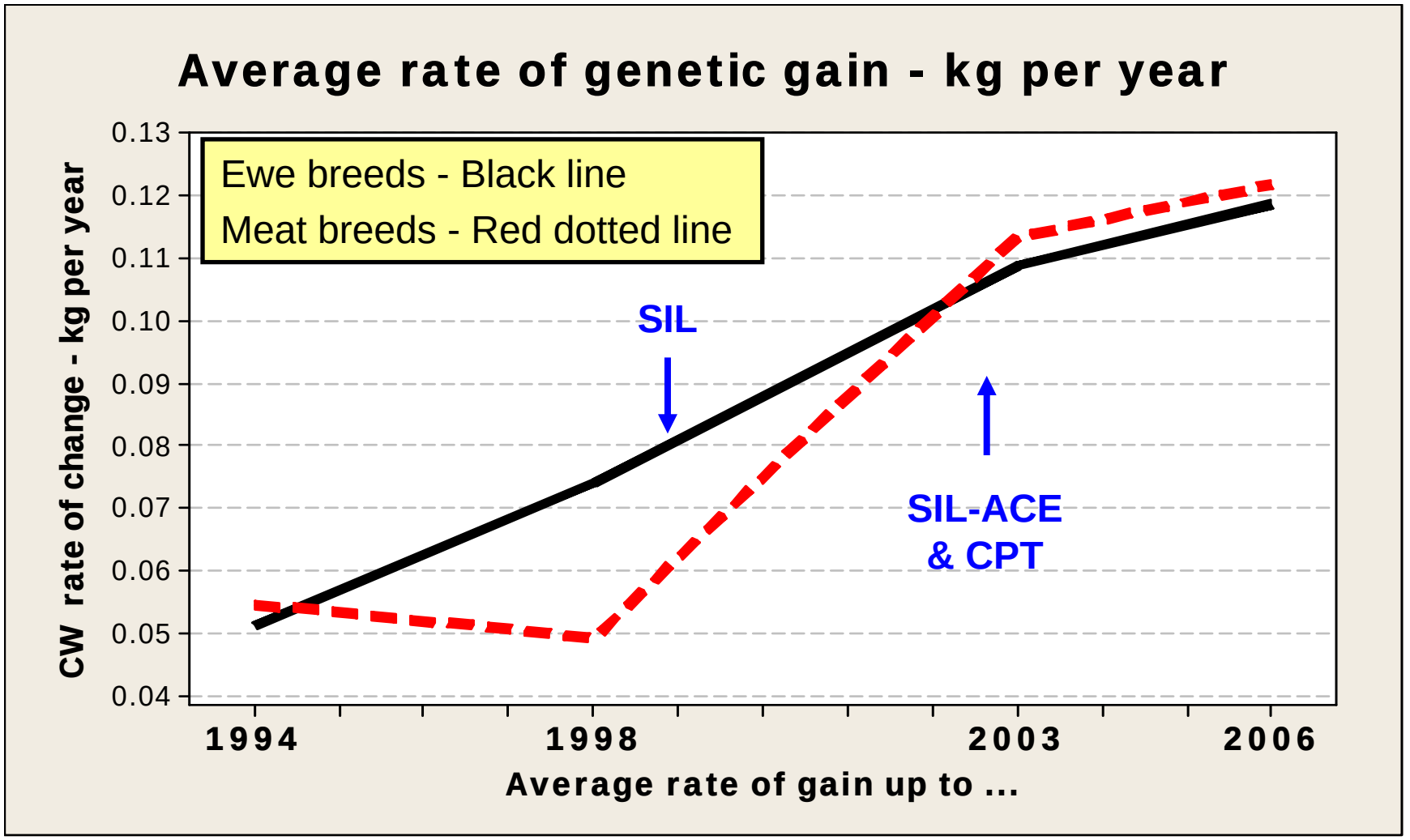
All are key Genetic Selection drivers

The influence of SIL on New Zealand's sheep flock performance

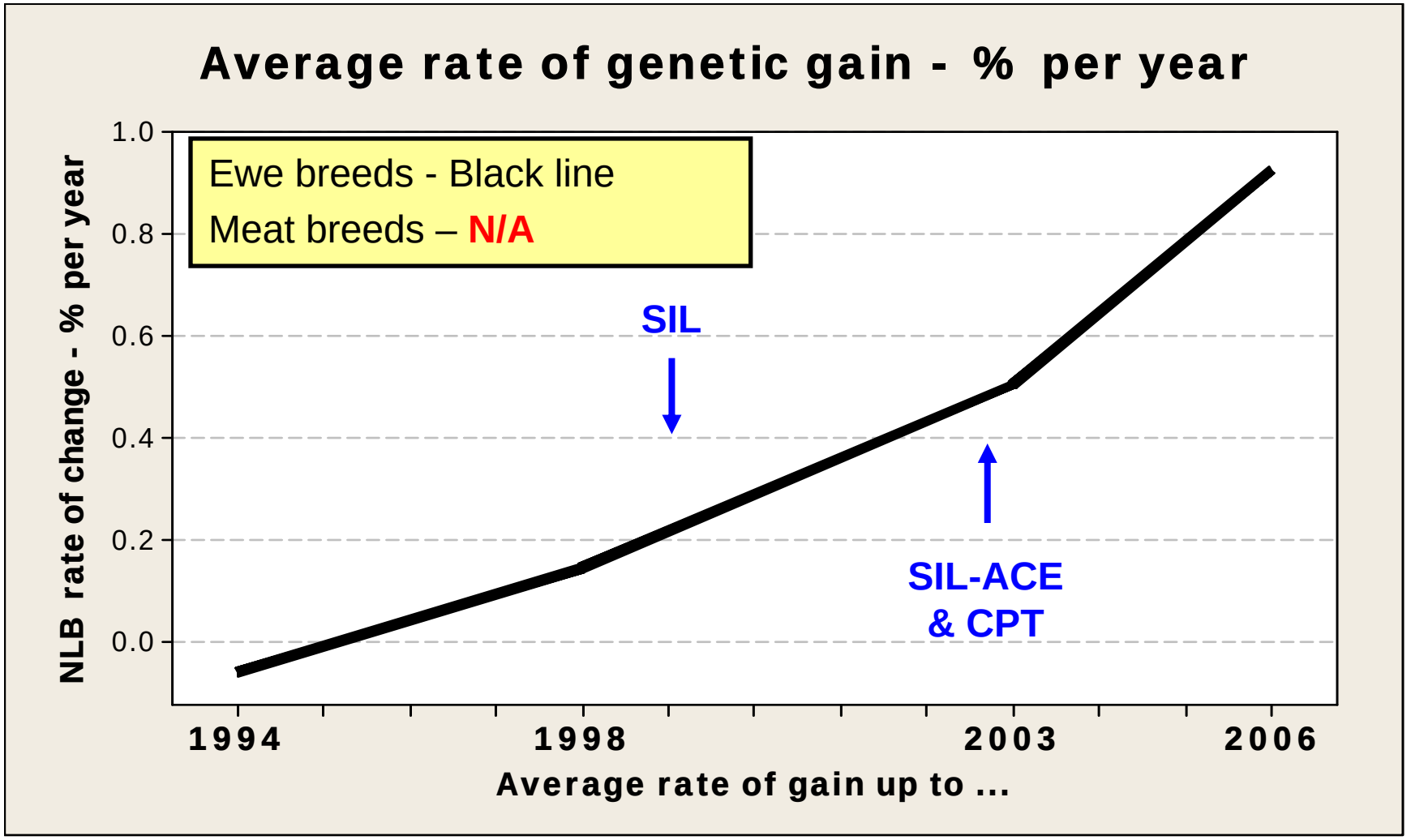
Trends in rate of gain – Overall index



Trends in rate of gain – Carcass weight



Trends in rate of gain – Number of lambs



Rate of genetic progress

Period and flock type

Years		Meat breed index, $/yr	Ewe breed index, $/yr
1990-1994	pre-SIL	0.37	0.25
1995-1998	pre-SIL	0.34	0.29
1999-2003	**SIL**	**0.61**	**0.59**
2004-2006	**CPT + SIL-ACE**	**0.83**	**0.92**

SIL traits

		1999	2010+
Growth	Early growth + Adult size	X	
	Early growth		X
	Adult size		X
Meat	Fat vs Lean	X	X
	Lean Yield		
Reproduction	Number of lambs	X	X
	Hogget lambing		X
	Twinning rate		X
Wool	Fleece weight	X	X
	Fibre diameter	X	X
	Fine wool quality		X
Lamb Survival			X
Health	Parasite Resistance	X	X
	Parasite Resilience		X
	FE Tolerance		X
	Dags		X
Bareness			X
Ewe longevity			
Genomic BVs	DNA + pedigree / performance data		X
Efficiency			

New technologies

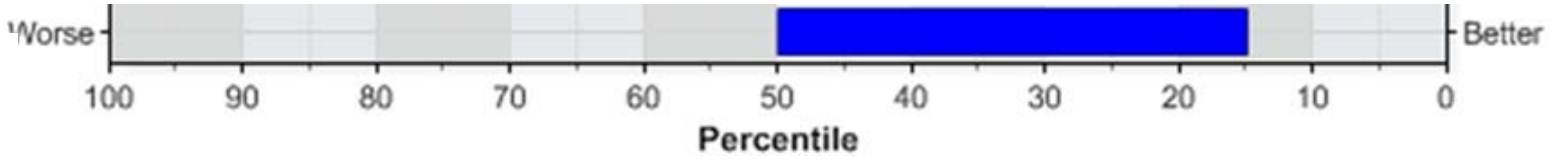
- DNA parentage – Pfizer
- SNPs molecular BVs (mBV)
- eBV + mBV = gBV (genomic)
- Carcase merit assessment
  - Lean meat yield
  - Meat eating qualities

(Re)defining breeding merit

- Is "more" always better?
  - Trait windows – number of lambs, fatness
- What about balance across traits?
- How can we do this better?
- **New online tool addresses these ideas**

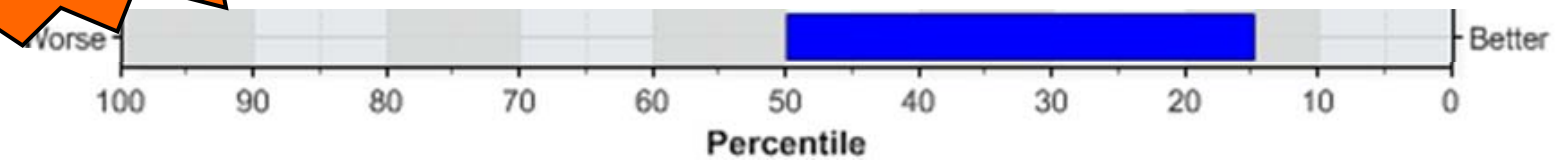
Genetic Merit - balance

All-star!



OVERALL
Growth
Meat
Wool
Reproduction
Lamb Survival

1 trick pony?



OVERALL
Growth
Meat
Wool
Reproduction
Lamb Survival

eSearch

beef+lamb new zealand

Extracting more value from SIL-ACE

- Until recently, Top 200 sires as Leader Lists for traits & selection indexes posted on internet …

  …but wealth of data untapped

- Two ***eSearch*** tools on internet
  - **FlockFinder** – identify flocks with genetic information ram buyers want
  - **RamFinder** – find individual animals with specified combinations of genetic merit across BVs & indexes

FlockFinder

Identify flocks with the genetic information you want to use in ram selection

SIL-ACE *eSearch* FlockFinder

SIL-ACE Analysis Oct 2009

Usage	
Usage	Dual Purpose

What traits are important to you?				
Trait	Primary	Selection Pressure ← LESS MORE →	Avoid Low Merit	Avoid Extreme High Merit
Number of lambs (born)	☐	◉ ○ ○ ○ ○ ○ ○	☑ less	☑ more
(Lamb) Survival	☐	◉ ○ ○ ○ ○ ○ ○	☐ low	☐ high
(Lamb) Growth	☑	◉ ○ ○ ○ ○ ○ ○	☐ slow	☐ fast
Adult ewe size (Growth)	☐	◉ ○ ○ ○ ○ ○ ○	☐ large	☐ small
Meat (Lean Yield)	☐	◉ ○ ○ ○ ○ ○ ○	☐ low	☐ high
Meat (Fatness)	☐	◉ ○ ○ ○ ○ ○ ○	☐ high	☐ low
Wool (Production)	☑	◉ ○ ○ ○ ○ ○ ○	☐ less	☐ more
Resistance (to internal parasites)	☐	◉ ○ ○ ○ ○ ○ ○	☐ low	☐ high
Tolerance (to Facial Eczema)	☐	◉ ○ ○ ○ ○ ○ ○	☐ low	☐ high

General Criteria	
Ram Birth Year	2008
Region	All

Genotype Specification	[see note below]
Genotype Specification	Genetic Vision
Genetic Vision	Romney

What do the search criteria do? (show answer)

Guide to using FlockFinder (show answer)

What does Genotype Specification mean? (show answer)

What does the Trait selection pressure warning mean? (show answer)

Start Search >> Results per page: 10 Back to SIL Web Reset Search

SIL-ACE *eSearch* FlockFinder

SIL-ACE Analysis Oct 2009

Flock	Prefix	Collecting Data For	Rams
3001	Waihora	Number of lambs, Growth, Meat, Wool, FE Tolerance ★★★☆☆	1441
2191	Motu-Nui	Number of lambs, Growth, Wool, Resistance	973
1689	Fernvale	Number of lambs, Growth, Meat, Wool	890
39	Turanganui	Number of lambs, Survival, Growth, Wool, Resistance	709
1077	Holly	Number of lambs, Growth, Wool	607
539	Wairere	Number of lambs, Growth, Meat, Wool, Resistance	606
1938	Totaranui	Number of lambs, Survival, Growth, Wool	564
259	Rawahi	Number of lambs, Growth, Wool	516
383	Te Whangai	Number of lambs, Growth, Wool, Resistance	514
40	Turanganui	Number of lambs, Survival, Growth, Wool, Resistance	479

1 2 3 4 5 6

Your query found 58 flocks. Showing page 1 of 6.

More information about the flocks can be obtained by clicking the Flock ID. Click on column headings to sort the results; click again to sort in the opposite direction.

You requested animals genetic vision breed component(s): Romney; born in 2008; in All region; Dual Purpose traits: Number of lambs (born) (avoid low merit, avoid high merit); (Lamb) Growth (primary, pressure 1); Wool (Production) (primary, pressure 1);

If you wish to contact SIL about this search, the reference search number is 6297.

Why do some flocks have more rams listed? (show answer)

Why don't some flocks appear in the results? (show answer)

What if no flocks were found? (show answer)

QUERY DEBUG DATA (show answer)

SIL-ACE *eSearch* FlockFinder

SIL-ACE Analysis Oct 2009

Flock		Prefix	Collecting Data For	Rams
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1689		Fernvale	Number of lambs, Growth, Meat, Wool	890
39	Romney Warren M Turanganui, R D 2, Featherston warren.m@xtra.co.nz 06 307 7841	Turanganui	Number of lambs, Survival, Growth, Wool, Resistance	709
1077		Holly	Number of lambs, Growth, Wool	607
539		Wairere	Number of lambs, Growth, Meat, Wool, Resistance	606
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If you wish to contact SIL about this search, the reference search number is 6297.

Why do some flocks have more rams listed? (show answer)

RamFinder

Find individual animals
with specific combinations
of genetic merit for BVs & indexes

SIL-ACE *eSearch* RamFinder

SIL-ACE Analysis Oct 2009

Genetic Merit, Trait Criteria [see note below]

Usage: Dual Purpose | Overall — Show ACE Indexes ☐ Show eBVs ☐

SIL Goal Traits	Abbrev	Minimum	Maximum	Lo/Hi range	Average	Show	Use
SIL Dual Purpose Overall	SIL_DPOc	1000		156 to 1242	699	☑	☑
SIL Dual Purpose Reproduction	SIL_DPR			-223 to 445	111	☑	☑
SIL Dual Purpose Survival	SIL_DPS			-185 to 317	66	☐	☐
SIL Dual Purpose Growth	SIL_DPG			250 to 1321	785	☑	☑
SIL Dual Purpose Adult Ewe Size	SIL_DPA			-580 to -38	-309	☑	☑
SIL Dual Purpose Meat	SIL_DPM			-22 to 250	114	☐	☐
SIL Dual Purpose Wool	SIL_DPW			-56 to 247	95	☑	☑
SIL Dual Purpose WormFEC	SIL_DPF			-216 to 235	10	☐	☐
SIL Dual Purpose Facial Eczema	SIL_DPX			-204 to 500	148	☐	☐

Click this button to recalculate the ranges and averages above — Update

Results

Sort results by: SIL Dual Purpose Overall — ordered: High to Low

General Criteria

Query Type: Animals which match the following criteria

Animal: Birth Year 2008 to 2008 — Sex: Male — Status: Alive

Region:

Other: Available for sale ☐ Semen available ☐

Progeny: Birth Year to

Genotype Specification [see note below]

Genotype Specification: Genetic Vision

Genetic Vision: Coopworth

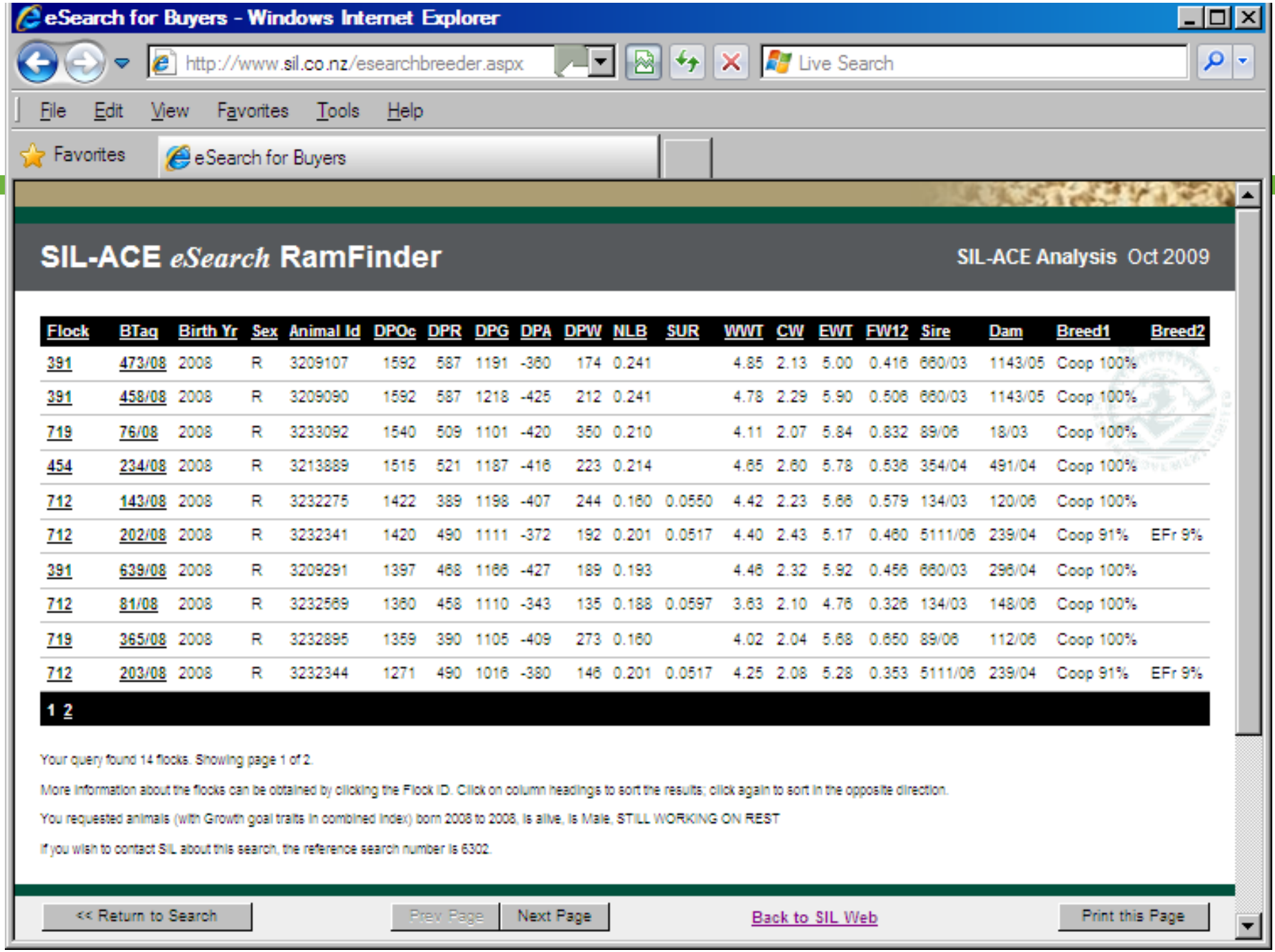
Genotype Criteria

SIL Flock Number (e.g 1234)	Not ☐	Not ☐	Not ☐
Sire (e.g 1234.5678/09)	Not ☐	Not ☐	Not ☐
Dam (e.g 1234.5678/09)	Not ☐	Not ☐	Not ☐

How do I use the Genetic Merit, Trait Criteria table? (show answer)

What does Genotype Specification mean? (show answer)

Start Search >> — Results per page: 10 — Back to SIL Web — Reset Search



SIL-ACE *eSearch* RamFinder

SIL-ACE Analysis Oct 2009

Flock	BTag	Birth Yr	Sex	Animal Id	DPOc	DPR	DPG	DPA	DPW	NLB	SUR	WWT	CW	EWT	FW12	Sire	Dam	Breed1	Breed2
391	473/08	2008	R	3209107	1592	587	1191	-360	174	0.241		4.85	2.13	5.00	0.416	660/03	1143/05	Coop 100%	
391	458/08	2008	R	3209090	1592	587	1218	-425	212	0.241		4.78	2.29	5.90	0.506	660/03	1143/05	Coop 100%	
719	76/08	2008	R	3233092	1540	509	1101	-420	350	0.210		4.11	2.07	5.84	0.832	89/06	18/03	Coop 100%	
454	234/08	2008	R	3213889	1515	521	1187	-416	223	0.214		4.65	2.60	5.78	0.536	354/04	491/04	Coop 100%	
712	143/08	2008	R	3232275	1422	389	1198	-407	244	0.160	0.0550	4.42	2.23	5.66	0.579	134/03	120/06	Coop 100%	
712	202/08	2008	R	3232341	1420	490	1111	-372	192	0.201	0.0517	4.40	2.43	5.17	0.460	5111/06	239/04	Coop 91%	EFr 9%
391	639/08	2008	R	3209291	1397	468	1166	-427	189	0.193		4.46	2.32	5.92	0.456	660/03	296/04	Coop 100%	
712	81/08	2008	R	3232569	1360	458	1110	-343	135	0.188	0.0597	3.63	2.10	4.76	0.326	134/03	148/06	Coop 100%	
719	365/08	2008	R	3232895	1359	390	1105	-409	273	0.160		4.02	2.04	5.68	0.650	89/06	112/06	Coop 100%	
712	203/08	2008	R	3232344	1271	490	1016	-380	146	0.201	0.0517	4.25	2.08	5.28	0.353	5111/06	239/04	Coop 91%	EFr 9%

1 2

Your query found 14 flocks. Showing page 1 of 2.

More information about the flocks can be obtained by clicking the Flock ID. Click on column headings to sort the results; click again to sort in the opposite direction.

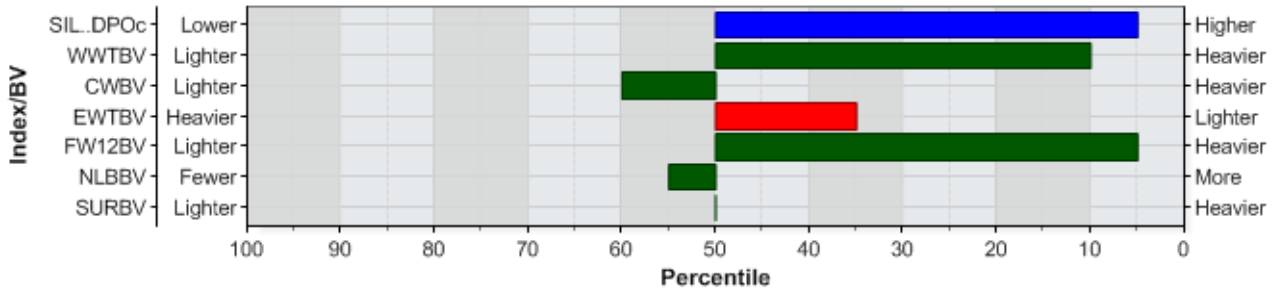
You requested animals (with Growth goal traits in combined index) born 2008 to 2008, is alive, is Male, STILL WORKING ON REST

If you wish to contact SIL about this search, the reference search number is 6302.

<< Return to Search | Prev Page | Next Page | Back to SIL Web | Print this Page

Prev Animal | Next Animal | Print this Page

Index and BV Percentiles for 1821.38/08



[What the Bars Mean] [Hide Index and BV's Percentile Graph]

Search Criteria

Birth ID	1821.38/08
Current ID	1821.38/08
Birth Year	2008
Birth Rank	2
No. of Progeny	0

Current Owner	Fletcher G M
Location	Otago
Breed 1	Coop 100%
Breed 2	
Sire Birth ID	712.5125/06
Dam Current ID	1821.39/06

Index Values for Alive Ram 38/08

Index	Result
SIL DPOc	1443

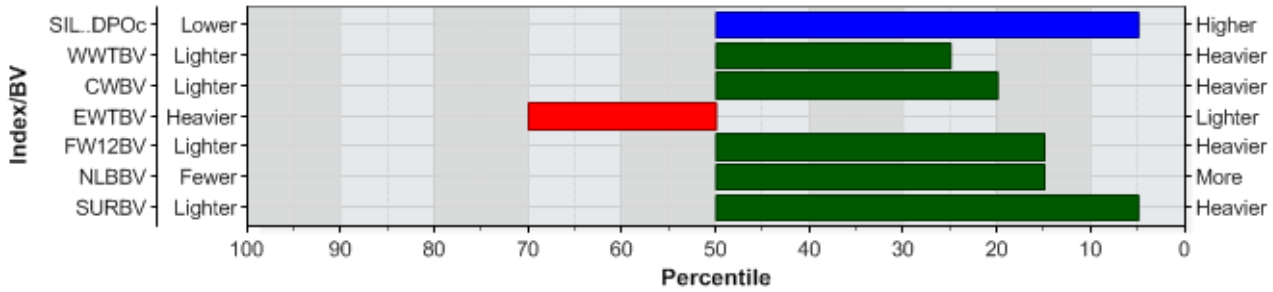
BV Values for Alive Ram 38/08

BV	Result
WWT	5.63
CW	1.28
EWT	3.00
FW12	0.698
NLB	0.045
SUR	-

[Click here to view Index and BV definitions]

Prev Animal | Next Animal | Print this Page

Index and BV Percentiles for 712.143/08



[What the Bars Mean] [Hide Index and BV's Percentile Graph]

Search Criteria

Birth ID	712.143/08
Current ID	712.143/08
Birth Year	2008
Birth Rank	2
No. of Progeny	0

Current Owner	Wyn-Harris S
Location	Hawkes Bay
Breed 1	Coop 100%
Breed 2	
Sire Birth ID	391.134/03
Dam Current ID	712.120/06

Index Values for Alive Ram 143/08

Index	Result
SIL DPOc	1422

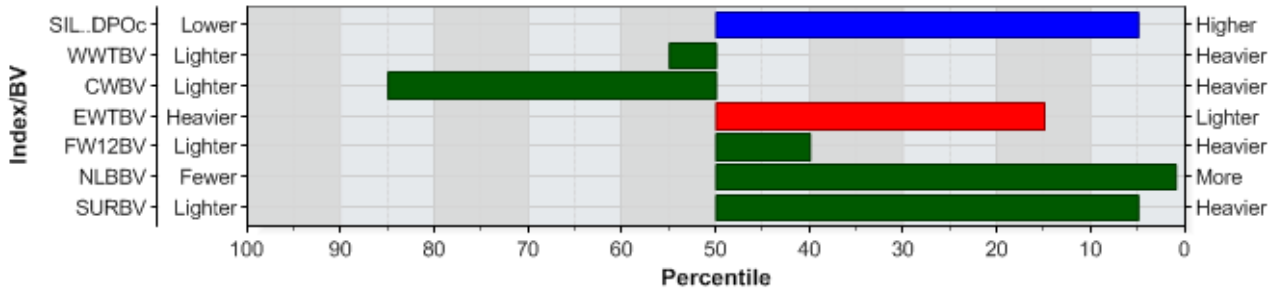
BV Values for Alive Ram 143/08

BV	Result
WWT	4.42
CW	2.23
EWT	5.66
FW12	0.579
NLB	0.160
SUR	0.0550

[Click here to view Index and BV definitions]

Prev Animal | Next Animal | Print this Page

Index and BV Percentiles for 689.249/08



[What the Bars Mean] [Hide Index and BV's Percentile Graph]

Search Criteria

Birth ID	689.249/08
Current ID	689.249/08
Birth Year	2008
Birth Rank	3
No. of Progeny	0

Current Owner	Carthew S J & P
Location	Manawatu
Breed 1	Coop 100%
Breed 2	
Sire Birth ID	689.279/06
Dam Current ID	689.1453/03

Index Values for Alive Ram 249/08

Index	Result
SIL DPOc	1445

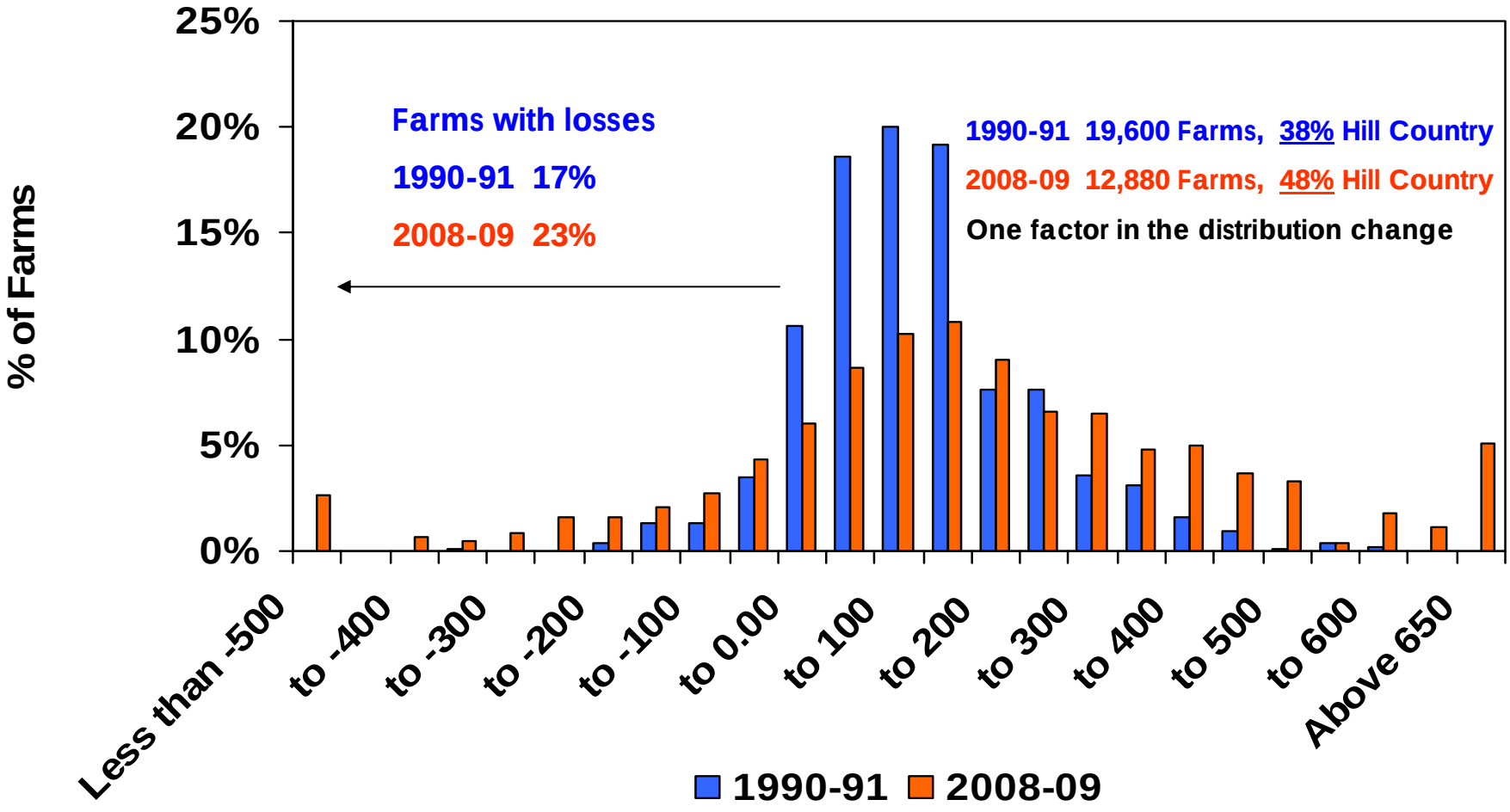
BV Values for Alive Ram 249/08

BV	Result
WWT	2.87
CW	0.61
EWT	0.83
FW12	0.323
NLB	0.321
SUR	0.0512

[Click here to view Index and BV definitions]

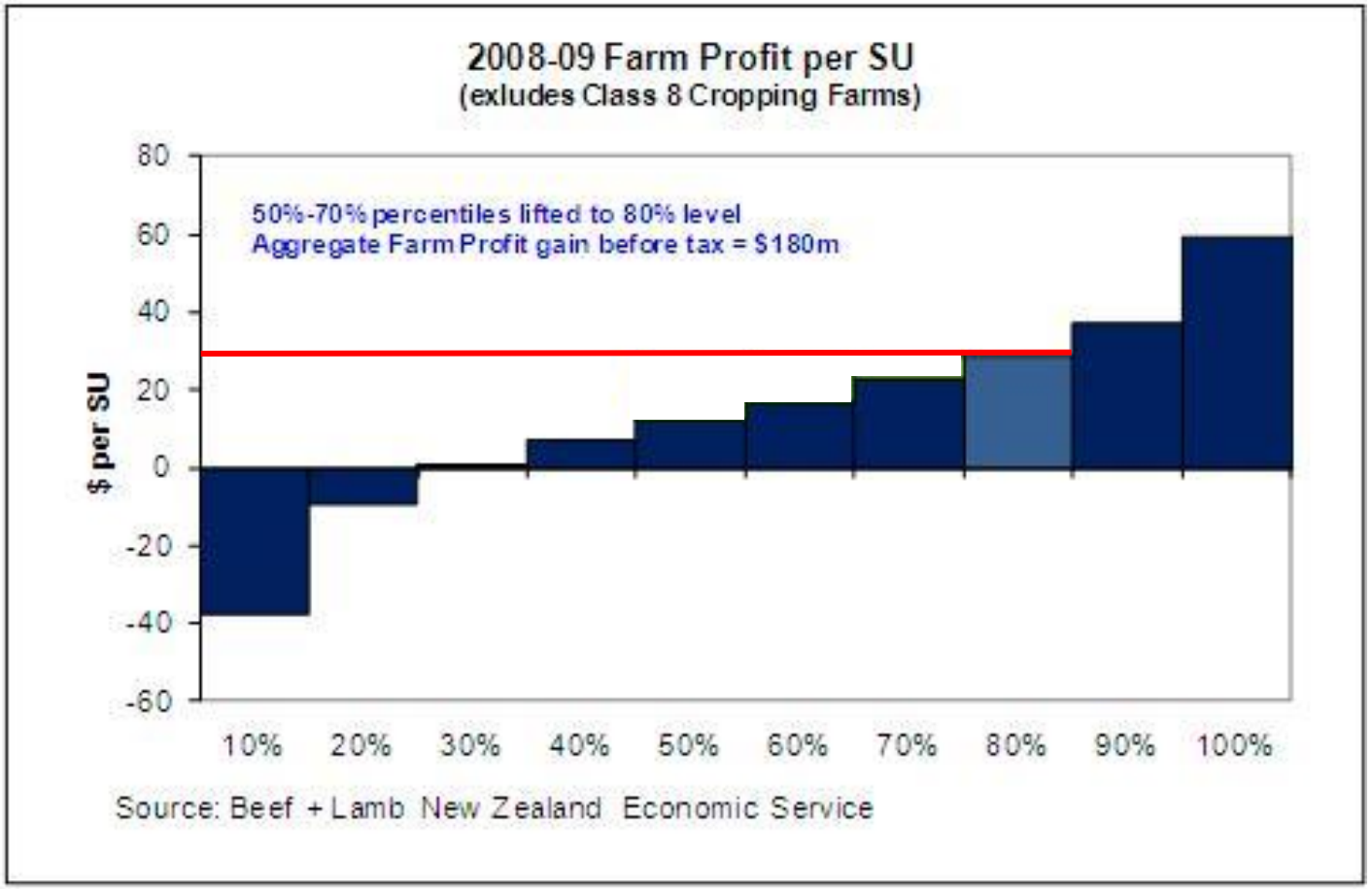
The Opportunity

Sheep & Beef Farms
Farm Profit per ha distribution



Source: Beef + Land New Zealand Economic Service Sheep & Beef Farm Survey

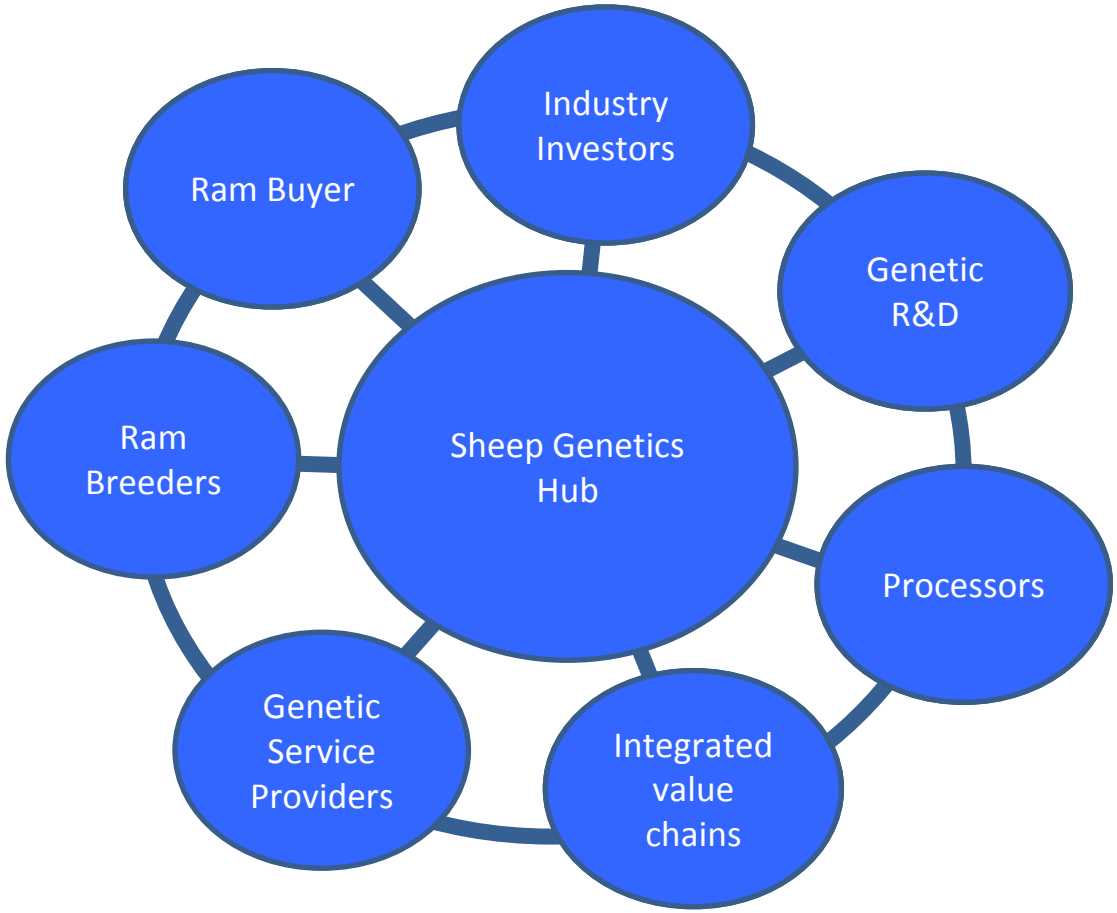
Farm profit per stock unit



Aligning industry investment

- On farm data collection
- Data storage and management
- Analysis
- Targeted research & development
- Market influence and demand
- Uptake & adoption

A consolidated industry view



Summary

Summary

SIL has made significant contribution to success of the NZ sheep industry

- Grown in depth and breadth
- Better use of genetic information
- Clearly added value to industry

Summary

Looking forward…

- Scope to extract greater value
- Industry breeding objectives will change
- More complete alignment of genetic, genomic and adoption