

Wantage Monitor Farm - Julian Gold

Meeting 8: The right machinery choice

24 November 2015

Snells Hall, East Hendred, Wantage

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For more information, visit cereals.ahdb.org.uk/wantage



Julian Gold

Meeting summary

- Establish the farm's philosophy for profit levels and reinvestment
- Combine replacement
 - Work out costs on a per hour basis using engine hours not drum hours and labour at engine hours + 15%. Compare to contractor
 - Broader rotation may allow smaller combine capacity requirement
 - Age depreciates combine more than hours. Therefore smaller kit, longer hours
 - Manage cashflow – reserve cash in good years to maintain reinvestment in poor years
 - Extended warranties cheaper than new combines
 - Machinery Price inflation needs considering as much as depreciation
 - CTF at Hendred reduces flexibility to use contractors if needed
 - Forward policy to buy cheaper (not new) keep longer and sell dearer (at right time in right market) - to dramatically reduce depreciation charges
- Bateman utilisation / replacement
 - Accepted under-utilised following loss of hectares
 - When costing work rates, note actual rates are less than quoted daily spraying rates – there is standing time!
 - Meeting view was not to increase use / efficiency by switching to liquid fertiliser
 - Solid market choice gives more flexibility than liquid
 - Retaining Bateman give flexibility and capacity, and ability to spray alongside fertilising
 - Retaining for more years would correct 'lifetime' depreciation rates
- 2015 Wheat Crop YEN Entry
 - Nitrogen or water did not limit the crop
 - The crop achieved good total biomass, high ear numbers, normal grains per ear but small 1000 grain weight. Possible reason is inability to capture high enough percentage of available radiation
 - Need to focus on increasing canopy duration and minimising the impact of disease. Would a later maturing variety help?

Firmly planted on Julian's office wall!

“In good times instead of going shopping put the money in the bank ready for the bad times.”

“Bad new machinery decisions are quick to make but can take a long time to put right.”

“Conversely, Buying second-hand allows easy extraction if purchase decision is wrong.”

“Be careful gearing up for expansion if no forward security of tenure/contract.”

Hendred Farm Partnership combine costings

	TX 68 (HARVESTS 98, 99, 10)	TX 68 Plus (HARVESTS 99, 1000)	LEXION 480 (HARVESTS 01, 02, 03, 04, 05)	LEXION 5800 (HARVESTS 06, 07, 08)	LEXION 5800+ (HARVESTS 09, 10, 11)	LEXION 740 TI (HARVESTS 12, 13, 14, 15)
TOTAL AREA HARVESTED	2343 Ha	1403 Ha	4378 Ha	2544 Ha	2629 Ha	3641 Ha
TOTAL HOURS AMOUNT	14015 Hrs (10415)	8920 Hrs (642)	1965 Hrs (1583)	1138 Hrs (888)	952 Hrs (743)	1510 Hrs (1180)
DEPRECIATIONS (Ha)	29.19	36.79	22.86	16.08	21.14	38.83
AV. INTEREST (Ha)	2.11	7.38	7.47	10.50	12.17	6.58
REPAIRS/SERVICES (Ha)	5.10	5.57	4.52	4.02	7.86	4.53
INSURANCE (Ha)	1.10	1.20	1.20	1.26	1.55	1.74
LABOUR (Ha)	3.96	5.27	5.68	6.69	6.05	8.02
FUEL (Ha)	2.29 (24.10)	4.02 (40.14)	3.86 (50.11)	8.51 (88.11)	8.14 (88.11)	11.61 (118.11)
TOTAL COST (Ha)	£49.75/Ha	£58.73/Ha	£45.02/Ha	£47.16/Ha	£52.91/Ha	£70.51/Ha
TOTAL COST (Ha)	(£20.13)	(£22.71)	(£18.24)	(£17.07)	(£21.41)	(£28.54)
HAIRS:						
ON STRAW cut at yr	781 Ha (1930 ac)	702 Ha (1733 ac)	875 Ha (2,161 ac)	222 Ha (2,045 ac)	876 Ha (2,165 ac)	910 Ha (2,219 ac)
Ha per acre at yr	1.67	1.58	2.25	2.24	2.76	2.41
Ha per harvesting hour (Harvesting Hour 27.8% of engine hours)	3.14	3.02	2.85	2.86	3.54	3.09
TOTAL COST HAIR (Ha)	£38.85	£44.22	£37.44	£39.99	£45.34	£49.82
TOTAL combine cost to combine	£29.13	£29.46	£26.43	£27.54	£29.18	£40.65

Hendred Farm Partnership: Sprayer/fertiliser costings

1: Approx. machinery purchase prices (if purchased new in 2015)

180-200 Hp Tractor:	£100,000
Trailed 30m sprayer:	£65,000
Self-Propelled 30m sprayer:	£165,000
Weigh cell fert. Spreader:	£15,000

2: Annual approx. areas covered by Hendred Farm Partnership

(cropped area :	approx. 700 Ha)
Spraying:	5000 Ha
Fertilising:	3000 Ha

3: Approx annual hours for self-propelled machines

No.2 Tractor (JD 7530)	1000 Hrs/Yr
Self-propelled sprayer	500 Hrs/Yr

4: Approx. actual work rates (not spot rates!)

Spraying (30m)	10 Ha/hr
Fertilising (30m with loader backup)	15Ha/hr

5: Hourly running costs of self propelled machines

180hp JD 7530 (actual costs from '08 onwards)	Light work = £33.27/Hr
New 180-200hp tractor (estimated over first 3yrs of life)	Light work = £52.21/Hr
Telehandler (JD 3420 actual costs '04-'14)	(Running Fert) = £28.50/Hr
Househam sprayer (actual costs '06-'14)	= £47.15/Hr
Bateman Sprayer (estimated over first 3yrs of life)	= £80.99/Hr

(Notes: - Where costs are actual, depreciation is actual over life of machine. 7530 is based on accurate estimate of its current value. Estimated costs use 15% reducing balance for depreciation.

- Average interest in actual costs is 5%. Average interest in estimated costs is 3%
- All costs (estimated and actual) have fuel cost in at 50p/l)

6: Per hectare running costs of trailed and mounted implements

New 30m trailed sprayer (estimated)	£3.11/Ha
Bogballe fert. spreader (actual '08-'14)	£0.76/Ha

(Notes: - Sprayer depreciation est. at 15% reducing balance)

7: Total costs of operations/ha

Self-propelled spraying (Househam)	<u>£47.15/Hr</u> 10 ha/hr	=	£4.72/Ha
Self-propelled spraying (Bateman)	<u>£80.99/Hr</u> 10 Ha/hr	=	£8.10/Ha
Tractor + Trailed sprayer (Existing 7530 + new sprayer)	<u>£33.27/Hr</u> + £3.11/Ha 10 Ha/hr	=	£6.44/Ha
Tractor + Trailed sprayer (both new)	<u>£52.21/Hr</u> + £3.11/Ha 10 Ha/hr	=	£8.33/Ha
Fertilising with loader backup (actual; 7530+ Bogballe + loader)	<u>£33.27/Hr</u> + <u>£28.50/Hr</u> + £0.76/Ha 15 Ha/hr 15 Ha/Hr	=	£4.88/Ha

Hendred Farm Partnership: breakdown of machinery costings

	<u>JD 7530 Tractor</u>	<u>New 180-200 Hp Tractor</u>	<u>JD 3420 Telehandler</u>	<u>Househam Sprayer</u>	<u>Bateman Sprayer</u>	<u>New Trailed Sprayer</u>	<u>Bogballe Spreader</u>
Depreciation	3.65/Hr	21.22/Hr	3.06/Hr	12.65/Hr	42.45/Hr	1.67/Ha	0.43/Ha
Av. Interest	2.62/Hr	3.99/Hr	1.95/Hr	6.42/Hr	7.99/Hr	0.94/Ha	0.08/Ha
Insurance	0.45/Hr	0.45/Hr	0.45/Hr	1.25/Hr	1.25/Hr		
Repairs	2.35/Hr	2.35/Hr	3.26/Hr	3.53/Hr	5.00/Hr	0.50/Ha	0.25/Ha
Oil	0.40/Hr	0.40/Hr	0.48/Hr	0.50/Hr	0.50/Hr		
Fuel	7.00/Hr Light Work	7.00/Hr Light work	2.50/Hr For fert backup	6.00/Hr	7.00/Hr		
Labour	16.80/Hr	16.80/Hr	16.80/Hr	16.80/Hr	16.80/Hr		
Totals	£33.27/Hr	£52.21/Hr	£28.50/Hr	£47.15/Hr	£80.99/Hr	£3.11/Ha	£0.76/Ha

Notes: Figures in black are actuals, figures in red are estimated.

New machines use depreciation rate of 15% reducing balance over the first three years of life

And converted to hourly figure.

Fuel price has been adjusted on all figures (including actuals) to 50p/l

Labour is 2015 actual average cost to business including housing, av. Annual overtime, Employers NI, etc.

Av. interest on actuals taken as 5%. On estimates for new machines as 3%.

JD 7530 purchased new in '08. Currently has approx. 6550 Hrs on clock.

JD 3420 owned for 10 yrs between '04-'14. Sold with 6770 Hrs on Clock.

Househam sprayer owned for 6.5 yrs between '06-'14. Sold with 3,700 hrs on.

YEN Report

Field name & area		0 (5.2 ha)
WATER		
Maximum rooting depth at your site	<i>metres</i>	0.5
Topsoil texture & available water	<i>% volume</i>	Silty clay loam, (17%)
Subsoil texture & available water	<i>% volume</i>	chalk, (20%)
Available soil water at field capacity	<i>mm</i>	291
Total Available Water, <u>inc.</u> summer rain	<i>mm</i>	472
Estimated water used by your crop	<i>mm</i>	442
LIGHT ENERGY		
Total Solar Radiation (Sept – <u>Aug</u>)	<i>TJ / ha (% LT average)</i>	35.7, (96%)
Radiation captured by your crop	<i>% annual incident</i>	51%
Potential cause of yield limitation	<i>light / water</i>	Light
Potential Grain Yield (15% MC)	<i>t/ha</i>	21.4

Character	Units	Your ENTRY	YEN 2015 highest	Bench-mark
Fertile shoots i.e. Ears	<i># / m²</i>	637	819	460
<u>Spikelets</u>	<i># / ear</i>	16	22	NA
Grains	<i># / ear</i>	45	79	48
Thousand Grain weight @ 15% MC	<i>g / 1000</i>	43.4	56	50
Grain specific weight	<i>kg / hl</i>	73.7	83	NA
Grain protein	<i>% grain DM</i>	11.5	14.5	11.6
Total biomass at harvest	<i>t / ha</i>	22.1	27.9	18.4
Harvest index (grain dry matter)	<i>% biomass</i>	48%	58%	51%
Total grain N offtake	<i>kg / ha</i>	215	282	189
Grain Yield achieved (15% MC)	<i>t / ha</i>	12.5	16.5	11.0
Grain Yield achieved	<i>% YEN average</i>	98%	130%	NA
	<i>(& rank)</i>	24		
Grain Yield achieved	<i>% Potential</i>	58.4%	81%	NA
	<i>(& rank)</i>	31		

YEN highest values and benchmark figures refer to wheat entries only

CropBench+ benchmarking

- To find out more about AHDB's CropBench + benchmarking tool, please contact:

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Cereals.ahdb.org.uk/monitorfarms
#monitorfarms

Next meetings

- Thursday 14 January 2016 – Livestock and manure in the arable rotation
- Tuesday 9 February 2016 – Crop nutrition
- Tuesday 14 June 2016 – Summer meeting

Meeting times and locations will vary so please ensure you have registered your contact details to receive notification of details throughout the year

To attend the meetings, please email Philip.dolbear@ahdb.org.uk or call 07964 255614

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