growcom

together we grow

Submission on

Technological Advancement in Agriculture

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About Growcom

Growcom is the peak representative body for the fruit and vegetable growing industry in Queensland, providing a range of advocacy, research and industry development services. We are the only organisation in Australia to deliver services across the entire horticulture industry to businesses and organisations of all commodities, sizes and regions, as well as to associated industries in the supply chain. We are constantly in contact with growers and other horticultural business operators. As a result, we are well aware of the outlook, expectations and practical needs of our industry.

The organisation was established in 1923 as a statutory body to represent and provide services to the fruit and vegetable growing industry. As a voluntary organisation since 2003, Growcom now has grower members throughout the state and works alongside other industry organisations, local producer associations and corporate members. To provide services and networks to growers, Growcom has about 30 staff located in Brisbane, Bundaberg, Townsville, Toowoomba and Tully. We are a member of a number of state and national industry organisations and use these networks to promote our members' interests and to work on issues of common interest.

About the Queensland Horticulture Industry

Queensland's production horticulture industry delivers the fresh fruit and vegetables that grow healthy Australians. Our industry directly contributes more than $2.5 billion to the Queensland economy, supports significant regional employment, and is the only agricultural sector to consistently achieve strong growth over the past five years. Horticulture is Queensland's second largest agricultural sector after beef.[1]

There are two components of the horticulture industry: production horticulture which includes the fruit, vegetables, mushroom and nut industries; and lifestyle (or non-food) horticulture which includes turf, cut flowers and nursery production. Growcom does not represent the lifestyle horticulture sector although we work closely with their representatives under the banner of the Queensland Farmers' Federation.

Queensland is Australia's leading state for fruit and vegetable production, growing one-third of the nation's produce and supplying most of Australia's bananas, pineapples, mandarins, avocados, mangoes, beetroot, fresh field tomatoes and capsicums. Queensland's 2500 production horticultural farms produce more than 120 types of fruit and vegetables and are located from Stanthorpe in the south to Cooktown in the far north.

Response to terms of reference

TOR1 - Improvements in the efficiency of agricultural practices due to new technology, and the scope for further improvements

The multi-commodity nature of horticulture means that there is huge variation in the uptake of technology across the different crops. Some crops, such as carrots, are produced in a highly mechanised way whereas others such as strawberries and bananas are picked and

[1] (DAFF 2013, *Queensland AgTrends 2013-14* and DAFF 2014, *AgTrends Update April 2014).*

packed almost entirely by hand. In many cases this is as much a function of the inherent properties of the crop itself rather than any recalcitrance on behalf of growers.

It is our experience that many growers are highly innovative and are actively seeking technological solutions to improve their efficiency. At a whole of industry level, the areas with the most opportunity for efficiency gains include labour, pest control and managing inputs such as nutrients, water and energy. There are also gains to be made by utilising improved technology up the supply chain.

Horticulture is the most labour intensive of the agricultural industries. Labour costs commonly account for at least 50 per cent of a horticulture business's cost of production. Australia's labour costs are amongst the highest in the world and certainly the highest in the Asia-Pacific region. As well as the cost of labour, there are significant issues in relation to accessing labour at the right times.

Many of our crops are still picked and packed entirely by-hand with very few cost-effective alternatives. Whilst we acknowledge schemes such as the Seasonal workers program and the working holiday visa program, any technological advances that would reduce the cost of labour would have significant benefit to our industry. This is not just in-paddock but in the packing shed as well. Investment in cool chain technology is also important.

From the perspective of pest management we note the investment in new technologies such as sterile insect technology for fruit fly control. We see technologies such as this as part of an integrated arsenal to manage pest and disease incursions rather than a replacement for traditional chemical protection.

Growcom currently hosts a searchable label database called InfoPest (www.infopest.com.au) which enables users to access up-to-date information on approved chemical products, labels and permits images, rates of use, withholding periods, maximum residue limits and pest resistance. We are looking to enhance access to the website through tools such as apps and promoting the website widely to growers and their support networks.

Growcom is not against the use of GM technologies but contends that issues around consumer acceptance need to be dealt with before such technologies can be implemented. At this stage, our GM free status gives Australian products an edge with consumers.

Growcom would also like to see investment in non-lethal control technologies for native pests such as flying foxes and birds. The Queensland horticulture industry was badly affected by a decision by the then Queensland government to disallow the shooting of flying foxes. This decision was made after extensive lobbying from animal activists. Whilst damage mitigation permits have been reinstated it would be naive to think this situation won't occur again. We need proactive investment from government to ensure that native animals and farmers can co-exist in line with consumer/voter sentiment.

Some commodities within the horticulture sector have embraced technologies such as controlled traffic farming but there is scope for expansion. The Queensland horticulture industry has shown significant progress in the uptake of improved water use efficiency technology and technologies such as fertigation. This however is a consequence of a sustained investment in the Rural Water Use Efficiency Initiative by the Queensland government.

Growcom sees significant potential for efficiency improvements through the uptake of industry best practice programs. Growcom has recently launched Hort360 which is a whole of horticulture on-line risk management program which looks at best practice across the whole operation including water use efficiency, soil management, industrial relations and workplace health and safety. We see integrated packages such as these which identify areas for improvement, provide guidance on how to improve and enable growers to benchmark their practices as fundamental to improved farm gate outcomes and regulatory compliance.

Our recent consultations with growers in relation to the Horticulture Code of Conduct identified a clear need for real time price information to improve transparency in the marketplace. Horticulture produce selling is a bit like stocks and shares. The price can shift dramatically in a day and the price paid in the wholesale markets can then dictate the price in the supermarkets. The market information currently provided by the Market Information Services is not based on real sales data and is too slow. A system, similar to the stock exchange, implemented across the central wholesale markets would have enormous benefits to growers. This information could be accessed by smartphones or tablets and enable growers to make better decisions about their crop and where they send it.

TOR 2: Emerging technology relevant to the agricultural sector, in areas including but not limited to telecommunications, remote monitoring and drones, plant genomics, and agricultural chemicals

As highlighted in our response to TOR1, the horticulture sector is so diverse that it is difficult to make generalisations about the use of technology. We are aware of emerging technologies across all the topics listed above being used in some commodities. We would recommend an initial scoping of the current technologies already being utilised by the sector across the supply chain be undertaken by Horticulture Innovation Australia to enable a snapshot of the industry. This could also provide a starting point for cross-pollination of ideas across the different commodities.

TOR3: Barriers to the adoption of emerging technology

As highlighted in the response to TOR1, the uptake of new technology varies significantly across the different commodities and there are a range of different factors that impact on uptake of technology. At the most general level, the following barriers exist:

- **Lack of available current technology to suit the commodity in question**. For example, there is no technology available to pick pineapples. The Australian industry is small by world standards and most other production areas have low wages so there is limited incentive to invest in picking technology. The Australian industry does have a levy but most investment is in the area of pest management as it is considered a more urgent priority. If the system for chemical access was improved then levy funds could be spent on longer term strategic priorities such as mechanisation.

- **Low awareness of new/emerging technologies**. With the contraction of extension services across Australian agriculture and a more project driven approach to technology transfer, the opportunities for knowledge sharing about new technologies has declined. The Rural Water Use Efficiency initiative (RWUEI) is a good example of how investment in extension can lead to significant uptake of new technology and improved efficiency.
- **Limited appreciation of the cost to benefit ratio of new technologies**. Again the RWUEI is a good example of a program that has incorporated tools such as efficiency calculators to enable growers to better understand the cost benefit of significant capital investments in irrigation technology. These calculators are also useful as they can be used to support applications for finance. Industry programs such as Hort360 may also have some application in this capacity in the future. Perhaps innovation funding to facilitate investment in higher risk technologies would be useful.
- **Lack of confidence in using new technologies and general change management issues**. Supporting early adopters to become industry champions can assist in building confidence across the industry.
- **Poor access to modern communications technology.**
- **Concerns about community acceptance of new technology.** Whilst there are opportunities for the implementation of new technologies such as irradiation and GM to replace traditional chemical controls, many growers are concerned about the community acceptance of these practices.