

The Organic Approach-

Does it have a place in sensitive catchments?

John Vosper

Cleavedale Farms Ltd

Matamata

Cleavedale Farms

- 80 ha on edge of Matamata
- 250 pedigree Jersey cows
- Farming organically since 2003
- 30ha support block purchased 2004





Why organic?

- Improved environmental outcomes
- Financially viable
- There are solutions to many of the challenges

Improved environmental outcomes

- Lower N leaching
- Soil carbon levels have increased –improving resilience
- Greater biodiversity – sort after home for bees

Cleavedale Farms- System 2;

Farmax - Organic vs conventional

Physical	Organic	Conventional
Area	80	80
Stocking Rate	3.0	3.1
kgN/ha	86	136
Peak cows milked	243	246
Days in milk	238	274
%MS /liveweight	90	107
MS/ha	1007	1208
MS/cow	332	393

Cleavedale Farms- System 2; Farmax - Organic vs conventional

Overseer results	Organic	Conventional
kg N /ha/hr	86	136
kg N leached/ha/yr	26	23
kg P loss /ha/yr	0.9	1.4
N conversion efficiency	24	28

Massey University Organic-Conventional Dairy System Trial

	Conventional farmlet	Organic farmlet
Stocking Rate (cows/ha)	2.4	2.2
DM intake (kg/cow)	4426	4120
Dietary CP (%DM)	22.7	18.6
N intake (kg/cow)	161	123
Urine N output (kgN/ha)	215	133
N in urine patches (kg/ha)	1123	742
Measured N leached (kgN/ha)	19	8
Overseer (kgN/ha)	16	8

Grow Organic Dairy Project

N leaching from the case study organic farms, N conversion efficiency as predicted by OVERSEER® and the Environmental efficiency index.

Farm	Milksolids production (kg MS/ha)	N leached (kg N/ha)	N conversion efficiency (%)	Environmental efficiency index (kg N/t MS)
Waikato A	717	17	39	24
Waikato B	763	19	31	25
Waikato C	732	24	44	33
Waikato D	900	13	44	14
Central Plateau	843	25	38	30
Taranaki B	920	25	38	27
Manawatu	776	12	37	15

Soil resilience

Increased organic matter and biological activity

- ➡ improvements in structure
- ➡ water holding capacity
- ➡ drainage
- ➡ increased nutrient holding ability

Can you afford to be organic?

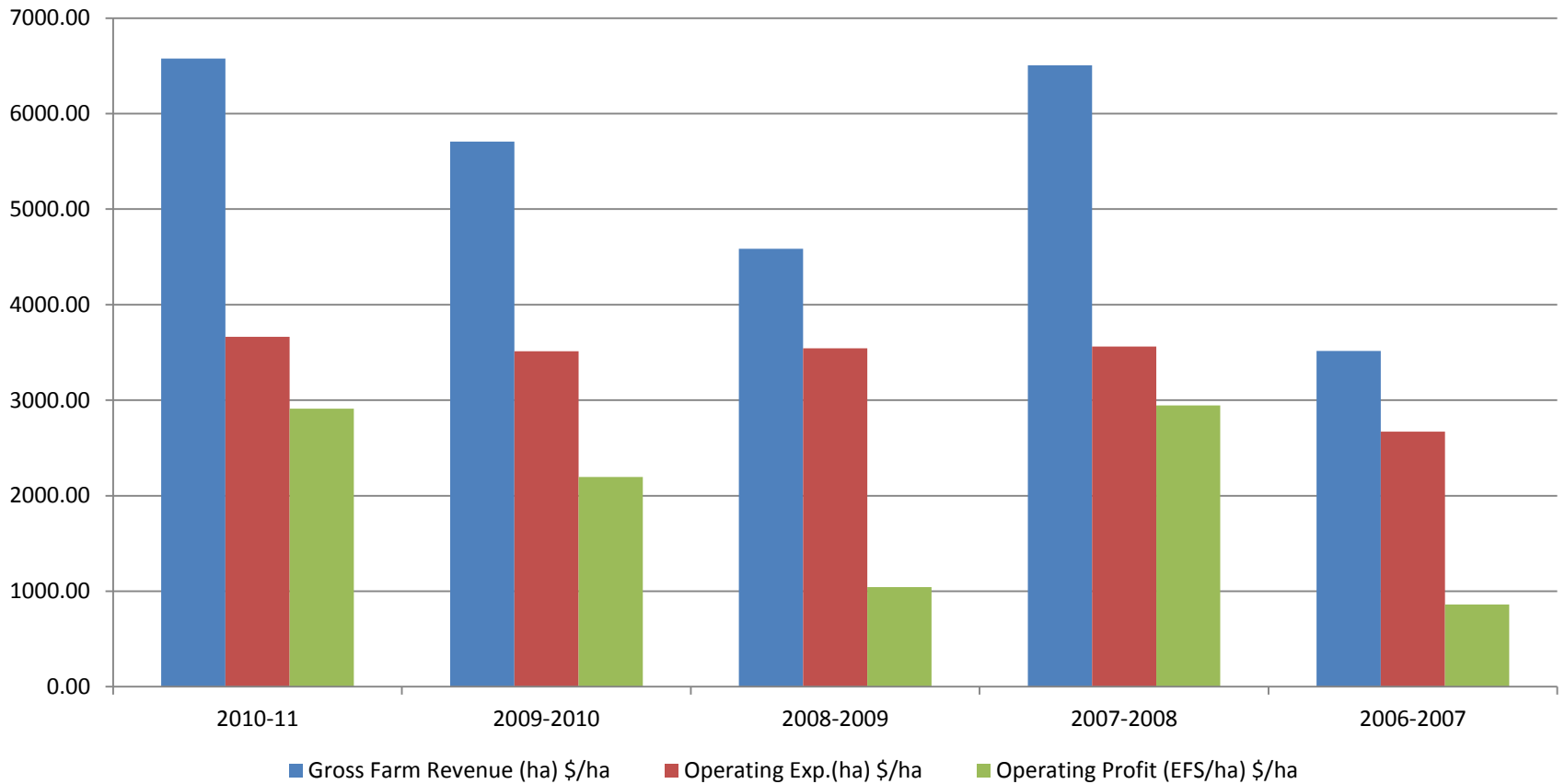
- Fonterra offer \$1.50/kgMS premium
- Fonterra comment that their organic farmers production is comparable to similar system conventional
- Effect on milk production
 - 20 to 35% ARGOS study
 - 12 to 33% Massey University
 - 12 to 15 % Grow Organic Dairy

Massey University Organic-Conventional Dairy System Trial

Organic/Conventional Comparison Trial MU		
	06/07 Conv.	06/07 Organic
Cows milked	53	47
Eff. Dairy ha	21.32	20.6
Stocking rate	2.5	2.3
kgMS/cow	379	347
kgMS/ha	942	792
Gross farm income (\$/ha)	4036	4423
Operating expenses (\$/ha)	3338	3675
Operating profit (\$/ha)	699	748
Return on assets (%)	2.8%	3.0%
Cost of capital (\$/ha)	1250	1250
Cost of milk (\$/ha)	4592	4445
Cost of milk (\$/kgMS)	4.88	5.61
Difference (%)		15%

Grow Organic Dairy

Figure 2.1C: Year-wise: Average Revenue, Expenses & Profit per Ha



ARGOS

- Milk yields lower but farms on different levels of premium
- FWE 79% of conventional 2005/6 but similar in 2006/7 and 2007/8

Management Season	Org. 2005/6	Conv. 2005/6	Org. 2006/7	Conv. 2006/7	Org. 2007/8	Conv. 2007/8
FWE (\$/ha)	1900	2418	2343	2626	2966	2873
Operating Profit (\$/ha)	1737	2164	1968	1650	3131	3494

Cleavedale Farms- System 2; Farmax - Organic vs conventional

- Assumed similar amount of imported feed
- Increased N use and crop yields
- Improved reproductive performance
- Adjusted costs

	Organic	Conventional
Milk Price (\$/kgMS)	6.20	4.70
Operating Profit (\$/ha)	764	553
kgMS/ha	1007	1207

Challenges

- Vulnerability to climate
- Animal health
- Weeds

Climate

- Important to achieve BCS and pasture cover targets
- Feed budgeting
- Feed buffers or source of reasonably priced feed
- Grown own maize
- Support block





Animal Health

- Mastitis
- Bloat
- Internal parasites

Mastitis prevention

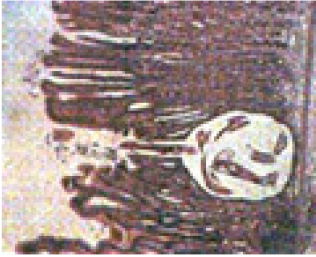
Reduce exposure	Manage faeces, mud and muck	Effluent disposal	Calving and drying off	<ul style="list-style-type: none"> Clean environment essential Not advisable to calve or dry off on effluent paddocks or stand-off areas
		Prevent pugging and build up of dung on paddocks	Drying off	No more than a moderate reduction in feed. Replace grass with hay. Spread cows out onto clean grass (reverse rotation)
		Keep high traffic races clean	Peaks from May to September	particularly 100 m. before the shed
		Manage drainage	During wet conditions	Races, gateways, troughs
	Reduce transmission	Teat spraying – All milkings, all teats, all year	Springer mob	<ul style="list-style-type: none"> Consider running through shed every day for monitoring, training heifers and teat spraying Manage open teat canals, especially in heifers. Any animal leaking milk should be milked. Freeze some for their calves.
		Plant maintenance – twice yearly minimum	Winter	Full plant check
			Spring	Quick check of pulsators, vacuum level and reserve, vacuum pump
			During milking	<ul style="list-style-type: none"> Watch cup alignment Change liners every 2500 milkings
		Vigilance – detection and separation of infected cows	Colostrum mob	<ul style="list-style-type: none"> Pre-milking strip RMT before entering herd
			Clinicals and Subclinicals	<ul style="list-style-type: none"> Run as separate mob or consider splitting herd along age lines Milk last. Hand strip – <i>care not to transmit infection via hands or gloves</i>
		Monitoring	Whole herd	<ul style="list-style-type: none"> Regular check of teat condition at cups off ISCC from herd test RMT any suspects
			Subclinicals	Regular RMT
			Whole herd - dry period	Thorough check 10 – 14 days after drying off
Enhance cow's defenses	Minimise stress	Feed	Whole herd	<ul style="list-style-type: none"> Quality balanced diet – variety of pasture species and sufficient dietary fiber. Attention to minerals and trace elements
			Calving	Transition feeding -avoid excessive bagging up due to fresh grass, feed hay/silage around 1/3 of diet
		Human/cow interaction	Whole herd	<ul style="list-style-type: none"> Gentle handling Socialisation of heifers
		Provide shelter	Whole herd	<ul style="list-style-type: none"> Trees for shelter and shade Herd homes
	Reduce infections	Maintain teat condition	Whole herd	<ul style="list-style-type: none"> Emollients e.g. glycerine Teat grease
		Enhance immune system	Whole herd	<ul style="list-style-type: none"> Trough treatments or drenching with tonics e.g. apple cider vinegar, seaweed, garlic Trough treatments with homeopathic remedies

Bloat

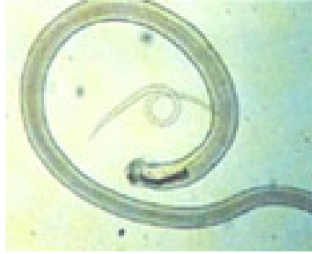
- Feed management
- Salt
- Fish oil



Parasites



Ostertagia cyst in the
abomasal wall



Ostertagia adult and
larva

- Minimise larvae intake
- Provision of clean pastures
- Build resistance - Well fed animals
- Trace elements

Weeds

- Pasture management
- Grubbing
- Weedenz
- Yellow bristle grass??

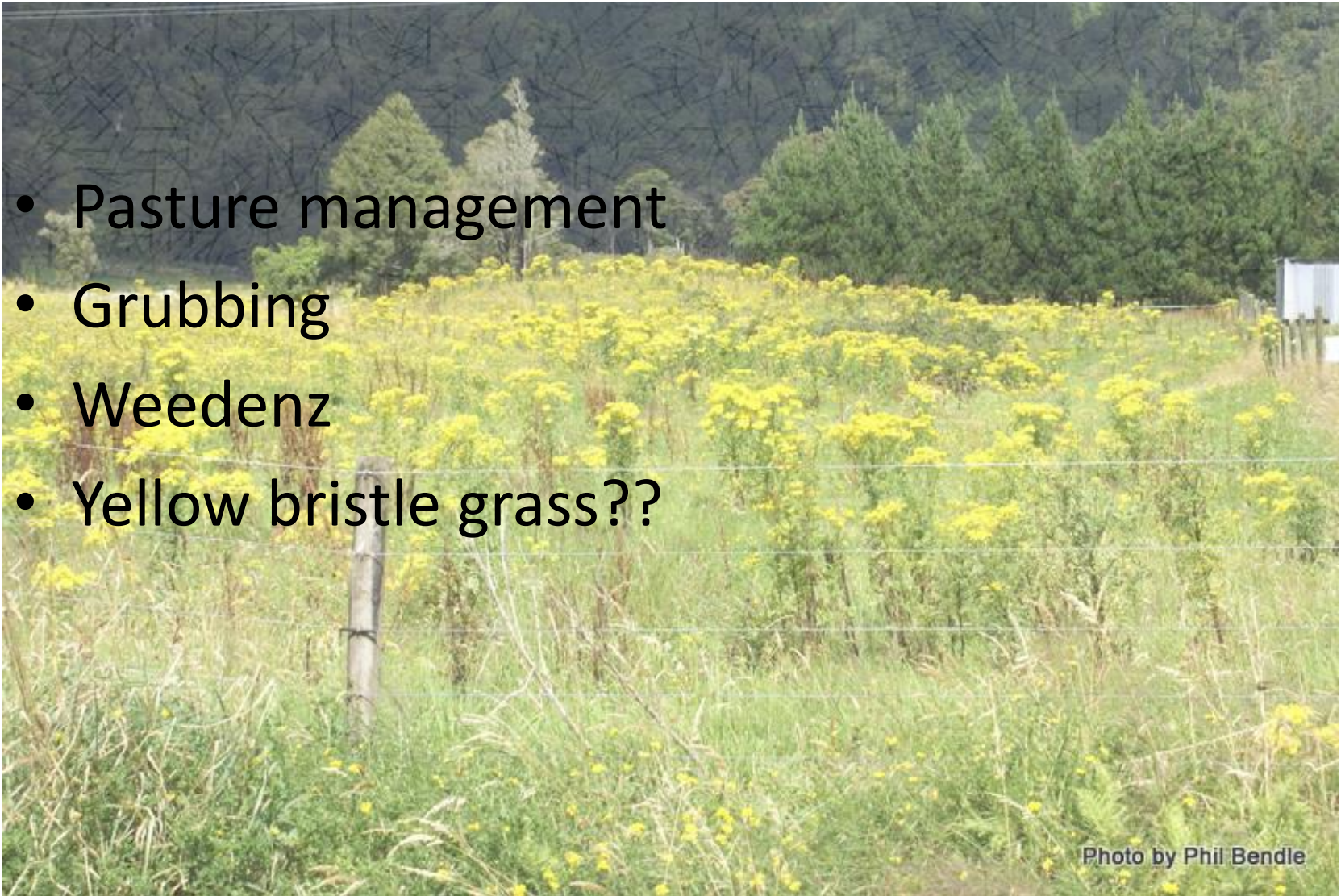


Photo by Phil Bendle

Summary

- Lower leaching than higher stocked farms
- Premium available
- Can be as profitable
- Need to be proactive
- Opportunity to increase farm gate returns