



# **Aberdeenshire Arable Monitor Farm**

**George and Andrew Booth  
Savock Farm  
Foveran  
Aberdeenshire  
AB41 6BA**

**Meeting Report – 1st Nov 2011**

**Lessons from the 2011 harvest year and Biomass burners**

**Next Meeting: Tues 6<sup>nd</sup> Dec 2011**

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

## Meeting Programme:

- Welcome from Chairman
- Andrew's update
- View growing crops
- Foveran Hall – fly cup
- Group exercise – review of lessons from the 2011 season
- Market prospects – Bruce Ferguson, Openfield
- Biomass Burner for drier – Robert Ramsay

### 1. Welcome

Peter Chapman, welcomed everyone and outlined the meeting programme. There were 60 farmers & others from the Community Group present.

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

#### Harvest Results 2011

Crops	Area (ha)	Varieties	Yield (t/ha)	2010 Yield
W OSR	41.7	Cracker & Catana,	3.5	3.1
W Barley	60.3	Retriever & Sequel	7.3	7.0
W Wheat	63.0	Alchemy & Viscount	7.6	7.3
W Oats	39.4	Dalguise	6.1	7.2
Sp Barley	23.3	Belgravia	5.6	5.5
Sp Oats	48.7	Firth	6.0	5.1
Grass	48.7			
Fallow	9.4			
Trees	6.2			
<b>Total</b>	<b>340.6</b>			

#### Harvest feedback:

- Started 6 August, finished 29 September (30/9 in 2010). A chauve!
- WB – early sown Retriever did well. Sequel sown Oct back of Westfield disappointed. All WB propcorned for feed sales over winter.
- WOSR – Catana did well on clean ground. Cracker less well overall as lost 2ha of field too wet to cut. Only sown Cracker this autumn due to its clubroot resistance.
- W Oats – bit disappointed. Late harvest so harvest losses in one field – maybe roundup next year. Field we walked at Westfield did best.
- SB – cut a lot before started WW. Belgravia aimed at high N market. Got a lot of slurry. Late maturing. N landed between low and high, so no market. Dried it and stored for now.
- WW – started well, 4 September, 3.5t. 26% moisture on average however. Early sown crops on lighter land (e.g. one we walked earlier) didn't do as well as later sown. Lot of blind grain sites on ears. Wheat yields down generally across NE by 1.5 t/ha? Very variable.
- S Oats – Harvested last. Ran well at both Mundurno and Bucksburn with little input.

- Got good conditions to sow next crops. Wheat in 4 to 8 Sept (mostly Invicta). 50% WB (mostly Retriever and Sequel, wee bit Bamboo and Volume) sown by mid Sept, WO (Belado) late Sept. Belado not preferred but couldn't get Dalguise.
- Been difficult getting pre and post emergence weed sprays on due to catchy weather and wind, so used contractor to help. All now been sprayed.
- All crops sold (wheat and oats direct to Scotgrain Elrick store) except 470t feed barley (100t dried, rest propcorned). See marketing sheet in Appendix.
- Other: min till OSR trial on 4.8 ha, started long-term compost trial, bought Amazone vari-rate fert spreader.

### 2011/12 Cropping

Crops	Area (ha)	2010/11 (ha)	Varieties
W OSR	39.9	41.7	Cracker
W Barley	107.2	60.3	Retriever, Sequel, Bamboo & Volume
W Wheat	63.4	63.0	Invicta & Viscount
W Oats	32.2	39.4	Balado
Sp Barley		23.3	
Sp Oats		48.7	
Grass		48.7	
Fallow		9.4	
Trees	6.2	6.2	
<b>Total</b>	<b>340.6</b>	<b>340.6</b>	

### 3. View Growing Crops

#### Field 1

Field Name:	Big Park - East	£ per Ha	Comments
Field size (ha)	19 ha		
P, K, pH status	Field been sampled in detail for compost trial – results next meeting.		
Soil type(s)	Heavy at bottom, lighter at top.		
Current crop and variety	Wheat – Viscount		
Previous crop and variety	WOSR – Cracker		
Previous crop yield	3.3 t/ha		
Cultivations description	Ploughed and one-pass, except bottom heavier half which got power harrow. Not rolled. Might roll in spring?		Had slug pellets.

Sowing date	30 Sept.		
Seed rate and price	240 kg/ha (£392/t)	£94.08	Group questioned if 1,000 grain weight done? Worth doing as huge variation in seed samples. Use to guide sowing rate.
Fertiliser application type, rate and date	No autumn fert.		3 yr compost trial – 3 plots each with light land at top, heavy at bottom. Plot 1 30 t/ha green waste compost. Plot 2 14 t/ha food waste compost. Plot 3 No compost or dung.
Plant population post establishment	Not counted yet, but visually good even germination.		

Compost trial will measure soil structure, soil bugs, yield across the 3 treatments. N applications will be equalised over the 3 plots.

## Field 2

Field Name:		£ per Ha	Comments
Field size (ha)			
P, K, pH status			
Soil type(s)			
Current crop and variety	WOSR – Cracker		
Previous crop and variety	WB		
Previous crop yield			
Cultivations description	Plough, one-pass.		
Sowing date	22 August		
Seed rate and price			
Fertiliser application type, rate and date	Had seedbed fert.		
Plant population post establishment	Reckon 70 plants/m <sup>2</sup> now. Expect to fall to 50 by spring.		How many needed? 20 to 30 plants enough? Too risky?
Plant population spring			
Tillering measure			
Spray, rates and date	Had weedkiller and fungicide. Falcon for volunteer cereals		Slug pellets round headland only

	debated – Ian Dalley would still do it to get rid of source of eyespot.		
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**Field 3. Behind Westfield. Min Till OSR 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.

**4. Lessons from the 2010/11 season**

**This was a group exercise to capture all the lessons /experiences from the latest harvest year.**

**Questions:**

- Range of yields across crops?
- How did varieties vary?
- Fert and disease/agronomy lessons?
- Successes/ failures?
- Any new ideas/ trials?
- Marketing experiences?
- Coping with late and wet harvest – lessons?
- Knock on effects for next season?

**Group feedback:**

- Winter barley yield was average to poor, depending on establishment conditions and timing
- Some SB did higher yields than WB! An excellent SB year despite what looked like a poor summer. Problem was wet harvest.
- Winter wheat at best average, but better on lighter land and in west Aberdeenshire.
- OSR was good to excellent.
- Feature of this year was sheer variation eg WB 2.5t/ac to 4.0t/ac.
- Big lesson: when to stop sowing winter cereals? Later crops were most often the worst. Good establishment helps the crop cope with a lot over rest of season.
- Varieties: big debate is WB variety choice – the hybrid Volume versus Sequel. Most felt Volume was the best for yield by far. Maybe 1 t/ha difference. But quality is an issue, but may depend on management. Lot of samples were very hairy, though we may have been going in too quick due to weather worries. Mobile driers knocked off a fair bit of

the awn. Other problem with Volume in some cases was brackling – one quoted up to 1t/ha on ground.

- Varieties: Cracker OSR proved itself, though it was a good OSR year anyway. Clubroot resistance showed through.
- Varieties: SB. Folk expect Propino, Concerto, Waggon to increase, Optic to decrease again. Some raised concerns with Concerto – skinning, excessive secondary growth.
- Varieties: Winter Wheat. Viscount OK, not too much sprouting. No real stand out varieties.
- Varieties: W Oats. Concern over Belado – folk found it very difficult to get accepted for milling this year.
- Straw yields – WB very little, SB huge!
- Agrochems: Othello used on meadow grass, seemed to knock back wheat – result of a dry spring?
- Fert: Definitely a year which rewarded putting fert down the spout with the seed – lack of moisture meant closer nutrients were to seed the better.
- Any trials? Several folk doing detailed soil sampling for precision application, wood burning drier success, min till WW after OSR (disc), windrowed potatoes, slurry applied to standing crop.
- Any specific harvest lessons? Need combine capacity! Hindsight and patience! Reinforced importance of drainage maintenance and problem of plough pans.
- Market lessons? Spreading risk has worked. Know your cost of production.

## **5. Market Prospects – Bruce Ferguson, General Manager, Openfield**

### **Wheat Market Drivers:**

- World Wheat stock levels recovered (200Mt compared to 114Mt 4 yrs ago), record production. Buyers more relaxed.
- East European crops are recovering and Russia has lifted embargo (1<sup>st</sup> July) on exports.
- Stock-to-use levels high - 30%, would have expected prices to fall more
- However, wheat prices buoyed by the US Maize crop which had low yields – so compounders substituting maize with wheat (hence maize underpinning wheat)
- UK exportable wheat surplus 2.0MT, already 1MT moved. Quality levels excellent in UK
- Ensus bioethanol plant due to re-open early spring. Vivergo Fuel due for completion mid 2012 in Hull (1MT)
- Half the US maize crop goes for bioethanol production
- UK feed wheat & barley prices near parity - £140/t

### **Barley Market**

- Barley yields & quality surprisingly good in Scotland
- Lot of malting barley still on farms, but all stores full - may struggle to find a market
- Depends if farm stores able to condition & recover the barley
- The demand for MB hasn't disappeared, just that users have shortage of stores
- Malting barley £208/t fob for export (so £170/t ex-farm)
- English MB quality poor – high N's due to dry
- Feed barley supplies tight - ex-farm £140/t

## OSR Market

- Record UK crop (prodn 2.7Mt, consumption 1.85Mt). However, EU crops suffered from drought so EU deficit 3MT. UK need to export 0.5Mt, but on target as 160K t shifted in July alone.
- Price fallen from the peak and currently £345/t ex-farm. If hit £365 to £375, go for it?

## Advice

- Don't base expectations on last year
- If you have crops to sell, look out for spike (+£10--£15/t) then consider selling
- Volatility will still be a feature of the market
- Remember to consider selling crops forward – have over 2 years flexibility
- Protect a margin over input costs, as they have increased and threaten margins
- Greek default an issue?? Supply/Demand fundamentals too strong. Would only produce a £10/t downside?

## 6 Biomass Straw Burner – Robert Ramsay, Mains of Kinblethmont, Arbroath

Robert farms 1,500ac of good arable land near Arbroath. He provided the group with a video clip to demonstrate his straw burner and its operation.

### Key points from Robert's talk

- Has 4,500t cereals to dry.
- An all arable farm, no livestock, in past incorporated the straw into soil
- Has continuous flow drier but added a straw burner (300kw) in 2010, to provide an alternative to the existing diesel drier.
- The driver was to cut fuel costs which are rising every year and hopefully to take advantage of the new Govt incentive to use renewable heat – the RHI
- This year (2011) added another larger biomass burner (Ekopol, 600kw) - made in Poland
- Big square straw bales are burned in a chamber, then heat exchanger heats water to 60C, which then heats the air going through the fan to the grain.
- The RHI scheme has been announced with projected rates, but is still to be approved by the EU (State Aid rules) before going live.
- To be eligible for Renewable Heat Incentive (RHI), the system must be accredited by OFGEM and needs to be metered – thus the need for water rather than direct heat.
- Robert admitted his system is labour intensive and basically needs a man to be present most of the time
- A chamber of 2 big bales takes approx 3 hrs to burn.
- The residue ash is cleaned out weekly
- There were some Health & Safety concerns - the chamber temp rises to 300c
- Still uses the diesel burners as a back-up
- The whole system is still under development
- The burners could use residue wood, and other biomass materials as an alternative to straw
- In terms of calorific value, 2.67t straw (value £133) = 1,000l of diesel (value £700) – a saving a £567.

- No capital costs for the biomass burners were given
- Robert provided an estimate of the running costs. It showed that although the straw burners were only used for half of the crops this year, they still provided a saving in diesel fuel of £28,050. In addition, if the RHI scheme had been open, it could have earned an extra £21,170 in subsidy = total £49,220.

At the next meeting we will be visiting a number of drying and storage options. One will be Hamish Watsons biomass fired tray drier at Balring, Mintlaw. The boiler cost approx £30,000 and the benefits are substantial – see the detail at the next meeting on 6 December.

## 7 Other Project Business

### Arable Business Groups

Benchmarking will form a key part of the ABG's with members expected to share production costs, gross margins, yields, prices, etc. to look for improvements.

**Anyone wishing to find out more about the Arable Business Group please contact Jim Booth, Tel 01651 – 843607 or jim.booth@saos.coop**

### 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

Tues 6<sup>nd</sup> Dec, 2011, 1pm Balring Farm, Mintlaw

## Appendix 1 Crop marketing figures at November 2011.

### WHEAT

<b>Production 2011</b>	<b>458</b>
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Varieties: Alchemy, Viscount

#### SALES

Date	Buyer	Tonnage	Delivery date	Price	
23 Aug '10	Scotgrain	203	Nov-11	£130	26,390
8 Mar '11	Scotgrain	203	Nov-11	£160	32,480
26-Oct-11	Scotgrain	52	Jan-12	£152	7,904
sub-total		458			<b>66,774</b>
Balance to sell		<u>0</u>		<b>Av price</b>	<b>146</b>

### OATS

<b>Production 2011</b>	<b>530</b>	<b>(240 WO &amp; 290 SO)</b>
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Varieties: Dalguise (WO), Firth (Sp O)

#### SALES

Date	Buyer	Tonnage	Delivery date	Price	
2 Sep '10	Scotgrain	116	Hvst	£116	13,456
9 Feb '11	Scotgrain	300	Hvst	£168	50,400
31 Aug 11	Scotgrain	32	Hvst	£173	5,536
28 Sep 11	Scotgrain	71	Hvst	£180	12,780
	Hm Saved Seed	11		£170	1,870
sub-total		530			<b>84,042</b>
Balance to sell		<u>0</u>		<b>Av price</b>	<b>159</b>

### FEED BARLEY

<b>Production 2011</b>	<b>570</b>	<b>(460 WB + 130 SB)</b>
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Varieties: Retriever, Sequel (WB) & Begravia (SB)

#### SALES

Date	Buyer	Tonnage	Delivery date	Price	
August	Neighbour	70	Aug-11	£145	10,150
Sept	ECV (Belgravia Failed MB)	30	Sep-11	£145	4,350
					0
sub-total		100			<b>14,500</b>
Balance to sell		<u>470</u>		<b>Av price</b>	<b>145</b>

### OSR

<b>Production 2011</b>	<b>152</b>
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Varieties: Cracker, Cantana

#### SALES

Date	Buyer	Tonnage	Delivery date	Price	
Pool	Abdn Grain 1st Paymnt	152	Aug-11	125	19,000
sub-total		152			0 19,000
Balance to sell		<u>0</u>		<b>Av price</b>	<b>125</b>