

# THE BENEFITS OF BETTER BREEDING IN THE SCOTTISH SHEEP SECTOR



**Sheep Focus Farm Project**  
**Final Year & Overall Results from Phase 2**



[www.scottishsheepstrategy.org.uk](http://www.scottishsheepstrategy.org.uk)  
Telephone: 0131 472 4039

# The Benefits of Using Performance Recorded Sires with High Value Traits - Executive Summary

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QMS Sheep Enterprise Profitability in Scotland costings consistently show that the top third of producers in the sample achieve higher gross margins through more lambs to sell and heavier lamb weights, with lower levels of associated variable costs.

## **The Benefits of Better Breeding trials have been shown:**

- Over 6,000 lambings
- On 9 farms
- Across 6 years of very variable weather and economic conditions

## **The Performance Recorded Rams with High Value Traits for Growth have given the focus farmers involved in the trials:**

- Better rearing % = more lambs for sale
- Better maternal performance
- Better growth rates to 8 weeks of age and beyond
- Earlier lamb finishing
- Better conformation carcasses
- Better carcasse weights
- More even batches of lambs for sale and breeding
- Reduction in cost of production

**So are you reaping the rewards or losing out?**



## Foreword



This year's end of term report includes the results of the Suffolk Focus Farm project. This aimed to show that the use of performance recorded Suffolk rams could improve growth rates over and above what is expected from a breed which has rapid growth as its main selling point.

Over the past few years the Focus Farm trials involving maternal and terminal sire breeds have provided strong evidence that performance recording does what it says on the tin. It identifies the animals with the best genes for improving flock performance and the bottom line, and that these superior genes are long lasting and transferable to succeeding generations.

On behalf of the Scottish Sheep Strategy Group I thank Rod McKenzie for his sterling efforts in promoting performance recording to the Scottish sheep industry. Love it or loathe it, there can be few sheep breeders in Scotland who have not heard of, or voiced their opinion of, performance recording.

Signet's Alison Glasgow, who did the number crunching and explained the mysteries of EBVs at Focus Farm meetings,

moved on to pastures new with the Limousin Cattle Society. We thank Rod and Alison for their unending patience and good humour and wish both of them well. Thanks also to Morrisons (Supermarkets), Dumfries House, Messrs Dalrymple, Kings Arms and the Gordon family, Wellheads for participating in the Focus Farm Suffolk trial.

It's been a long hard winter which seems to have lasted for over a year and taken a

heavy toll on flock performance the length and breadth of the country. Let's hope there's something better in store for the year ahead.

*Maimie*

**Maimie Paterson**  
SSS Chairman

# The Project

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The purpose of this Focus Farm initiative is to encourage the use of performance information when selecting breeding stock to:

- Improve the quality of lamb from the Scottish sheep industry and
- Increase producers' returns by improving the production genetics within their flocks

The approach taken to achieve this builds on the outcomes of Phase 1<sup>1</sup> of the trial and focuses on two main areas:

- The dissemination of results from on-farm breeding trials, and
  - The sharing of knowledge and skills amongst producers via farm meetings
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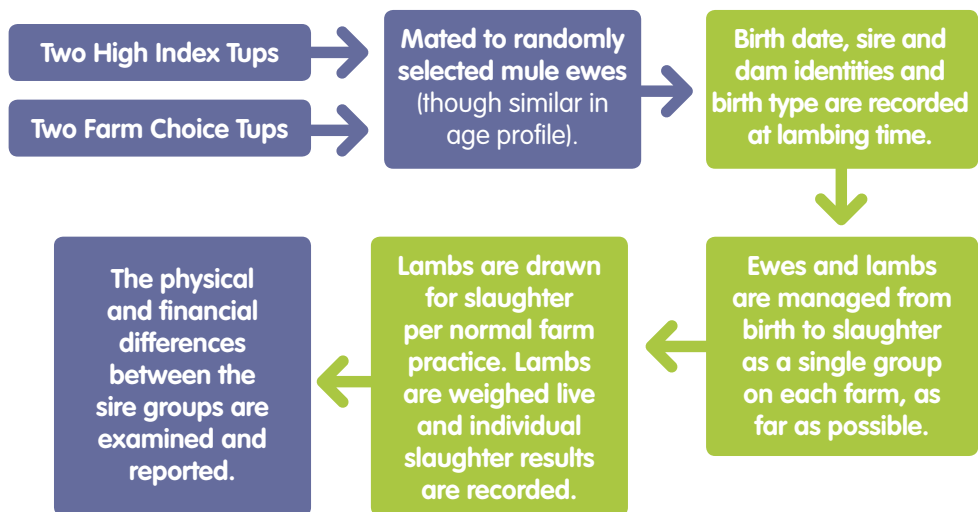
The following pages explain the structure of the project on each of the farms and discuss fully the most recent results from the 2012-born lambs in Phase 2.



## The dissemination of results from on-farm breeding trials

Over two seasons, 2011 and 2012, the financial performance of lambs sired by High Performance Suffolk tups is being compared to that of lambs sired by Suffolk tups of unknown genetic merit in three commercial flocks in Scotland. This report refers to the latter as 'Farm Choice' tups which were largely selected 'by eye'.

The following diagram illustrates how this has been structured on each farm:



In Phase 1 of the trial, females bred in Years 1 & 2 were retained & their performance as dams was analysed in Years 3 & 4. The comparison aims to draw out the role that genetics has to play in finished lamb production and identify opportunities for cost saving and increasing returns through selection of breeding stock.

## The sharing of knowledge and skills amongst producers via farm meetings

Regular farm meetings are held on each farm throughout the year. A fixed group of local producers and industry representatives examine and discuss a wide range of management and husbandry issues relating to the trial. Student groups from the agricultural colleges, local to each farm, are also involved.

<sup>1</sup> See final report titled "Sheep Focus Farm Project – Year 5 The Final Results from Phase One"

## The Farms

The Scottish Sheep Strategy is indebted to the three farms hosting this trial:

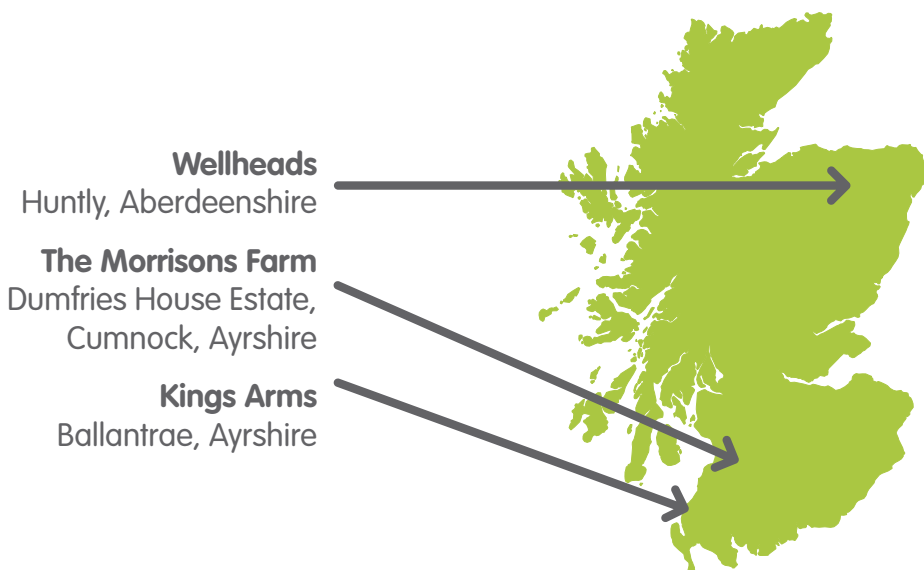
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Messrs H R & C Dalrymple, Kings Arms, Ballantrae, Ayrshire.  
Farm manager, Andrew McLean

Mr & Mrs John Gordon, Wellheads, Huntly, Aberdeenshire.

The Morrisons Farm, Dumfries House Estate, Cumnock, Ayrshire.  
Farm manager, Andrew Robinson

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The success of this trial has been a result of the dedication & attention to detail each farm has offered and their strong support has been very much appreciated. QMS and the Scottish Sheep Strategy committee would also like to thank Signet and especially Alison Glasgow for the management of the Focus Farm projects and the long hours spent data crunching over the past six years.

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Hugh Murray, Andrew McLean, Fiona McLean and James Frame at Kings Arms



Ewen and John Gordon, Wellheads



Claire and Andrew Robinson (Farm Manager) and Andy McKie (Shepherd), The Morrisons Farm

## The Tups



The performance recorded tups were purchased in 2010. They were all shearlings bought at Kelso Ram Sales or, in one instance, directly off farm. They were bought from different consignors at an average price of 800 guineas.

**Their terminal sire Indexes at the time of purchase were all in the top 5% of the breed.** Full details of individual trait EBVs can be found in the booklet 'Sheep Focus Farm Project - Phase Two, Results from the First Year'.

With the exception of one tup at Wellheads, all completed the 2011 tupping season for 2012 lambing. The Wellheads tup was replaced by a shearling with similar Breeding Values.

**For more information on Estimated Breeding Values visit [www.signetfbc.co.uk](http://www.signetfbc.co.uk) or telephone 02476 478829.**

## The Results - Year 2 (2012 lambing)



Dumfries House: All Lambs

Lamb Group	Singles		Twins		Overall		
	No. Lambs	£/Lamb	No. Lambs	£/Lamb	No. Lambs	£/Lamb	
Farm Choice	23	£75.84	107	£70.54	130	£71.48	High Index lambs worth <b>£3.12/lamb</b> more than Farm Choice lambs
High Index	16	£78.35	105	£74.03	121	£74.60	

Assuming 70 ewes mated per tup = 125 lambs

At an additional **£3.12/lamb**, the High Index tups would be worth an additional £390/tup/year

**Over a 4-year working life, this is worth approximately £1,560/tup.**

In each instance above, the returns per lamb have been adjusted to reflect lamb age and increased/decreased costs of keep.

## The Results - Year 2 (2012 lambing)



Kings Arms: Lambs Finished Off Creep

Lamb Group	Singles		Twins		Overall		High Index lambs worth <b>£2.26/lamb</b> more than Farm Choice lambs
	No. Lambs	£/Lamb	No. Lambs	£/Lamb	No. Lambs	£/Lamb	
Farm Choice	13	£85.77	97	£85.50	110	£85.53	
High Index	13	£89.67	69	£87.43	82	£87.79	

Assuming 70 ewes mated per tup = 125 lambs

At an additional **£2.26/lamb**, the High Index tups would be worth an additional £283/tup/year

**Over a 4-year working life, this is worth approximately £1,130/tup.**

**A smaller group of twin-reared lambs were finished off grass.**

**Their results are as follows:**

Lamb Group	Twins		High Index lambs worth <b>£2.13/lamb</b> more than Farm Choice lambs
	No. Lambs	£/Lamb	
Farm Choice	23	£80.03	
High Index	42	£82.16	

## The Results - Year 2 (2012 lambing)



Wellheads: All Lambs

Lamb Group	Singles		Twins		Overall		High Index lambs worth <b>£2.04/lamb</b> less than Farm Choice lambs
	No. Lambs	£/Lamb	No. Lambs	£/Lamb	No. Lambs	£/Lamb	
Farm Choice	9	£78.99	95	£78.13	104	£78.20	
High Index	7	£81.62	98	£75.77	105	£76.16	

The Farm Choice tups that sired the 2011-born lambs were different to those that sired the 2012-born lambs and although unexpected, this result does illustrate the difficulty in using non-recorded tups; until they are bought and used, their breeding merit is unknown. Some will perform very well, others not so – as the two years of results have shown – and this can not be predicted at the time they are purchased.

## Conclusions from Year 2

As with the first phase of this trial, the way in which each farm's results were achieved differed slightly. The main reasons for the differences between the groups on each farm were:

- The faster finishing time of the lambs
- A high proportion of the lambs in the stronger groups selling early in the season.

### **The unexpected Year 2 result from Wellheads serves as a reminder...**

- Of the huge variation that exists between tups (since Farm Choice tups did very well in Year 2, but different Farm Choice tups were much poorer in Year 1).
- Of the fact that the difficulty with non-recorded tups is that their breeding merit is unknown until after they have been bought and used. In both years, the Farm Choice tups were considered to be 'good' at the time they were selected. It is only in retrospect – once the cost of the poorer-performing animals had been borne (purchase costs and poorer lamb returns) that we know this not to be the case.

### **Other main points illustrated by this trial...**

- On some farms, the High Index tups clearly differed from the Farm Choice tups in terms of 'type'. The performance of their commercial lambs has been unaffected by such difference.
- The weather and finishing conditions in Year 2 in particular were challenging. The ability of the lambs sired by the High Index sires to finish quickly within weight specification was largely unimpaired.

Summary of Results	The value of High Index sires compared to Farm Choice sires (where genetic merit not known)
Dumfries House	+ £3.12 / lamb
Kings Arms	+ £2.26 / lamb
Wellheads	- £2.04 / lamb

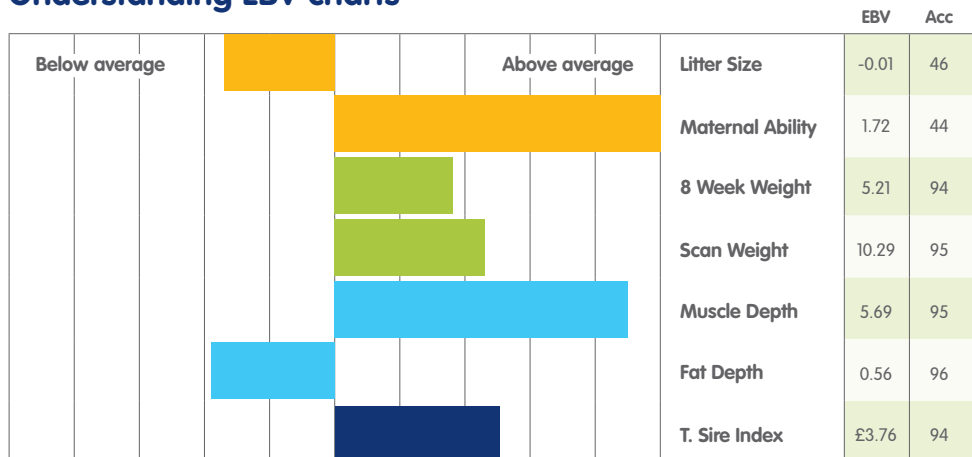
# Thinking of Buying a Performance Recorded Tup?

Then do your homework beforehand.

The pedigree and performance information of all recorded animals can be viewed at any time using the Basco database search facility. Go to [www.egenes.co.uk/bascosearchsheep](http://www.egenes.co.uk/bascosearchsheep) where you can search by individual animal details, by breeder and also by EBV criteria.

To view a demonstration of this facility go to the Scottish Sheep Strategy homepage ([www.scottishsheepstrategy.org.uk](http://www.scottishsheepstrategy.org.uk)). Clicking on 'Video 2' in the EBV Search box will open a demonstration within the Suffolk breed. Alternatively contact QMS on **0131 472 4040** and request an "Investigating EBVs with the BASCO website" CD.

## Understanding EBV charts



- The centre line represents the Breed Average for each EBV and Index.
- Bars to the right indicate the EBV/Index is above Breed Average, and the further to the right they lie, the higher it is above Breed Average.
- Bars to the left indicate the EBV is below breed average.
- EBVs/Indexes and bar charts can only be used within a breed. They do not compare animals across more than one breed.

## Overall Summary of Results from Phase 1 and Phase 2

The following is a summary of the combined results from Phases 1 and 2 of the Focus Farm trial.

**Nine** breeding trials on **nine farms**, spanning **six years** and approximately **6,000 lambings** have shown **clear financial gain** for breeders and finishers in selecting tups of high genetic merit for traits relevant to their farms and markets.



## Phase 1:

Gross return per ewe from High Index sires in comparison to Low Index sires.

Lambing Year	Gross Return (£/Ewe)					
	Dalmeny	Hazelbank	Kinnahaird	Rotmell	Westerhall	Whitchesters
Breed	Texel tups on Lley n x ewes	Purebred Lley n	Texel tups on Mule ewes	Purebred Blackface	Purebred Blackface	Hill North Country Cheviot
2007	-£0.63	Started in '08	£3.29	£11.42	£3.13	£13.95
2008	£0.44	£20.49	£17.94	£7.37	£17.93	£7.97
2009	£18.37	£32.04	£14.68	£15.92	£1.06	£21.93
2010	£6.00	£4.53	Trial end '09	£5.91	Trial end '09	£5.03
Overall Returns	£24.18	£57.06	£35.91	£40.62	£22.12	£48.70
<b>Average Return p.a.</b>	<b>£6.05</b>	<b>£19.02</b>	<b>£11.97</b>	<b>£10.16</b>	<b>£7.37</b>	<b>£12.18</b>

### Note:

The results highlighted in blue indicate returns from the finished lambs. The results highlighted in pink indicate finished lamb returns from the daughters bred by the original High, Low and Farm choice tups.

Example of interpretation: the finished lambs bred by the High Index sires at Dalmeny in 2007 were worth £0.63 less than those bred by the Low Index tups. In 2009, the daughters bred by the High Index sires at Dalmeny were worth £18.37 more than the daughters by the Low Index sires. Averaged over the four-year duration of the trial, lambs & daughters sired by the High Index tups at Dalmeny were worth £6.05/ewe more per annum than lambs & daughters by the Low Index tups.

## Phase 2:

Gross return per lamb from High Index sires in comparison to Farm Choice sires.

Lambing Year	Gross Return (£/lamb)		
	Dumfries House	Kings Arms	Wellheads
Breed	Suffolk tups on mule ewes	Suffolk tups on mule ewes	Suffolk tups on mule ewes
2011	£1.19	£3.91	£3.13
2012	£3.12	£2.26	-£2.04
Overall Returns	£4.31	£6.17	£1.09
<b>Average Return p.a.</b>	<b>£2.16</b>	<b>£3.09</b>	<b>£0.55</b>





These financial benefits were expressed in different ways on different farms, but they included:

- A reduction in the number of days to slaughter
- The production of heavier carcasses
- A lower risk of lambs becoming overfat
- Better conformation carcasses
- More uniform batches of lambs
- Lambs sold to hit a better trade
- More efficient growth leading to a reduction in costs of production
- Heavier store lambs
- Heavier ewe lambs and gimmers prior to tupping
- Greater rearing & finishing success amongst daughters

# Scottish Sheep Strategy Activity

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The full results from both years of this trial as well as those from the previous four years which concentrated on other breeds are available on the Scottish Sheep Strategy web site at **[www.scottishsheepstrategy.org.uk](http://www.scottishsheepstrategy.org.uk)** under Better Breeding.

A series of workshops designed to help tup buyers use EBVs as part of their buying decisions will be held in the run-up to tup sale time in August and September. There will also be a series of EID workshops held to enable sheep farmers to have a better understanding as to how electronic ear tags and readers can help producers monitor their flocks with a view to identifying the underperformers.

A CD rom "Investigating EBVs with the BASCO website" is available free of charge from QMS by telephoning **0131 472 4040**, alternatively this can be viewed on the Scottish Sheep Strategy Website, link on the home page.

Dates will be published on the QMS page of The Scottish Farmer or contact Scottish Sheep Strategy for details: Telephone **0131 472 4039** or check out the website **[www.scottishsheepstrategy.org.uk](http://www.scottishsheepstrategy.org.uk)**

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## Signet Breeding Services

### **Signet Bureau**

Telephone: 02476 478829

Email: [signet@eblex.ahdb.org.uk](mailto:signet@eblex.ahdb.org.uk)

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