Future of Protected Cropping Research Summit summary

What is the opportunity for protected cropping:

Protected Cropping is a system that supports horticultural crop grown under structure or cover to modify growing conditions and manage risk. These structures include nets, polytunnels, polyhouses, greenhouses, and glasshouses. Industry movement from open field growing systems into protected cropping to de-risk production, increase yields, and reduce inputs. Protected cropping allows growers to meet consumer and supermarket demand through the ability to grow high quality produce year-round. Climate variability and food security are expected to be key drivers leading to significant industry growth.

Crops which can grown under protected cropping include, but not limited to:

- Vegetables
- Fruits (apples, grapes, mangoes, avocadoes)
- Berries
- Leafy Greens
- Herbs
- Amenity plants

The protected cropping industry employs over 10,000 people with Food Innovation Australia Limited estimating that 10,000 new workers will be required in the industry by 2030. Horticulture is Australia's fastest growing sector, supporting Australian agriculture to become a $100 billion industry by 2030.

Process:

To support the continued growth of Australian protected cropping, the industry invested in the 2021-2030 Australian Protected Cropping strategy, launched in late 2021. To support the opportunities outlined in the strategy, Hort Innovation and Protected Cropping Australian (PCA) facilitated the "Future of Protected Cropping Research Summit" to identify a suite of works to deliver targeted outcomes for PC growers in Australia. This consultation was led by an independent facilitator Cath Botta and involved major industry stakeholders including growers, researchers, allied trade and potential funding partners.

Outcomes:

The outcome of the Research Summit was the development of the Australian Protected Cropping Program. This program of works was informed by the industry R&D strategy and structured around 5 key investment themes:

1. Sustainability, Environmental, Social, Governance
2. Advanced Agronomy
3. Market Development and Insight
4. Attracting and Retaining People
5. Identification, Evaluation and Adoption of Technology

Sustainability and Environmental, Social and Governance

Sustainability and ESG was identified as a significant opportunity for the industry. The group identified that growers need to be aware of tools and support available to monitor their production systems and identify their sustainability metrics. This will include the data capture and tools for benchmarking, particularly in the areas of Energy, Plastic, Water, Green House Gas emissions.

Growers should also be supported to undertake lifecycle assessments of their operations and products to ensure multiple stages of sustainability metrics are tracked.

The group identified that sustainability and ESG will be important to attract financing opportunities as well and to develop and maintain market access.

Potential projects may include:

- Sustainability data capture, assessment and dissemination
- Delivery of tools, metrics and benchmarking to assist growers to monitor their sustainability
- Communication of industry sustainability to local and international markets

Advanced Agronomy

Advanced Agronomy was identified as an opportunity to continue to improve the performance and management of crops under protected cropping systems. The advanced agronomy theme focuses on solving targeted production issues for growers. The group identified advancements in genetics and the development of PC centric varieties which are designed to perform in Australian PC systems. There was also discussion around agronomic practices to improve quality and shelf life and other post-harvest quality measures.

Potential projects may include:

- Targeted genetics for PC
- Next gen pest and disease management
- Crop management principles for post-harvest measures
- Communication and extension of information to solve production issues

Market Development and Insights

Improving the diversity of and access to markets, both domestic and international, is an important investment theme to continue to support the growth and development of the industry. Collaboration throughout the value chain is important to deliver customer-centric outcomes. Increased understanding of customers through data and insights to identify and develop product market fit and allow growers to better market their crops. Increasing the product market fit by giving growers the understanding of and ability to better target market segments through targeted production. Value adding, packaging and supply chain innovation were also identified as an area of priority investment for PC growers. Understanding and development of export markets and pathways for protected cropping was also an opportunity to support PC growers through market diversification. Investments will be complementary to existing trade and market insight activity.

Improved branding, marketing and communication was highlighted as an opportunity to increase the value of PC thorough improved public perception of PC produce. The group identified that a number of industry opportunities such as, increasing confidence in PC, increased perception, consumption and demand for PC products, increasing the profile and developing the story of the industry. An increased knowledge and understanding of the benefits of PC will drive preference for PC produce, increasing industry value.

Potential projects may include:

- Domestic and export customer and market insights
- Development of metrics and measures to inform and underpin marketing claims
- Development of industry messaging and story to improve industry perception
- Increased broad communications to increase the profile of the industry Post harvest, packaging, and supply chain innovation, including gas, temperature and traceability
- Development of PC specific export protocols to increase export market penetration

Attracting and Retaining People

Attracting, retaining and upskilling people was identified as an important investment theme. Attracting early career professionals to protected horticulture and informing them of the opportunities in agriculture was identified as a key priority for this theme. The requirement of skilled staff in the near future is likely to be a limiting factor for the growth of PC in Australia and efforts should be made to support and development access to a skilled labour supply. Support and development of existing workers is an important investment priority in order to retain the existing workforce and improve business outcomes. Upskilling existing workers through managerial, business and, technical education was seen to be important. One of the biggest issues identified by the group was the requirement for technically skilled individuals in agronomy and technology sectors to enable the adoption of high-end cutting-edge research into protected cropping businesses.

Potential projects may include:

- Support for work placements
- Education and training support
- Interstate and international study tours
- Management and leadership training for key staff
- Communication and extension resources to improve the image of protect cropping workplaces

Identification, Evaluation and Adoption of Technology

Identification evaluation and adoption of technology was seen as a high priority investment theme. Investments in this theme would understand agronomic issues, scout international research organisations for potential solutions, evaluation of solutions, identification of return on investment for growers, commercial validation, and adoption support. The focus of this investment theme will be on solving production problems, test, evaluate and de risking high tech investment for protector cropping, and support for growers to trial and implement these technologies.

Potential projects may include:

- Evaluation of genetics at pace using automation digital phenotyping international genetics propagation and tissue culture techniques
- Implementation of artificial intelligence within protect cropping systems
- Robotics and mechanization to reduce labor requirements
- Evaluation of emerging technologies and their application in protected cropping systems

Program Implementation:

The program will be implemented by as advisory group made up of key stakeholders. The advisory group will focus on program direction and strategic advice for the program. Co-investment will be sought from industry stakeholders through the Hort Innovation Hort Frontiers Advanced Production System Fund. Projects will be scoped, evaluated, and administered by Hort Innovations R&D managers in accordance with Hort Innovations investment processes. Some opportunities raised may not be suitable for the investment of R&D funds, but were key to the Australian Protected cropping strategy. These may be progressed by Protected Cropping Australia.

Next steps

- Symposium notes shared and feedback sought from participants.
- Additional feedback at sought at Hort Connections (June 6, 2pm at Hort Innovation Stand #68-71) and Protected Cropping Australia conference (July 17-20)
- Hort Innovation seeks approval to procure R&D program. September 2023
- Program procurement October 2023