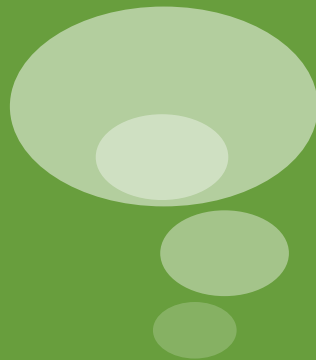


MNCA Agronomy Your Levy at Work



Soil Pasture Livestock Profit

Outline

- **MNC Agronomy** – My focus in Tim & Julie Bale’s system
- **Soil Health** – key focus on this for pasture production
- **Pasture Management** – key driver to livestock production
- **Livestock health & production** – function of pasture production, herd management and seasonal conditions
- **Pasture Based Milk Production**– get your priorities right
- **Summary & questions** – paddock walk

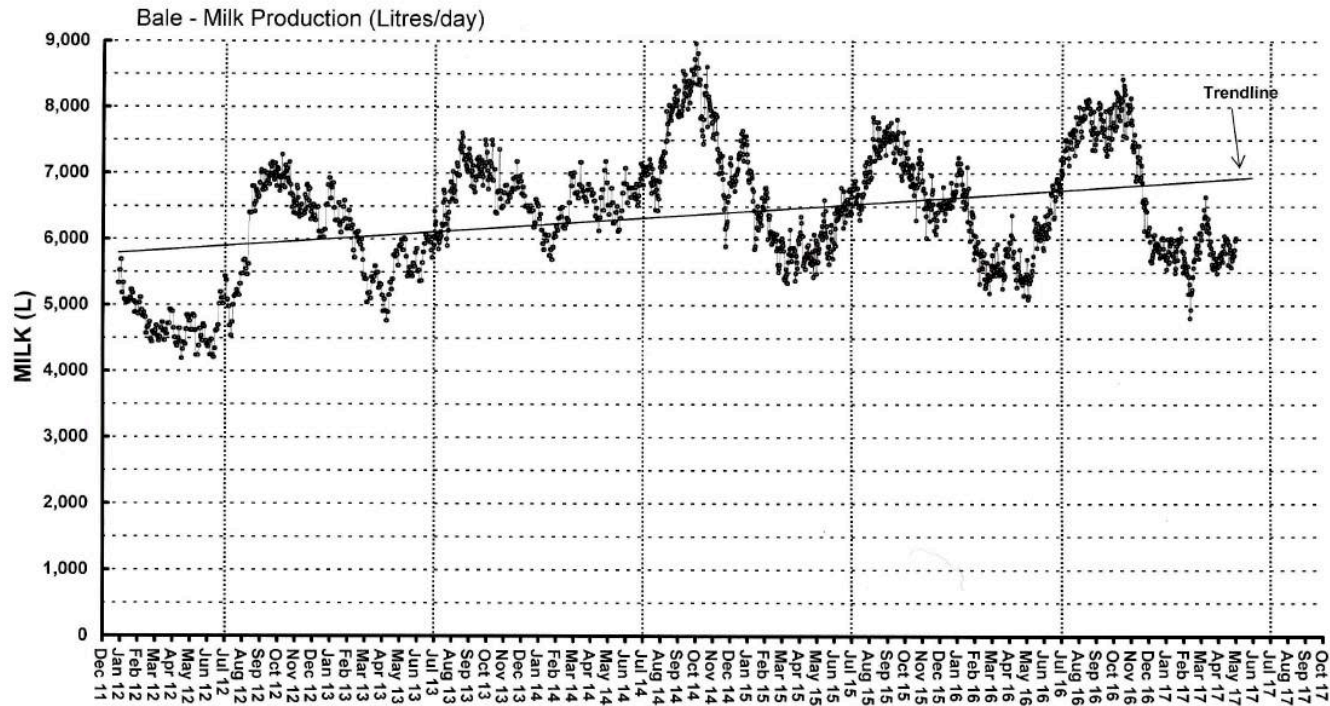


MNC AGRONOMY – My focus

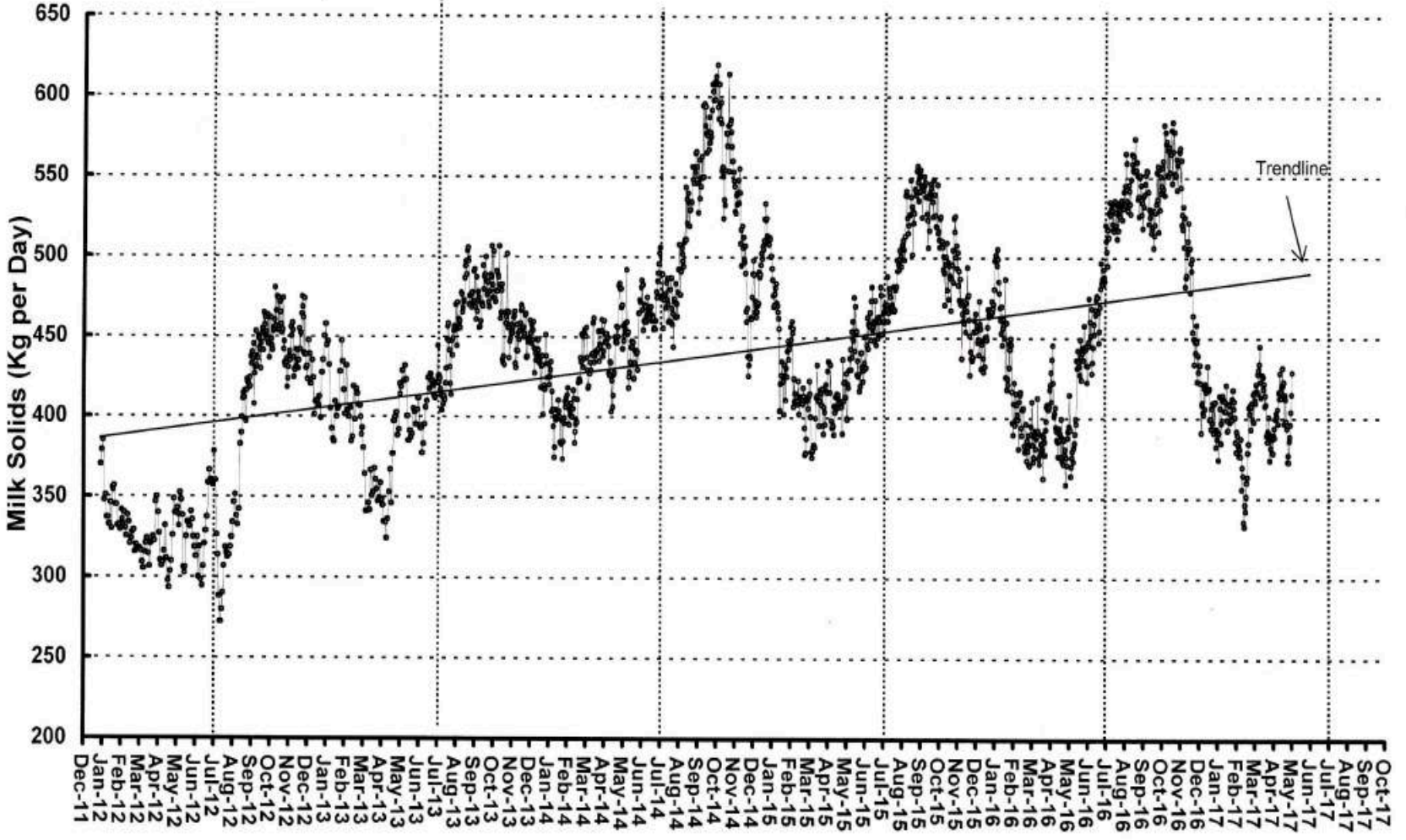
- 1) Soil health** - soil testing, identification of major (and minor) limitations to pasture growth, programs in place to address (long term)
- 2) Pasture management** – grazing management, fertiliser plans, sowing protocols, decision making
- 3) Livestock production** – most important aspect to aid in decision making for 1) and 2). Milk components, production graphs; focus on what “gaps” we need to fill



Livestock Production – Where are we lacking in pasture performance?



Bale - Milk Solids per Farm



Milk (pasture?) production gaps identified

- **Summer/autumn production**
 - Pasture quality
 - Pasture quantity (utilisable)
 - Cow intake
 - Climatic limitations

- **Winter/early spring milk components**
 - Pasture quality
 - Rumen function
 - Supplement regime

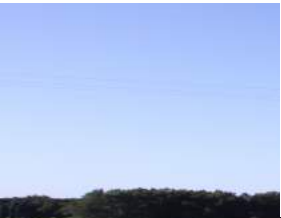
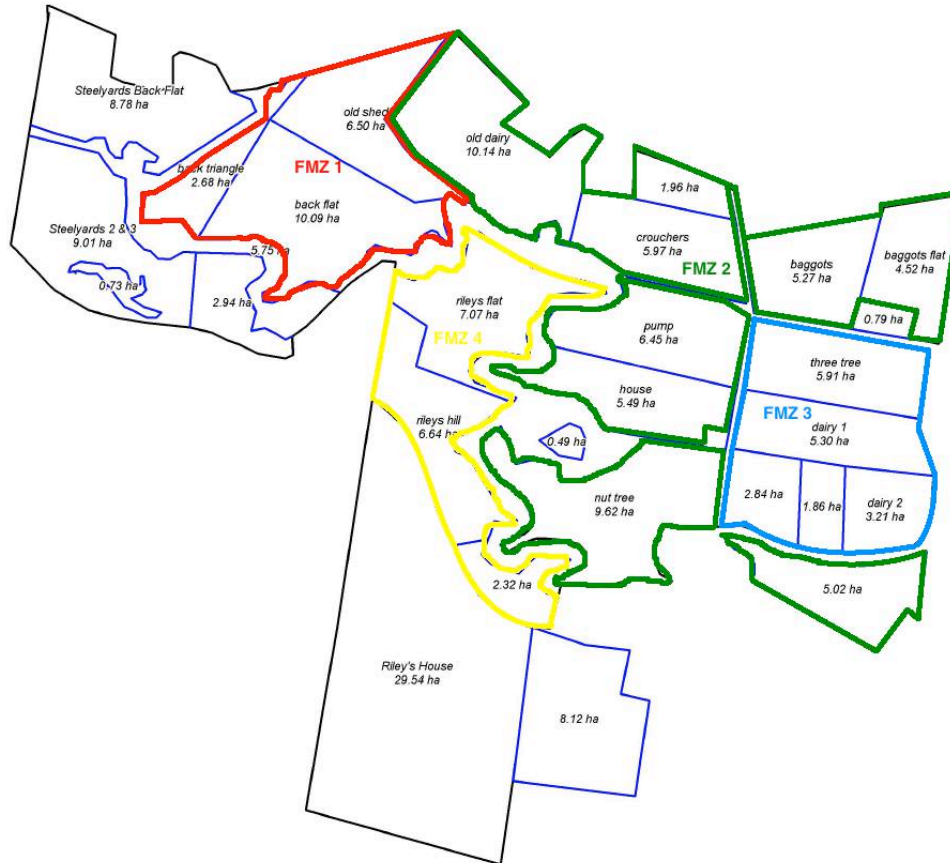


Pasture Management – how do we minimise the gaps?

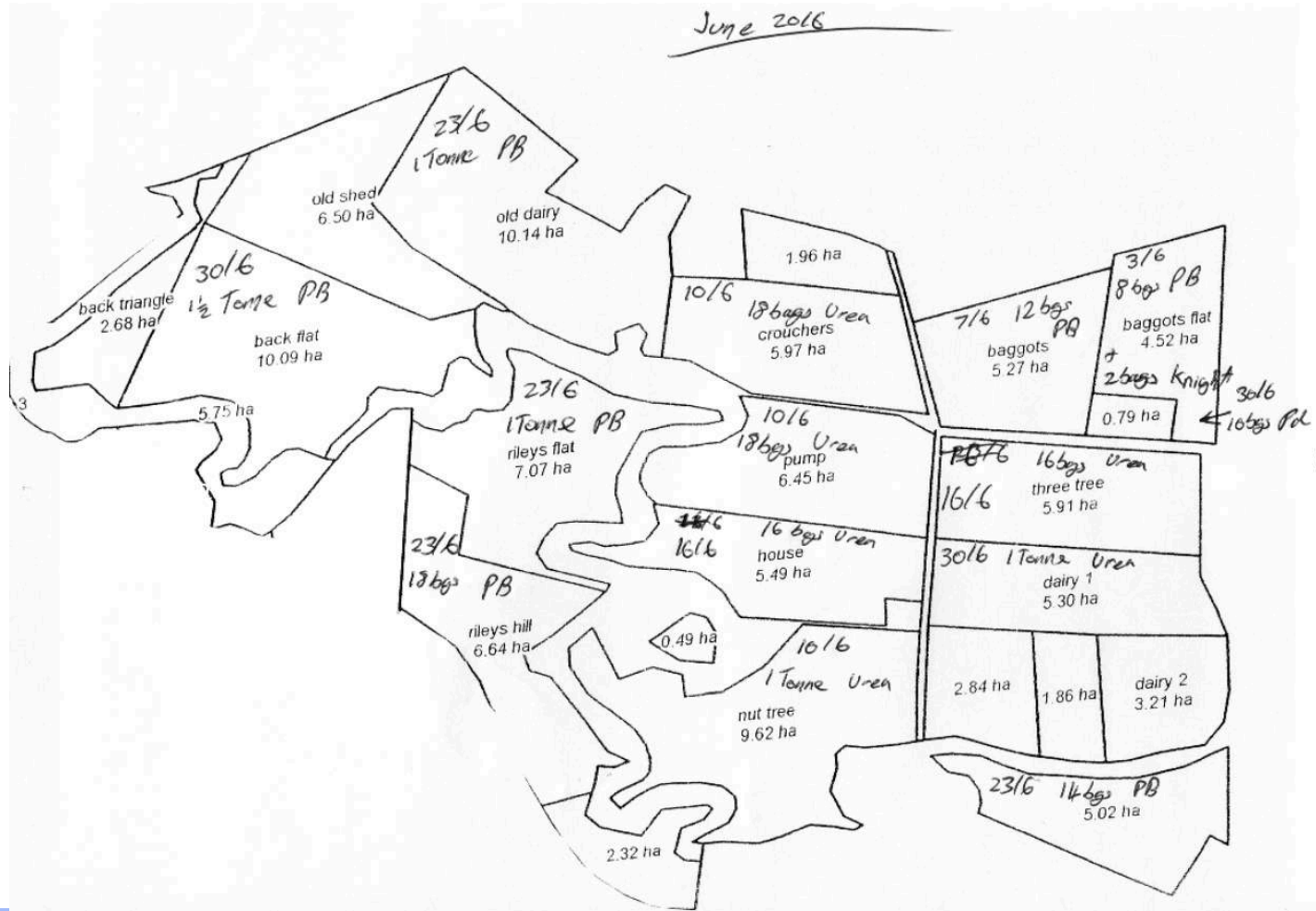
- Kikuyu grazing management (grazing rotations short, mulching regularly, minimise residual)
- Strategic fertiliser use (K for water use efficiency, N and S for pasture utilisation and quality, Ca and OM for rainfall response)
- Livestock supplementation (a tool to help manage the above points; protein in summer, fibre in winter, quality silage during pasture yield deficit periods)



Fertiliser management – stick to the plan - FMZs



Monthly Fertiliser Sheets



Planning to plan

- Annual soil testing of the same site (within a FMZ)
- Strategic testing of “problem paddocks” within a zone
- Monthly fertiliser strategy for each zone
- Annual soil ameliorant (lime, litter etc) plan for specific paddocks
- Monthly review of plans and alterations due to prevailing conditions



Soil Health and Pasture Production Goals

- Maximise rainfall utilisation (whenever it occurs)
- Minimise weather stress events (whenever they occur)
- Have a soil with available nutrients year round
- Increase pasture response following stress events
- Increase pasture quality aspects and utilisation
- Use pasture species which help fill feed “gaps”



Soil Structure – identify and refine

- Supplementary to monthly soil fertiliser programs
- Split into summer and late winter applications
- February – lime etc
- August – increasing soil temperatures but large grazing interval (approx 28 days)

February 2017 Treatment

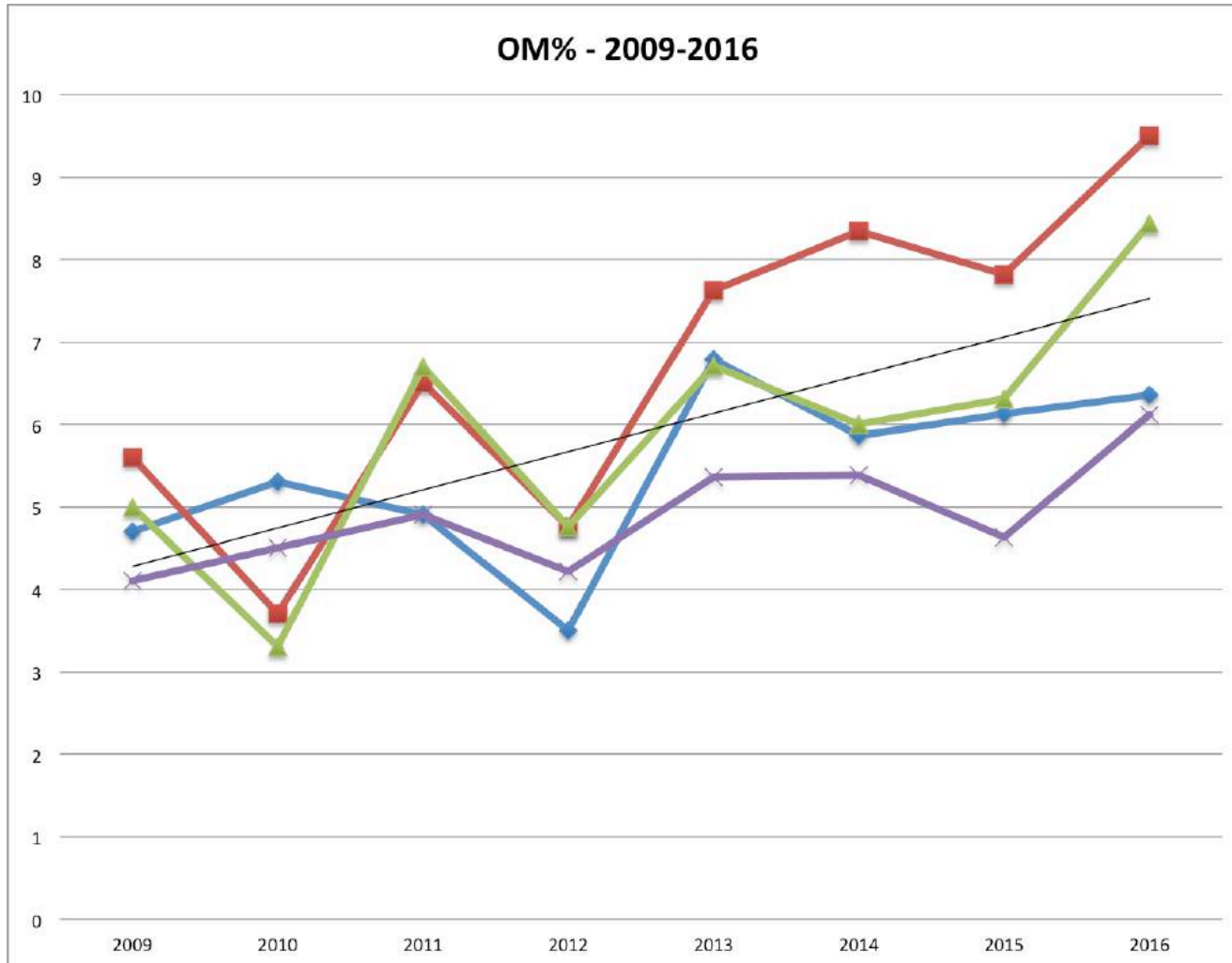
Paddock	Area(ha)	Mined Gypsum Rate (t/ha)	Total Gypsum (t)	Lime (t/Ha)	Total Lime (t)
Dairy	10	1.5	15	1.5	15.0
Crouchers	8		0	2.5	20.0
Pump	6.5		0	2.5	16.3
Three Tree	6	1.5	9	1.5	9.0
Nut Tree	10		0	2.5	25.0
Rileys Flat	7	1.5	10.5	1.5	10.5
TOTAL			34.5		95.75

August 2017 Treatment

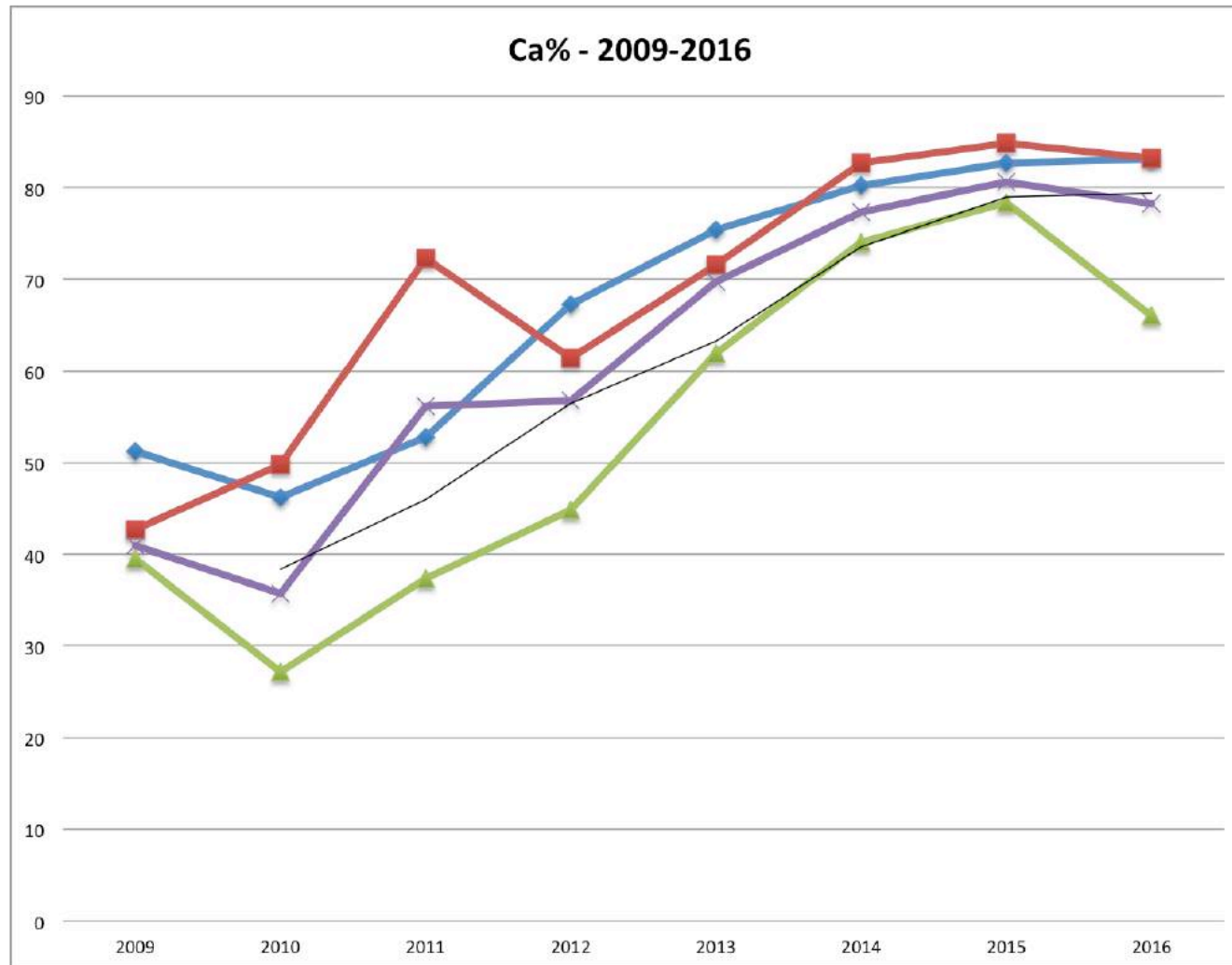
Paddock	Area(ha)	Chicken Litter Rate (m3)	Total Chicken litter m3)	Lime (t/Ha)	Total Lime
Rileys Flat	7	7.5	52.5		0.0
Back Flat	10	7.5	75		0.0
Steelyards	10	7.5	75	0	0.0
TOTAL			202.5		0



Soil Structural Improvements - Organic Matter



Soil Structural Improvements - Calcium



Fertiliser strategy – annual plans, monthly review & applications

Apply in	Rate	Product	N	P	K	S
January	100	UREA	46.0	0.0	0.0	0.0
February	100	Blend 2 (65% Urea/35%SOP)	30.0	0.0	14.0	7.0
March	100	DAP	18.0	20.0	0.0	1.0
April	80	UREA	36.8	0.0	0.0	0.0
May	100	Blend 2 (65% Urea/35%SOP)	30.0	0.0	14.0	7.0
June	100	Blend 2 (65% Urea/35%SOP)	30.0	0.0	14.0	7.0
July	80	Liquid/Progibb Blend	20.0	3.2	0.0	3.2
August	80	UREA	36.8	0.0	0.0	0.0
September	100	Blend 2 (65% Urea/35%SOP)	30.0	0.0	14.0	7.0
October	100	Blend 1 (50%Urea/50%SOP)	21.0	0.0	23.0	10.0
November	100	Blend 1 (50%Urea/50%SOP)	21.0	0.0	23.0	10.0
December	100	Blend 1 (50%Urea/50%SOP)	21.0	0.0	23.0	10.0
Total Nutrient applied Per Ha			340.60	23.20	125.00	62.20



Annual Review – Plans vs Actual

ACTUAL vs PROPOSED 2012				
Back Flat	N	P	K	S
Total Nutrient Proposed(kg/ha)	340.60	23.20	125.00	62.20
Total Nutrient Applied (kg/ha)	372.27	18.00	56.00	70.75
Difference (kg/ha)	31.67	-5.2	-69	8.55
Baggots	N	P	K	S
Total Nutrient Proposed(kg/ha)	340.60	23.20	125.00	62.20
Total Nutrient Applied (kg/ha)	458.55	30.00	82.60	95.05
Difference (kg/ha)	117.95	6.8	-42.4	32.85
Dairy	N	P	K	S
Total Nutrient Proposed(kg/ha)	339.85	21.40	0.00	75.40
Total Nutrient Applied (kg/ha)	427.25	28.80	0.00	91.15
Difference (kg/ha)	87.4	7.4	0	15.75
Riley's	N	P	K	S
Total Nutrient Proposed(kg/ha)	340.60	23.20	125.00	62.20
Total Nutrient Applied (kg/ha)	376.95	30.00	84.00	95.75
Difference (kg/ha)	36.35	6.8	-41	33.55



Pasture System improvements

- Chicory herb base integrated to “extent” spring quality into summer, and for drought tolerance
- Legumes; a function of soil health and pasture management
- Late flowering Italian ryegrass species (oversown annually)
- Pasture management still king, with major focus on:
 - Grazing management and pasture utilisation
 - Fertilising to maximise rainfall utilisation
 - Pasture quality
 - Minimising feed gaps



Management of pastures

Important management protocols include...

- Grazing management ...
 - grazing intervals
 - utilisation
 - thatch management
 - fodder conservation

- Strategic fertilising ...
 - regular applications
 - manures late winter
 - ameliorants in late spring/summer

- Sowing...
 - paddock preparation
 - timing
 - pest control
 - grass control
 - starter fertiliser & first topdress
 - first graze



Pasture selection

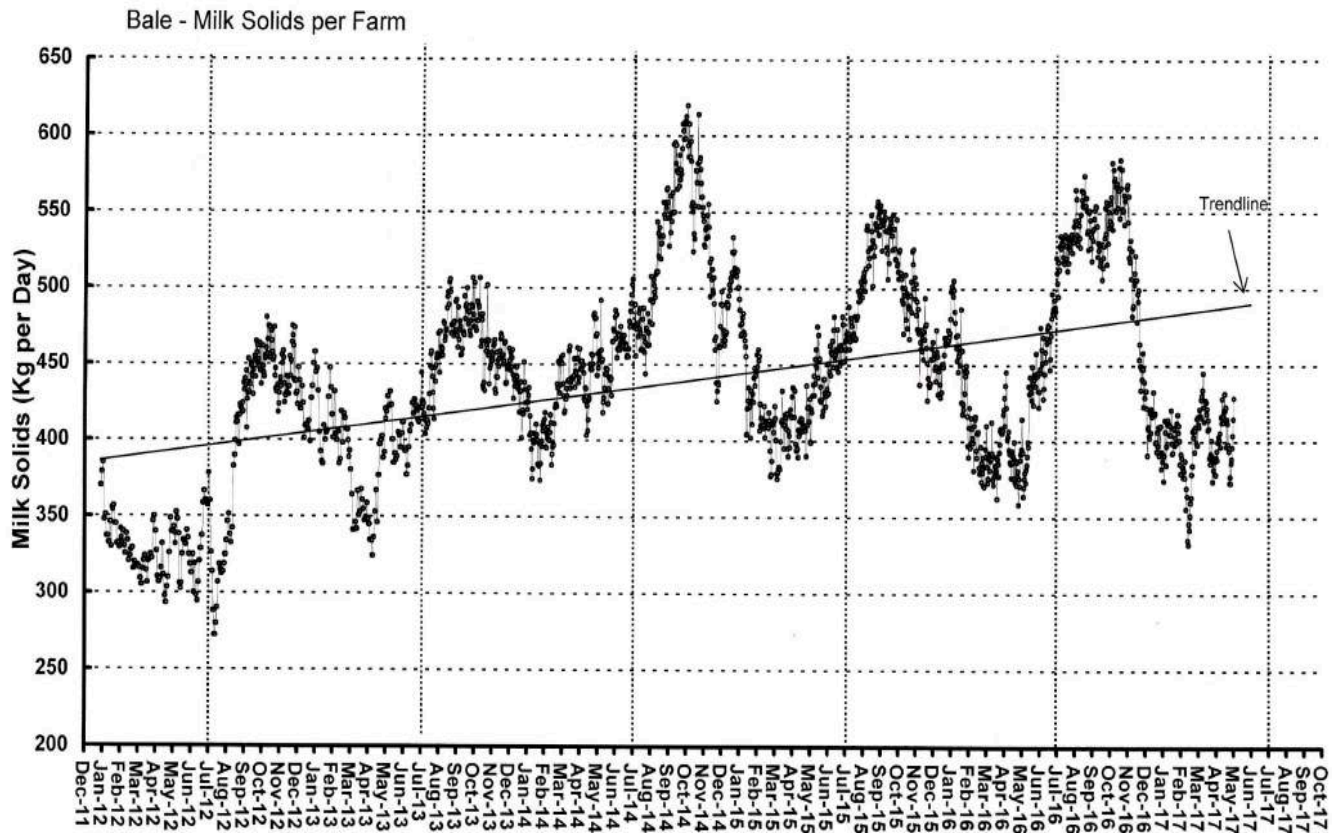
- **Selection based on...**
 - Soil fertility
 - Long term pasture improvement program
 - Current pasture composition
 - Management skills
 - Production goals

- **NOT ...**
 - Seed price
 - Trial data alone
 - What the neighbor is planting



Pasture Based Production

- From 375kgMS/day (2011) to 480kgMS/day (2016)
- Milking platform area has remained the same (104ha)
- Represents increase from 1316kgMS/ha/year to 1684kgMS/ha/year



Summary

- Soil health, pasture management and climatic conditions will determine productivity
- We can't control climatic conditions, so focus on soil health and pasture management
- Pastures to utilise nutrition, rainfall and climate

Paddock walk and talk.....

