

Banff & Buchan Monitor Farm Project

Annual Report 2005

Project Managed by:

Supporting the
land-based industries
for over a century



Project Funded by:



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1 Introduction

The Banff and Buchan Monitor farm is one of 7 projects currently running in Scotland. The project is based around a New Zealand concept of sharing ideas and identifying best practice methods to improve the physical and financial performance of farms in a particular area.

The Banff and Buchan Monitor farm is funded by Quality Meat Scotland. The whole project is managed by SAC specialist Iain Riddell with Turriff consultant Mike Fettes facilitating the Banff and Buchan Monitor Farm.

In practice a Monitor Farm is a commercial unit chosen as being representative of the area. This farm is then visited regularly by a Community Group, made up of local farmers, over a three year period. The Community Group led by the facilitator reviews the current farming practices of the Monitor Farm and tries adapting and refining the system to improve the performance of the farm.

1.1 Objectives of the Monitor Farm Project

The aim is to use the Banff and Buchan Monitor Farm as an example for local farmers that will motivate and influence their ideas to:

- Improve the financial and physical performance of their businesses
- Influence their attitudes to change and encourage the uptake of best practice or more efficient farm systems
- Encourage more sharing of ideas and perhaps co-operation
- Encourage farmers to record data, benchmark their performance against the Monitor Farm and identify ways for both to improve performance
- Encourage the development of systems that reduce production costs, improve performance and free up more management time.

These objectives will be achieved by:-

- Influencing the Community Group members at the Monitor Farm meetings
- Influencing other farmers through articles in the farming press
- The use of Monitor Farm Open Days to demonstrate the findings of the Community Group.

1.2 Key personnel involved in the Banff & Buchan Monitor Farm Project

- Monitor farmers Robert and Ethel Chapman and their son Iain
- Monitor farm stockman Angus Michie
- Facilitator Mike Fettes, SAC Consultant based in Turriff
- Monitor Farm Project Co-ordinator – Iain Riddell, SAC Senior Beef and Sheep Consultant
- Specialist Support – Iain Riddell, Gavin Hill and Jimmy Hyslop all SAC

- QMS Support – Johnny Mackey and Charlotte Maltin
- Community Group – local farmers who regularly attend meetings

1.3 Selection of Monitor Farm

The Monitor Farm selection was done democratically. An open meeting was held in Turriff in August 2004. At that time Iain Riddell, SAC and Johnny Mackey QMS explained how a Monitor Farm would work and farmers were asked to volunteer or nominate other farmers. A short list of three typical beef/suckler cow producers were picked. Using a selection committee of two local farmers, Johnny Mackey, Iain Riddell and Mike Fettes, R & E Chapman, West Cockmuir was picked after farm visits and interviews.

1.4 Community Group

50 members, including 40 farmers, farm's vet, farm's business consultant, farm's beef buyer. On average attendances have averaged around 35 for 2004-05.

- Sub-groups were formed for grassland, crops, beef and financial. These groups meet when required prior to Community Group meetings and influence the decisions taken by the Community Group and ultimately the Monitor Farmer.

1.5 Format of Meetings

Meetings were held regularly throughout the year avoiding the busy harvest period. Meetings started at the Tophead steading at around 1 pm with tours of stock and fields at both Tophead and neighbouring Quarryhead Farms. At around 3-3.30 pm the meetings moved to a shed at Quarryhead (in the summer months) or to the Heath-hill Hotel, Memsie for further discussion. Teas, coffee and biscuits were provided by Mrs Chapman and Mrs Michie when at the Quarryhead meetings or by the hotel.

The facilitator Mike Fettes plus an SAC specialist led the meetings. The knowledge and experiences of the Community Group members was used when making practical decisions for the Monitor Farmer to adopt.

1.6 Publicity

Features in farming press including Press and Journal, Scottish Farmer and some local paper coverage. As far as possible a small press article was released by the Press and Journal the week prior to each meeting.

Community Group members and QMS received reports of each meeting.

2 Farm Details

West Cockmuir - R & E Chapman

2.1 Location

R & E Chapman is a lowground arable and livestock business. The land comprises the two main units of West Cockmuir and Tophead (which includes the farm of Quarryhead).

Both farms are in the Mormond Hill area of Strichen with the main farm West Cockmuir being approximately 3 miles from Strichen.

2.2 Business Ownership and Structure

The business is a partnership between Robert Chapman and his wife. The land is owned by the business. At present the day to day and overall management of the business is undertaken by Robert Chapman. Cattle manager/stockman, Angus Michie, is in charge of the suckler herd and Iain Chapman, Robert's son, is in control of the arable part of the business.

As well as cattle and arable enterprises the business also has a large poultry business selling egg and point of lay pullets. The Monitor Farm Project is only concerned with the beef and arable enterprises.

2.3 Land

The land farmed by R & E Chapman lies within both less favoured and non-less favoured areas. The less favoured area is at Tophead with West Cockmuir being all non-LFA.

The soil varies from heavy clay on the permanent pasture at Tophead to lighter more arable land at West Cockmuir. Yields vary both with soil type and the growing season.

All the land farmed by R & E Chapman falls within the Moray, Aberdeenshire, Banff and Buchan, Nitrate Vulnerable Zone. The spreading of slurry and poultry manure is restricted at times on sandy or shallow soils.

2.4 Present Policy

Arable

Winter and spring crops are produced on the best arable land, the crops grown at present (2004/05) are:-

	Area Ha
Winter barley	40.50
Winter wheat	28.00
Winter Oilseed Rape	40.00
Spring barley	28.00
Grass (permanent & rotational)	122.00
Trees	4.00

As much of the arable work as possible is done by farm staff. Crop agronomy is undertaken by a local company who also supply chemicals.

Grassland and forage

Around 1200 tonnes of grass pit silage is made annually at Tophead approx 30ha first cut and 16ha second cut using contractors for mowing, chopping but mainly farm staff for the pit and local farmers for carting. Only the silage grass receives artificial fertiliser at around 25-30 kg /ha of ammonium nitrate for the first cut. The rest of the fertiliser for the silage and grazing comes from the poultry manure produced at West Cockmuir. Whole crop has been made from 5.25 ha of spring barley.

Livestock

Approximately 130 suckler cows are kept, these are mainly spring calving but some autumn calving from slippage. Replacements have been bought in but it is hoped to produce own replacements in the future by the recent introduction of a Simmental bull. Bulls used are 3 Charolais, one Limousin and one Simmental.

All calves are taken to slaughter, bulls are kept entire and finished at 12-14 months. Heifers go to grass in spring and finish at around 18 months. The cows are fed silage and straw as are the weaned heifers. Bull calves are fed a barley beef ration from weaning.

The cows are kept at Tophead and the herd is relatively new. Mr Chapman and his stockman are keen to improve the herds performance and are open to new ideas (ideal for a Monitor Farm).

2.5 Buildings

A new purpose built cattle shed was erected in 2002 at Tophead where there is also a traditional type steading. All the cows and some of the weaned calves are housed at Tophead. The steading at Quarryhead is used for the finishing bulls and heifers plus some grain storage

2.6 Markets

All arable crops are sold through local merchants. Prime cattle go to local abattoirs but most have gone to McIntosh Donald. Replacement heifers are bought through Thainstone Mart or from local farms.

2.7 Environmental

The business has a Rural Stewardship Scheme undertaking various management options.

Being in a Nitrate Vulnerable Zone and producing a large amount of poultry manure the business is aware of possible pollution problems. However given the rising cost of fertiliser good use of all manure produced will help reduce crop and grass growing costs.

3 First Year Overview and Objectives

At the first Community Group meeting in November 2004 Iain Riddell outlined the overall objectives of the Monitor Farm project. The main points for the Banff and Buchan Monitor Farm were:-

- It is a 3 year project with six Community Group meetings per year
- To achieve maximum benefit group members should attend regularly
- The aim is to improve the overall physical and financial performance of the Monitor Farm through the adoption of best practice by the Community Group

The first year has followed the same sequence as other Monitor Farms. The first few meetings were about becoming familiar with the strengths and weaknesses of the current farming system and getting used to the interaction between group members.

The Monitor Farmers Robert, Ethel and Iain Chapman are very progressive and open to ideas which are practical and show potential.

The farm stockman Angus Michie is like minded and keen to improve the system being prepared to tackle, within reason, the ideas put forward by the Community Group. Angus maintains good livestock records and has an eye for detail. It would be difficult for the business to achieve the current level of output without the dedication and commitment shown by Angus.

The farm has good overall resources in terms of available buildings, breeding stock and available machinery. The land is in good heart and fertility is improved through the constant application of poultry manure from the poultry business at West Cockmuir.

At the first meeting suggestions for the first year objectives were:-

- **Financial data**
 - Discussion on farm accounts – most recent 3 years
 - Enterprise gross and net margins
 - Tackling fixed costs – notably labour, power and property
- **Single Farm Payment**
 - Paper exercise of best strategy
 - Review of best enterprise mix
 - Optimum cow numbers
 - LFASS
 - Optimum crop area
 - Sheep???
- **Cattle diets**
 - Cows
 - Finishing cattle
- **Feeds**
 - Concentrates
 - Area of grass silage
 - Use of cereal wholecrop

- Costs/benefits for different options
- **Reducing cost of overwintering stock**
 - Outwintering cows for part of winter?
 - Earlier turnout of heifers?
 - Forage crops for cattle?
- **Cow fertility**
 - Identify reasons for higher barren rate this year
 - Monitor heifer and cow fertility and calving pattern/spread
- **Calving ease**
 - Assess reasons for caesareans/assistance – can this be reduced through use of bull EBVs and management of cow condition at calving.
- **Calving periods**
 - Spring only or autumn herd for slippage
 - Options for management of barren cows – cull, sell with calf at foot or move to autumn herd
 - Costings for spring and autumn calving
- **Finishing cattle**
 - Calculation of enterprise net margins
 - Cost per kg liveweight or deadweight gain
- **Analysis of grading sheets**
 - Selection of prime cattle
 - Optimum weight for finishing
 - Bulls or steers?
 - Finishing off grass
 - More ad lib cereal diets
- **Cattle genetics**
 - Bull EBVs – choosing right animals for purpose
 - Discuss current bull EBVs and assess performance of progeny of each bull
 - Replacement policy – homebred or buy in?
 - Selection of homebred replacements
- **Herd Health**
 - Strategic health planning – involve vet
 - Testing for presence of disease – BVD, Lepto, IBR
 - Strategy for reducing risk of these diseases
 - Johnes disease strategy
- **Trace element status**
 - Establish levels of Se, Cu, Zn, I
 - Correct problems if discovered
- **Grassland management**
 - Grass heights
 - Best mix of silage and grazing
 - Optimising use of grazed grass
 - Grass seed mixtures
 - Reseed policy

- **Arable crops**
 - Net margins for arable crops
 - Mix of crops and grass
 - Detailed crop management to be tackled by subgroups rather than by whole group
 - Crops, varieties

- **Environmental schemes**
 - Options for further development

- **Fertiliser use**
 - Analysis of poultry litter – risk of locking up phosphate, effect of too much potash
 - Fertiliser policy

Some of these objectives can be tackled in the short term but others are long term projects.

4 Topics Dealt with and results

4.1 Suckler herd financial performance

This exercise was completed in January 2006 prior to the Open Day. Results are shown for calves born in 2004 and finished in 2005 for the spring calving herd only.

Results have been compared to QMS survey data for Rearer finisher enterprises - 12 farms with an average suckler herd of 133 cows with calves sold in 2004. This is a reasonably good match to the Monitor Farm.

Financial performance

	Monitor farm	QMS Rearer finishers
	R&E Chapman 2004	Average 2004
£ per cow		
Calf output	635	560
Subsidies	255	294
less net replacement cost	-41	-58
Output	848	796
Purchased concentrate	19	89
Homegrown concentrate	61	53
Other feed	39	26
Forage	30	44
Total feed and forage	149	212
Vet and med	38	22
Bedding	31	43
Other costs	26	17
Total variable costs	244	294
Gross margin	604	502
Fixed costs	437	422
Net margin	167	80
Net margin less subsidies	-88	-214

Physical performance

Key performance factors	Monitor farm	QMS Rearer finishers
	R&E Chapman 2004	Average 2004
Cows barren	9%	n/a
Calves born alive	94%	90%
Calf deaths to weaning	2%	2%
Calves reared	91%	88%
Av DLWG to weaning kg/day	1.20	1.02

Weaning to sale	Heifers	Bulls
Feeding period	319 days	184 days
Carcass weight kg	327	367
Av sale weight lwt kg	594	668
Average DLWG kg/day	0.88	1.65
Mortality %	4	4
Average price per kg lwt	205 p/kg	200 p/kg

Comment

- R&E Chapman show a better net margin than the sample - £167 per cow v £80 per cow. This has been achieved by having higher output - £75 per cow, lower feed costs - £149 v £212, and lower variable costs - £50. However fixed costs were £15 higher and subsidy payments were £39 lower for Tophead when compared to the survey farms.
- R&E Chapman may differ from these other enterprises by having more animals finished on ad lib cereal diets. Although daily cost of these diets is higher, finishing time is greatly reduced and bedding costs are minimised through having a drier diet.
- Also the Monitor Farm performance is better than for the sample with more calves reared 91% v 88%, better calf growth rates, and higher finishing weights. Finishing heifers in just over 18 months at 327kg and bulls in 13 months at 367kg is excellent performance.
- Removing the subsidy payments alters the R&E Chapman net margin to -£88 per cow as opposed to -£214 per cow for the sample. These figures illustrate the magnitude of the task faced in making beef enterprises pay without subsidy. They also show that the Monitor Farms spring calving herd is more efficient than most and already well ahead of the game. The group will seek to make further improvements in the next two years.

4.2 Herd Health and Fertility

From the outset both the farm vet, David Fotheringham, Strichen and SAC vet Sheila Rusbridge have been actively involved in the Community Group decisions. Robert and Angus realised that there may be some health problems affecting the suckler cows. In the past there had been a number of cows which did not hold to the bull and also a few abortions prior to calving. Blood tests had proved inconclusive and it was decided that this was a priority area to be tackled.

Sheila Rusbridge outlined the main disease problems the herd is likely to have which are BVD and Johnes and that the best way to combat these was through a suitable Health Scheme. Robert is now convinced that this is the way forward for the herd and has decided to join a scheme.

The main points for the diseases to be tackled, how to overcome them and the decisions taken are as follows: -

Bovine Viral Diarrhoea

At the July meeting Sheila Rusbridge and David Fotheringham gave an outline of how this virus is transmitted and its effect on cattle health. The main points are:-

- The virus is contact spread and carrier animals are carriers for life – Tophead has tested antibody negative
- BVD can cause scours, pneumonia, infertility, abortion and deaths in calves
- BVD is introduced through farm boundaries and by bought-in animals
- Control by protecting boundaries – double fencing, don't buy in calves or replacements unless status is known, hygiene – keep farm clean
- Control by vaccinating cows to protect calves and test a sample of yearling calves each year until clear
- David Fotheringham discussed the timing of vaccination consisting of two doses one month apart, then an annual booster
- Robert intends vaccinating until he has reached the herd size he wants, he feels that £3/year/cow is a low price for insurance and in relation to the possible cost of lost calves. Angus said that probably Nov/Dec each year is the best time to vaccinate.

Johnes

- Sheila felt this was the most important problem we face
- Johnes can cause scours, infertility and wasting
- Angus reported that four animals were culled last year because of this so the herd is infected to some degree
- Johnes is transferred from cow to calf via colostrum and faecal contamination
- No cure, has been found
- More difficult to eradicate in closed herds
- Must test and cull, clean up environment through herd hygiene, don't use colostrum from another cow or herd. The organism lives in muck, water and wet areas, colostrum, contaminated streams and water troughs.
- Buy in replacements from known status herds (remember this applies to bulls also)
- Annual test will cost £4/animal in the Health Scheme
- Need at least 2 clear tests to be clean
- Vaccine is available but not full proof, doesn't stop infection
- It is possible to establish clean and dirty herd if suitable buildings are available – need to keep all muck separate etc.
- Robert said he was convinced to go ahead with this although there would be a real cost. The only way to find out the extent of the problem was to test.

Suckler herd fertility

Monitor Farm herd fertility figures were presented at the December meeting. This covered the spring calving herd only. Iain Riddell presented the figures using an SAC survey format.

Spring calvers 2005	Cows/heifers mated		Cows/heifers calving		Live calves	
	Number	%	Number	%	Number	%
Fertility						
Cows/heifers to bull	140					
Cows/heifers calving	118	84.3				
Cows/heifers barren	17	12.1				
Cows/heifers aborting	5	3.6				
Cows/heifers mortality (M-C)	0	0.0				
Cows/heifers calving 1st cycle			59	50.0		
Cows/heifers calving 2nd cycle			32	27.1		
Cows/heifers calving 3rd cycle			8	6.8		
Cows/heifers calving 4th cycle			8	6.8		
Cows/heifers calving 5th cycle			6	5.1		
Cows/heifers calving 6th cycle			3	2.5		
Cows/heifers calving later			2	1.7		
Total calving			118	100.0		
Calving period weeks	0					
Replacements	10	7.1				
Calving						
Live calves > 3 wks					121	96.0
Dead calves < 3 wks					5	4.0
Twin births			8	6.8		
Total born			126			
Rearing						
Calves weaned	119	85.0			119	
Calf mortality 24hr to weaned					2	1.7
Cow/heifer mortality Calv-Wean	3	2.1				

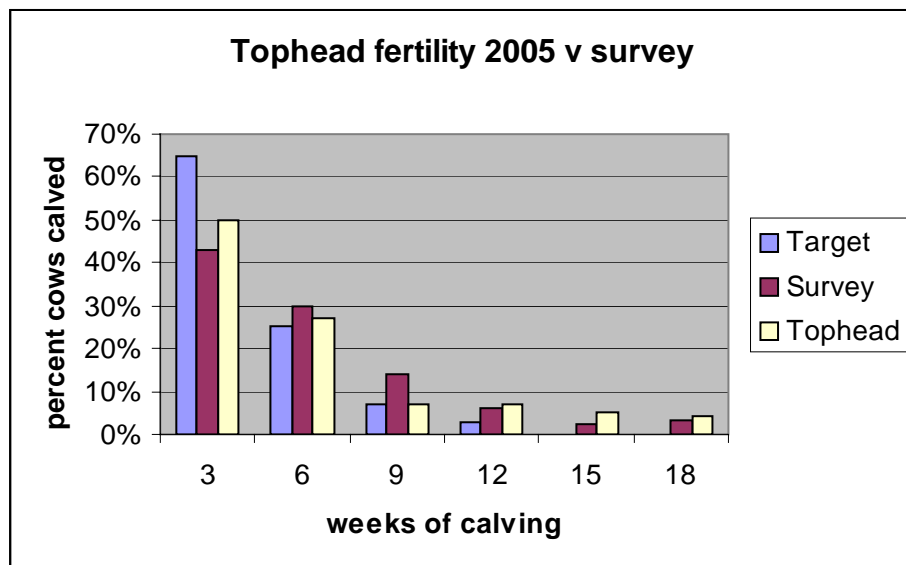
Comment

The main points were:

- The final figure for 2005 of 85% calves reared per cow and heifer put to the bull, was lower than the might have been hoped for. The average suckler herd in the QMS 2004 Suckler Cow Enterprise survey reared 88%. The Tophead spring herd actually achieved 92% calves reared in 2004
- The main reason for low numbers reared was barren cows being higher than expected at 12%. Normally barren cows have been at a lower level in this herd. Also, 3.6% abortion was experienced. Although post mortem analysis was conducted on some calves no clear reason was identified. (repeated from above paragraph)
- Calf deaths from birth to 3 weeks were also slightly higher than desirable at 4% but this can probably be explained by the high percentage of twin births, which are less likely to survive. Normally this target would be set at 2%.

- Replacement rate was lower than for other herds at 7% as opposed to an SAC survey average of 15% due to the young age profile in the Tophead herd.
- Other analysis has shown that calf growth to weaning and sale is significantly above average. This is due to a combination of good genetics, calf breed (mainly Charolais cross calves out of Simmental cross cows) and good stockmanship. Might the large cow type and the longer gestation period of these continental cross calves reduce fertility? Is it difficult to get both excellent calf growth and good herd fertility? This is something the group will analyse at future meetings.

Banff and Buchan Monitor Farm calving compared to SAC survey



The graph above shows the Tophead calving divided into 3 week calving bands compared to “target” figures and the results of an SAC survey comprising over 30 Scottish suckler herds. The start of calving was assessed as 285 days after the bulls went in with the cows. Any live calves born before 285 days were added to the first 3 week period.

Comment

- Tophead calving is better than for the average in the SAC survey with 50% of cows calving in the first 3 weeks and 27% in the second 3 week band.
- There is however quite a long tail to the Tophead calving which given better cull cow prices will be tackled in the next year.
- Disadvantages of long calving periods include – more hours spent supervising calvings, higher risk of infection picked up by late born calves, less time for cows to come back into season for next bulling period, less even batches of calves and staggered weaning.

4.3 Grass Production at Tophead

The Community Group discussed and monitored grass production throughout the 2005 growing season. The grass sub-group comprises

Donald Moir
Iain Taylor
John Penny

This group met several times and gave feedback on their views of how grass was performing.

Notes from the Community Group Meeting on 25th May indicate some of the discussions taking place with Jimmy Hyslop SAC Specialist present. The group discussed grazing policy in the cow grazing fields. It was pointed out that the aim during the early part of the grazing period was to keep grass at a target height of 4-6 cm to promote good leafy growth. Later on in the season cattle become more choosy as there is more spoilt areas and the aim should be for 8-10 cm at that time.

The group felt that the grazed fields looked about right but no one was prepared to measure the exact height in the field. The group discussed how grass height can be controlled by varying grazing intensity. The grazed fields appeared to have a lot of clover but it was pointed out that in reality it was probably only 5-10% of the sward, at this level there will little effect on nitrogen production. All the fertiliser the grazing grass had received was poultry manure.

The silage field we visited was new grass. The sub-group felt that there should be a good silage cut with some grass starting to go flat. The grass should be cut at around 50% flower emergence. The grass mix used is a Murray Duguid mix at 15 kg/acre, composition details are as follows

Grass Seed Mixture (2004)

Kg/acre	
1.75	Perennial Ryegrass Int. Premium
1.50	Perennial Ryegrass Int. Aberdart
1.50	Perennial Ryegrass Int. Fornax Tet.
1.50	Perennial Ryegrass Int. Aubisque Tet.
1.50	Perennial Ryegrass L.Foxtrot
1.50	Perennial Ryegrass L.Aberavon
3.00	Perennial Ryegrass L.Sirocco Tet.
1.75	Timothy, Promesse
0.25	Clover White, Action
0.75	Clover White, Aberherald

15.00 kg per acre

Robert hoped to cut silage on 9th June, most operations will be carried out by contractor with Angus in the pit. It is expected that contractors charges will be around £30/acre. It was hoped that the 90 acres of silage would be taken in on one day, the following morning the pit would be tramped and covered. No additive was to be used.

The group discussed whether or not first years grass should be cut or grazed. In

general most were happy to cut but it was pointed out that grazing hard in the first year could benefit the sward density by encouraging more tillering.

Losses in silage making were discussed. Jimmy outlined that around 20% dry matter losses could be expected for pit silage from field to feeding. For baled silage this could be up to 10%. The group agreed that grass was the cheapest feed, silage was next with concentrates the most expensive.

The group had noticed that grass had grown at Tophead for most of the winter. This is probably because of the poultry manure but care would be needed to ensure as much of this as possible was grazed to prevent winter kill spoiling the sward. It was obvious that cows could be grazed through the winter but the main problem was the weather and poaching. Perhaps Robert should have sheep! - Robert thought he had enough to cope with.

In general all agreed that the grass was in good condition and suitable for the class of stock.

Later in the season at our July meeting the following was discussed when Iain Riddell was present.

It was pointed out that the amount of poultry manure used will limit clover production. Robert said that clover wasn't a priority since he had ample nitrogen from the manure. It was agreed that the grass should be grazed harder but grass growth had been variable over the season and he had to have enough grass throughout the whole season for the number of cows kept. In any case, as we approach the autumn staggers peak plenty grass should be available.

It was agreed that poultry manure should be limited if possible in the back-end to reduce the staggers problem from lush growth and high potash in the grass. Perhaps high magnesium cobs should be fed to cows. The grass sub group felt that grazing fields should be used for the second cut of silage and some first cut fields used for grazing.

The group was concerned that a field re-seeded last year had an infestation of docks appearing. It was pointed out that spraying would kill the clover and it should be done in the spring as the clover starts to grow. It was suggested that since clover wasn't really a priority that a cheap spray of CMPP could be used every year or second year. In another field of older grass, which had been cut for silage, docks had a bigger hold. It was suggested that the outside of this field should be sprayed next spring but leave the rest of the field to find out if that was enough since it is difficult to estimate the worst areas.

The first cut was taken when the fields were wet in early June and the group could see the compaction tracks. We discussed the effect this would have on grass growth. Should these tracks be sub-soiled?

4.4 Arable Crops

Most of the arable crops are grown at West Cockmuir and their performance throughout the year was monitored mainly by the crop sub-group consisting:-

Peter Chapman (Chairman)
Iain Chapman
Iain Learmonth (Farm Agronomist)
Elaine Booth

Although the Monitor Farm Project concerns itself primarily with the cattle enterprises, the crop enterprises are providing feed grain and straw. As a result the crops are part of the whole farming system.

A complication for this Monitor Farm compared with other similar units is the amount of poultry manure being used. This manure has a high fertiliser value but also acts as a liming material because of the amount of carbonate in it. The soils at West Cockmuir are of a low manganese status and the poultry manure aggravates this leading to severe manganese deficiency in cereal crops. Most crops receive around 5 kg/ha of manganese sulphate to combat the deficiency problems and as much of the cattle manure as possible goes on to the arable ground. The amount of poultry manure used also reduced the amount of bagged fertiliser required for crops as well as grass. The main fertiliser used for the crops is ammonium nitrate to supply nitrogen.

The crop varieties grown were as follows:-

Winter barley – Pastoral / Sequel mix

Winter wheat – Riband

Spring barley – Golf

Winter Oilseed Rape – Fortress, Winnter, Malpas

Gross margins for the crops were prepared by the crop sub-group and are as follows:-

	<u>WINTER BARLEY</u>	<u>SPRING BARLEY</u>	<u>WINTER WHEAT</u>	<u>WINTER OSR</u>	<u>HEAR OSR</u>
OUTPUT per acre					
Yield	2.88	2.65	3.40	1.40	1.60
Grain Value	65.00	65.00	71.00	151.00	195.00
Straw Yield (bales)	10.00	10.00	7.00	0.00	0.00
Straw Value (per bale)	4.00	4.00	3.00	0.00	0.00
	227.20	212.25	262.40	211.40	312.00
VARIABLE COSTS per acre					
Seed	19.55	9.60	20.70	14.00	26.10
Fertiliser	20.10	13.40	23.45	18.90	12.20
Organic Fert.	8.00	8.00	8.00	8.00	8.00
Sprays	43.50	26.00	42.50	27.30	24.30
Other Crop Expenses	0.00	0.00	0.00	10.50	10.50
	91.15	57.00	94.65	78.70	81.10
GROSS MARGIN/AC	136.05	155.25	167.75	132.70	230.90
GROSS MARGIN/HA	336.04	383.47	414.34	327.77	570.32
Seed type	Certified	Home Saved	Certified	Certified	Certified
Nitrogen rate/ acre	103 units	69 units	120 units	76 units	42 units
Inorganic P & K	none	none	none	none	none

The crop sub-group had used a figure of £8/acre for poultry manure which Hamish Watson and Peter Chapman pointed out that this material had a hassle value and more of a fixed cost in spreading rather than a straight-forward manurial value. Poultry manure also affected manganese because of its lime value.

2005 Winter Crop Trial

A trial being carried out this year is to monitor the effect of combine drilling on manganese deficiency. One field of winter wheat was combine drilled with P&K. It is expected that the fertiliser will lower pH slightly allowing the crop to grow away faster.

4.5 Finishing Cattle

All the calves produced from the suckler cows are finished on the holding. A real bonus has been the farms weighing crate and Angus has weighed the finishing cattle regularly. Since all finished cattle are sent to McIntosh Donald, having Brian Anderson, their procurement officer, in the Community Group has given the group active feedback on how the cattle are performing from the abattoir end. In the past bull calves have been kept entire and finishing on an ad-lib cereal diet from weaning. Heifers had been fed a store diet from weaning with a low rate cereal plus silage. Bulls normally were finished at 12-14 months with heifers from 16-20 months.

At our February meeting the discussions led to some changes especially for the way the heifers were kept. At that time the heifers were being fed ad-lib silage and around 1½ kg of bruised barley plus minerals. It was agreed that the cattle sub group should look at the alternatives and report their feedback to Robert. The bulls at Quarryhead were looking well and Angus had just weighted some. The group was told that some bulls weighed 650-680kg and were ready to slaughter. Brian Anderson informed the group that the target deadweight was 380 kg for bulls and up to 420 kg for steers and that a 55-56% killing out could be expected. Overweight cattle were penalised. Robert had a bull away last week which was penalised by 5p/kg for being 382 kg deadweight.

The bulls were being fed whole crop as well as ad-lib barley/protein mix. It was pointed out that there was no real reason to feed whole crop to these bulls - ad-lib straw plus the barley mix is all they need. They will eat around 10 kg/day barley plus 1 kg straw.

It was discussed whether or not Robert should castrate this years bull calves in case the changes to OTM rules affect prices next year. Robert feels that the bulls are performing well and it was felt the demand would continue in the short term. Perhaps castrating some but keeping with the bulls was suggested by Patrick Dickson and this was agreed. Again the beef subgroup should review this.

Trial - as a result of the February meeting 14 heifers 400-440 kgs were fed an ad-lib cereal diet and not put out to grass. The remainder of the heifers were fed the normal store diet and put to grass in April.

By the October meeting the performance figures for all the 2004 calves were available and the results show the following. Mike presented figures comparing the ad-lib cereal fed housed only heifers with those put to grass and then finished on an ad-lib cereal diet, along with the ad-lib fed cereal bulls (table below).

Table of Finishing Performance

	Av Dead Wt (Kg)	Av LW Est (Kg)	Days birth to slaughter	DLWG Kg	Av Price £/Kg	Av Gross Value £
Heifer ad-lib cereals only	330.78	625.17	480	1.21	2.06	680.59
Heifer grazed then ad-lib cereals	329.21	622.04	586.64	0.98	1.94	637.28
Bulls	366.42	655.88	397.83	1.53	2.00	731.71

The above table indicates that for the heifers there is no significant difference in weight at slaughter between the 2 heifer systems. The ad-lib cereal only fed heifers were kept for 100 days less and the value had dropped for the grazed batch. However the grazed heifers were the smaller ones but the performance was still lower at 0.98 kg/head/day compared with 1.21 kg/head/day for the intensive batch. Mike pointed out that we need more detailed costings before we can compare more accurately.

The 2005 calves

At the July meeting the group was told that the calves had been on creep feed of barley for 3-4 weeks and were eating 1-2 lbs per day. The group discussed various ways to introduce creep feed to prevent acidosis by animals eating too much. It was common to use a mix of a fibrous energy feed like beet pulp along with the barley and decrease the beet pulp as the calves become used to feeding. Angus just used straight barley with few problems. When he changed onto new season barley, he reduced the amount fed and gradually increased it again .

It was pointed out that feeding calves creep was an efficient way to put on extra weight. It was expected that an extra 20-40 kgs growth could be achieved. Calves were also used to feeding before being weaned and this reduced stress, through having a familiar feed at weaning, and growth check at that time.

A muck midden in grazing field sparked a debate since calves were in direct contact with dung. Sheila Rusbridge pointed out that there could be a risk from Johnes and that middens should be fenced off.

In October Angus started to wean the spring calves all of which have been performing well. Angus told us that he thought the calves had done better this year and he felt that this was because creep feeding had started earlier. The calves were eating 1.5 – 2 kg/day in the field. All the calves have had 2 doses of Rispoval 4 (4 ml/dose) pre weaning and Angus was pleased with reduction of pneumonias since starting to use this product. Calves were being weighed shortly after weaning and this will be discussed later. At weaning the bulls have been moved to Quarryhead and gradually moved on to ad-lib barley plus 12% / T of a Harbro protein concentrate. A couple of the weaned bulls have had a bloat problem and have been split off from the rest.

Once weaned the cows have been put back outside and it is hoped they will stay out until nearer Christmas but this will depend on the weather and soil conditions. The cows are getting silage and straw in the field. The back-end cows have started calving with few problems so far.

From the December meeting the following was observed:-

This year's spring calves are performing well see Table - below. Bulls were achieving weaning weights of around 380 Kg, by using an estimated average birth weight of 50 Kg; this is an average liveweight gain of 1.50 Kg/day. Since weaning, performance on the ad-lib cereal diet has increased and they are now growing around 1.60 Kg/day on average.

Table - Performance of calves

Averages	Weaning Weight kg	Age at weaning days	LWG from birth kg	Daily LWG kg/day	Average Weight 9/12/05 kg	Weight gain from weaning Kg *	DLWG from weaning Kg/day *
Bulls 2005	381	220	331	1.50	462	82 (52 days)	1.59
Heifers (2005)	319	215	274	1.23	400	40 (36 days)	1.11
Bulls 2004					427		1.47

* - Weighed 9/12/05

Comparing present performance with the same cattle last year (see Table 2) the 2004 bull calves were 427 Kg, 35 Kg lighter, and gaining at 1.47 Kg/day. This year the bull calves were being fed ad-lib creep from July and it seems to have paid off. The ad-lib cereal fed heifers are also performing well.

A point raised was how could we improve on this performance? The answer agreed seemed fairly obvious – it would be difficult. The downside of having good performing cows producing such high performance calves is that there may be a compromise in fertility. Fertility performance figures show that the herd achieved about 85% calving/rearing rate from cows/heifers put to the bull with around 4% abortions.

Trial – as a result of discussions at the February meeting 10 bull calves were castrated in May but kept as if they were bulls. The performance of these steers to weaning show no significant difference from the bulls but they are being weighed regularly and a clearer picture will be seen once they are all slaughtered in 2006.

4.6 Replacement Policy

At present Robert buys in replacement in-calf heifers from local markets and local farmers. However following the Community Groups discussions on herd health and fertility the dilemma now facing Robert is, should he:

- a) breed his own replacements by closing his herd and only buying in breeding bulls to breed his own replacement with e.g. Simmental or Limousin

- b) concentrate on maximising the performance of the finishing cattle by buying in replacement heifers from a known status herd (accredited) and using top quality terminal sires to breed high performance calves.

At our October meeting Gavin Hill, SAC beef specialist gave a presentation on using EBVs (Estimated Breeding Values) for selecting bulls. Gavin explained that EBV's are measures of the genetic worth of an animal, half of which will be passed on to its calves. The figures are calculated from all available performance records on the animal as well as its relatives in many different herds. EBV's are an estimate of a range of performance traits covering fertility, calving ease, milking ability, growth and carcass merit. Gavin pointed out that perhaps EBV's are good indicators of which bulls not to go for.

It does not always follow that the highest index bulls realise the highest prices. Bulls have still to be pleasing to the eye in terms of structure, locomotion, legs and other traits that can be assessed by a stockmans eye.

If Robert is only looking for a terminal sire to produce heavy fast growing finishing cattle then attention to the growth EBV's such as 400 weight is essential. However ease of calving is also a priority to minimise the care required at calving and calving information should be used when purchasing a bull. If looking for a bull to breed his own replacements then he still requires fast growing well finishing calves but also easy calving replacement heifers. Calving ease in this case requires closer evaluation since a easy calving bull may produce heifers which themselves are difficult to calve due to a smaller pelvis and Calving Ease Daughter will give a better guide to suitability in this instance.

Robert and Angus are pleased with how the calves are performing and they do not want to jeopardise production. It is likely that the Monitor Farm will concentrate on the production side and replacements will be sourced from a known source. The Community Group should take full credit for this decision and how it was arrived at.

4.7 Silage Analysis and Rations

2005 silage analysis results were as follows:-

Dry Matter	23.6%
Metabolisable Energy	11.4 MJ/kg DM
Protein	9.9% of DM
PH	4.4

The results show a reasonable quality silage but low in protein. Rations had been prepared for the cows as follows (based on 750 kg animals).

	head/day
Silage	14.0 kg
Straw	7.3 kg
Soya bean meal Hipro	0.70 kg
Min / Vit	80 g

For 320 kg heifers a suitable ration assuming 0.70 kg/head liveweight gain

	Head/day
Silage	15.3 kg
Soya bean meal Hipro	0.50 kg
Barley	1.50 kg

Min / Vit

70 g

The only extra is soya bean meal but Robert is already using this for poultry so it can easily be accessed. It was pointed out that low protein first cut silages are common this year but it is only through analysis that this can be highlighted. Accurate rations can then be calculated to ensure target performance levels.

5 Objectives for 2006

At the December 2005 meeting the Community group put forward the following objectives for the coming year.

Health and Fertility

- Blood testing and results or analysis
- Replacement policy decisions
- Benchmarking key areas against national results
- Assess health problems eg fluke and staggers
- Genetics evaluation through EBV's

Financial Analysis

- Cost systems eg heifers short keep versus long keep and bulls versus steers
- Net Margin analysis for enterprises
- Fixed costs analysis

General monitoring and evaluation

- Silage 1 cut or 2, cut later, arable silage
- Feeds for finishing cattle
- Grassland management
- Fertiliser use

Some of these subjects are already being monitored but there is keen interest within the Community Group to take this further. The group is also interested in benchmarking their own systems against the Monitor Farm figures.

6 Conclusions after the first year – the facilitators view

The first year of the Banff and Buchan Monitor farm has proved to be successful in many ways.

The Monitor Farmers Robert, Ethel and Iain are flexible and prepared to adapt their farming system if the Community Group can show an advantage. Even though they are extremely busy with their other business interests they are open to suggestions and willing to take time to help even with minor detail to help the project run smoothly.

The farms stockman Angus Michie is also adaptable but has an eye for detail. It is the facilitators view that the two main reasons for the high performance being achieved at the Monitor Farm is a) the class of stock and b) the stockmanship skills shown by Angus.

The Community Group has proved loyal to the project and have agreed that they get more out of the meetings than they originally thought they would. The group has a wealth of experience both practical and theoretical. One trend noticed over the last two meetings is an increasing desire by the group to benchmark their own systems against that of the Monitor Farm. This process has started with some crop gross margin comparisons and will be encouraged during the coming years.

At each meeting a beef specialist is invited and these specialists add vitality to the meetings by providing us with a varied and useful source of information. Sheila Rusbridge, SAC Vet and the farm vet have also provided us with invaluable information and pointed us in the right direction during the animal health discussions. Brian Anderson of McIntosh Donald, Beef Buyers has contributed to our understanding of the market forces.

QMS staff, Johnny Mackey and Charlotte Maltin have both contributed to general discussion. They have focused our thoughts on market forces and the perceptions of the general public, our customers. We must always remember that we are dealing with food and we must strive to maintain a high quality product and maintain welfare standards.

In conclusion I am sure the Banff and Buchan Monitor Farm can look forward to another interesting if not hectic year.