

CAN WE PROTECT GRAPES AND VINES USING SUNSCREEN ?



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IMPACT OF HEAT

- Fruit Condition
- Vines
- Vineyard Operations
- Wine Quality
- Winery – operations and costs

IMPACT OF HEAT – FRUIT

- Physical condition
 - Scorch
 - Sunburn
 - “Processability”
- Chemistry
 - Colour
 - Phenolics
 - Be/pH/TA



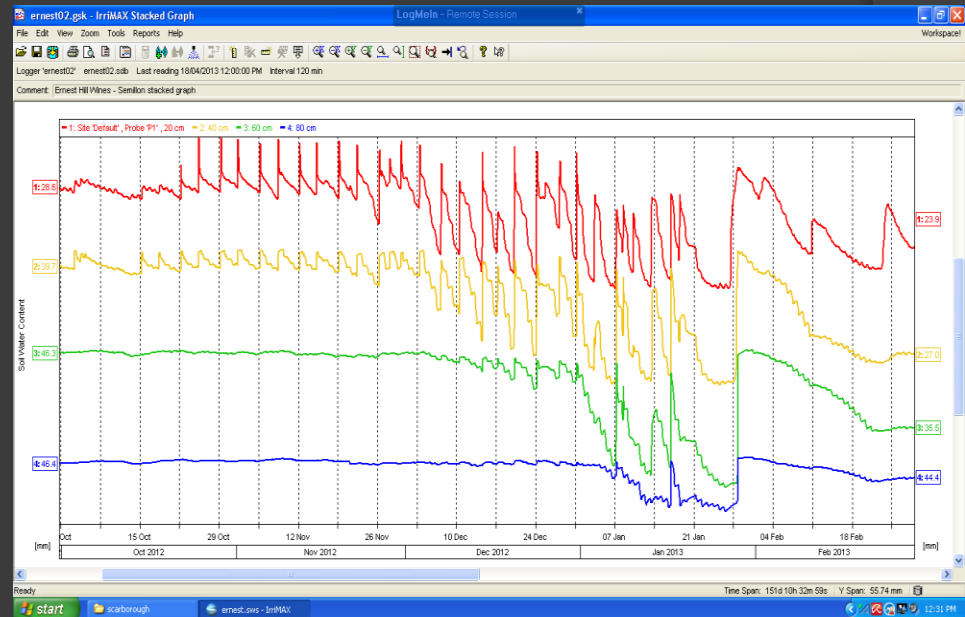
IMPACT OF HEAT – VINES

- Canopy functionality

- Ripening

- Water use

- Post-Harvest Recovery



IMPACT OF HEAT – VYD OPS

- Extra days pre-harvest
 - Ongoing water inputs
 - Cost & availability of water
 - Pumping/application costs
 - Labour to irrigate
- Potential extra fungicide inputs
 - Clash of harvest/spray operations
 - WHP come into play
 - Additional labour/Cost of labour etc...



IMPACT OF HEAT – WINE QUALITY

- FRUIT
 - Colour
 - Phenolics
- Processing in the Winery
 - Extra inputs as hard to handle
 - Processing delays

Ultimately - compromise wine value (\$↓) and cost of inputs (\$↑).



IMPACT OF HEAT – THE WINERY

➤ Delays

- Whole winery schedule impacted.
- Other “waiting” fruit impacted by delay e.g. loss of quality, increased skin contact etc...

➤ INCREASED COSTS

- Extra processing time e.g. longer press cycles – overtime/wages.
- Extra cooling – hotter fruit – energy inputs.
- Extra inputs e.g. settling aids – materials costs.

➤ \$\$\$\$\$

“SUNSCREENS”

WHAT ARE THEY ?

- Various types
 - Clays e.g. Screen Duo, Surround
 - Vapour guard – anti transpirant.
 - Photon – plant defence.
- Different mechanisms to minimise sunburn or heat stress.

SUNSCREENS for HEAT MANAGEMENT

TWO KEY ELEMENTS :

- PHYSICAL PROTECTION
 - FRUIT
 - CANOPY
- ABILITY TO LOWER CANOPY TEMPERATURE
 - Maintain canopy functionality and ripening.
 - Fruit ripens “on schedule”.

What we want to achieve :

- Reduced exposure to :
 - More heat events.
 - Rain/Hail events.
 - Pest pressure e.g. birds.
 - Winery intake constraints.
- Reduce Inputs and Costs
 - Water – availability, pumping, application labour etc...
 - Fungicide applications.
 - Winery savings.

HUNTER DEMONSTRATION

➤ AGWA – GRASSROOTS REGIONAL PROGRAM

➤ Aims

- To assess the “benefits of sunscreen” in a vulnerable variety – Semillon
- For both growers and winemakers to “see” it at work.
- To “tweak” application regime – best bang for our buck.

➤ Demos

- McWilliams Lovedale 2012/13 and 2013/14
- Bimbadgen 2012/13
- **Highly visible covert operation !**

2013-14 McWilliams Lovedale



OUTCOMES

- Less sunburn in treated areas.
- Earlier ripening.
- Better analysis and colour in the winery
- Better settling post press.

*“Fruit riper analytically and flavour wise.
Better pH TA as well.*

*Better colour due to less sunburn;
required less fining. Juice settled better
(maybe due to bentonite effect?)”*

Jim Chatto, McWilliams.





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Other Benefits

- Assess Spray Coverage
 - Early and late in the season on foliage
 - On bunches – a reason not to apply late season botrytis sprays.
“Confidence to make the call”
- See growth still occurring late season.
 - Vine function
 - Unprotected foliage.
- QLD Fruit Fly ???



Thanks

➤ Contributors

- AGWA
- Tony Somers – formerly NSW DPI
- Richard Hilder (NSWWIA)
- Bimbagden – Sarah Crowe and Alan Johns
- McWilliams – Paul Harvey and Jim Chatto
- AgNova
- Agricrop

