

Professional agronomists helping farmers do more with less in North America and Australia

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Extended Abstract

In North America and Australia over the past 30 years, there has been a trend away from government extension services supporting growers, to grower advice provided through corporate or private consultants and advisors. As a result, there are now many private industry people providing sales and technical agronomy information to growers, particularly in the grains industry, but also for other specialised crops such as horticulture, sugar and cotton.

In North America, there are close to 3600 retail crop input outlets, 22,000 retail agricultural staff who advise farmers, 13,000 Certified Crop Advisers (CCA), and 3000 Certified Professional Agronomists, and another 3000 private consulting agronomists that work independently of any specific agricultural retail outlet. Additionally, in Canada a person may need to have another professional designation depending on the province. For example, in the provinces of Manitoba, Saskatchewan, Alberta, and British Columbia there is legislation that a person needs to be a Professional Agrologist to advise farmers. The term “Agrologist” applies to more than agronomy but also includes livestock husbandry, agricultural economics, environmental science and land reclamation. In the province of Quebec, a person needs to be a professional Agrologist and an Agronome (the French word for professional agronomist).

In Australia, there are nearly 1100 premises certified by AgSafe as places from where agricultural chemicals are sold, and so if each has 2 to 3 agronomists, then in the corporate sector there could be between 2000 and 3000 staff. Added to that are private consultants, technical staff from supplier companies, and advisors/extension personnel in the farmer groups. The GRDC mailing database has around 3500 comprising retail, commercial, government and service industry advisors. This would suggest that outside of government funded extension services there are probably around 4000 “agronomists” supporting around 86,000 farm businesses covering around 70 Mha of crop and managed pasture with a gross value of \$56 billion. This is around one agronomist for each 20 business and 80 kha.

In North America, a recent survey asking farmers where they obtain agronomic advice indicated that agricultural retail staff are the most mentioned group (60%), government extension (20%), private consultants (10%), and the balance from the internet. Government extension services still have a strong role particularly through the Land Grant Colleges (LGC) and their advisory services. Extension specialists are present in every land grant college in the US, and extension agents operate at almost every county. Soil test critical values, fertiliser recommendations and crop variety evaluations are still managed largely through the LGC system. For example, the Tri-state fertiliser recommendations have been developed through collaboration among Purdue University (Indiana), Ohio State University and Michigan State University and are promoted by both public and private advisors. These represent the standard reference for nutrient management practices for the major crops in those states.

The use of precision agriculture technologies is growing rapidly and it is estimated that about 4% to 5% of cropped land is managed using some aspect of variable rate applications. Advice on this is primarily from private consultants or agricultural retail chains partnered with consulting groups. Since the agricultural retail staff are relied upon as a source of information it is important that the in-house agronomists, crop advisers and advising staff be knowledgeable and continue to learn.

One example of how the agricultural retail group along with other stakeholders, farmers among others, can work successfully together, is the 4R Certification (Right Source of nutrients at the Right Rate, Time and Placement). This voluntary program provides certification of agricultural retailers on the advice about

reducing phosphorus movement off farms and into streams and rivers of the West Lake Erie Watershed, Ohio USA. Roughly half of the 1,125,000 ha of cropped land in the watershed is now being advised and managed using 4R Nutrient Management, certified through this scheme. This has been in action since 2014, so the cooperation of farmers and agricultural retail groups has been impressive. The agricultural retail agronomists and crop advisers have been key to the success of this initiative.

Similarly, California has implemented a Certified Crop Advisor (CCA) programme that can help producers implement a voluntary certification program on crop management and inputs. The CCA's work to reduce nutrient loss from agricultural lands by developing USDA Nature Resource Conservation Services nutrient management plans with growers. In some ways, this is analogous to the role that Fertcare® accredited advisors play in developing plans for catchments at risk in Australia.

In both Australia and North America, most professional agronomists are trained at an agricultural university and have a BSc (or equivalent) degree, many now with at least two years of experience advising farmers. University degrees in other scientific disciplines may need to take some additional courses in specific areas such as crop management, pest management, nutrient management, or soil and water management. These courses can be taken through in-person courses at universities, and some on-line university courses.

Certified Crop Advisers (CCA) can have a few different combinations of education, and experience, that will be explained in the presentation. All CCAs are required to pass two certification exams, both international and regional based, and there is a need to obtain at least 50 Continuing Education Units (CEU) over each two-year period after passing the exams, to remain certified.

In Australia, several programs cover professional development and accreditation of those working in agronomy. Soil Science Australia leads the Certified Practicing Soil Scientist which has 136 members accredited. The Ag. Institute of Australia also has a professional certification program (Certified Practicing Agriculturalist). Both require an initial qualification and experience check, and annual submission of participation in approved professional development activities. The Australia Society of Agronomy has over 500 members, and Soil Science Australia has over 1000 members, many in common between the two associations. The Agricultural Chemicals industry also has an industry mandated training and professional development program focusing on safe handling and storage of farm supplies – through the AgSafe® accreditation program, and there are around 5000 currently on the database. The fertiliser industry has accredited 268 advisors through the Fertcare® program. Both programs have premises accreditation and there around 1080 Fertcare® premises and 1200 AgSafe® premises, most of which would be dual accredited. When considered against the estimated number of agronomists, the penetration of professional development is relatively poor compared to other professional organisations. As another index of engagement of the industry personnel in external training, around 1500 people attend the annual research updates, mainly advisors. Most commercial resellers have informal or formal training and development programs. For example, Landmark have a graduate agronomy program offered to universities, with trainees them domiciled at one location for 1-2 years. Each graduate agronomist has a training program developed across their internship and there is a senior agronomist in each region overseeing professional development, all co-ordinated through a head office training and development manager. Graduates attend internal and external field days and training sessions, as well as a biennial 3-day agronomy conference that brings together the whole division. Landmark also have a Diploma of Agronomy program in partnership with Longerenong College, and provide on-line resources including internal social media to all staff, including AgSafe® accreditation.

Importance of Continuing Professional Development:

In North America, the increased demands on private and commercial advisors for advice on sustainable land and water management, has played a part in the development and management of Continuing Professional Development (CPD) programs. This has placed good advice at the centre of management options in fragile areas such as the Lake Erie catchment and in the irrigated horticultural valleys of California. Well crafted, and delivered, CPD is important because it delivers benefits to the individual, their profession and the public. To the individual, CPD means keeping pace with current standards, maintenance and enhancement of up-to-date knowledge and skills, keeps you interested and continues your ability to make a meaningful contribution to the industry. To the industry, CPD is a part of continuous improvement advancing the body of knowledge and providing validation of professionalism in the provision of advice. It provides the public with confidence in our profession and improved environmental protection with sustained agricultural productivity.