Fertilizing For Profit on Grassland Farms

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Fertilizing For Profit on Grassland Farms

- Context
  - Land Use
  - Existing Efficiencies ??????
  - Scope For Improvement
- Lime-Impact @ Farm level

- The Universal crop –Grass Silage
  - Nutrition
  - Yield Measurement

- Case Studies

- **Finally Check for Sleepers !!!!!!!**

Farm Numbers, Land area farmed and family farm income (FFI) on National Farm Survey Farms in 2014 (NFS,2014)

	No Farms	Land Owned Ha	Land Rented Ha	Total area farmed ha	Average FFI
Dairy	15,654	45	12.8	57.8	€67,598
Cattle Rearing	15,707	33.4	7.1	40.5	€10,369
Cattle Other	25,674	36.6	5.9	42.5	€13,321
Sheep	12,195	47.1	10.6	57.7	€15,065
Tillage	6,651	53.3	14.1	67.4	€28,995
Mixed Livestock	2,760	50.7	14.8	65.5	€56,183

Fertility improvement must improve income

Brian Moran NFS

What Can Be Done About Low Farm Income ?????????

Teagasc Profit Monitors 2014

GM Suckler To Weanling/Store

Average → €358/ha → Top 1/3

Difference mainly output

GM Non Breeding Beef Farms

Average → €503/ha → Top 1/3

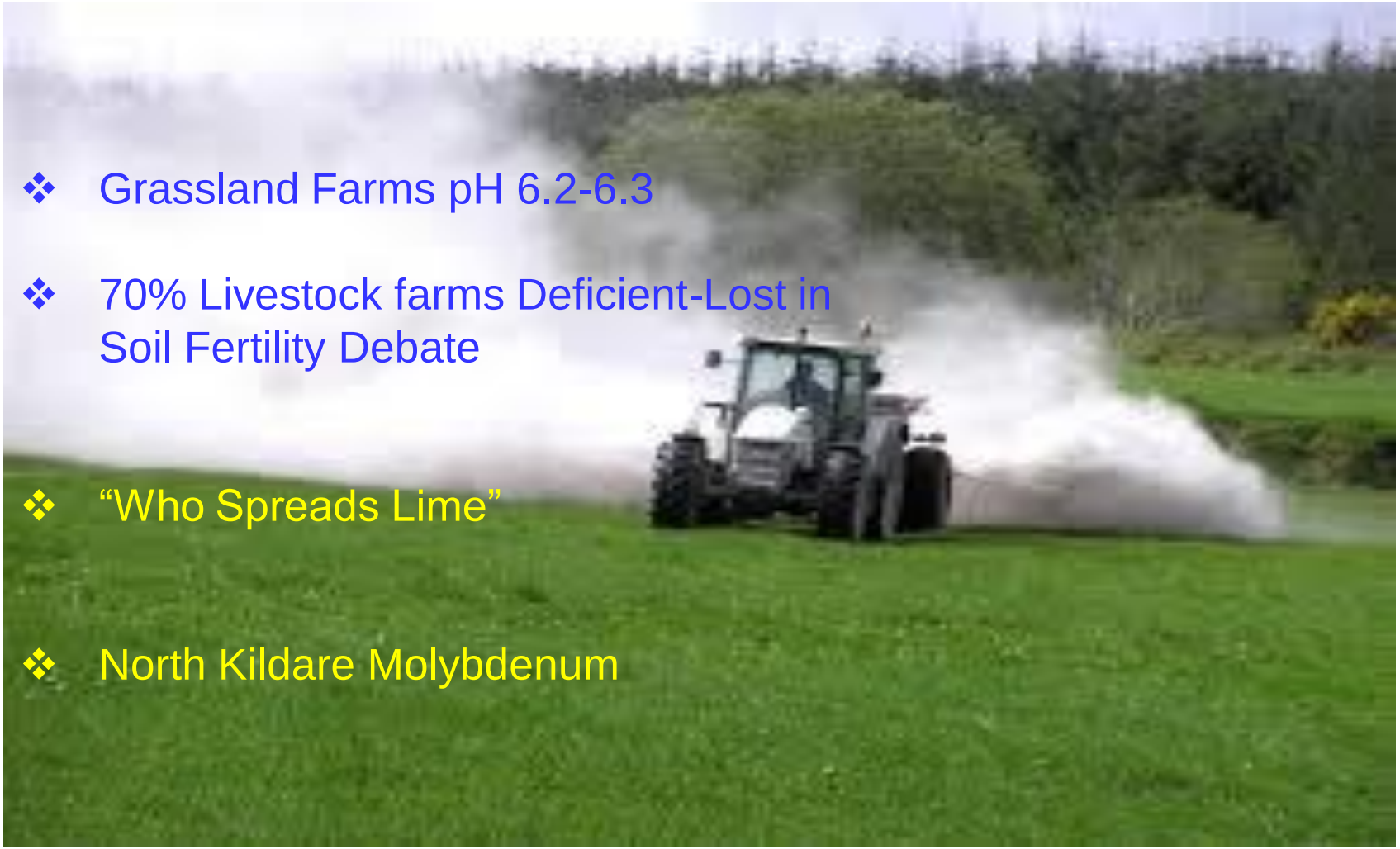
Other Enterprises showing similar variation

Farm Numbers, Land area farmed and family farm income (FFI) on National Farm Survey Farms in 2014 (NFS,2014)

	Av area farmed Owned & Rented	Rented land %	Stocking Rate Lu/Ha Percentage Farms				
			<1	1-1.5	1.5-2	2-2.5	>2.5
Dairy	55	22.3	1%	11%	36%	31%	21%
Cattle Rearing	38.5	17.9	33%	46%	16%	4%	1%
Cattle Other	40	14.1	16%	36%	34%	8%	5%
Sheep	54.2	18.9	23%	35%	20%	16%	6%
Mixed Livestock	63	22.6	10%	28%	32%	22%	8%

Land rental 9-12% Overheads
Forage purchases 5% all enterprises
Soil Fertility Decline ??
Chicken and Egg

Key Soil Fertility Targets-Lime



- Grassland Farms pH 6.2-6.3
- 70% Livestock farms Deficient-Lost in Soil Fertility Debate
- "Who Spreads Lime"
- North Kildare Molybdenum

Grass Silage-Universal Crop

Prime target for scarce resources Lime,N,P,K

- ✓ First Cut Target Yield Min 5t dm/ha-All Farms
- ✓ Yield impact on Cost/t Dry Matter
- ✓ Soil test results-Silage Fields Very Obvious.
- ✓ Gradual decline in Yields over time-Not noticed

Silage P & K requirements to replace removals in harvested herbage (P and K index3)

	First Cut (5 t/ha DM)	Second Cut (3t/ha DM)
P and K requirements kg/ha *(units/acre)*	20 - 120 *(16 – 100)*	12 – 75 *(10 – 60)*

Silage Yield Measurement

- Farmers in Crop-Measuring Yield
  - Visible Yield
  - Soil Test Results
  - Applied Nutrients

Example
pH 5.29
Yield 2.3 t DM/ha
Limed: >5.5 t DM/ha

- Lessons learnt
  - How poor yields are
  - Acceptance poor yields
  - Impact of low Ph and K
  - Variation between fields

    but fixed fertilizer programme.
- Cut late to get yield>impact on quality

  70 Kg N/ha for first cut ??????

Practice Changes-Case Study A

- 60 Ha Dry stock Farm -12 ha Spring Barley
- 40 Single Sucklers
  - Bulls Sold as Stores
  - Heifers Finished
  - Spring Lambing Flock 200 ewes.
- Stocking Rate 2 lu/ha
- Soil Fertility
  - P-74% @ Index 1 &2
  - K-79% @ Index 2
  - pH-88% < pH 6.2

S/Rate 2 LU/ha ??????

What's The Problem.

- Poor Grass Growth
  - Reduced output.
    - Lambs weaned/ewe
    - Store Bulls low sale weight.
    - Heifers-High Meal Feeding.
    - Suckler Cows Reduced Body Score.

Not only about S/R also output

Practice Changes-Case Study A

- Triggers for Change
  - Exiting REPS –Income Replacement.

Management + Investment

- 2011 Lime Applied
- Fertilizer Investment 2010 To 2014  68%
- 2014 Paddocks 35 ha

Case Study A>>>>> Outcomes

Store Bulls	2013	2014	2015
Days On Farm	477	457	435
Live weight Sale weight kgs	440	451	476
Heifers			
Days On Farm	636	634	634
Carcass Wt.	N/A	312	329

Store Bulls

- Days on Farm -22 €€€€€€
- Sale Weight + 25 Kgs
- Sale Value + €1,400

Heifers

- Days On Farm Same €€€€€€
- Sale Weight + 17 kgs
- Sale Value + €1,200
- 2016 Carcass wt 359 kgs

Farm Gross Margin Increase-- 30%

Target Beef Output/LU +7%, Weaning Rate +36%

Case Study A-Farm Nutrient Balance

		Off takes		
Production		P(kg)	K (Kg)	N (kg)
Live weight (Kgs)	29,879	299	224	
Grain (tonnes)	86	292	404	Recommended
Total Off takes (Kg)		591	628	7369
Inputs (Kg)		1300	3080	5160
Balance (kg)		709	2452	2209
Percentage off take supplied		220%	490%	70%

Farm is Nitrate Compliant

Must not overlook fuel---N

Practice Changes-Case Study B

- 37 Ha Drystock Farm
- 40 Single Sucklers
  - Calves Sold as Weanlings
- Heavy Soils
- Impeded Drainage

- Stocking Rate 1.38 lu/ha
- Soil Fertility
  - P,K 55% @ Index 3
  - Ph—Optimal Ph

- Poor Grass Growth
  - Low S/R
  - Low output.
  - Low Sale weights

- Suckler Cows Reduced Body Score.

Practice Changes-Case Study B

- Triggers for Change
  - Exiting REPS –Income Replacement.

Management + Investment

- 2012 Paddocks Installed
- Strictly grazed out 2-3 days
- 12 ha rented land dropped 2013
- Surplus grass Conserved and sold.

Case Study B>>>>>> Outcomes

Farm key KPIs	2012	2013	2014
Area Farmed Ha	49.44	37.48	37.33
Stocking Rate Kg Organic N/Ha	82	122	135
Stocking Rate Lu/Ha	1.38	1.54	1.76
Fertilizer Cost €/Ha	€115	€118	€127
Purchased Concentrate €/ha	€65	€50	€54
Gross Output €/Ha	€773	€782	€1,036
Gross Margin €/ha	€411	€414	€637

S/R + 27%

Gross Output/ha + 34% (€263)

Gross Margin +€226 (55%)

Grass growth>> Better Management
Soil Fertility Movement ???-Soil Test

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Case Study B-Farm Nutrient Balance

Farm Nutrient Balance				
		Offtakes		
Production		P(kg)	K (Kg)	N (lg)
Liveweight (Kgs)	18,077	180	135	
Hay Sales (Tonnes Dry Matter)	6	24	150	
				Recommended
Total Offtakes (Kg)		204	285	3,468
Inputs (Kg)		125	250	2430
Balance (kg)		-79	-35	-1038
Percentage offtake supplied		61%	88%	70%

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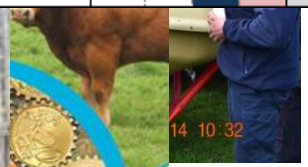
Farm being soil tested

Fertilizing For Profit-Key Tools

- Soil Sampling
- Nutrient Management Plan
- On Farm Measurement
  - Silage Yield measurements.
  - Grass growth rates.
  - Housing and turnout dates.
  - Animal growth rates.
  - Suckler cow fertility and Ewe weaning rate.
- Profitability
- Best Practice

Field Name	Crop	Area ha	Soil Sample	Soil pH	Index N	Index P	Index K	Nutrients Applied Lime t/ha	Nutrients Applied N kg/ha	Nutrients Applied P kg/ha	Nutrients Applied K kg/ha
8	Grazing	15.4	No Soil Test	-		3	3	0	100	0	0
6	Grazing	1.3	No Soil Test	-		3	3	0	100	0	0
7	Grazing	1.0	No Soil Test	-		3	3	0	100	0	0
5A	Grazing	2.6	5A	5.5		1	3	2	145	20	198
3B	1 Cut + Grazing	4.5	3B	5.6		2	2	3	116	36	180
4B	1 Cut + Grazing	7.6	4B	5.7		1	2	6	116	36	180
4C	Grazing	4.2	4C	5.8		1	2	6	83	22	71



Final Thoughts

- No Restrictions on farm efficiency
- Profit Essential
  - More From Less
  - Biological Efficiency
  - Climate Change/Environment
  - Genetic Gain

Thank You