

In vitro evaluation of the methane mitigation potential of a range of grape marc products

*V.M. Russo, J.L. Jacobs, M.C. Hannah,
P.J. Moate, F.R. Dunshea and B.J. Leury*



Grape marc

- Skins, seeds and stems of grapes after they have been pressed to make wine
- When fed to dairy cows it can reduce methane emissions by 20%
- Grape marc types (white, red, skins, seeds, stems, fresh, ensiled) vary depending on grape variety and processing methods



In vitro screening

- *In vitro* fermentation runs using ruminal fluid
- 20 grape marc types
- Measured total gas production, methane percentage, VFA, ammonia and final pH



Results

- Total gas production ranged from 21.8 to 147 ml/g DM
- Methane production ranged from 14 to 54% of total gas
- Some types were highly fermentable with low methane %
 - Fresh grape marc better than ensiled or processed grape marc
 - Skin marcs better than seed marcs
 - White grape marc better than red grape marc

Conclusions

- Grape marcs differ greatly in their potential as feed supplements and mitigants of enteric methane emissions for ruminant production systems