Technology lifts efficiency

POTATOES SA

BY **ROBBIE DAVIS, CEO**

AS A global food crisis looms against a backdrop of climate change, it is reassuring to know that primary producers have a developing toolkit of smart technology which can assist in crop and farm management.

With uncertainty surrounding the cost of the future workforce, these tools are labour-saving productivity-boosting 'farmhands' in the form of crop-monitoring drones or unmanned aerial vehicles, advanced environmental sensors, variable rate irrigation systems and solar-powered agbots.

These innovations will transform crop production in Australia as primary producers strive to make their agribusinesses more profitable and sustainable, with less.

Precision weeding, seeding and feeding linked with GPS, sensor and satellite data will substitute many of the routine tasks of farming.

Recently I witnessed firsthand the precision flying and imaging of UAVs in a South East potato crop.

Potatoes SA is the voice for seed producers, growers, fresh market, packers, processors, marketers, exporters, wholesales and retailers.

There is no doubt that robotics is offering a pathway to a reduction in labour costs, more efficient and timely operations and better land management, resulting in productivity improvements.

In addition to this, a CSIRO-developed wireless sensor network which collects real-time data on weather, soil, air and moisture is enabling precise remote monitoring of crops, and live satellite-derived pasture data.

This is helping producers to make expedient management decisions, for example when and how much to irrigate, based on data delivered directly to their smartphones.

In fact, the University of Southern Denmark is to develop an ecodrone that will combat pests. With tanks filled with ladybirds, predatory mites and parasitic wasps, the drones will fly across fields and spread the insects precisely where pests are ravaging crops.

The future of global agriculture looks like something out of a sci-fi movie, but these unique innovations in precision agriculture will be the way to ensure continued, sustainable food security.

Future farming will be an increasingly collaborative effort involving a team of many experts including agronomists, statisticians, plant pathologists, molecular biologists, geneticists and software programmers.

In fact, globally PA is expected to become a $US4.5 billion market by 2020 and this will increase as improved yields and profitability further enhance the widespread adoption of these new technologies.

A recent Bank of America Merrill Lynch global research report suggested that the worldwide agricultural robot market would increase from $US817 million in 2013 to $US16.3b by 2020. That is massive growth and a large segment of this will be UAVs.

The country which is the star in the embrace and uptake of new PA technologies is Brazil. This has resulted in the highest productivity rates in the world and the ability to produce crops that meet global demand.

Consequently, Australia will need to 'step up' its technological use if it wants to compete in these markets and attract smart young people into agriculture.

With uncertainty surrounding the cost of the future workforce, new tools such as drones are labour-saving productivity-boosting 'farmhands'.