



PERENNIAL PASTURE SYSTEMS

MAKING PASTURE GO THE DISTANCE

PPS NEWS

Planning Meeting; The management committee held this year's planning meeting at Joel Joel on March 1st. The six hour session looked at governance & succession as well as planning this years project & events program. Some event dates are on page 4 & others will be added during the year. Rita & Debbie from the Girls & Grass advisory group attended part of the meeting & reported on the G & G planning meeting. Committee member, Ken Hall, who has been on leave of absence due to ill health attended the meeting and we are pleased to report that things are improving due to new medical treatments.

Almost Annual Conference; The PPS 12th Annual Conference will be held in Ararat on Wednesday August 25th. Last year's conference was cancelled due to Covid restrictions but PPS hopes for a clear run this year with the conference returning with no change to last year's proposed line up.

Study tour; The 12th almost annual Study Tour is proposed for September from Wednesday 15th to Friday 17th. The management committee decided that an interstate tour was risky due to sudden state government lockdowns, so a Victorian tour is planned. It will be a grains & lamb tour of leading Wimmera farms, it is hoped that it will include the farms of previous annual conference presenters. Overnight stops will be in Horsham & the short distance to most PPS members will allow people to join all or part of the study tour; day tours will be an option for those short of time.

PPS Girls & Grass Advisory Group; Girls & Grass Advisory Group held their planning meeting early in February. Sue Maconachie was elected Chair and she thanked outgoing foundation committee members Jodie Greene, Janine Curtis and Jane Thomas. Incoming members are Rita Bikins, Malinda Hall and Tricia Sweeney. The committee is looking forward to hosting face to face activities in 2021.

Problem Paddock Project; PPS is proposing a new project looking at solutions for problem paddocks. A Serradella & Kikuyu demonstration is planned for the sandy soils which occur in areas surrounding mountains in the region. If members have any other ideas for problem paddock demonstrations, contact the Project Manager.

Market Outlook Webinar; PPS conducted another sheep, cattle & grains markets outlook webinar with Rob Herrmann from Mecardo. Mostly positive news for the medium term but, as always, there are a few things that could put pressure on prices. Seventeen members took part & a further twenty requested the recording. PPS & Rob, again, passed his presenter's fee onto the Kasenda Village Project in Uganda. There is information on the Kasenda Project on the PPS website partnerships tab.

Healthy Soils Project; The fourth Healthy Soils session was held on March 3rd with Lisa Warn & Dr Nathan Robinson looking at soil testing and launching the PPS soil test project. Further details on the project will be forwarded to members. Session 5 will be on April 8th with Dr Helen Hayden talking on soil microbiology. The Healthy Soils program is supported by MLA.



Q Fever Vaccinations; Q fever is a debilitating bacterial infection passed on from sheep, cattle & goats. Humans typically get Q fever when they breathe in dust that was contaminated by infected animals. PPS member, Malinda Watson and G & G coordinator, Debbie were able to organise Q fever vaccinations in Stawell. 25 members took part in the program. Vaccinations are periodically available through the health service; contact Debbie for details if you are interested.

PPS member input; Members had input into two farm policy projects in late 2020. Around eight members volunteered for interviews on Federal Govt farm drought policies with Dean Jones from the National Drought & North Qld Flood Response and Recovery Agency. Six members also volunteered to be interviewed for a study on farmer mental health for the National Enterprise For Rural Community Wellbeing at the initiative of PPS member Kristy Potter-Price, who works in the health service.

PPS Defibrillator; PPS was successful in an application to the Ararat Wind Farm Sustainable Community Grants program to purchase a defibrillator for PPS events. PPS took delivery in January, thanks to the Ararat Wind Farm for their support.



PPS Project Manager's Border Collie "Mogwai" is a useful pasture height indicator.

She met her match in PPS member Doug's new Holdfast GT phalaris & Arrowleaf clover pasture at Invergarry" Langi Logan in October 2020.



High production annual forage is becoming increasingly important in regional farming systems, complimenting perennial grazing pastures and cropping systems.

A regional trial site has shown interesting results in 2020 and Chris Walsh; farm production advisor from Elders Ballarat has provided the following summary.

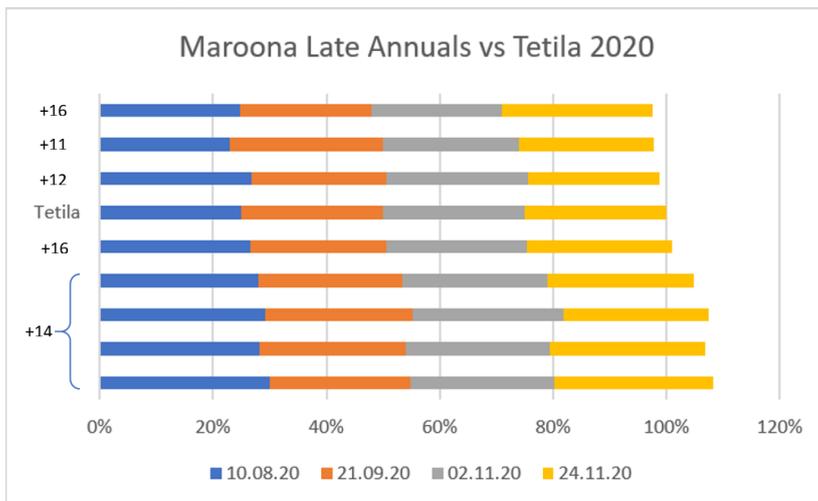
Trial: Annual Ryegrass Biomass Measurements

Location: Maroona, (12km south of Ararat) 2020 **Sowing Date:** May 7th **Co-operators:** Elders Ararat & AGF Seeds

Hypothesis: That later maturing annual ryegrass produces more Winter production then short season ‘Tetila’ types, with the upside potential of increased late season production/quality in years with wet Springs.

Background: It has been observed over recent years that some late season ARG varieties are producing more winter production than typical short season varieties. This has been measured in HRZ of Victoria, but we hoped to measure this in more marginal areas.

Results: It was shown that some later maturing ARG varieties are producing up to 300kg DM more than Tetila types in the first winter cut (even when sown later than optimal and below average winter rainfall!). This provides the grower with better winter returns, even when increased seed costs are taken into account. Furthermore, if the Spring is kind, the grower can capitalise on better quality and DM late into the season. Short season varieties still have a place in some situations where Lucerne/Summer forage is being Spring sown, but there is considerable upside to the grower when sowing some later maturing varieties for hay and grazing. We stress that these varieties need to be tested on your own farm in side-by-side conditions to be proven as each farm will have differing soils and situations. Contact Chris at Christopher.Walsh@elders.com.au for full trial results.



Left; DM cuts comparison

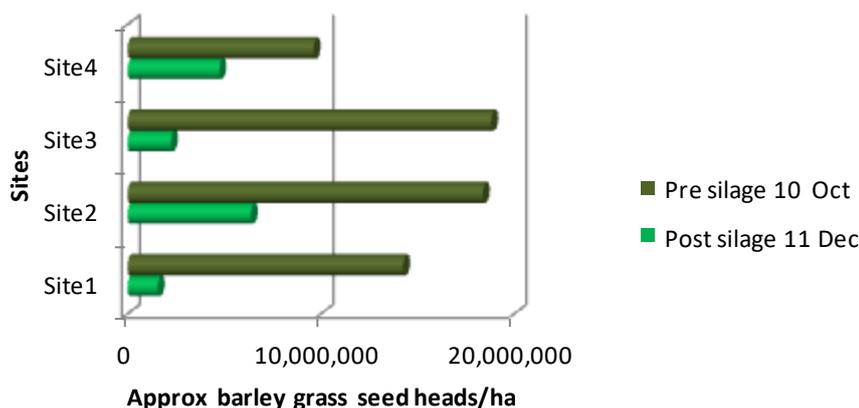
Right; PPS Management Committee member, Craig Altmann, at the site in October



Below; Maroona site October 2020



The Oaks (2020)



“Annual grass control strategies in a perennial pasture system” PDS

PPS is again measuring the effect of removing barley grass seeds through silage production. The site is an Uplands cocksfoot pasture at “The Oaks” near Crowlands which was cut on October 10th, 2020.

In 2019, the removal of the silage at the demonstration site on “Ben Nevis Farms” at Tulkara had a lasting effect through the spring of 2019 which reduced barley grass numbers in 2020.

The good spring rains in 2020 may have affected the results at “The Oaks” with a secondary germination of barley grass occurring. The pre & post silage seed head counts can be seen in the graph.

Seed counts will be conducted in the silage & control areas of the paddock in 2021 to assess the results. A report on the silage demo can be found on the PPS website. <https://www.perennialpasturesystems.com.au/post/pps-annual-grass-control-project>

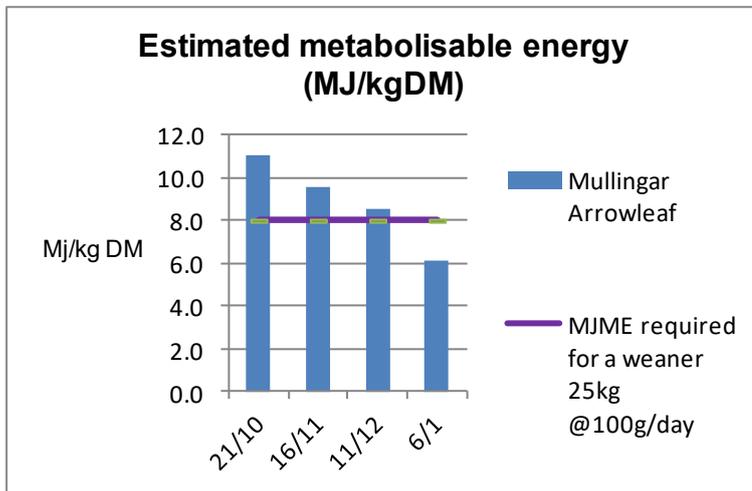
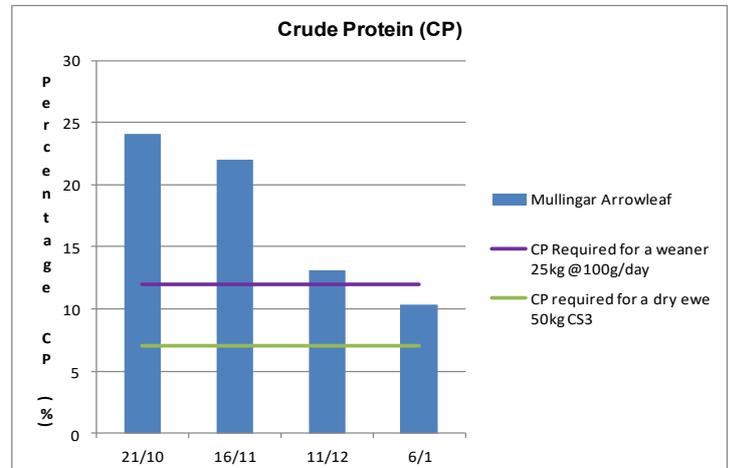
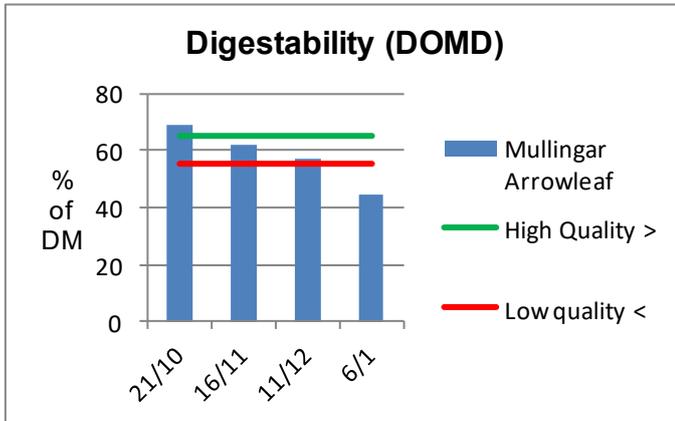
The project is being conducted in partnership with Agriculture Victoria and is part of the MLA PDS program.



Arrowleaf Clover Feed Quality

As part of the “Annual grass control strategies in a perennial pasture system” demonstration, Arrowleaf Clover has been introduced into pasture sites through broadcasting techniques with variable success. The demonstration aims to use the clover to suppress barley grass growth through competition; results can be accessed in the 2020 results report that was emailed to members and can be found on the PPS website at - www.perennialpasturesystems.com.au/post/pps-annual-grass-control-project.

The broadcasting technique has been successful in establishing Arrowleaf in pasture at “Mullingar” Ararat, although any long term effect on barley grass is still to be assessed. As part of the demonstration, it was decided to test feed quality of the Arrowleaf through the spring and early summer of 2020. The results are shown in the graphs below; sheep requirements are shown by the horizontal lines in the graphs.



The results show that sheep requirements were fully met by the Arrowleaf well into December but the feed quality had dropped by early January and was not supplying sufficient energy to maintain weight in adult or weaner sheep. The digestibility had also fallen to low quality, which means that sheep would not be able to consume enough of the feed to maintain weight. The protein level was ok for grown sheep but too low for weaners. Supplementary feeding would be needed for all classes of stock to maintain bodyweight. Arrowleaf seed heads were measured separately for feed quality in January but showed little difference to the whole plant. By January most of the seeds had dropped and leaves had been consumed by sheep. The results show the importance of knowing the feed quality of paddock feed as it declines in summer. *The project is being conducted in partnership with Agriculture Victoria and is part of the MLA PDS program.*



Left; Arrowleaf on 20/10/2020



Right; Pasture on 11/12/2020



Fescue; a low rainfall pasture tool?

In 2020, PPS commenced a winter active fescue demonstration looking at its value in pasture systems in the <550mm rainfall zone. Two fescue pastures, established with Uplands cocksfoot in 2018, east of Stawell were measured for DM production last year and four new pastures were assessed, located at Avoca, Concongella, Paradise and Winjallock.

The DM and feed quality results initially suggest that winter active fescue has a place in the lower rainfall regions. The project is part of the MLA PDS program. A report of the 2020 results has been sent to members and is available on the PPS website; <https://www.perennialpasturesystems.com.au/projects>



~ PPS DIARY DATES ~

PPS 12th Annual Conference; Gum San Great Hall; Ararat Wednesday August 25th

PPS 12th Annual Study Tour; Grain & Lamb tour; Wimmera region, Wednesday 15th September—Friday 17th September

Winter Farm Tour – “Boorook” Woorndoo; Sunday June 20th, details will be sent closer to the date.

PPS Healthy Soils Session 5 - Soil biology with Dr Helen Hayden; Ag Vic. Thursday 8th April 1.30pm Ararat; see attached flier. The Healthy Soils program is supported by MLA

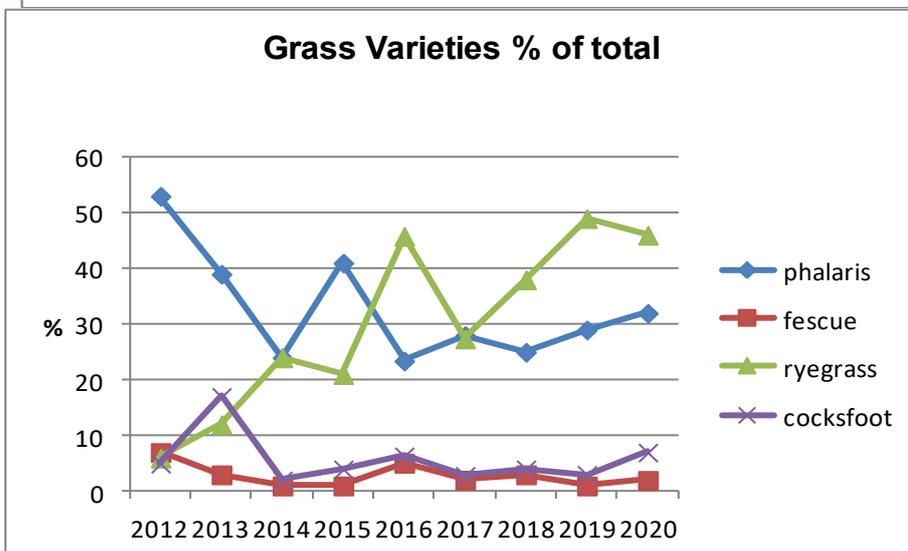
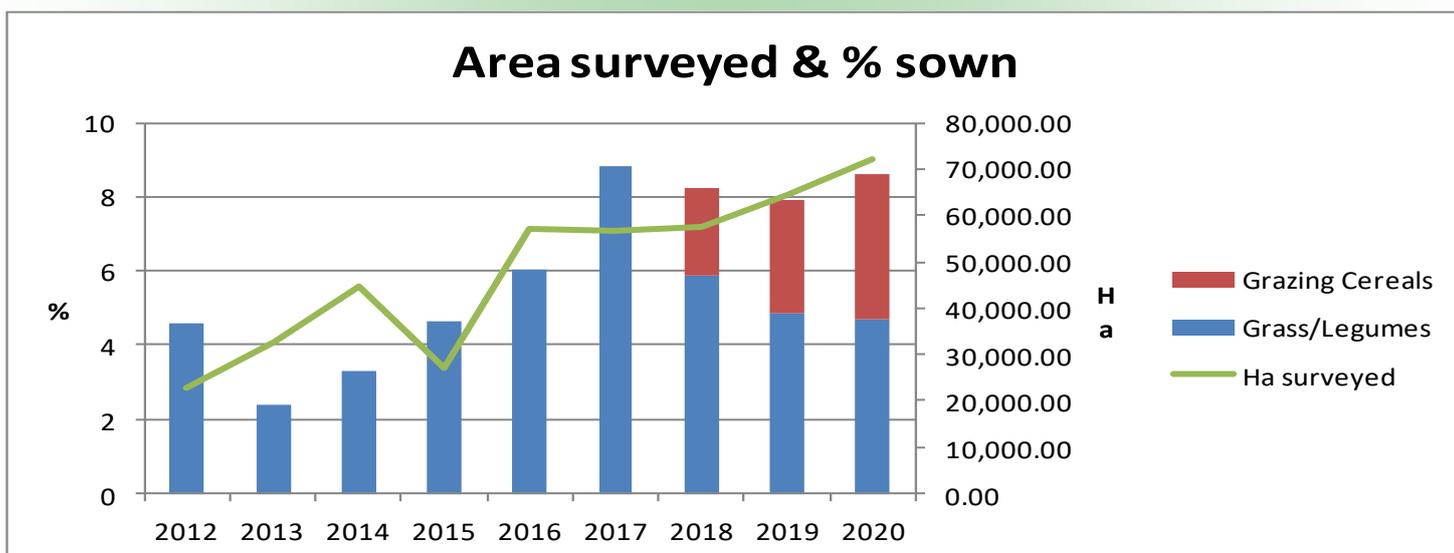
Girls & Grass group - Coffee morning 10.30am, Tuesday 16th March at Barkly Bistro & Bar, 240 Barkly Street, Ararat. First Aid Training Course—Sunday 18th July venue & time TBC.

PPS 9th Annual Pasture Establishment Survey

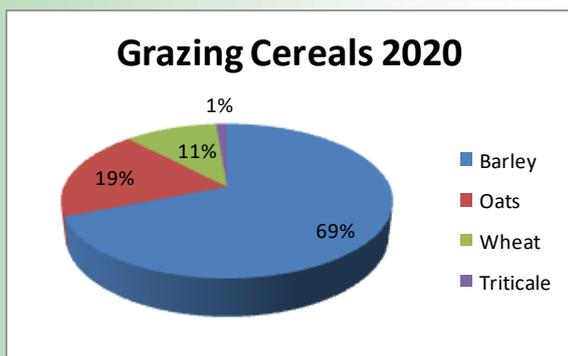
PPS has surveyed members on their pasture establishment program for 2020; 54 members responded, covering an area of 74,594 Ha. Three of the respondents didn't sow new pastures in 2020; 6,483 Ha (8.7%) of the total area surveyed was sown to new pasture or grazing cereal and the graph below compares this with previous years. Grazing cereals were added to the survey in 2018 and 3.9% of the area surveyed had grazing cereals established.

The graphs below show the 2020 results as well as comparisons to previous years.

It is interesting to note the large rise in ryegrass sowings since 2016; last year 80% were short term cultivars and were established to provide quick feed to fill feed gaps. PPS has noted a large increase in dry sowing and asked for the area dry sown in 2020; it amounted to 27%; just over half the percentage of 2019, the early autumn break being the reason. Respondents were again asked for the cultivar used in phalaris establishment; Holdfast GT made up 99% of the plantings in 2020.



Western Quarries supported the survey with a draw for a load of road building material; it went to Stuart Robinson's at Clunes.





Dolomite or Lime

The topic of using Dolomite instead of Lime arises from time to time, so PPS asked Lisa Miller from Southern Farming Systems to compare them.

Lisa is well known to PPS members & presented a session on soil pH and lime use at a PPS/MLA Healthy Soils session in early 2020.



Dolomite, is it as effective as Aglime?

By Lisa Miller, SFS

There are three main considerations in the decision to choose dolomite instead of aglime; cost, effectiveness or whether additional magnesium within dolomite can add value by also addressing magnesium related deficiencies/disorders.

Both aglime and dolomite contain carbonate which removes hydrogen ions (acidity) from the soil, through a series of chemical reactions. The main difference is that aglime is calcium carbonate and dolomite contains both magnesium carbonate and calcium carbonate.

Cost

The most cost-effective lime product spread on farm will generally be from the closest located quarry due to the high influence of cartage on overall costs. Dolomite is generally a more expensive lime product than aglime and has higher cartage costs as the closest pits to South West Victoria are located in Mt Gambier.

Effectiveness

Cheapest is not always the most effective. Effectiveness is based on neutralizing ability and speed of acid neutralizing reactions.

Neutralizing Value (NV) reflects the amount of carbonate neutralizing power, the higher the NV% the more hydrogen ions it will consume. NV is based on pure aglime which is rated as 100% and most aglime products sold in Victoria commonly have an NV of 80 to 90% which is lower than dolomite. Dolomite can exceed 100% due to containing magnesium which has lower molecular weight than carbonate giving it a higher NV. GEM Burnda Rd dolomite was reported at 105% at the Victorian Lime Producers Association website in 2019.¹

Often lime products are compared using the following formula where the lime with the lowest effective cost is preferred.

Effective Cost \$/t = $(100 \div \text{NV}) \times \text{Cost/t spread}$

Whilst the NV of dolomite is higher, the chemical composition of dolomite makes it slower to react than aglime. In NSW DPI experiments, dolomitic lime was found to create about 35% less pH change than aglimes derived from hard dense rock and about 50% less pH change than soft rock limes (e.g. coral, fossilized limes) of similar fraction sizes in the first 18 months.²

Having a product react rapidly in the first year to change acidity is advantageous, as you want to quickly recoup costs by removing soil acidity constraints to plant growth.

Magnesium value

Producers have expressed concerns about the repeated application of calcium (Ca) through aglime and wondered if they should instead be using magnesium (Mg).

This is partly to do with confusion over benefits of having balanced cations. For example, the Ca:Mg ratio reported in soil tests, has not been found to be a useful indicator of plant productivity, even when soil contained a Ca: Mg ratio of 1:20, plant productivity was not affected.³ A better predictor of plant performance is based on deficiency/sufficiency principles.

Dolomite or Lime

Reports of either magnesium or calcium being deficient are rare and most likely to occur on acid coastal sandy soils. Desirable levels for seedling or pasture growth are magnesium above 0.2 meq/100g and calcium above 0.5 meq/100g at 0-10cm.³

5. AS Miner Geotechnical (2013) Differences in limes. In: Corangamite region "Brown Book". Corangamite Catchment Management Authority. Available online: [How do different types of lime compare?](http://ccmaknowledgebase.vic.gov.au) (ccmaknowledgebase.vic.gov.au)

Other questions have related to benefits of using dolomite or aglime on livestock metabolic disorders such as grass tetany (low Mg) and milk fever (low Ca).

Studies show both aglime and dolomite influences plant cation uptake by increasing root exploration of soil and consequent nutrient uptake by removing aluminum toxicity. Also liming products through supply increase calcium and magnesium availability but have also been shown to decrease potassium concentration in plant shoots (via dilution by increasing plant growth) which may potentially increase the risk of milk fever⁴ but could potentially reduce grass tetany risk.

Due to many confounding factors (e.g. plant stage, animal age and soil potassium status), experience is that neither aglime or dolomite application should be relied upon as a treatment for metabolic disorders and livestock should be treated directly.⁵

References

1 VLPA Comparative Agricultural Limestone Test Results April 2019 Available online: [Product Specification - Victorian Limestone Producers Association](http://vlpa.asn.au) (vlpa.asn.au)

2 Conyers M K, Scott B J, Fisher R and Lill W (1995) Predicting the field performance of twelve commercial liming materials from southern Australia. *Fertiliser Research* **44**, 151-161.

3 Fenton G and Conyers M (2003) Interpreting soil tests for calcium, magnesium and ca:mg ratios. NSW Agriculture Leaflet No 7, Wagga Wagga. Available online: [Interpreting soil tests for calcium, magnesium and Ca:Mg ratios](http://nsw.gov.au) (nsw.gov.au)

4 Pelletier S, Simpson RJ, Culvenor RA, Belanger G, Tremblay GF, Allard G, Braschkat J and Randall PJ (2008) Dietary cation-anion differences in some pasture species, changes during the season and effects of soil acidity and lime amendment. *Australian Journal of Experimental Agriculture*, 48, 1143-11.



Dolomite Mountains in Northern Italy; Not available for quarrying