Aberdeenshire Arable Monitor Farm

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Foveran
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Report from 5th Meeting – 7th March 2012

Crop walking, costings, crystal ball gazing and compost!

Date of next meeting: end April/May 2012 (weather dependent)

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The Aberdeenshire Arable Monitor Farm Programme is an HGCA project supported by the Scottish Government SRDP Skills Development Scheme.

TOP TIP FROM MEETING

One of the most undervalued piece of equipment is the hand spade! When doing your crop walking it is worthwhile digging the occasional spade depth to inspect the soil profile, check root development, etc. Worm activity is a good indicator of soil health, there should be 6 worms per spade of soil. Check all the 'sore' bare bits in the field and even take digital pictures as a record.

Meeting Programme:

- Welcome from Chairman
- Andrew's update
- View growing crops
- Foveran Hall – fly cup
- Farm Budget
- Market prospects – Ian Keith, Frontier
- Benefit and value of compost – Mel & Grant Keenan

1. Welcome

Chairman, Peter Chapman, welcomed everyone to the fifth meeting of the project and outlined the agenda for the day. There were 42 farmers and others from the Community Group present.

2. Andrew's update – what has happened since the last meeting?

Crops in the ground and planned for this spring are as follows. Forward sold tonnages and prices are also shown in the last column.

Cropping 2011/2012

Crops	Area (ha)	2011 (ha)	2012 Varieties	Forward sold to date
W OSR	39.2	41.7	Cracker	To Aberdeen Grain.
W Barley	78.46	60.3	Retriever, Sequel, Bamboo, Volume	
W Wheat	50.21	63.0	Invicta & Viscount	145t @ £160/t 87t @ £140/t 145t @ £142/t Average £148/t to date, all Nov 2012 delivery.
W Oats	31.47	39.4	Balado	87t @ £140/t 145t @ £140/t All milling, Nov 2012 delivery.
Sp Barley	34.17	23.3	Propino & Chronicle	
Sp Oats	53.08	48.7	Firth	
Grass	38.83	48.7		
Fallow/grass margins	4.98	9.4		
Trees	10.2	6.2		
Total	**340.6**	**340.6**		

Some key points;

- Grain sales decisions influenced by trip South – farmers there been selling much more wheat forward.
- Depending on yield, good proportion of wheat now sold
- Also wanted to secure milling oat market
- Balado not favoured w oat variety, but all could get
- Not traded any barley – will follow feed market strategy as per last year
- Planned spring barley varieties are Propino (will grow as feed variety, but is approved for brewing and suitable for malting export) and Chronicle (just been added to Recommended List as a variety with brewing and malting potential – Andrew growing it as part of a merchants 400t batch trial)

Other update news;

- N fert on to all winter crops except wheat last week
- No compost applied in spring – next application will be autumn
- Crops all looking good – most parks have growing endrigs! This alone will improve yield potential.
- New vari-rate fert spreader home. K still to go on and may vari-rate apply. Next year aim to go full vari-rate. Considering N sensor system.
- CropBench group now producing comparative figures – very interesting to see variation. Will report back results at May meeting.
- **GRAIN DRIER DECISION**: Following the meetings on drier options, Andrew and George feel that this is a much more complex decision than originally expected, both in terms of the sheer number of options (especially when add in biomass burners and the Renewable Heat Incentive) and sheer capital cost. The decision for 2012 is to buy a second-hand mobile drier just for this harvest and to upgrade the existing store (which can hold 1,000t and will be needed in the long term, but is in relatively poor condition – expect to spend £10K) to give time to consider options in more depth and to see if driers are definitely accepted for the RHI. A final decision will be made for 2013 harvest – a double tray drier and possibly a biomass burner are the preferred options at the moment.
- Hamish Watson (whose burner and tray drier we visited at Balring, Mintlaw) reported to the group that Ofgem had carried out trial visits to biomass boilers and their interim report is expected to be positive with regard to accepting biomass fired driers within the RHI scheme.

3. Inspecting the growing crops

We aim to follow 5 crops through the season. At this meeting we covered 3 of the crops and the main points raised are listed below. The detailed field records, as at the time of visit, for all 5 crops are included at Appendix 1.

Field 1 Tank Field (behind Westfield). Min Till Oilseed Rape Establishment Trial.

- After WB
- Two thirds of field sown conventionally.

- Third of field done with Hamish Watsons min till drill. This puts the seed down the back of subsoiler legs (5 leg, 3m width). Hamish developed this over last 12 years as a faster way to establish rape. Started with discs at front, but this disturbed soil and led to lots of volunteers and weeds. Gone to wider spacing – individual plants are bigger and branch strongly. Need to direct cut as not enough stalks to hold up swathed crop.
- Can sow fast – did 50 acres (over two locations) on the day they came to Andrew's.
- The min till area has one large wet area and quite a lot of volunteers. Will be interesting to see how the widely spaced rows of rape plants compete.
- Note: this technique was very successful (on much lighter soils) on the Angus arable monitor farm – increased work rates, cut costs and increased yields 1t/ha.
- 200kg of NutriSphere N (38%N and 18%SO3) @ £329/t applied on 26/02/11. So had 75kg of N so far. NutriSphere by combining N and S allows one fert application (of ammonium sulphate) to be cut out.
- Had 10-10-25 in autumn.
- Aim to apply 185kg N. Had 75kg so far. When apply next dose of N? – when first flower petal is opening – cuts down vegetative bulk of the crop without harming seed yield.
- Plant count is 40 plants/m2 on min till part, 50 plants on conventional part of field. 50 plants/m2 too many for a hybrid variety especially?
- More even plant size on the min till area, much more variable size on the conventional. Overall the min till area plants are bigger and stronger – a function of fewer plants or ability to put down deeper roots due to subsoiling??
- 15 plants counted per metre of min till row length
- Some min till folk are cutting back to 1kg seed only
- Winter stem weevil – had Oct/Nov pyrethroid spray to kill adults so don't get grubs in spring
- Only extra cost on the min till area was 0.3l/ha of Falcon to take out some volunteers
- All had slug control and light leafspot spray.

Field 2 Overhill (above road at Savock). Winter Oats

- See detailed field record sheet in Appendix
- Very even, thick crop at time of viewing
- After WW which looked OK but yield was disappointing last year
- Variety Balado – not ideal as has low specific weight making milling difficult. And its very thick! (333 plants/m2)
- Had muck. Other WO field had compost.
- Had 75 kg N as 200kg/Ha NutriSphere N. Aiming for 140kg N total. Balado stiff strawed so could go higher.
- Had pre-emergence Hurricane for meadow grass – bad in this field. Also bad for cleavers (the most competitive of our broad leaved weeds) so will have to spray for it in spring. Then will get growth regulator and mildew spray. Will use Strobilurins to give max chance for grain to fill well to hit milling weight.
- Sterile brome problem here, but it is claimed that compost controls it! Davy Smith has found that – we will monitor.
- One of the advantages of W Oats the geese don't seem to like it!
- Soil spade sample taken by Mel Keenan – rule of thumb: looking for 6 worms per spadeful in a healthy soil. Structure looks good.

Field 3 Big Park East. Winter Wheat. Compost Trial.

- See Appendix for detail.
- Three year compost trial. Three treatments, each on 6 ha plots: green compost, food compost and untreated control.
- Plot 1: 30t/ha green waste compost. Plot 2: 14t/ha food waste compost. Plot 3: Control - artificial fert only.
- Will measure yields, structure, soil micro-organisms, organic matter, fertility, heavy metals, etc across the 3 treatments.
- N applications will be equalised over the 3 plots.
- Previous crop was OSR – straw chopped.
- Not had weed spray, not rolled (bad idea on this heavier field), no P and K fert.
- 425 plants/m2. Some feel it's too thick e.g. Peter Chapman only drills 375 seeds/m2.
- No spring N yet. When should apply? Group consensus 10 days time.
- Meadow grass and cleavers also a problem here. Will also have probably 4 fungicide sprays. Will be over the field 5 times with the sprayer.
- Bottom of field very heavy and wet – crop yellowing. Cut back inputs there? Group consensus is that you should never give up on wheat – it has massive ability to recover.

4. Farm Budget

Why do a budget?

- A basis for monitoring progress over the year – check actual v. budget. Gives chance to react and control
- Sets a target for the year
- It's a model of the business – once you have a budget on the computer you can work through the impact of changes, whether simple things like a change in grain prices, or more complex like dropping an enterprise.
- It's a learning tool – doing the budget and monitoring/updating means you better understand how your business works over time and in differing seasons.
- And of course we do them to keep the bank happy! i.e. monitor your overdraft balance.

For the Monitor Farm programme it's important that we have a budget for the business partly because it allows us to monitor the financial outcome of what we are trying to improve.

How do you do the budget?

Just copy totals across from last years accounts and tweak up and down?

Ideally no. It's important to work through output and variable costs from first principles – working through input rates and prices makes the budget much more accurate and improves your knowledge. We use cashflow worksheets for the main outputs and inputs. Fixed costs probably need to be based on previous years levels with adjustments for changing usage and prices e.g. fuel prices.

Lots of budgeting packages are available so it's relatively easy to do your own computer based calculations – it's best if you "own" the figures anyway. An alternative is to use a consultant or a budgeting service like FCS to do the crunching.

Andrew has prepared a draft budget for their next financial year (1 June 2012 to 31 May 2013) which quite neatly covers the 2012 harvest and marketing year. The Monitor Farm programme is about improving the trading performance of the business so interest, rent and personal drawings are excluded.

Harvest 2012 Area, Yield and Price Assumptions

	Area (ha)	Yield (t/ha)	Price (£/t)
WW	50.21	7.7	140 – 160 Already sold
WB	78.46	7	125 – 135
WO	31.47	6.3	130 – 140 Part already sold
SO	53.08	5.3	130 – 140
SB	34.17	5.5	125 – 135
WOSR	39.2	3.3	410
Grass	38.83		

CASHFLOW Year to 31 May 2013

	Jun	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	TOTAL
CASH INFLOW													
Crops													
Wheat						23,200	32,770						55,970
Milling oats						32,480	30,420						62,900
Feed barley					25,000		24,440	9,300	9,300	9,300	9,225		86,565
Oilseed rape			13,300	13,222			13,223		13,222				52,967
Straw				2,500	7,000	8,750		1,770					20,020
													0
Other Income	11,436	15,700	14,386	11,436	14,386	19,686	135,900	11,436	16,886	11,436	16,236	14,386	293,310
Capital sales													0
New Loans													0
TOTAL INFLOW	11,436	15,700	27,686	27,158	46,386	84,116	236,753	22,506	39,408	20,736	25,461	14,386	571,732
CASH OUTFLOW													
Seeds					2,155		8,405			3,665			14,225
Fertiliser						4,000	69,215	2,000					75,215
Sprays		4,994				4,994				4,994	4,994	4,994	24,970
Sundry Crop			1,432		1,432	1,432	8,250	1,432			1,432		15,410
Other variable costs	3,050	6,300	3,150	4,800	8,000	36,682	33,831	2,950	3,450	35,231	33,431	3,350	174,225
Fixed Costs & Cap Ex	18,301	7,020	36,920	22,151	16,220	4,520	20,951	4,020	8,120	17,701	5,720	8,420	170,064
													0
Drawings													0
Loan repayment													0
TOTAL OUTFLOW	21,351	18,314	41,502	26,951	27,807	51,628	140,652	10,402	11,570	61,591	45,577	16,764	474,109
NET CASHFLOW	-9,915	-2,614	-13,816	207	18,579	32,488	96,101	12,104	27,838	-40,855	-20,116	-2,378	**97,623**

before rent, interest, drawings

BUDGET PROFIT AND LOSS ACCOUNT
Year to 31 May 2013

	£
Output	
Crops	278,422
Other	173,385
Total Output	451,807
Variable Costs	
Seed	14,225
Fertiliser	75,215
Sprays	24,970
Sundry Crop	15,410
Other VC's	54,300
Total Variable Costs	184,120
Total Fixed Costs	180,445
Total Costs	364,565
Net Profit before rent and interest	87,242

What next?

- This is our starting point for following the financial performance of the business over the coming year.
- The Management Group will sit down with the budget and more background calculations to assess if it is a fair target for the year.
- At the next meeting we will present Net Margin figures for each crop from the work done by the Arable Business Group members.
- During the programme we will have a business planning workshop, using the budget and margin figures to look at the likely impact of changes in policy – a winter meeting.

5. Market Prospects – Ian Keith, Frontier

Old crop:

- Those with old crop still to sell need to be mindful demand will end soon
- Expect to see the differential between wheat and feed barley prices to widen
- Still demand for old crop wheat
- Most of the UK exportable surplus is now gone
- Don’t expect to see the price of wheat collapsing

- Two-thirds of the EU OSR goes to biofuel protection.

- Continental production down last year.
- All of the Scottish OSR went across to Europe

New Crop:

- The key factor will be what happens over the next 3-months, weather wise around the world
- Parts of Europe experienced extreme cold temps over the winter so still unsure how crops will over winter.
- There is a drought in South America. Soybean crop predicted down 10% (20mt)
- Parts of S-E England already experiencing a drought
- With crude oil > $120 /barrel - OSR prices lifted £350/t Nov before any bonus payments

- The new Vivergo bioethanol plant (£300M) at Hull will open this summer. This is a joint venture between BP, DuPont and ABF. At full capacity will take 1.2MT wheat. Still uncertainty over the future on the Ensus bioethanol plant.
- Expect the demand for wheat to be strong, in addition there will be a deficit in Scotland.

Malting Barley

- The whisky distilling industry is on full production, record exports, low stocks
- Will require over 800,000t malting barley, limitation is malting capacity, some of which will have to come from England
- Area of spring barley in Scotland expected to increase by 5% due to lower winter wheat sowings central Scotland, Fife and parts of Borders.
- Some permanent grass may be ploughed to ensure 'rotational' as a response to CAP Reform proposals.

Advice

- Volatility will still be a feature of this season's market
- Don't base expectations on last year, consider selling crops forward

Current spot prices

Feed barley	£135/t
Malting barley	£170/t
Feed Wheat	£150/t
OSR	£350/T

6 Benefits and value of Compost

Mel and Grant Keenan, Keenan Recycling Ltd, Hillhead of Auchreddie, New Deer, provided a presentation to the group. The Keenan's now operate one of the largest composting plants in the world, comprising of 18 in-vessel compostors producing 25,000t of green waste and 10,000t of food waste. With increasing quantities of compost coming on to the market, this is an ideal opportunity to learn more about the benefits and value of compost.

Key points from their talk

- Compost has been used for centuries. Historically land fertility was highest around towns /cities due to the sewage & food waste being carried out over time.
- Green compost is a natural product made by shredding, mixing, stacking and turning biodegradable materials under managed conditions.
- It takes approx 6-wks to compost green waste in turned outdoor windrow systems and 12-wks for food waste in special vertical closed vessels which are turned regularly.
- The compost has been processed under controlled conditions to produce a high quality product, as defined by BSI PAS100.
- Compost is a great soil improver to counteract the decline in organic matter and fertility following intensive arable production with no grass break or livestock
- It takes 150 years to make a teaspoon of soil but only 10-yrs for it to be destroyed!
- Some farmers with continuous cereals have remarked that seagulls no longer follow their plough – due to a lack of worms. Worms move more soil than a tractor!
- Aeration in soils is critical, if not, it becomes anaerobic leading to all sorts of problems
- Intensive cropping leads to a decline in OM and in extreme cases in conjunction with a drought led to the US dust bowls for example
- Organic matter greatly improves the quality of many types of soils and thereby improves its ability to support the production of high yielding crops.
- The target OM is 7-10% in most Scottish soils.
- In addition to providing valuable OM to soils, compost acts as slow release fertilisers for N and P and provide a readily available source of K. Other nutrients, including Mg, S and trace elements are also provided.
- Compost also provides a useful source of calcium and has a useful liming effect. It has up to 15% of the neutralising value of lime on a dry matter basis, but since it tends to be applied at much higher rates than lime, the liming effect of a single compost application can be more than that of a typical application of lime.
- The direct fertiliser replacement value of green compost is up to £9 per tonne, and £13/t for food compost. Additional value comes from improving soil health, soil trace element content and organic matter levels.
- Improved soil quality can lead to savings in fuel during cultivations, and allow machinery on to land on more days in the year without damaging soil structure.
- Spreading costs are generally about £2 - 4 per tonne depending whether farm machinery is used or contractors employed.
- NVZ regulations and Waste Management Licensing allow a maximum of 250 kg/ha N to be applied from the compost in any year.
- Distance from the composting site is a significant factor in the cost of compost and the high cost of transporting compost means that farms close to the composting site will find it easier to justify the cost of using it.

Fertiliser value – typical analysis (at a rate of 14t per ha)

	Green Waste	Premium Waste (food)	Availability Year 1
Nitrogen	122 kg/ha	257 kg/ha	5%
Phosphate	44 kg/h	108 kg/h	50%
Potassium	84 kg/ha	116 kg/ha	80%
Mg	24 kg/h	32 kg/h	20%
S	12 kg/ha	27 kg/ha	10%

Green compost costs £2.75/t, while premium compost (food) costs £5.50/t.

Summary of Compost benefits	
• reduced need for bagged fertilizers	• better soil structure leading to:
• reduced nutrient leaching	greater workability of the soil
• increased yielding potential	increased traffic tolerance
• potential to improve drainage in heavier soils	• beneficial soil microorganisms aid:
• improved water-holding in light soils	soil aggregation
• reduced erosion risk	nutrient recycling
	plant disease suppression

7 Other Project Business

Management Committee

Remember this is a farmer led and owned project. A small Management Committee has been established to represent the Community Group. Please give them a call if you have any feedback or suggestions to make the project even better.

NAME	MOBILE NO
Peter Chapman Jnr – Chairman	07711 347735
Bryan Chalmers	07801 296811
Stuart Davidson	07885 232401
Robert Drysdale	07753 929248
Phil Smith	07900 991196
Willie Willox	07778 110937
Andrew Booth (Monitor Farmer)	07970 767071

Date of next meeting end April/ early May 2012 – weather dependent

Appendix 1. Detailed Field Record Sheets