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Arable Monitor Farm (Angus)

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Report on Meeting held 27th May 2010

Soil Management

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SCOTTISH EXECUTIVE

TOP TIPS FROM MEETING

Winter wheat can be sown as late as Feb as long as it is a suitable variety, soil conditions are good and it gets 'vernalised' (cold spell) after sowing.

May sound like teaching yer granny to suck eggs, but there's a lot of value in digging the occasional pit in each field to check if you have deep soil problems. Can use a digital camera to keep a record.

1. INTRODUCTION

25 members attended the first of two summer meetings. Programme:.

- Update by James Black on spring work and 2010 cropping..
- Field session on soil pits with Dr Bruce Ball, SAC Soils Systems.
- Inspect Oilseed Rape low cost establishment trials with Tommy Pate.
- Session in hall on "Soils and their Effective Management".
- Market Update by Keith Headridge, Commercial Director, Scotgrain Agric.
- What happens after the Monitor Farm programme ends? Group session.

2. UPDATE (James Black)

2010 cropping

Crop	2010 (ha)	2009 (ha)	2008 (ha)	Varieties
W. Wheat	77	96	104	Alchemy& Viscount
W. Barley	44	53	43	Pearl & Amarena, Sequel
Sp Barley	78	119	115	Optic
OSR	45	16	22	Catana & Cuillin
Grass, etc	2	2	4	
Land rented out (veg + peas)	44	15	19	
Potatoes – home	68	53	53	Rooster, M. Piper, Kestrel, Osprey, Saxon
Potatoes – rented land	44	61	69	Rooster, M. Piper, Osprey
TOTAL	402	415	429	

Key points:

- Spring barley looking hellish for a while. Reasons? Don't combine drill fert with seed as is normal practice, but hope to maintain high enough P & K status. But combined with no rolling (didn't get a chance before crop through partly because don't like to roll until wide tyre tractor available) and very dry conditions, this has held back the crop. Improved a lot since had rain. Shifted back to all Optic after last year's Oxbridge disappointments (lost heads & rejections).
- Tatties planted in great weather conditions. Have halved seed area as lost some rented land and problem getting PCN free land. Now concentrating seed at home. Still 200t old crop Rooster and 300-400t Kestrel to dress (Bartlett's trying to develop Kestrel as a Rooster type for ASDA). Having good success with hen-pen and reducing fert use. Need to hire special spreader. Cultivate right behind spreader to incorporate and protect N. Used

2 destoners – saved working through the night with 1! Most herbicide applied at time of meeting.

- Wheats; all looking OK. One field Viscount sown in February at Slade in good conditions and is looking very good considering lateness. Got frosts post-sowing so should have vernalised OK.
- Oilseed rape all okay except for one trial area – Sumo Trio kept breaking down, lost a week, sown late then got heavy rain. Right beside road! Needed lot of slug pellets this year.
- Winter barley all looking OK. Growing Amerina for feeding. Sticking with Pearl for brewing (open price contract).
- Table below shows price history over last 4 years. Hoping for improvement!

Backboath's Average Crop Prices

	2009/10	2008/09	2007/08	2006/08
Wheat	£103	£123	£173	£100
Malting Barley	£107	£	£164	£87
Feed Barley	£82	£90	£145	£93
OSR	£236	£269		£

3. SOIL PITS AT BACKBOATH. Dr Bruce Ball.

Pit 1. Balrownie Series. Relatively heavy sandy clay loam.

- A very good soil – among best in Scotland.
- Bruce has developed with others a visual assessment tool based on looking at a spadeful of soil which covers the top profile of the pit. **Contact us or SAC directly if you would like a copy of the assessment sheet.**
- Looking to assess structure – clod and crumb size. Want lots of small crumbs – not big hard clods and not structureless powder.
- Also assess colour = organic matter. Want dark colour.
- Also look for hard layers in the pit, especially evidence of a plough or cultivation pan. Stops roots and might waterlog.

Pit 2. Forfar Series. Sandier version of previous series.

- Very good crumb structure in this pit
- Some clods deeper, but also hard layer at bottom of pit – not sure if natural or machine made
- Incorporated straw visible in lumps over profile – ideally would like better incorporation. Does this reflect bands of poorly spread straw resulting in what look like yellow lines in the SB crop in this field?

Overall conclusion on pits;

- Continuously cropped so concern is decline in organic matter and hence structure. All our arable soils are losing organic matter. Also hard plough layers and uneven straw incorporation.
- Answer? Blacks are tackling this trend with chopping and incorporation of straw (has problems, but long term correct for the soil), and with import of hen pen and cattle dung. Will a few breaks with min till establishment (OSR) also help?
- **Key conclusion is to get a spade out and dig a few holes to see if you have problems!**

4. OILSEED RAPE ESTABLISHMENT TRIAL 2009/10 (Tommy Pate)

The 2008/09 trial aimed to improve establishment techniques, improve yields, reduce costs and improve timeliness. A number of methods were employed and the costs and yields were recorded.

2009 OSR Trial Results:

METHOD	Yield (t/ha)	Fuel Cost £/ha @ 61p/L
Heva 5 leg subsoiler	4.80	14.03
Heva sub + disc + packer	3.96	10.68
Sumo Trio	3.96	10.37
Plough + Kuhn 1 pass	3.60	12.20+8.66=20.86

This Year's Trial

Unable to replicate the trial this year, due to availability of the machines, it was decided to experiment with the subsoiler based method. Two 4ha plots were established both using subsoilers set at 10 inches deep. The only difference is the leg spacing. Hugh's own Sumo subsoiler is set at 65cm leg spacing whilst He-Va supplied a subsoiler with a leg spacing of 55cm.

Both were sown on 19th August at 4.5kg/ha with Catana (70 seeds/m²).

Since then, both have received identical fertiliser: 0.70 . 45 kg/ha + 46 kg N/ha in autumn and further 152 kg N /ha Spring.

Same spray programme:

Herbicide Butisan + Falcon + Cypermethrin (18/09/09)

Fungicides spring Proline (15th Feb) and Proline + Delsene Flo (19th May)

Early May plant counts and root measurements were taken but the real result will be in the yield!

METHOD	Average plants / m ²	Av root length (cm)	Av plant height (cm)
55cm spacing	31	23	124
65cm spacing	33	24	118
Conventional plough & 1 pass (12.5cm spacing)	35	16	106

The trial at this stage is showing that the wider spaced subsoil/drill plants are stronger – they have a deeper tap root and are taller. And sunlight is clearly getting in between the rows pre-flowering. This is backing up last years results.

70 seeds were sown per square metre, but only half survived, though this was the case for the traditional plough and one pass area as well as the “rouger” subsoil drill plots. Shows we had a difficult backend as 95% of the conventionally sown seeds survived in last years trial.

Effect of bad weather shows up in endrigns this year – much poorer plant survival. Other members also trying subsoil drill option and Tommy doing conventional plough, but blocking off every second spout on drill.

5. “SOILS AND THEIR EFFECTIVE MANAGEMENT” TALK. Dr Bruce Ball, SAC.

(If you wish a copy of Bruce’s powerpoint presentation please get in contact).

Overall soil management is looking at 3 key factors:

1. Soil life – the organisms and bacteria which promote healthy root growth need oxygen, organic matter, correct nutrients, water drainage/appropriate retention
2. Porosity – essential to let excess water drain away
3. Organic matter – critical for soil structure, water holding capacity and fertility. Most Scottish soils have around 5% organic matter, but it is falling. On your soils analysis reports look at the “loss on ignition” figure – this is an indicator of organic matter content. Is it going down over time? Generally, the colour of the soil will get lighter.

Min tillage is more likely to be successful on light free-draining soils
Compaction problems more common due to the increased weight on soils from machinery. Normally worst at harvest under wet conditions.

There is interest in controlled traffic farming with some UK units using dedicated permanent tramlines – see www.controltrafficfarming.com website.

6. MARKET UPDATE. Keith Headridge, Scotgrain UK.

Old Crop

Wheat; the market has moved up over recent weeks having traded up to £110 for August. Cut backs in distilling and compounding usage leaves a reasonable volume yet to be sold off farm, for anyone that requires space pre-harvest the marketing window is shortening with most consumers now satisfied although there are some signs of recovery in usage. The main drivers remain currency and weather. The Euro is at a four year low against the \$ and this has helped to lift values £5 to £7 over recent weeks.

Advice might be to sell wheat now if have left over from last year.

Note Whyte and Mackay closed Invergordon for 3 weeks and others also closing for around a month – running out of barrels for storage. After collapse in spirit sales in qtrs 1 and 2 of 2009, sales by the end of 2009 were above normal.

New Crop

Wheat. September currently £106 rising to £110 for November with the area increased from 87,000 Ha last year to around 104,000 Ha this year – need consumption rise to help deliver premium. The Ensus Bioethanol plant is helping. It only opened Feb and will eventually use 1 – 1.2M tonnes. Scot premium over English (Cambridge area) wheat remains around £15/t. Dry conditions north France might reduce their yields 0.2t/ha.

Oilseed Rape. Harvest values in the £235 - £240 region + bonuses. Nov around £245 + bonuses, so maybe £260/£270? Lot of price volatility due to currency at moment.

Feed barley. The problem crop. Nominal values would indicate a £15 - £20 discount to wheat with new crop valued £80/t. Spanish crop offered at a £20/t discount. 5Mt went into intervention in EU so overhangs the market.

No contract prices for this years malting barley. £105/t ex-farm?? Will get better in next few years as areas and stocks adjust. Spring 2009 SB 287,000 ha, spring 2010 240,000 ha.

Harvest 2011

Wheat. The Nov 2010 futures trading around £109 and Nov 2011 around £117, so with current costs it looks like the wheat area will increase, weather allowing. Sell a portion of 2011 wheat now??

Oilseed rape. A similar picture to the 2010 crop with EU crushing capacity increasing it is likely that currency will drive prices. Rape may displace other oils e.g soyabean. All the OSR will get used.

Our Gross Margin spreadsheets show the winter wheat and oilseed rape crops profitable. Good time to lock into margin and dilute fixed cost overhead.

Summary

World stocks are rising but currency and weather are certainly adding volatility. The Euro is at a four year low against the \$; around 1.2280. This is 15% down in value against the \$ at start of year, and continues to support European grain and oilseeds values.

7. FUTURE OF THE MONITOR FARM PROGRAMME

Only a summer and autumn meeting left.

Would like ideas for remaining meetings – any gaps to fill?

What do after programme ends?

- Can just finish and let Monitor Farm programme move to a new area. Looks like HGCA and Scot Gov Skills Development scheme are interested in continuing this type of programme.
- In this area, could continue in a smaller more focused way as discussed in the Management Group e.g. focus on trials/new ideas only, maybe 4 meetings per year, go to different farm each meeting, each farm tackles one trial/innovation
- Needs a core of keen folk if want to continue in this way – **down to yourselves**
- Likely that HGCA would be supportive – might be possible to do an application supported by HGCA to the SRDP skills development scheme to fund specialists, etc.

8. DATE OF NEXT MEETING

Farm-Scale Renewables Tues 15th June 2010.

Final meeting Tues 2nd November 2010.