

## ASPAC Digest – August 2019

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*13th Edition, August 2019*

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## Greetings from the Chair

Welcome to our August issue of the ASPAC newsletter. Firstly, let me offer my best wishes to the outgoing ASPAC Executive Committee members, Chairperson Dave Lyons, Janice Trafford and Paul Milham.

Dave Lyons has been a long-standing member of the Laboratory Proficiency Committee, a member of the Methods Committee, the Executive Committee rep for QLD since 2012 and was co-author with George E. Rayment of the important reference “Soil Chemical Methods – Australasia”. Dave’s dedicated work furthering ASPAC’s principles will have a lasting impact while he enjoys well deserved retirement.

Dave is pictured at the 2018 AGM in Canberra congratulating Janice Trafford for her term on the Executive as ACT rep from 2006 (or earlier) till 2018. Another tireless servant of ASPAC, Janice’s coordination of workshops over a 10 year period ensured industry knowledge has passed down to a another generation of laboratory technicians. The picture below also shows Paul Milham receiving a plaque distinguishing his service to ASPAC. Paul has been our NSW rep at various times since the inception of ASPAC in 1990, and is the convenor of the ASPAC Methods committee. Both Janice and Paul have kindly indicated a desire to assist on future sub-committees, and Paul will continue to convene the Methods Committee for a few more years.

Mid-way through 2018 we also saw the departure of NZ rep Rebecca Withnall from the Executive Committee when she took up a position in another industry. I thank Rebecca for her positive and enthusiastic contributions to ASPAC and the executive and wish her the best for the future.



Stepping in to these roles are Janelle (Nell) Peisley (ACT), Will Bodecker (NZ), Graham Lancaster (NSW) and Stephanie Cameron (Newsletter Editor). The new executive group provides a creative and motivated team to steer ASPAC's direction in the near future.

ASPAC's participation in the National Soil Conference in Canberra during November 2018 saw a large attendance by ASPAC members. The two sessions of presentations by ASPAC members and the AGM were well received, and I extend my thanks to each of the presenters, and Janice Trafford for her work with the Soil Science Australia organising committee.

The 16<sup>th</sup> International Symposium on Soil and Plant Analysis (ISSPA) was held at Wageningen, The Netherlands, in June 2019. Continuing our long running association with the ISSPA, seven ASPAC members attended, enjoyed and contributed to a very successful Symposia. Of particular note was the awarding of the prestigious J. Benton Jones Jr. Award to Roger Hill, of Hill Laboratories in New Zealand. Congratulations Roger! A second highlight of the Symposia was the formation of an International Governance Committee to oversee the organisation of future ISSPA events, which will involve at least two ASPAC representatives on the committee, along with representatives from SPAC, AgriLASA and several European representatives.



The location and dates for this year's Training Workshop and the Annual General Meeting will be released soon, so please keep your attention on incoming emails and the ASPAC website.

Finally, I'll draw your attention to information in this newsletter: (1) A reminder of the existing policy on using ASPAC's logo on reports and in general publications; and (2) ASPAC's work in creating a regional network of laboratories within the Global Soil Laboratory Network (GLOSOLAN). Facilitated by the Food and Agriculture Organisation of the United Nations (FAO), this represents a great opportunity for ASPAC to renew and further develop our past work with regional neighbours.

Paul Kennelly  
ASPAC Chair



## ASPAC now on Reddit

ASPAC now has another home on the internet!! Our own dedicated subreddit

r/ASPAC exists so that Lab Techs (and even know-it-all managers) can connect and ask questions, swap war stories and advice from your fellow Labrats.

Best of all its completely anonymous!

For those of you that are new to reddit I would suggest that you take the time to poke around. There are a couple of really good subreddits and YouTube lessons on how to use reddit.

On the left hand side of any post you'll see an up arrow and a down arrow. In Reddit these are used for voting on posts and comments. Posts or comments with a lot of votes rise to the top and become more visible in the page, by up voting on posts that you find interesting and useful you are bringing it to the attention of others.



This is desired to be a forum to discuss all things related to Plant and Soil analysis in an anonymous manner. Please feel free to ask questions, give you opinion on things and provide links and information that will benefit others. The more you get involved the more the forum will grow to reflect your needs so hop on over, sign up and join the community.

When we help each other everybody wins!

You can find us here <https://www.reddit.com/r/ASPAC/>

## Fertcare Soil Sampling Guide

### Where do you go for guidance on soil sampling?

If you are involved in taking soil samples to assist in the development of fertilizer and soil amendment recommendations, download the latest version of the Fertcare® Soil Sampling Guide from the Fertcare website. The guide forms part of the Fertcare B and C training resources and the sampling section of the Fertcare Accredited Advisor Performance Standards. Fertcare Accredited Advisors, agronomists and others involved in soil sampling are strongly encouraged to follow the new guide when taking soil samples.



The guide addresses a number of new topic areas including, selecting areas to sample within the farm, sampling approaches and sampling patterns for areas with previous fertilizer banding to name a few.

Dr Cameron Gourley from Agriculture Victoria Research and David Weaver from the WA Department of Primary Industries and Regional Development prepared the guide after receiving input from a range of public and private sector experts and practitioners. The guide has also been subjected to comprehensive review by a range of groups including the Fertcare Technical Committee and the ASPAC Fertcare Committee, so you can be confident in the information.

Build trust with your clients by basing the soil and plant nutrition advice on objective measures such as soil and plant testing. Accurately collecting soil samples is one of the foundations for the development of evidence-based fertilizer recommendations. Please take the time to read the Fertcare Soil Sampling Guide which can be found under the Nutrients and Fertilizer Information section of the Fertcare website and don't forget to tell your colleagues about it.



## Extending the linear calibration for Mo-blue P measurements

The linear absorbance range for the ascorbic acid reduced Mo blue method of Murphy and Riley (1962) is about 1 absorbance unit for a 1 cm light path. This corresponds to about 0.8 mg P/L in the solution as measured. A review of the chemistry of this reaction is worth reading (Nagul et al. 2015).

Linear equipment calibrations typically give more robust performance than their non-linear counterparts for a variety of reasons (LGC/VAM 2003). Nonetheless, curved calibrations are often used for phosphate measurements on environmental samples because of the large range of possible phosphate concentrations. Consequently, in many environmental applications it would be advantageous to extend the linear calibration range of the Mo-blue method to higher concentrations. This is possible by a simple increase in the concentration of potassium antimonyl tartrate in the reagents (Harwood et al. 1969). The modified method works well, is routinely used by some member laboratories, and some manufacturers of automated colorimetric equipment may have adopted the practice. Nonetheless if you increase the concentration of potassium antimonyl tartrate in your reagents, be aware that it is advisable to validate the modified procedure and update your documentation accordingly.

### Sources

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### ASPAC Methods Committee March 2019

Paul Milham: <[p.milham@westernsydney.edu.au](mailto:p.milham@westernsydney.edu.au)>

Chris Gendle: <[Chris.Gendle@csbp.com.au](mailto:Chris.Gendle@csbp.com.au)>

Paul Kennelly: <[paul.kennelly@incitecpivot.com.au](mailto:paul.kennelly@incitecpivot.com.au)>

Will Bodeker: <[will.bodeker@ravensdown.co.nz](mailto:will.bodeker@ravensdown.co.nz)>

## Meet the ASPAC Executive

### Paul Kennelly, Chair of ASPAC and Victorian Representative



Paul joined Nutrient Advantage Laboratory Services in 1999. Holding a variety of technical and leadership positions across the laboratory group, he took on the role of Laboratory Manager in 2008. Paul has been the Victorian Representative of the ASPAC Executive Committee for the last four years, serves as a member of the ASPAC methods committee, and is the current ASPAC Executive Committee Chairperson.

### Chris Gendle, Vice Chairperson and Western Australian Representative



Chris is the Operations Manager at the CSBP Soil and Plant Laboratory which is a major commercial testing facility in Australia. Prior to his current role, Chris had roles as a Laboratory Technician and Chemist at the same Lab. He has been a member of the ASPAC Executive Committee for six years and is a current member of the ASPAC methods committee, which provides technical assistance for the soil and plant testing industry.

### Matthew Wheal, Secretary and South Australian Representative



After studying ecology of plants and animals for his BSc at the University of Adelaide late last century, Matthew took on a PhD in mineral nutrition of plants at the Waite campus. This led to research work at Cornell University in the USA, grapevine breeding research with CSIRO in Merbein and teaching undergraduate biology at LaTrobe University's Mildura campus.

Returning to the University of Adelaide, Matthew changed focus, working as an analytical chemist measuring concentrations of macro- and micro- nutrients in grains and leaves at Waite Analytical Services, using ICP-OES instruments. Following a brief period at Flinders University, he now works at the Australian Wine Research Institute as the ICP-MS operator, analysing wines for research, production and export purposes. Matthew has been on the ASPAC Executive Committee for 10 years, as Secretary and SA representative.

**Craig Newman, Treasurer & Tasmanian Representative**

Craig completed a Bachelor of Applied Science in 1991 and since that time he has worked in the pharmaceutical and agricultural industries. Over the years he has been exposed to many aspects of crop management practices gaining valuable experience in nutritional and growing requirements of many major crops produced in the Tasmanian region. In Craig's spare time he likes to sail, ride motor bikes, enjoys good food and wine and has a particularly perverse enjoyment of maths and computer programming. He is currently the treasurer for ASPAC, as well as moderating the ASPAC Reddit page, and working on updating the website.

**Rob De Hayr, Queensland Representative**

Rob manages the DES Chemistry Centre laboratories at the EcoSciences Precinct in Brisbane. His laboratory experience ranges over the past 40 years. Rob has also spent time as a research scientist studying biogeochemical processes in groundwater-surface water interactions and the fate of particulate nutrients emanating from erosion processes. The Chemistry Centre laboratories support Government and collaborative research, survey, extension and monitoring programs aimed at environmental protection particularly in the Great Barrier Reef and sustainable agricultural production with an emphasis on soil security.

**Janelle Peisley, ACT Representative**

Nell Peisley works with the Analytical Chemistry Group at CSIRO Agriculture and Food based at Black Mountain in Canberra. The key focus of the Group is to provide plant and soil analysis to CSIRO researchers and their collaborators. Nell has worked with the Group for the past 13 years and is a new addition to the Integrated Agriculture Systems research program.

**Will Bodeker, New Zealand Representative**

Will is currently the Laboratory Manager at ARL, a commercial agricultural testing laboratory based in the Hawkes Bay region of New Zealand. Will graduated from Victoria University with a degree in Chemistry in 2011 before joining ARL in 2012. Over that time Will has had a range of analytical and leadership roles across the lab. Will is a new addition to the ASPAC Executive committee, replacing Rebecca Withnall as the New Zealand representative late in 2018.



**Graham Lancaster, NSW Representative**

Graham has been manager of the Environmental Analysis Laboratory within the Southern Cross University at Lismore for more than 25 years. His primary interests are in biological and organic farming, along with sustainable agricultural practices. Graham is also involved in extensive research into environmental contamination and remediation options. Graham is the current NSW ASPAC Representative for NSW.



**Stephanie Cameron, Newsletter Editor**

Steph is a qualified scientist who graduated from the University of Western Sydney Hawkesbury with a Bachelor of Applied Science in 1996. Since then Steph has gone on to become the business operations manager, director and co-owner of East West a local company based in Tamworth. East West is a National Association Testing Authority accredited lab for testing soils for geotechnical, environmental and agricultural purposes. Steph is currently coordinating the newsletter and communications for ASPAC.



*The 2019-20 ASPAC Executive Team*



## Global Soil Laboratory Network



### What is GLOSOLAN?

[The Global Soil Laboratory Network \(GLOSOLAN\)](#) was formed with the objective to facilitate networking and capacity development through cooperation and information sharing between experienced institutions and those with less experience. This network is aiming to strengthen the performance of laboratories in support of the harmonisation of soil data sets and information towards the development of global standards. Indeed, the harmonisation of soil analysis is a critical component of making soil information comparable and interpretable across laboratories, countries and regions.

### Background

In December 2012 the Council members of the Food and Agriculture Organisation of the United Nations (FAO) formally established [The Global Soil Partnership \(GSP\)](#) as a mechanism to develop a strong interactive partnership and enhanced collaboration and synergy of efforts between all stakeholders involved in the sustainable use and protection of soils. This initiative is supported by Regional Partnerships. The Pacific Soil Partnership is hosted by the Pacific Community (SPC) and is supported in Australia by the Department of Agriculture and Water Resources, CSIRO and state government agencies through the Australian Soil Network. The mandate of the GSP is to improve governance of the limited soil resources of the planet in order to guarantee agriculturally productive soils for a food secure world, as well as support other essential ecosystem services, in accordance with the sovereign right of each State over its natural resources. In order to achieve its mandate, the GSP addresses five pillars of action to be implemented in collaboration with its regional soil partnerships.

1. Promote sustainable management of soil resources for soil protection, conservation and sustainable productivity
2. Encourage investment, technical cooperation, policy, education awareness and extension in soil
3. Promote targeted soil research and development focusing on identified gaps and priorities and synergies with related productive, environmental and social development actions
4. Enhance the quantity and quality of soil data and information: data collection (generation), analysis, validation, reporting, monitoring and integration with other disciplines
5. Harmonisation of methods, measurements and indicators for the sustainable management and protection of soil resources

GLOSOLAN is a pivotal component of Pillar 5 which provides the mechanisms for developing and exchanging globally consistent and comparable harmonised soil information. This refers to soil profile observation and description data, laboratory and field analytical data, and also derived products such as digital soil maps and soil property estimations, and interpreted information based on agreed and representative indicator sets. GLOSOLAN will also support the establishment of National Soil Information Systems as well as that of a Global Soil Information System (GLOSIS), another priority activity in the GSP agenda.

### What role can ASPAC play?

Approximately two hundred laboratories from all around the world have joined GLOSOLAN and the Regional Soil Laboratory Networks (RESOLANs) have already been established in Asia (SEALNET), Latin America (LATSOLAN) and recently Africa (AFRILAB).

[ASPAC](#) is perfectly positioned as a vehicle for the delivery of the Pacific RESOLAN. We have an already existing long standing network across the region and already deliver on the aims and goals of GLOSOLAN. Through its activities, ASPAC promotes the adoption of appropriate field sampling protocols, uniform and reliable soil and plant analytical methods, sound interpretation guidelines, and reliable and appropriate advice to clients.

In this regard, the network:

1. conducts soil and plant inter-laboratory proficiency programs (global proficiency) allowing labs to get laboratory certification;
2. offers an annual study travel award to attend conferences;
3. publishes quarterly newsletters for members;
4. sponsors workshops and conferences to facilitate the sharing of knowledge and expertise; and
5. promote discussion and advice through the “Reddit” forum.

The Pacific Soil Partnership at their meeting in May endorsed this model. ASPAC executive committee member Rob De Hayr is assisting the Pacific region Pillar 5 Chair, Dr Peter Wilson (CSIRO) in implementing the Pacific Regional network. Rob is engaging with the laboratory managers in the Pacific Nations and Papua New Guinea to develop a sustainable model incorporating ASPAC to deliver support to those developing countries through the regional network.

Laboratories from Fiji (3), Samoa (2), PNG (2), New Caledonia and Guam have registered with ASPAC. Tonga and Vanuatu are currently developing laboratories and will join once they are established.

### GLOSOLAN operates through Regional Soil Laboratory Networks (RESOLANs)



GLOBAL SOIL  
PARTNERSHIP



## **ASPAC POLICY**

### **Use of the ASPAC Logo**

#### **i) Use of logo on general stationery (e.g. Letterheads):**

ASPAC allows current financial members to include the ASPAC logo on their letterhead and other documentation. It must be accompanied by the statement “A member of the Australasian Soil and Plant Analysis Council” plus the membership number.

Any variation to the wording would need to be approved by the ASPAC executive, prior to use. Approval must be requested in writing to the ASPAC secretary, and including examples of the proposed format and accompanying wording.

#### **ii) The use of the logo on laboratory reports**

ASPAC permits current financial members the use of the ASPAC logo on laboratory reports, provided that the laboratory holds a current Certificate of Proficiency, and the specific soil and plant tissue tests covered are clearly identified. For example, the proficient tests could be highlighted by asterisk. It must be clear which tests are not included in the current Certificate of Proficiency.

The following statement must also appear alongside the logo: “This laboratory has been awarded a Certificate of Proficiency for specific soil and plant tissue analyses by the Australasian Soil and Plant Analysis Council (ASPAC). Tests for which proficiency has been demonstrated are highlighted in this report.”

The last sentence may be altered, depending on the mechanism the laboratory adopts for indicating which tests are covered. It is essential that it is clear to the client which tests the laboratory is not currently deemed proficient in (as listed on their current Certificate of Proficiency).



## **Australasian Laboratory Management Conference**

### **Australasian Laboratory Management Conference Sydney – Monday 11 – Wednesday 13 November 2019**

Science Industry Australia announces the Call For Papers for the 2019 Australasian Laboratory Management Conference (ALMC19) to be held in Sydney on Monday 11 to Wednesday 13 November. Papers will be presented in a single stream during Tuesday 12 and Wednesday 13 November. This year will mark the first time the conference has visited Sydney since 2014.

Invitations are sought for 30 – 45 minute oral presentations under the theme:

#### **Change Management in an Agile World**

Change is required in technology based organisations in order to continuously improve and to remain adaptable in an ever-evolving landscape. New innovations in laboratory technology and scientific instruments are impacting on the Laboratory Manager's ability to manage change effectively. A Laboratory Manager needs to manage change without seriously impacting workflow, whilst promoting collaboration and offering agile solutions to all challenges put before them. Presenters at this Conference will focus on changes occurring within the laboratory workspace and solutions to manage the consequent change.

Closing date for submission of abstracts is July 12, 2019. For further information, see <http://www.scienceindustry.com.au/application/files/4715/6083/0258/CallForPapersALMC2019.pdf>

## **Soil Organic Matter**

### **Soil Organic Matter in a Stressed World**



## Roger Hill awarded the J. Benton Jones Jr. Award

Roger Hill, of Hill Laboratories in New Zealand was awarded the prestigious J. Benton Jones Jr. Award at the 16th International Symposium on Soil and Plant Analysis (ISSPA), recently held at Wageningen, The Netherlands, in June 2019.

The award recognises Roger for his dedication and advancement of soil and plant analysis, especially in the innovation, early adoption and continuing development of automation and NIR to routine soil and plant testing. It also recognises his service with leading roles in shaping ASPAC testing quality as a long-running convener of ASPAC's Laboratory Proficiency Committee and holding Executive Committee roles.

The namesake of this award, J. Benton Jones, was instrumental in organising the inaugural U.S. Soil and Plant Analysis Council (SPAC) over 45 years ago, and the development of the first ISSPA meeting held in Fresno, California in 1989. The J. Benton Jones Jr. Award is given out during each Symposia by SPAC, in recognition of an individual who has made an outstanding contribution to the scientific profession of soil and plant analysis. Over the past 30 years this unique award has been presented to 15 individuals across eight countries. The only other member of ASPAC to hold the award is George E. Rayment, notably receiving the award in 2003



## Committee Contacts

<b>Executive Officer</b>	Warren Webber	<a href="mailto:webber@outlook.co.nz">webber@outlook.co.nz</a>	Phone: +64 27 478 7758
<b>Elected Executive Committee</b>			
Chairperson	Paul Kennelly	<a href="mailto:Paul.Kennelly@incitecpivot.com.au">Paul.Kennelly@incitecpivot.com.au</a>	Victoria
Vice-Chairperson	Chris Gendle	<a href="mailto:Chris.Gendle@csbp.com.au">Chris.Gendle@csbp.com.au</a>	Western Australia
Secretary	Matthew Wheal	<a href="mailto:matthew.wheal@awri.com.au">matthew.wheal@awri.com.au</a>	South Australia
Treasurer	Craig Newman	<a href="mailto:cnewman@agvita.com.au">cnewman@agvita.com.au</a>	Tasmania
Newsletter Editor	Stephanie Cameron	<a href="mailto:Stephanie.C@eastwestonline.com.au">Stephanie.C@eastwestonline.com.au</a>	
Regional Representative	Rob De Hayr	<a href="mailto:Rob.dehayr@dsiti.qld.gov.au">Rob.dehayr@dsiti.qld.gov.au</a>	Queensland
Regional Representative	Graham Lancaster	<a href="mailto:Graham.Lancaster@scu.edu.au">Graham.Lancaster@scu.edu.au</a>	New South Wales
Regional Representative	William Bodeker	<a href="mailto:will.bodeker@ravensdown.co.nz">will.bodeker@ravensdown.co.nz</a>	New Zealand
Regional Representative	Nell Peisley	<a href="mailto:Nell.Peisley@csiro.au">Nell.Peisley@csiro.au</a>	Aust. Cap. Territories
<b>Laboratory Proficiency Committee</b>			
Chairperson	Roger Hill	<a href="mailto:Roger.Hill@hill-labs.co.nz">Roger.Hill@hill-labs.co.nz</a>	
	Paul Kennelly	<a href="mailto:Paul.Kennelly@incitecpivot.com.au">Paul.Kennelly@incitecpivot.com.au</a>	
	Leigh Sparrow	<a href="mailto:leigh@birdbrainsdownunder.com.au">leigh@birdbrainsdownunder.com.au</a>	
	Graham Lancaster	<a href="mailto:Graham.Lancaster@scu.edu.au">Graham.Lancaster@scu.edu.au</a>	
<b>Fertcare Advisory Committee</b>			
	Graham Lancaster		
	Rob Norton		
	Craig Newman		
<b>Travel Award Assessment Committee</b>			
	Nell Peisley		
	Rob De Hayr		
	Matthew Wheal		
<b>Methods Committee Convenor</b>			
	Paul Milham		
<b>Plant Nutrition Trust, ASPAC Representative</b>			
	Nell Peisley		
<b>Training Workshop Convenor</b>			
	Nell Peisley		
<b>Liaison Officer with Consumer Affairs Victoria</b>			
Secretary	Matthew Wheal		
<b>Membership Subcommittee</b>			
Chair	Paul Kennelly		
	Regional Exec. Rep. (applicant's location)		