Using Precision Technologies and Targeted Management to Improve Vineyard Performance

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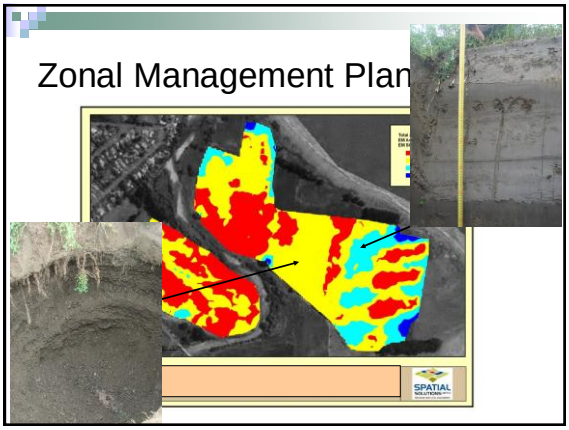
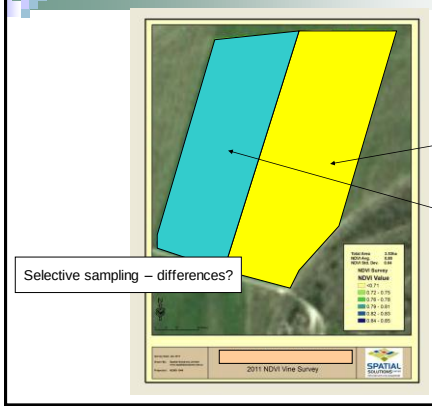
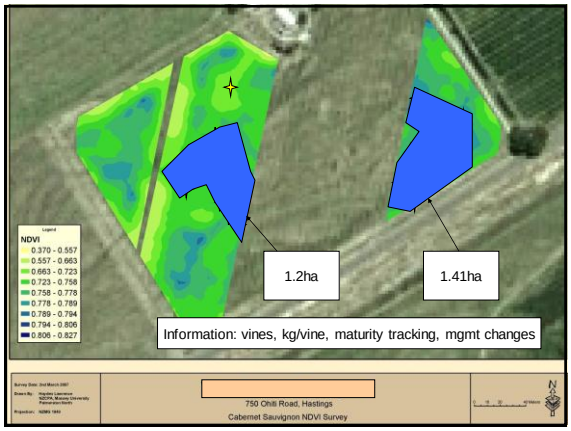
Overview

- NDVI and EM38 to classify vineyard quality and create Zone maps
- Targeted management of vineyards based on zone maps
- SFF Project (one year) - Two Vineyard case studies will be used in 2012
  - Villa Maria – Omahu Gravels Merlot
  - Mission – Mere Road Syrah

Zonal Management Plan







Zonal Management

- Formulating Management Plans
  a) Irrigation
  b) Pruning
  c) Shoot thinning
  d) Leaf Plucking
  e) Crop loading
  f) Thinning
  g) Sampling
  h) Harvesting
- Classification of zones?
- What zones produce the best quality fruit?

Vineyards in SFF Trial

Mission Mere Road Vineyard

- 2ha Syrah

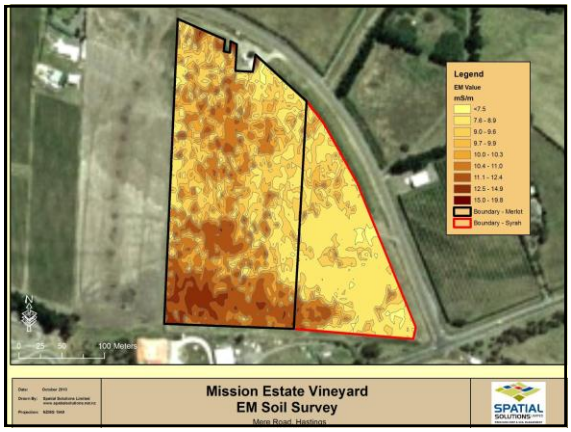
Villa Maria Omahu Gravels

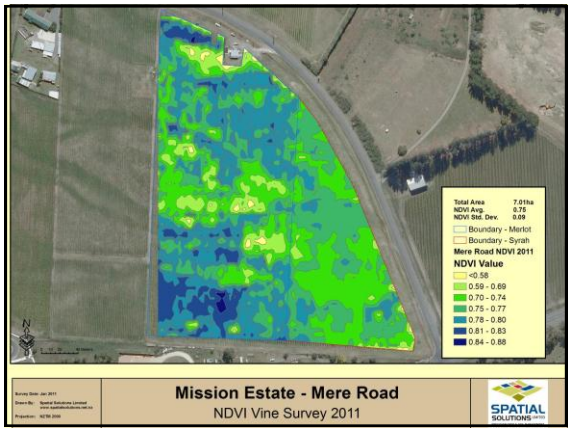
- 2ha Merlot

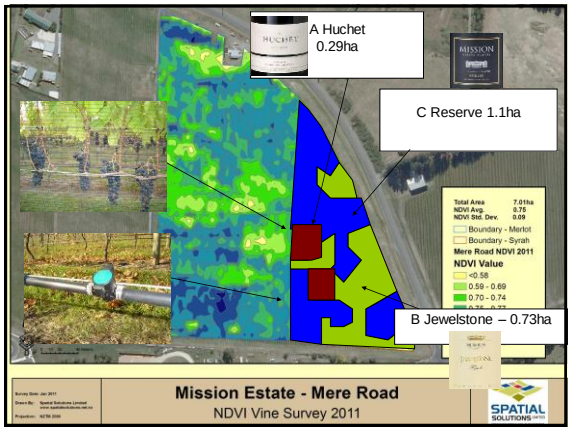
- Vineyards set up as case studies with the aim of improving financial performance

Mere Road - 2012

- Identification of zones used with 2011 NDVI and EM38 image.
- Targeted management of zones
- Variable cost structure in relation to management zones







Within Zones 2012

- Block cane pruned
- Shoot thinning change within zones
- One bunch per shoot in low and medium vigour zones, two bunches per shoot in higher vigour zone
- 100% leaf removal from bunch zone – cost differences?
- Varying crop loads across zones
- Fruit quality, quantity monitored across zones
- Financial performance assessed

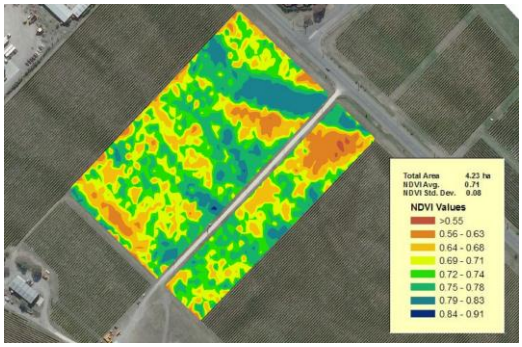
Cost Structure of Zones 2012

	Huchet	Jewelstone	Reserve
Task	**Cost/vine**	**Cost/vine**	**Cost/vine**
Pruning	0.50	0.5	0.6
Shoot thinning	0.20	0.20	0.20
100% leaf removal	0.15	0.25	0.40
Crop removal	0.60	0.50	0.30
Pinning of shoots	0.55	0	0
Lateral thinning	0.15	0.20	0.20
TOTAL INPUT COST	2.15	1.65	1.7
Yield/vine	1.1	1.4	2.5
$/Kg	3.5	2.5	2
Gross per vine	3.85	3.5	
Net per vine	$1.7	$1.85	$2.55

Date	Range	Brix	pH	TA	
29/03/2012	A - Huchet	20.1	2.93	12.2	
29/03/2012	B - Jewelstone	20.3	2.9	12.9	
29/03/2012	C - Reserve	18.4	2.7	13.4	
10/04/2012	A - Huchet	20	2.98	11.6	
10/04/2012	B - Jewelstone	19.6	3	12	
10/04/2012	C - Reserve	18	2.97	12.8	
16/04/2012	A - Huchet	21	3.05	11.6	
16/04/2012	B - Jewelstone	21.4	3.156	10.175	
16/04/2012	C - Reserve	20	2.99	12.4	
27/04/2012	A - Huchet	23	3.15	10.1	HARVEST
26/04/2012	B - Jewelstone	22.1	3.14	9.8	HARVEST
20/04/2012	C - Reserve	21.1	3.05	9.75	HARVEST

Villa Maria – Omahu Gravels - 2012

- Identification of zones used with 2011 NDVI image.
- Targeted management of zones A and B
- Inputs varied based on zones
- Variable cost structure in relation to management zones



Session Summary

- Variation exists within vineyards
- Technology available to accurately define and quantify potential quality within vineyards
- Significant differences in quality, quantity, ripeness and flavours
- Zone map creation and ground truthing to define zones
- Management of zones based on vigour to improve block performance
- Targeting vigour and management is important to improve fruit quality and economic performance.
- This SFF project has provided further insight into zonal management