

Perth Monitor Farm Project

Annual Report 2004 and 2005

**Project Managed
by
SAC:**

Supporting the
land-based industries
for over a century



**Funded by
SEERAD and QMS**



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PERTH MONITOR FARM PROJECT

Introduction

Perthshire was selected as one of two sites to test the effectiveness of Monitor Farms in Scotland. This 3-year pilot project was initiated and largely funded by SEERAD with additional financial backing from QMS. SAC was commissioned to run the project and provide facilitators for each group.

The objectives of the project are:

- To improve the physical and financial performance of farm businesses by using the Monitor Farm to demonstrate beneficial technologies and practices.
- To influence farmers' attitudes to change and decision-making and encourage a more rapid uptake of good practise.
- To encourage record-keeping, data collection and benchmarking to provide a measure of performance.
- To encourage the development of systems that reduce the costs of production, improve physical and financial performance, and free up more time for farmers to manage their businesses.
- To investigate ways of increasing returns through adding value and utilising diverse sources of income.

Selection of Farm

The Monitor Farm should be a commercially run working farm typical of the area. The selection process involved local farmers either volunteering or being nominated as candidates for the role. From a short list of three main contenders Pitroddie Farm was chosen as the Monitor Farm in December 2003.

Meetings and Attendance

Following the New Zealand model a "community group" was formed from local farmers wishing to participate in the project. The Perth community group has 41 members including the farm's vet (David Ramsay of Tay Valley Veterinary Centre) and representatives of various organisations in the industry. The first on-farm meeting was held on 27th February 2004 and the group has averaged 6 meetings per year.

Attendance at some meetings has been low, and this may be attributed to the following factors:

1. A degree of reluctance to share information, and resistance to group activities.
2. Lack of time to attend meetings (most members are short-staffed).
3. Other interests taking a higher priority when spare time is available.

However group members are always keen to receive the notes from meetings.

The Perth group rejected the widely-adopted structure of community groups elsewhere, deciding against the appointment of a chairman to lead the group and against sub-groups to focus on particular areas of the business (e.g. cattle, sheep, crops, finance, environment).

Publicity

The project has been publicised in the local and national press (SAC Newsletters, Scottish Farmer features, Scotsman, etc.) and on television (BBC Landward). The Open Day on 27th July 2005 was widely advertised locally, and was covered by local journalists.

“Crops” Magazine invited a presentation on the arable aspects of the farm at their Scottish Conference in November 2005, and subsequently ran an article in their journal.

Farm Details

Pitroddie Farm is owned by the Steele family and has been managed by Douglas Allan for over 20 years. The land lies approximately twelve miles east of Perth and rises from sea level to 900 ft (270m). There are three steadings; Pitroddie, Nether Durdie and The Goddens, and the units are contiguous. There are approximately 600 acres (240 ha) of arable crops on the heavy clay soil of the Carse of Gowrie, which is classified as non-LFA. The 750 acres (300 ha) of higher ground is within the Less Favoured Area and carries 100 suckler cows and followers and 820 ewes. The farm employs a full-time stockman, Colin Ewart, who lives at The Goddens.

Details of the farmed units are summarised below:-

<u>Farm</u>		<u>Total Area Ha.</u>	<u>Designation</u>	<u>Ownership Status</u>
Pitroddie	}	357.95	Non LFA	Owned
Nether Durdie			Non LFA	Owned
The Goddens		297.11	LFA	Owned
Glendoick		63.71	Non LFA	Contract Farmed

The cows are predominantly Limousin crosses calving in spring to Limousin and Angus bulls. There is a shortage of cattle accommodation and not all the progeny can be housed and finished over winter. Rations are based on silage, straw and home-grown barley.

The ewes are mainly Texel crosses with some Mule-type ewes in the flock. Suffolk, Texel and Beltex tups are used. A lambing percentage of 160% is typical. Around 120 ewe lambs are retained for breeding and the remaining lambs are finished on the farm.

The arable crops at the start of the project were winter wheat, winter barley, winter oilseed rape, spring barley, turnips and potatoes (let out). The greatest acreage was in spring barley. Much of the set-aside is in strips along watercourses or other wet areas of fields. Most of the arable operations, with the exception of combining, are carried out by a local contractor.

Wildlife conservation is an interest and Pitroddie has CPS and RSS schemes in place. There are about 17 acres (6.78 ha) of woodland on the farm.

SWOT Analysis

Strengths

- A supportive owner committed to the farm.
- An experienced farm manager who is willing to adopt new technology.
- Productive, fertile lowground capable of producing good yields from a wide range of crops.
- Relatively free-draining upland capable of producing good grass and forage crops.
- A reputation for producing quality livestock meeting the requirements of the butcher trade in particular.
- A good variety of wildlife habitats.

Weaknesses

- Inadequate cattle housing; some buildings requiring reroofing.
- Sub-optimal profits.
- Lack of fencing on lowground precludes grazing.
- Lengthy calving period.

Opportunities

- Cereal production costs could be reduced.
- Further participation in agri-environmental schemes could generate additional income.
- Establishment of clover-rich swards could reduce fertiliser inputs.

Threats

- CAP Reform could reduce farm income.
- Johne's Disease in the suckler herd could result in significant financial losses.
- Increasing cost of complying with legislation.

PROGRESS REPORT

Subject Areas

The Monitor Farmer and the Community Group identified several areas within the broader objectives for closer attention. These include:

- Johne's Disease
- Heifer Replacement Policy
- Cattle Store / Finishing System and Marketing
- Winter Feed
- Establishment of Clover-rich Swards
- Finishing Lambs
- Faecal Egg Counts and Worm Control
- Crop Rotations
- Crop Protection Programmes
- Enterprise Costings

Most of the above topics were continued into the second year, with the addition of the following:

- Scanning Ewes
- Land Management Contracts
- Maximising Single Farm Payments
- Recording Cattle Weights.

In September 2004 (9 months into the project) Douglas Allan and his wife decided to take a sabbatical year to travel around New Zealand. This gave the group the additional challenge of continuing the project in Douglas's absence whilst a temporary part-time manager was taken on to run the farm.

Results

Johne's Disease

The herd was first tested in December 2000 and there were 3 inconclusive and 3 suspected positive results out of 100 cows. Results since then are shown below:

	Positive	Suspected	Inconclusive
2000	0	3	3
2001	8	2	
2002	0	1	1
2003	3		
2004	6		
2005	3	2	

The farm has worked closely with David Ramsay of Tay Valley Veterinary group in developing a strategy to tackle Johne's Disease, and he has provided the Community Group with a lot of valuable information on the subject.

The policy at Pitroddie is to test and cull, and with such high numbers of cows testing positive in 2001 the advice was to buy in all heifer replacements. Now that the herd has been tested for some years it is possible to establish low-risk family lines, and the strategy now is to ensure that heifers from cows testing positive are not used for breeding. On the other hand heifers from negative lines are less risky than buying in from an unknown source, and could be kept as replacements.

Other control measures include fencing off watercourses (paid for through RSS) and keeping down rabbit numbers.

Heifer Replacement Policy

To a large extent this has been dictated by the strategy to control Johne's. In the past the farm had autumn and spring-calving cows and used heifers from each group as replacements for the other, thus calving at 2½ years. The group was keen to keep the calving confined to the spring and buy in heifers from autumn-calving

herds. There is an increasing list of herds tested free of Johne's with heifers to sell, and this can be a useful compromise.

Retaining home-bred heifers will necessitate a decision on whether to calve at 2 or 3 years, and appropriate management of the replacements from selection onwards.

Winter Feeding for Cattle

With cattle in at least three different steadings over winter, feeding is a time-consuming job and has frequently involved transporting feedstuffs from yard to yard. The idea is to use the most convenient feed at each place, so the system is as shown:

Pitroddie Cows	Straw + Urea-treated Wheat
Goddens Cows	Silage
Nether Durdie Youngstock	Silage + Barley + Soya

Urea-treated wheat has proved a very useful feed for Pitroddie. It is palatable and easily used, and has the added advantage of allowing an early start to the wheat harvest.

The group considered growing beans as a source of protein but rejected the idea as soya was competitively priced, easy to handle, and avoided the issue of another late crop to harvest.

Livestock Enterprise Costings

First year results are shown below. These are shown net of production subsidies but include LFASS payments. Pitroddie has higher than average output and very low fixed costs compared to other farms. More detailed costings for each enterprise are shown in Appendix I.

	Number	GM/hd	FCs/hd	Net Margin/hd	Total
Suckler Cows	106	£168	£241	-£73	-£7738
Finishing Steers	37	£235	£210	£25	£947
Finishing Heifers	51	£178	£190	-£12	-£657
Breeding Ewes	720	£49.55	£32	£17	£12,440
Combined Total					£4992

Clover-Rich Swards

Douglas has considered converting the farm to organic production but rather than making that commitment he has adopted some organic principles that suit Pitroddie. In the autumn of 2004 a field was sown to a red clover / ryegrass mixture, with the intention of managing it to maximise nitrogen fixation by the clover. The group has followed this crop from the start. The first problem was a vigorous flush of broadleaved weeds, which were controlled by topping. Cattle broke in from a neighbouring field and one was lost to bloat. The following season the field was grazed successfully. One strategy to avoid bloat is to limit access to clover-rich grazing initially – this reduces the risk of animals gorging on clover. Bloat-guard can be added to water troughs, and the provision of a bale of straw can also help.

The field then suffered a serious infestation of thistles. Finding a clover-safe effective herbicide proved difficult and expert advice was sought – the field was treated with Squire + MCPA which worked slowly but effectively.

The field was grazed with lambs in the summer of 2005.

Finishing Lambs

White clover was stitched into one of three similar-sized fields at The Goddens, with a view to finishing lambs off grass. In the first year of the project there was some advantage in lamb weights early on but insufficient data gathered to provide hard evidence. In 2005 a trial was attempted to compare the growth rate of lambs on the

clover-rich sward with similar lambs on a conventional, nitrogen-fertilised sward. Colin weighed lambs at grass and received an assurance that two batches of lambs could be followed through at slaughter to give comparative carcass weights. Unfortunately the slaughterhouse failed to differentiate between the two groups and the work was lost. This has been a very frustrating trial as it is felt that there may be significant differences in the results. There will be another attempt to collect adequate data in summer 2006.

In general the sheep enterprise is very profitable. One of the main factors is that the lambs achieve relatively high weights, and thus pays off as the Texel and Suffolk-cross carcasses are good quality and grade well. Lambs are sold through both the live marts to the butchers and deadweight to Highland Glen.

Faecal Egg Counts

Observations by Colin and Douglas have suggested that sheep worms were not a particular problem at Pitroddie, and this was not a primary issue of concern.

In summer 2005 samples were taken from some dirty lambs and the results showed high levels of coccidiosis and some nematodirus. Further tests established no resistance to anthelmintics so the lambs were dosed with a white drench to combat the nematodirus. The challenge now is to maintain this situation, and the farms will continue to take veterinary advice on best practice for internal parasite control.

Crop Rotations

At the start of the project spring barley was the major crop on the 600 acres of arable land. The group felt that the heavy carse clay was more suited to growing wheat and that this would be a better option despite the later harvest. To justify the change of emphasis a costing exercise was carried out. This suggested that even a second wheat crop was more profitable than spring barley. The results are tabulated below:

Costs 2004	£/ha			
	WOSR	WW1	WB	SB
Seed	40	53	48	44
Fertiliser	128	130	115	68
Spray	76	99	105	36
Contract & combining	127	173	171	143
Desiccation	57			
Total Cost	428	455	439	291
Yield	3.7	10	7.4	5.6
Break-even Price	£115/T	£46/T	£59/T	£52/T

The plan to maximise the area of wheat was adopted for 2005. The change in crop area is detailed below.

Arable Crops	Area ha	
	2003	2005
Winter Oilseed Rape	15	26
Winter Wheat	51	81
Spring Wheat	-	15
Winter Barley	13	18
Spring Barley	82	34
Spring Oats	6	-
Potatoes (let)	7	16
Set-aside	32	22

In the second year the plan was to establish some fields in continuous wheat. Unfortunately the weather was very wet at drilling time. Rather than abandon the plan, spring wheat was sown in February to maintain the continuity. The spring wheat performed badly but winter wheat was sown in excellent conditions in autumn 2005. The spring barley acreage is being further reduced in response to the very poor prices secured for the 2005 crop, and Douglas is even contemplating leaving a field fallow as that is a better option than growing a crop that loses money.

The crop costing exercise was repeated in 2005, and significant savings were made in seed and spray costs. Unfortunately the large increase in fertiliser prices negated the advantage gained in all crops apart from spring barley.

Costs 2005	£/ha			
	WOSR	WW1	WB	SB
Seed	42	45	47	48
Fertiliser	135	136	140	85
Spray	74	80	77	28
Contract & combining	209	201	194	182
Desiccation	7			
Total Cost	468	470	466	349
Yield	3.75	9.4	8	5
Break-even Price	£125/T	£50/T	£58/T	£70/T

Crop Protection Programmes

The group identified some weaknesses in the spray programmes and suggested that the farm would benefit from independent crop advice. This resulted in a complete change from the previous system (one contractor recommended, applied and charged for products) to a new system whereby SAC gives recommendations, the farm purchases the products at best price, and the arable contractor applies the sprays. Varietal strengths are being exploited and spray timing has not been adversely affected.

Savings have been made in spray expenses by reducing rates where appropriate, using a one-spray programme on Decanter spring barley, targeting Manganese treatments where they are required and shopping around for best prices.

Crop spray programmes for 2004/05 are shown below:

	WW Robigus (sown 27/9/04)	WW Consort (sown 22/10/04)
Herbicide	Picona Quantum	Harmony SX CMPP Briotril (HBN)
T1	Proline Orchid (CTL) Chlormequat	Proline Orchid Flexity Chlormequat
T2	Landmark	Landmark Orchid
T3	Swing Gold	
Total Cost	£83.48/ha	£72.90
	WB Sequel (sown 16/9/04)	SB Optic (sown 4/4/05)
Herbicide	Picona CMPP	Harmony SX CMPP Briotril
PGR	Moddus Chlormequat	
T1	Acanto Proline	Fandango
T2	Fandango Orchid	Proline Orchid
Total Cost	£77.03/ha	£47.10/ha

The continuous wheat was treated with Latitude seed dressing to help prevent Take-all. This appeared to have little effect on the crop harvested in 2005 but the group decided to persevere with it as logic suggests it should be worthwhile.

Additional Issues for Year 2

Douglas Allan's Sabbatical

The topics reported above cover two years' work. The second year of the project was largely conducted in Douglas' absence while he travelled and worked in New Zealand, returning in October 2005.

During this period the farm management duties were carried out by SAC adviser Peter Lindsay. The farm book-keeper continued to work one day a week as usual. Practical crop work was done by Fraser Hunter and the livestock handling and daily management was the responsibility of stockman Colin Ewart. These people truly rose to the occasion and enabled the project to run smoothly and efficiently while Douglas was away. A debt of gratitude is due to them for their enthusiasm and assistance.

Ewe Scanning

663 ewes were scanned for the first time in January 2005, with a result of 190%. The breakdown was:

Empty	26
Singles	123
Twins	408
Triplets	100
Quads	6

Twenty six out of 663 scanned empty (4%) which was acceptable, but at lambing the eild numbers were notably greater. The scanning result for 2006 is 184% and the plan is to try and ascertain where losses are occurring and what the main causes of lamb deaths are.

Changes in the EU Subsidy System

The CAP Reform in 2005 moved support from production and farmers were allocated entitlements to Single Farm Payment based on claims in the period 2000-2002. The farming system at Pitroddie has not changed materially since then, so the reforms have not created any particular problems. These payments will reduce over the years, so like all Scottish farmers Douglas and the group need to look at ways of mitigating the losses.

Land Management Contracts

These were introduced as part of the new tiered system of support. Additional funding is available on various animal welfare and environmental protection measures, up to a maximum of approximately £3,500 per farming business. The options selected for Pitroddie include Quality Assurance Schemes, the basic Animal Health and Welfare Programme (to assist with the Johne's tests) and ditch management. The lowground is criss-crossed with ditches and pows and this is a good option for Pitroddie.

Weighing Facilities

A weigh cell was purchased in early 2005 to fit to the cattle crush. This has allowed accurate weights and liveweight gains to be measured for the first time. Previously the cattle were weighed by the float-load. The weigh cell has produced very valuable information and proved to be a useful tool.

The 2005 grazing season was very difficult for cattle with a cold wet period at turn-out, followed by very dry conditions in late summer that halted grass production. The effect on the cattle was worse than it appeared with one group of cattle averaging only 0.4 kg daily liveweight gain over the grazing period. The community group will be looking at ways to overcome these checks next season.

Objectives for 2006

- Continue with Strategies to Reduce Johne's Disease
- Investigate Possibilities to Expand Cattle Housing
- Complete a Season Comparing Lambing Finished on Clover-rich and Conventional Swards
- Consider Purchase of Grain Drier
- Identify Causes of Lamb Losses.

An open day will be held, probably in October or November.

A full assessment of the financial impact of the project will be completed at the end of year 3.

A second questionnaire will be completed by the Community Group and the Monitor Farmer to assess changes in their decision-making processes resulting from participation in the project.