

ASPAC Digest – April 2015

4th Edition, April 2015

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Greetings from the Chair

At the last AGM the executive lost a number of long term members: Teresa Fowles, Vlad Kawaljenko, and Roger Hill have all stepped away from the executive to enjoy much deserved retirement. With them goes incalculable years of experience, leadership and knowledge. It is fair to say that without their collective hard work ASPAC would be a very different organisation. I thank them for their efforts and wish them all the best for the future.

Stepping into these big shoes are Rebecca Withnall our new NZ rep, Paul Kennelly (Vic) and Ryan Walker (SA). The new executive has a dynamic new look with lots of new ideas. We are looking forward to some exciting times ahead. The 14th ISSPA was held recently in Kona Hawaii. The main theme of the symposium this year was tracking and analysing the movement of potassium in soils and plants. There were a lot of great presentations and opportunities to meet with representatives from other labs and other scientists. If you haven't had the opportunity to attend one of these symposia in the past I strongly recommend you take time out to visit the next one in 2017 – location to be announced soon!

As always the proficiency committee stands at the heart of ASPAC. Much of what we are about is ensuring consistency of laboratory soil and plant testing across the country and indeed the region.

The Laboratory Proficiency Committee (LPC) - Roger Hill, Dave Lyons, George Rayment & Paul Milham - in addition to overseeing the proficiency program and producing the annual report, has produced a statistical analysis of the achievements of the program over time. Their hard work is much appreciated. It is pleasing to see so many labs using the proficiency data to refine their techniques over the years as evidenced from the reports.

Another central part of ASPAC is the Methods committee and the Fertcare Committee. Both doing great work to help improve methodology and help growers make the best use of the information that a laboratory provides.

There has been much interest in ASPAC over the last few months both domestically and internationally, and we are being taken increasingly seriously by both the government and our international partners which is very exciting. To maintain the energy the executive is always looking to get new members to volunteer time into ASPAC and its various subcommittees. If you would like to be involved get in contact with your local ASPAC rep and we'll put you to work!

Introducing the new Executive Committee



Craig Newman – Chairman ASPAC Executive, Tasmanian Representative

Craig is the Laboratory Manager at Agvita Analytical in Devonport, Tasmania. He completed a Bachelor of Applied Science in 1991 and since that time has worked in the pharmaceutical and agricultural industries. Over the years Craig has been exposed to many aspects of crop management practices and has gained valuable experience in the nutritional and growing requirements of many major crops produced in the Tasmanian region.

In his spare time, sailing, good food and good wine are his interests along with a particularly odd enjoyment of maths and statistics.

Craig looks forward to the challenges that the role of ASPAC chairman brings. Feel free to contact him if you have any questions.



Dave Lyons – Vice Chairman ASPAC Executive, QLD Representative

Dave Lyons retired from the workforce in 2012, after 44 years of working mostly in a soil, plant and water testing facility, interspersed with periods as a researcher and client of that laboratory. In 2007, he was invited by the outgoing chair of the ASPAC Laboratory Proficiency Committee (Ken Peverill) to join Roger Hill, George Rayment and Brian Daly onto the committee and its associated Technical Advisory Group with Global Proficiency Services. He has thoroughly enjoyed the challenges that the role offers. Dave is into his second term as the Queensland State Representative on the ASPAC Executive, and is also the current Vice Chair of that committee. Since “retirement” Dave has maintained an active role in mentoring technical staff from other laboratories, through his role as an active NATA assessor, as well as a volunteer in ACIAR related projects. More recently he has been a lead player in the development of a soil testing facility at the Ministry of Agriculture and Fisheries in Dili, East Timor.



Matthew Wheal – Secretary

Matthew has been Secretary of ASPAC for the past 4 years was after being roped in by past-Chair Teresa Fowles at Waite Analytical Services (University of Adelaide). He currently works as a Post-Doctoral Fellow at Flinders University. He is the ICPMS operator for the Plant Nutrition group in the School of Biological Sciences. Their work generally involves analysis of large cereal field trials from international plant breeding centres, mostly rice, wheat and maize.

Tracey Bell - Treasurer



Tracey joined ASPAC in November 2014 in the role of Treasurer, keen to support the council's financial activities. She currently works as a Project Officer at AgVita Analytical in Tasmania and brings a diverse range of experience, previously employed by an agricultural company, a bank, a university and an accountancy firm. Tracey is currently undertaking an Masters in Business and in her spare time is a keen property investor



Warren Webber – Executive Officer

Warren started his tertiary days in humanities, moved onto agriculture and after a few years in farming, completed a veterinary degree. After 15 years in clinical practice he spent a decade as Director of Veterinary Continuing Education in New Zealand, responsible for conferencing, workshops and publications. Co-opted by Roger Hill to assist with the ISSPA 2013 in Queenstown, he subsequently accepted a part-time role as Executive Officer for ASPAC, and also managed the ISSPA 2015 symposium in Hawaii.



Paul Kennelly – Victorian Representative

After a few short-term lab positions in the environmental and food testing industries, Paul joined Nutrient Advantage Laboratory Services in 1999. Holding a variety of technical and leadership positions across the laboratory group, Paul took on the Laboratory Manager role in 2008. Leading a talented and dedicated crew, he has seen a lot of change over his 15 years at Nutrient Advantage, including the merger of two large fertiliser companies, Incitec Fertilisers and Pivot Limited to form Incitec Pivot Limited, the merger of their two large soil and plant testing commercial laboratories, and the challenges involved in an ever-changing industry.

Paul has been the Victorian Representative of the ASPAC Executive Committee for all of 3 months, and looks forward to strongly contributing to the council's objectives.



Janice Trafford - ACT Representative

Janice Trafford is the Australian Capital Territory representative. She has been a member of the ASPAC Executive Committee for over 10 years and the driving force behind organizing the plant and soil workshops since 2007.

Janice is an analytical chemist; most of her career has been spent carrying out the analysis of waters (groundwater, surface water, pore water, marine water). She came to Australia in 2002 to work for the Land and Water Division of CSIRO in Canberra. During this time she became involved in the analysis of soils and with ASPAC.

Since 2008 Janice has worked at Geoscience Australia working on projects carrying out research into nutrient fluxes in estuaries, carbonate chemistry in the marine environment, CO₂ sequestration, and groundwater chemistry for managed aquifer recharge research. Her soil analysis experience has stood her in good stead for the analysis of marine sediments.



Rebecca Withnall – New Zealand Representative

Rebecca Withnall is the Manager of Analytical Research Laboratories, an agricultural laboratory owned by Ravensdown Fertiliser. Rebecca got her training at the University of Otago, with a BSc (Hons) in Biochemistry and has also completed a Post Graduate Certificate in Executive Management. With 12 years' experience in the industry she is passionate about helping farmers make the right decision.



Paul Milham – NSW Representative

Paul Milham has represented NSW on the executive of ASPAC for 9 years. He has been a member since 1992 and convenes the Methods Committee. Starting his career with brief stints in commercial laboratories, Paul then led R & D in plant and soil analysis for 20 years with NSW DPI. Since then he has investigated interactions between soils, plants and the environment, including the effects of climate change. His PhD (2009) was on the behaviour of cadmium in soil, and he continues this research. Paul has published 55 research papers; he mentors three PhD students, is a NATA assessor, and works with a soil and plant analysis laboratory in Hanoi as part an ACIAR project.



Chris Gendle – WA Representative

Chris graduated from Curtin University with an honours degree in Nanotechnology, before starting as a casual laboratory technician at the CSBP Soil and Plant Lab in 2009. He is still with CSBP as a chemist, where his main responsibilities cover managing staff, equipment and quality control in the high throughput section of the lab. This is his second term on the ASPAC executive committee and it is also his second term contributing to the ASPAC methods committee.



Ryan Walker – SA Representative

Ryan is the Managing Director of Apal Agricultural Laboratory in South Australia. Ryan's background is agricultural research, agronomy and farming. This bio is a little short as at the time of publication Ryan was preoccupied with the birth of their first child. Congratulations to Ryan and his partner. We'll catch up with him later.

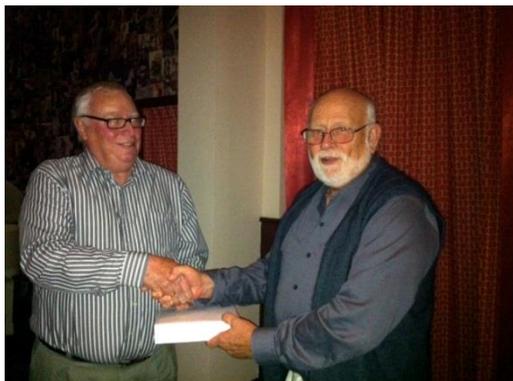


Rob De Hayr – Newsletter Editor

Rob De Hayr is the Science Leader managing the Queensland Department of Science, IT and Innovation Chemistry Centre laboratories. Rob started as a Laboratory Attendant in sample preparation until he completed his degree. He was then promoted to technical roles analysing soil, plant and water. After a sojourn into research in 2000 studying the biogeochemistry of riparian buffer zones and coordinating major water quality research and monitoring programs, he returned to manage the laboratories in 2008. Since returning to the lab, he has instigated a number of new technologies in environmental tracing, sediment dating, isotopes, radionuclides and geochemistry to compliment the more traditional soil, plant and water methods. Rob carries on a great tradition of ASPAC involvement as this laboratory (formally QDPI Agricultural Chemistry Branch) has spawned some well-known ASPAC identities such as George Rayment, Dave Lyons and Phil Moody as well as the creation of the "Green Book".

ASPAC Service and Achievement Awards

There were two awards this year; for Brian Daly and Vlad Kawaljenko.



George Rayment presented Brian with his award at the plant workshop dinner in Brisbane, August 2014. Brian held the position of secretary on the executive committee for 5 years and the Laboratory Proficiency Committee for 11 years. He has presented at all six of the plant and soil



workshops. He continues to strive to assist overseas labs to improve their processes and analytical quality control. Vlad was also presented with his award by George Rayment after the AGM in November 2014. Vlad was one of the original members of the ASPAC executive committee; he served as the Northern Territory representative from 1993 to 2014 and twice served as Treasurer. He was Vice Chair in 2003/4 and Chair of ASPAC in 2005/6. Vlad has also been active as Web Controller, assessor of the Travel Award and assisted in editing the 2010 conference proceedings.

ASPAC offers service and achievement awards to both members and non-members to acknowledge outstanding efforts on its behalf and as a thank you for services rendered.

Members may be eligible to receive a service and or an achievement award if they have served on the executive or sub-committees for 10 years or more OR have made a significant contribution to ASPAC or to the development of soil and plant analysis in Australasia. Non-members who have made a significant contribution to ASPAC or to the development of soil and plant analysis in Australasia ASPAC will also be considered.

Future Directions for ASPAC Discussion Forum & AGM 20th November, Glenelg North, Adelaide

The 2014 Annual General Meeting minutes will be available on the ASPAC website in early June once confirmed at the next ASPAC Executive Meeting 25th May.

Preceding the AGM the Executive Committee facilitated a 3 hour Discussion Forum on 'Future Directions for ASPAC'. The forum was attended by 18 people representing a broad spectrum of the membership. This forum replaced the



previously mooted Laboratory Management Workshop and intended to have a discussion around some of the issues put forward in the initial request for expressions of interest in holding the workshop.

- What are ASPAC's goals and objectives? Are we falling short?
- ASPAC Membership - who are we missing?
- Revitalising professional development for ASPAC members.
- Opportunities for collaboration and partnering.
- What is the future for ASPAC? Five and ten year objectives.

A summary of key points captured from the discussion follow:

- 1) Membership :
 - a. It was agreed by the forum that to get a realistic appreciation of the situation regarding ASPAC services, both current and future needs, that the executive should survey existing membership and industry.
 - b. There is potential to grow membership by encouraging increased university and researcher membership with a profile of research awards.
- 2) The forum was keen to see ASPAC investigate opportunities to further support the improvement of laboratories in developing countries in Asia Pacific as well as China.
- 3) There was a clear message that the ASPAC website was in need of an upgrade.
- 4) The discussion around ASPAC's current and possible services offered to members resulted in the following points.
 - a. Training via annual workshops or conferences should continue and the executive should look to encourage a broader participation.
 - b. ASPAC might facilitate the provision of workplace experience for undergraduate students.
 - c. ASPAC should encourage a larger number of laboratories to participate in Laboratory Proficiency Testing; perhaps via regional roadshows.
 - d. ASPAC should offer training in the interpretation of tests for agronomists and advisers highlighting the regional differences in test interpretation and appropriate selection of analytical tests.
- 5) A number of opportunities were identified for ASPAC to be involved in collaborations and partnerships:
 - a. International liaison by forming closer relationships with other international bodies such as SPAC and AgriLASA as well as researching the possibilities in the UK and Europe.
 - b. Support was given in principle to explore the formation of an international governance entity to oversee future ISSPA Symposia
 - c. Industry liaison by forming closer relationships with industry both directly and through representative bodies and professional organisations (e.g. Fertcare, Environmental authorities, Soil Science Society, RDCSS, GRDC)
- 6) Upcoming Events
 - a. Late 2015: Soils Workshop
 - b. 2016: ASPAC Conference in Australia. This will also be an executive election year



- c. 2017 :
- i. ISSPA 2017 Symposium. Possibly in China.
 - ii. Plant Analysis Workshop

The Executive is taking the points raised in the forum seriously. Already they are engaged in the process of evaluating the requirements for a new website and a looking at ways to attract new members to organisation. The Committee is actively looking at how to improve and expand the training workshops offered to members, as well as reviewing what can be done to make membership of ASPAC more valuable.

As part of this process of increasing membership, the committee is also looking at working with some laboratories in the Asian region to help them improve the quality of testing and interpretation of results. There has been interest from SPAC and AgriLASA (equivalent organisations in the USA and South Africa) in forming an international body. The executive are exploring the options carefully as well as looking how ties with other related organisations can be improved.

If you have any ideas about the directions you'd like to see ASPAC moving in we would love to hear from you! In the meantime stay tuned for exciting things to come

Survey of Members

ASPAC would like to better understand their member needs, including their satisfaction with current services provided; and whether there are additional services that might be offered.

To do this, the committee is sponsoring a member feedback survey and have sought the advice and input of the Social Science team at DSITI to assist in this process. Members will be contacted shortly with more information. Taking time to complete the survey will go a long way to helping us identify where ASPAC can improve its service to members.

2015 Training Schedule

4th Soil Analysis Workshop

The executive committee is planning the 4th ASPAC soil workshop for later this year. It will follow a similar format to previous soil workshops. Aimed at chemists and technicians who carry out soil extractions and analyses, the workshop will provide training in the basic requirements for high quality soil analyses; cover best practice and problem solving; allow the opportunity to network with other soil technicians.

The course will be open to all ASPAC members, with a limit of two attendees per corporate membership. Priority given to those who have not attended the previous two workshops as the content will be very similar. There will be a limit of 15-18 attendees.

The workshop will be held in Werribee, Victoria and include a tour of the Nutrient Advantage Laboratory Service, part of Incitec Pivot Ltd. The aim is to hold this in August and invitations will be sent to members as soon as the details are confirmed.

Report from Laboratory Proficiency Committee

Clarification of Total Organic Carbon (TOC) Method Codes (February 2015)

Prepared by Dave Lyons and George Rayment



In late 2012, a participant in the Soils ILPP contacted the ASPAC Laboratory Proficiency Committee (LPC) through Global Proficiency, suggested that labs may not be doing the acid pre-treatment when reporting results under 6B3. The lab thought results were too high in the latest round. This prompted the LPC to ask Global to do a survey of procedures that labs used when they reported results under 6B3 (Refer to Rayment and Lyons, 2011).

Of the 17 labs that responded to the survey, only seven strictly followed the procedure for 6B3. Two labs used variations of the Walkley and Black procedure (other than 6B1 Heanes). Two others used acids other than sulfurous acid, namely phosphoric acid and hydrochloric acid to pre-treat the soil prior to Dumas Combustion (6B3). All four labs recorded outliers in the respective round, usually on the low side. Another lab used the method of Heanes but reported under 6B3. Two others used method 6B2 to determine total C and subtracted their estimate of inorganic carbon using a method such as 19B (% CaCO₃ equivalent), and in doing so got good agreement with the median of labs actually doing 6B3. Two other labs did not do a fizz test nor acid pre-treatment before Dumas Combustion and got good agreement with labs doing 6B3. As it happened, all four soils in this round were acid to neutral, so the assumption that TC = TOC held in this case, **but this assumption does not always hold**. For example, coastal soils from low lying areas can be highly acidic, yet contain shell material. For these and other soils pH_w should not be used to rule out the presence of inorganic carbon. For method 6B3 a fizz test is used to detect the presence of inorganic forms of carbon. If a positive fizz test is recorded, the soil needs to be treated with sulfurous acid to remove inorganic carbon before Dumas Combustion. If a negative fizz test is recorded it can be concluded that no inorganic C is present, so no need for the acid pre-treatment before combustion, and the same C concentration can be reported under 6B2 (total C) and 6B3.

As a result of this survey the following actions and recommendations have been made by the LPC:

- In 2013, Total C was introduced into the Soil certification program. This action together with clear explanations of the differences between 6B2 and 6B3 in R&L 2011, has resulted in the number of labs currently reporting under 6B2 and 6B3 more in line with what we would expect.
- Wet oxidation procedures should not be reported under 6B3. Currently only about 4 labs are reporting results under 6B1 (Heanes). They should not be reporting their results under 6B3, thinking that they may not get certification for TOC. We are now pooling 6B1 and 6B3 results under TOC pooled.
- If you use Dumas Combustion to determine C, there are three valid scenarios:
 1. No fizz test – only report under 6B2 (total C)
 2. A positive fizz test and acid pre-treatment report under 6B3 (TOC).
 3. A negative fizz test and no acid pre-treatment report same result under 6B2 and 6B3

- We would expect the precision of Dumas C alone to be considerably better than Dumas TOC, as no acid pre-treatment is required, thus it is more time and labour efficient. Acid pre-treatment for large numbers of soils is very time consuming. Accordingly, there is little point in doing an acid pre-treatment if you record a negative fizz test. If no presence of effervescence after 5 minutes of adding acid, and there is no other reason to suspect the presence of carbonate/bicarbonate (e.g. alkaline soil pH), then you should proceed to determine TOC following Method 6B2. Moreover, it is possible to lose organic C through excessive heating during the acid pre-treatment step. If TOC results are low, then such losses should be investigated.
- We will soon be introducing a pseudo TOC code 6B5 which can be used by labs that determine TOC by subtracting inorganic C from Total C. This is a calculation – $TOC = Total\ C\ (6B2) - 0.12\ \text{times}\ \% \ CaCO_3\ \text{equivalent}$, the latter determined by a suitable method such as 19B or 20H1. Once introduced it is intended to pool 6B1, 6B3 and 6B5 under pooled TOC.

A soil carbon summary method code explainer is included for convenience.

Soil Carbon Summary Method-Code Explainer

The following table is a summary of the details of the carbon methods and method codes for Soil Carbon commonly included in ASPAC Inter-laboratory Proficiency Programs for soils (Rayment and Lyons 2011). Note that Rayment and Lyons (2011) supersedes the previously used text of Rayment and Higginson (1992). References to these publications are:

- Rayment GE, Higginson FR (1992) Australian Laboratory Handbook of Soil and Water Chemical Methods. 330 pp. (Reed International Books Australia P/L, trading as Inkata Press, Port Melbourne).
- Rayment GE, Lyons DJ (2011) Soil Chemical Methods – Australasia, 495+20 pp. (CSIRO Publishing, Melbourne).

Code	Method	Comment
6A1	Organic carbon - Walkley & Black	This measure of soil organic carbon (OCW&B; expressed as %C) typically yields a lower figure than the true TOC value. The method uses finely-milled air-dry sample. It involves wet oxidation by a dichromate-sulphuric acid mixture and relies only on heat of reaction. Soil weight should take account of the expected concentration of OC, and it is expected that allowance will be made for positive soluble Cl- interference in soils containing >0.5% Cl. The method specifies reporting on an oven-dry (105oC) basis. Nowadays this method is less preferred than 6B methods.
6B1	Total organic carbon - Heanes wet oxidation	The chemical basis of this procedure is similar to that of method 6A1, except that external heating on a hot-plate digester is included. Expensive apparatus is not required, while interference from carbonate is negligible. Correction for positive Cl- interference in saline soils (>0.5% Cl) is recommended. The method uses finely-milled air-dry sample, with weights varying with expected C concentrations. The method specifies reporting as %C on an oven-dry (105oC) basis.

Code	Method	Comment
6B2	Total organic carbon - high frequency induction furnace (no soil pre-treatment)	This method for total soil OC involves production, purification and measurement of CO ₂ evolved when soil C is ignited in a stream of O ₂ . Because all C compounds are converted to CO ₂ , the C from carbonates, charcoal, undecomposed wood, etc. will be included as no soil pre-treatment is specified. In the volumetric sub-method 6B2a, concentrated KOH solution is used to absorb the CO ₂ released. The difference between the original volume of gas in the burette and the volume produced after ignition equals the volume of CO ₂ evolved from the sample, after correction for gas temperature and pressure. Sub-method 6B2b is similar to Method 6B2a, except the CO ₂ produced by ignition is measured via infrared / thermal conductivity detection. Both 6B2a and 6B2b use finely-milled air-dry sample, with weights varying with expected C concentrations. Surrogate estimates can be obtained by NIR (method 6B4a) or MIR (method 6B4b) reflectance spectroscopy. The methods specify reporting as %C on an oven-dry (105oC) basis.
6B3	Total carbon - high frequency induction furnace (with prior physical removal of charcoal and chemical removal of carbonates)	Following quantitative action / pre-treatment to account for or to physically remove (if present) charcoal and to chemically remove carbonate with excess 5% H ₂ SO ₃ solution on a hot plate in a fume cabinet, the residual, re-dried soil sample is analysed for soil C by a suitable method, preferably Method 6B2b. The method involving carbonate removal and soil C analysis uses finely-milled air-dry sample, with weights varying with expected C concentrations. The method specifies reporting as %C on an oven-dry (105oC) basis.
6B5	Total carbon - high frequency induction furnace by method 6B2[or calibrated NIR (method 6B4a) or MIR (method 6B4b) surrogates], with no soil pre-treatment but with subsequent subtraction of separately determined inorganic C	This is a pseudo TOC method code not listed in Rayment and Lyons (2011). It clarifies a methodology for true TOC when soils are known to contain inorganic carbonates but no charcoal. Method 6B2 (or NIR/MIR surrogate) is used initially (no soil pre-treatment). As a separate action, inorganic-C (as %CaCO ₃) is determined by a suitable R&L carbonate method such as 19B or 20H1. After recording interim results for TOC and %CaCO ₃ on an oven-dry basis calculate true TOC = Total C (6B2) – 0.12 times % CaCO ₃ equivalent and report on an oven-dry basis, recording the soil carbonate method used. Note that methods 6A1, 6B1 and 6B3 cannot substitute for method 6B2 (or its NIR/MIR calibrated surrogate).
6G1	Soil organic matter by loss-on-ignition	This simple test involves the ignition of finely-milled air-dry sample initially to 105oC and then to 550oC. One hundred times the difference in sample weight in grams between these two temperatures, i.e. [100(Weight _{105C} –



Code	Method	Comment
		Weight550C] = Loss on ignition550C (LOI550C), which is assumed to approximate % Organic Matter.

Call for new members for the Laboratory Proficiency Committee

One of ASPAC’s main deliverables to its membership is the running of the Laboratory Proficiency Programs and the subsequent Laboratory Certification. In 2004, ASPAC greatly simplified this task by contracting out the actual running of the Programs to Proficiency Services Ltd (now Global Proficiency, GP), whilst still retaining ownership. Their oversight is provided by the Laboratory Proficiency Committee (LPC), currently George Rayment, Dave Lyons and Roger Hill.

The LPC usually meet twice a year, and at least one of those meetings is in Hamilton, NZ, to also have a ‘Technical Advisory Group’ meeting with Global Proficiency. The primary role of the LPC is to:

- ensure the Programs continue to meet the needs of the membership
- interface with GP, and negotiate the three yearly contract
- provide GP with technical advice and support for our Programs
- administer the Certification process
- compile an Annual Report on overall laboratory performance

The youngest member of the LPC is now 64, and the LPC and ASPAC Executive realize that it would be beneficial to have some of the younger members become involved in the LPC, for continuity reasons. We are therefore asking the members to consider serving on the LPC. Ideally, the applicants should have a working knowledge of soil and plant testing, and a basic understanding of statistics. If you are interested, we would love to hear from you. Please email the ASPAC Secretariat at Conferencenz@xtra.co.nz.

The Methods Committee in Action

Prepared by Paul Milham, David Lyons and Chris Gendle

The committee is a group of experienced analysts who respond to questions about test methods. In the two years since its inception we **responded** to the following questions:

- **Corporate member:** “Why are my results for exchangeable soil cations consistently low in proficiency rounds?” Advice was provided to remedy the bias.
- **The executive:** “What are the critical points in the measurement of bicarbonate extractable P in soil?” A two page guide was developed and is on the members’ area of the web site. **The ASPAC proficiency committee:** “What should be done about poor laboratory proficiency in measuring plant Si? Certification for this test was withdrawn on technical grounds. A number of laboratories have since expressed interest in this test.
- **Soil Science Australia:** “inappropriate extraction methods are being used to extract exchangeable cations from soils containing appreciable amounts of soluble and sparingly soluble salts”. ASPAC agrees that method/sample matching should occur where end users of the data would benefit and noted that the extraction methods are documented in Rayment and Lyons (2011) and are offered by laboratories. It was noted that the laboratory client usually chooses the cation extraction method and that clients are mostly farm advisors. Since Fertcare is the major trainer of farm advisors, ASPAC will recommend that Fertcare consider delivering enhanced training on the matching of cation extraction methods to soil properties and the end user’s needs. In support, ASPAC will offer to provide technical training materials through the Fertcare Advisory Committee.

Discussion of exchangeable soil cation extraction led to broader questions, e.g. can the large number of cation extraction methods be rationalised with minimal loss of the benefits? Addressing this question would require research with a benefit/cost focus. Should ASPAC support this type of study? The committee would welcome comments and suggestions.

Lastly, the committee is in the early stages of identifying critical points in the use of ICP-optical emission to analyse plant digests and soil extracts. The intention is to produce an exposure draft during 2015. Individuals with relevant experience are invited to contribute.

2015 David Orr ASPAC Travel Award



It is a pleasure to announce that the 2015 Travel Award will be named for David Orr.

David has been a long-time member of ASPAC from its inception, attending the Workshop at Ballarat in 1993 as a representative of one of the sponsors EZ Fertilisers. David became a private member of ASPAC in the late 90s and served as Tasmanian rep on the Executive from 2005-2011, as interim Treasurer in 1997-1998 and as Chair 2007-2008.

David worked hard to facilitate the formation of the FertCare program, the benefits of which will be felt for generations to come.

David ran FertCare “A”, “B” and “C” courses in Tasmania and Victoria, a service he continued for many years after official retirement. Applications for the David Orr Award closed on 31st March 2015. All applicants will be notified of the outcome of the award by the end of June. The prize money will be



sent at an agreed convenient time. The winner will be announced at the ASPAC AGM in November and in the following newsletter.

2015 Plant Nutrition Trust award

These grants are provided on a competitive basis to enable graduate students and early career scientists to attend international meetings or to perform research in overseas labs. Successful applications need to be relevant to some aspect of plant nutrition or soil fertility. The amount of each grant will vary depending on the activity being proposed and the potential for other support. Most grants range from \$200 to \$2,000. Applications closed on 2nd March 2015.

14th International Symposium for Soil and Plant Analysis (ISSPA 2015)

Kona Beach, Hawaii - Monday 25th to Friday 30th January

The 14th ISSPA symposium “The Year of Soils: Stewardship through Analysis” was held at the Courtyard Marriott Hotel, Kona Beach, Hawaii. A number of ASPAC members attended including Chairman Craig Newman and new executive member Ryan Walker.

A two day pre-symposium tour on the prior Friday and Saturday based from Waikiki and included a visit to Pearl Harbour. Monday 25th was a full day of workshops on Tissue Analysis, Laboratory Quality Control & Assessment, Tools for Understanding Soil Health, and Unravelling Potassium Requirements. The Welcome Function and Main Symposium Dinner was held on the beach that evening and featured an interesting Polynesian cultural show which traced the cultural inter-connections of the Pacific Islands from Hawaii to New Zealand.

Formal symposium sessions were held Tuesday, Thursday and Friday with a Fieldtrip on Wednesday. Two poster sessions throughout the week supplemented approximately 50 oral presentations. There was a predominance of potassium related topics throughout and a by-invitation-only workshop - “The K Roadmap” - organised mid-week by the International Plant Nutrition Institute.

The venue for the 15th ISSPA event in 2017 is mooted to be China. This has yet to be confirmed pending current considerations of the establishment of an international governance entity for ISSPA event oversight.

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Obituaries

Don Horneck

The untimely death from a heart attack in 2014 of Professor Don Horneck was announced by Professor Bob Miller [Secretary, Soil and Plant Analysis Council of North America] at the 14th International Symposium on Soil and Plant Analysis, Kona, Hawaii, in January 2015. Aged 57, Don Horneck was an eminent research and extension agronomist with the Oregon State University Extension Service, USA.

Of particular importance to the soil and plant analysis profession, Don had an organisational role in the 3rd International Symposium on Soil and Plant Analysis (Olympia, Washington; 1993) and was Chair of the 9th International Symposium on Soil and Plant Analysis held in Budapest, Hungary, in June, 2007. He also served as Chair of the Soil and Plant Analysis Council (SPAC) 2007-2008 and was a member of its Executive Committee from 1991-1994. In 2007-2008 he chaired a North American proficiency testing group.

Don had a strong publication record with many citations, plus a multitude of other professional interests.



Yash Kalra

The World, including Australasia, lost in November 2014 a “champion” of the soil science and soil and plant analysis professions. Yash Kalra was a humble yet skilled man with a career-long commitment to communicate science nationally and internationally, both in-person and in-writing.

Yash Kalra was born in Afghanistan in 1942 of Indian parents. His early rural upbringing nurtured a life-long interest in agricultural science and chemistry. Following undergraduate and post-graduate studies in India, Yash moved to Canada, where he commenced in 1963 a Research Fellowship and further post-graduate studies with the University of Manitoba, Winnipeg. A Research Assistantship from the National Research Council of Canada from 1964-66 strengthened his professional attachment to Canada.

Yash joined the Canadian Forest Service in Winnipeg in 1967 and moved to the then newly formed Northern Forestry Centre, Edmonton, Alberta, Canada in 1970. There he remained until his retirement in April 2010 after a distinguished professional career. At the time and for four decades he was Head of Soil and Plant Analysis, Canadian Forest Service, Natural Resources Canada.

As an internationally renowned soil and plant chemist, Yash Kalra was welcomed as a member and commonly, a senior office-holder of at least 15 scientific / professional societies plus a volunteer for around 35 groups. As examples, Yash was co-founder of the Western Enviro-Agricultural Laboratory Association of Canada and its President in 1983-4 and again in 1987-88. In addition, he was President of the Canadian Society of Soil Science (1996-97), President of the (North American) Soil and Plant Analysis Council (2000-02) and a Fellow of AOAC International. Other memberships included the Indian Society of Agricultural Biochemists, the Indian Society of Soil Science, and the (Indian) National Academy of Agricultural Sciences. He also served on the Editorial Boards of several scientific journals including Communications in Soil Science and Plant Analysis.



Technically, “Kalra’s Soil Analysis Crossword”¹ is superb and a good example of the breadth of knowledge possessed and integrated into one challenging document that all in the soil science and soil and plant analysis professions should attempt. Moreover, Yash commonly reported objectively on the many Conferences and Symposia he attended across the world, which is an unequalled achievement. Time was also found to edit and contribute to books, reports, and (with Joel Crumbaugh and Ivor Edwards) the Proceedings of the 7th International Symposium on Soil and Plant Analysis. Yash chaired the Organizing Committee for that Symposium, held in Edmonton, Canada, in July 2001.

Yash visited Brisbane, Australia, for the 6th International Symposium on Soil and Plant Analysis in March 1999. There he renewed old friendships and made many more. His final oral presentation at a Soil and Plant Analysis Symposium (the 12th) was in June 2011 on Crete (Greece). Fittingly, Yash drew on his accumulated knowledge and experience to present the opening talk titled “History of the International Symposia on Soil and Plant Analysis”. Earlier with John Ryan (2009), Yash published an informative scientific paper titled “Soil and Plant Analysis Council: A model for scientific innovation, education, and development”. It makes good reading.

Across his 72 years and before a heart condition shortened his life, Yash received multiple awards for his dedicated professional contributions that included the third recipient in 1993 of the J. Benton Jones Jr. Award of the international Soil and Plant Analysis Council, given in appreciation for dedicated service to the profession. His long-term professional colleague Dr John Ryan gave an obituary to Yash at the 14th International Symposium on Soil and Plant Analysis, Kona, Hawaii, in January 2015.

Yash will live on in the memories of many.
