

## Improving the reach of extension projects in the Australian vegetable industry

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**Abstract.** The Integrated Crop Protection (ICP) Project and Soil Wealth (SW) Projects are focussed on promoting best management practices for healthy crops and healthy soils in the Australian vegetable industry. These three-year projects aim to disseminate the existing information on ICP and soil health and continue to build upon this knowledge. To increase the reach of these projects a range of social media is being utilised in conjunction with on-ground activities. These forums are integrated and alert vegetable producers to activities, provide information on latest research and provide an opportunity for networking with other industry members. A number of principles have been used when developing these media platforms including: understanding the audience; providing quality over volume; focussing on engagement; integration of platforms. The types of social media used in these projects, the principles behind development, methods for evaluation of impact and future opportunities and constraints are discussed in this paper.

**Keywords:** plant health, soil health, agriculture, capability, social media, impactIntroduction

The Integrated Crop Protection (ICP) and Soil Wealth (SW) extension projects promote best management practices for plant and soil health in the Australian vegetable industry. Protecting crops and sustainably managing soil is vital for vegetable producers to improve productivity and profitability. However, practices, capabilities and attitudes differ throughout the country. These two projects are working with producers, advisors and other industry service providers to tailor solutions that suit their circumstances.

The projects have focused on a range of 'on the ground' activities such as regional demonstrations sites, workshops, master classes, field walks and written material to progress producers and advisors along the ICP continuum towards increasingly advanced levels of implementation/adoption on farm. These traditional extension techniques have been complemented by the use of social media to extend the reach and rate of adoption. Social media presents an opportunity to reach vegetable producers with promotion of industry news, publications, videos and other resources. In addition to disseminating information, social media also offers the opportunity to engage with industry members and form online communities around ICP and soil management. The type of social media used and their purpose within these extension projects are discussed in further detail, including guiding principles, measurement of effectiveness, and opportunities and constraints to future development.

### Why social media?

The incorporation of social media with traditional extension activities in the ICP and SW projects was considered to be a critical component for facilitating change and building capacity within the vegetable industry. There were a number of reasons for this, including:

- The geographic breadth of the project. These projects are focused on promoting crop health and soil management techniques for the whole of the Australian vegetable industry. While the demonstration sites and training events are regionally based, social media allows us to extend the outcomes of these activities to a national audience.
- Decreasing levels of investment in extension activities requires us to 'do more with less'. Social media enables a much higher return on investment when developing resources and running events. Information products such as fact sheets and guides stored electronically on the website can reach an unlimited audience and workshops and webinars can be recorded and shared on-line.
- Well-executed social media can also be more widely relatable than technical reports and if content is shared virally, recommendations from peers can greatly increase interest and trust.
- Fundamentally, the use of social media was expected to increase the reach of the knowledge developed through the project and the rate of change in practice.

### Guiding principles

The popularity of social media is partly due to its ability to tap into one of our most basic natural needs – forming groups and sharing information. It provides an opportunity for storytelling on a global scale, where everyone in the group has the opportunity to add to the story or share another point of view. In this respect, it provides a powerful opportunity to extend the outcomes

of research and facilitate practice change. To ensure the right 'story' reaches its intended audience, social media like any communication tool, requires careful and considerate management. Social media for the purposes of this paper is defined as the collective of online communication channels dedicated to community-based input, interaction, content-sharing and collaboration. The range of social media used within this project have been developed and managed using the following principles:

*Understand the audience* Vegetable producers' work within an intensive, competitive and complex industry. They are often time poor, consist of a range of cultural groups and are fragmented in terms of size, business models and crops produced. Traditional extension methods can have limited success due to these factors. Computer and social media use within the vegetable industry is increasing, particularly amongst younger producers and those with larger operations. While social media may still be viewed by many as purely for social purposes, interest and capacity in using social media is expanding. Understanding the needs and aspirations of each of the market segments is critical in tailoring engagement approaches.

*Quality over volume* Social media is used by the project to promote information products, activities and other news items deemed to be of interest and value to the vegetable industry. The goal is not to post a large quantity of content but to choose quality content that is of relevance to the vegetable industry, strengthens the image and value of the project, or that has a direct impact on vegetable production.

*Focus on engagement* While social media is an effective tool for communicating information to a large audience, its true value is only realised when the target audience is engaged. To facilitate engagement we have ensured our platforms have a consistent 'voice' that is viewed as professional and interesting, and focused on providing reliable and helpful content.

*Integration* To build a presence and increase audience penetration, resources, activities and industry news are cross-promoted across all of the social media platforms. An example of this is the development of videos showcasing the application of an ICP approach on vegetable farms. The videos are hosted on YouTube and promoted through Facebook and Twitter. Links to the videos are also provided on the project website. Promotion of the video on Facebook and Twitter not only lets people know of its existence but also provides the opportunity for viewers to provide feedback and post questions.

## **Tools**

The social media platforms used within the ICP and SW projects include Facebook, Twitter, YouTube and a website. These are discussed in further detail below. The target audience for these platforms includes all members of the vegetable industry (vegetable producers, advisors, supply chain members and the research community).

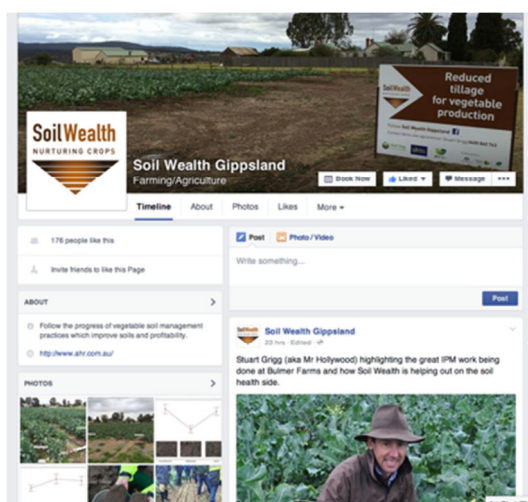
### **Facebook**

Facebook is a social networking website which allows users to become "fans" of pages and follow the page's activity, share the page's content and interact by commenting on the posts. Pages can be set up by businesses or organisations and used to post news, events, links, photos and video. There are now approximately 1.4 billion users of Facebook worldwide.

The ICP and SW projects are utilising Facebook to engage and inform the vegetable industry by:

- Promoting resources that provide information on best management practices for plant health and soil management.
- Alerting industry to events such as field walks, workshops and master classes.
- 'Sharing' information of relevance to pest and soil management within the vegetable industry.
- Providing real-time evidence of the outcomes of farm demonstration sites .

Facebook has been a key component of communicating the outcomes of regional demonstration sites. Selected vegetable producers across Australia have established sites on their properties demonstrating sustainable soil health and integrated crop protection practices. These have included reduced till, composting and cover crops. Regular updates on the progress and outcomes of these demonstrations have been posted on Facebook allowing the vegetable industry to view real-time evidence of changes in practice and also provide feedback (see Figure 1).

**Figure 1. Gippsland demonstration site Facebook page**

Facebook has also enabled the project team to receive feedback and provide support to vegetable producers. This can be seen in Figure 2 where a vegetable producer has posted a query in response to a video on reduced till practices. The ability to respond directly and quickly to producers facilitates engagement and builds trust in the information source.

**Figure 2. Post on Facebook page**

### **Twitter**

Twitter is an online social media site and micro blogging service, which limits the messages you send to only 140 characters long. Messages or “tweets” give users the power to share and create ideas quickly and efficiently across the world. There are now over 500 million users of Twitter around the world. Through posting and tone, the account is given a personality, or voice, so followers know a person is behind the account and can be engaged. Twitter is used to:

- Engage industry - Effort is made to quickly answer questions and provide direction to resources as well as actively “talk” with followers and provide feedback, comments or general conversation.
- Brand cross-promotion - Special attention is paid to re-tweet news and comments between the two accounts (SW and ICP) to strengthen brand focus.
- Highlight news/activities/events - Upcoming events and activities such as field walks or workshops are promoted and news of importance to the vegetable industry such as regulatory changes or pest updates.
- Re-tweeting/link sharing - Links and updates of followers are re-tweeted and shared. This helps keep the account active and builds relationships and brand recognition with followers.

- Thanking followers for re-tweeting content is an important component of building relationships and engagement. Figure 3 shows where followers have been thanked for sharing a message.

**Figure 3. Conversation from Twitter account**



### YouTube

YouTube is a video streaming service which allows users to create and upload videos to the website which then can be shared to anyone worldwide. There are approximately 1 billion unique visitors to the YouTube website each month and 100 hours of video footage is uploaded to YouTube every minute.

The SW and ICP projects have developed a number of videos to demonstrate how and why leading vegetable producers are incorporating more sustainable crop health and soil management techniques into their business. The videos are an effective way of promoting the benefits of change in that they:

- Provide a high level of content in a short period of time.
- They are relatable as content material is provided by vegetable producers.
- Expand to a global scale the concept of 'checking out what your neighbour is doing'.

Hosting the videos on YouTube provides a free easily accessible resource for producers to view in their own time. Figure 4 depicts a still from a video developed on a vegetable producers property in Cowra on how to implement reduced till practices in a vegetable production business. The video has been cross-promoted through Twitter, Facebook and on the project website.

**Figure 4. Video on reduced till in vegetable production hosted on YouTube**



### Website

The ICP and SW website has been developed to provide resources that will assist the Australian vegetable industry to implement more sustainable crop and soil health management practices

on their farm (Figure 5). Enquiries relating to ICP and SW practices are often issue driven i.e. poor soil or crop performance likely to lead to economic loss prompt producers to seek information on how to rectify the problem. The website has been developed to assist in finding resources to manage immediate issues but to also promote the long-term implementation of more sustainable and strategic practices. The three main components of the site are 'my area', 'my crop' and 'my topic'.

For searches where the identity of the problem is known producers can go straight to the 'my topic' area, which provides a range of resources (factsheets, guides, videos and weblinks) for managing pests and poor soil health. If the nature of the problem is not known, industry members may choose to search under 'my crop' which provides resources on pests that are particular to that crop.

The 'my area' pages provide information on activities and events that are occurring on a regional basis. These events are integrated with the topic and crop pages to ensure that industry members seeking information on a particular topic will be alerted to any activities in their area, which may help manage the problem. For example a producer seeking information on how to manage diamondback moth in brassica crops, will be able to find fact sheets, guides and videos to help them manage the pest but will also be alerted to any workshops that are occurring in their area.

**Figure 5. Resource page of the Soil Wealth and Integrated Crop Protection website**



## Evaluation

As stated previously, the purpose of these projects is to increase awareness and promote practice change relating to plant health and soil management amongst growers and advisors in the Australian vegetable industry. It is therefore important that the impact of these tools in achieving these outcomes can be monitored and evaluated, particularly for funding bodies investing in extension projects using online tools to deliver information.

The key components in measuring the impact of any extension project can be broadly grouped into three categories:

4. *Rate*: the extent to which the pace or scale of change has increased as a result of using these tools
5. *Reach*: the extent to which these tools enabled a larger number and geographic spread of the target audience to be engaged and communicated with
6. *Adoption and practice change*: the type of change that has occurred as a result of the project intervention.

There are a number of strengths and weaknesses in the monitoring and evaluation capability of the different online tools used in these projects. In general, online media platforms enable detailed monitoring and evaluation of the reach of information to our target audience, however measuring rate and adoption and practice change is more challenging. Data collected on the reach component includes:

**Facebook** Demographic information and statistics on each demonstration site page for fans (people that 'like' the page), people reached (people our posts were served to) and people

engaged (people who have 'liked', commented or shared our posts, or engaged with our page). There is also the ability to 'seed' or promote our demonstration site pages to a specific target audience based on interest, location and other demographic information. This is particularly useful for establishing new demonstration sites or promoting specific events as a 'campaign'.

*Twitter* Similarly, there is a range of statistics available for the project Twitter feeds. This includes the number of Tweets and the impressions these Tweets earned, as well as the number of profile visits, mentions and followers. Monthly summaries of top (or most effective) Tweets, mentions, followers and media Tweets allow the project team to prioritise and tailor content to the target audience in real time and compare to previous monthly results.

*Website* Analytics on the type, extent and source of the project website traffic enables the project team to monitor and determine the most effective pages, form of content, issues/topics and events, as well as where and how people are accessing the site e.g. direct URL, from social media, web browser search, time spent, number of click throughs.

The gaps in monitoring and evaluating rate and adoption and practice change can be filled by using other evaluation techniques integrated across the more traditional extension methods such as workshops, grower groups, field walks and demonstration sites. This includes methods such as pre and post intervention surveys, interviews and digital case studies to track grower and advisor progress, and enables the project team to triangulate the data with other monitoring information from the online media platforms.

### **Opportunities and Constraints**

There are a number of opportunities and constraints in using online media platforms or 'e-extension' tools in the horticulture sector. These all need to be considered in designing and planning projects, as well as integration with other more traditional methods of extension. The opportunities include:

- *Ability to improve efficiency* by increasing the reach of information, allowing your target audience to share and become an advocate for your content, as well as reducing travel time for national projects. For example, in less than half an hour one member of the project team can earn over 2,000 impressions for information or event promotion nationally on Twitter.
- *More coordinated and strategic approach* to disseminating project information and promoting events. This also includes prioritising and repackaging existing content from recent research or other online media platform users.
- *Ability to build a project 'brand'* and have united online presence that is a trusted and recognised provider of information. Making sure the content it is easily identifiable to online users is important. This includes #tagging items on Twitter, regular updates when people are likely to view your content to have a consistent presence, and having a consistent 'voice' with one person providing updates through most channels.
- *Learning from other agricultural industries* both nationally and internationally, particularly the grains industry in adopting e-extension methods with their grower and advisor networks at a whole-of-industry scale or for specific issues such as climate change.
- *Advances in monitoring and evaluation* of social media tools for business application continue as an increasing number of professional organisations and projects use these tools to engage and communicate with their audiences.

Some of the challenges we have identified in using these tools are:

- *Passive users* that may not engage with information or event promotion in a meaningful way can have the potential to skew statistics relating to evaluating reach.
- *Perception* by some growers and advisors that some online media platforms such as social media tools (Facebook and Twitter) are for personal use only and have limited professional application.

### **Next steps**

While true practice change and capacity building can only be achieved by working with individuals to tailor solutions that meet their particular needs and circumstances, incorporating social media into the ICP and SW extension projects has provided a range of benefits. These have included the ability to extend the reach of our message, achieving greater value for money from development of resources and facilitating real time engagement with the vegetable industry.

The value of social media in building social capital (that is trust, engagement and community involvement) should be viewed as a powerful tool within extension based projects. The ICP and SW projects will continue over the next two years to consolidate and expand our social media

presence. By continuing to use a variety of communication channels to extend crop and soil health research results we hope to improve management practices and enhance capacity within the vegetable industry.

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