

Agriculture & Food Sciences Innovation Pipeline | August 2020

PLANTS AND CROPS

Project name	Description	Partnered / Available	TRL 1 - 3	TRL 4 - 5	TRL 6 - 7	TRL 8 - 9
Crops and Horticulture						
Aussie Colours®	Water efficient flowering ornamental plants	Start-up: Aussie Colours Pty Ltd	●	●	●	●
Ruhbi™ Bayberry	New fruit for the western world - high-yielding, sweet and high in antioxidants	Licensed: PVA (Aus & NZ); AIGN (ROW)	●	●	●	●
UQ-1800 (Wheat)	High yielding wheat variety with excellent straw strength	Licensed: Seed Exchange Australia	●	●	●	●
XPT-UQ1203	Wheat PHS resistance in elite germplasm using UQ speed breeding technology	Licensed: Dow AgroSciences	●	●	●	
Avocado tissue culture	Platform for clonal propagation of avocado rootstock	Industry Partnered	●	●	●	
Ecoturf	Hard wearing, industrial strength landscaping grass	Available	●	●	●	
O'Hara barley	Multi-disease resistance in elite Scarlett variety using UQ speed breeding technology	Available	●	●	●	
QuGrains	Rapid trait introgression platform for plant breeding	Available	●	●	●	
High bread	Wheat protein and genomics that give good bread rising properties	Available	●	●		
Midas maize	Rich in zeaxanthin for novel food products with eye health claims	Available	●	●		
Plant nanopatch	Variety specific, precise and controlled release of new and conventional chemistry	Available	●	●		
Sorghum digestibility	Modified sorghum seed proteins to increase total protein content and digestibility	Available	●	●		
SupaSorghum	Protein modification and genomics for increased grain size, protein content and digestibility	Available	●	●		
UAV crop analysis	Power efficient UAV design platform with long flight times, coupled with crop imaging analysis tools	Available	●			
Plant Disease and Pest Control						
Di-Bak Parkinsonia	Fungal bioherbicide and novel application method for woody weed control	Start-up: BioHerbicides Australia (Aus)	●	●	●	●
Nexgen Plants	Protein and RNA production in plants	Start-up: Nexgen Plants Pty Ltd	●	●		
Plant root fungal protection	Novel mechanisms and compounds for plant protection against plant root fungal pathogens	Licensed	●	●		
Bioclay layered double hydroxide	Nanoparticle platform for delivery of RNAi mediated crop protection against sucking insects & viruses	Industry Partnered	●	●		
Cyclotides	Plant derived biopesticides and stable peptide structures for bioengineering new pesticides	Available	●	●		
Nanocapsules for active delivery	Silica micro/nanocapsules for controllable sustained release of active ingredients	Available	●	●		
BenPol - bentonite complex	Nanoparticle platform for delivery of RNAi mediated crop protection against chewing insects	Available	●	●		

Technology Readiness Levels (TRLs)

- TRL 1** Basic principles observed and reported
- TRL 2** Technology concept and/or application formulated
- TRL 3** Analytical and experimental critical function and/or characteristic proof-of concept
- TRL 4** Component/subsystem validation in laboratory environment
- TRL 5** System/subsystem/component validation in relevant environment
- TRL 6** System/subsystem model or prototyping demonstration in a relevant end-to-end environment
- TRL 7** System prototyping demonstration in an operational environment
- TRL 8** Actual system completed and "mission qualified" through test and demonstration in an operational environment
- TRL 9** Actual system "mission proven" through successful mission operations

● Already partnered ● Asset available for partnering

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ANIMALS	Animal Production						
	PAC-701 & 901	Winter adapted lucerne species with disease and pest resistance	Licensed: PGG Wrightsons	●	●	●	●
	PACL-501	Highly persistent variety of grazing lucerne	Licensed: PGG Wrightsons	●	●	●	
	Probiotic livestock feed	Novel bacillus inoculation of livestock feed for probiotic gains	Industry Partnered	●	●	●	
	Natural feed additives	Novel additives for preservation of animal feed	Industry Partnered	●	●		
	Rough microcapsules	Natural antibiotic delivery for feed supplements	Industry Partnered (Asia Pacific)	●	●		
	Algae livestock feed	Cost-efficient algae production systems for livestock feed and supplements	Available	●	●		
	Animal Health						
	Cane toad trap	Cane toad tadpole attractant	Licensed: SpringStar	●	●	●	●
	Natural anthelmintic	Natural anthelmintics from microbes for treatment of livestock	Industry Partnered	●	●		
	Rough microcapsules	Silica microcapsules with rough projections to ensure adhesion to fur for active delivery	Industry Partnered (Field limited licence)	●	●		
	Vaccine delivery platform	Nanovesicles for adjuvant-free delivery of subunit antigen vaccines	Industry Partnered	●	●		
	Tick vaccine	Vaccine for the Australian paralysis tick (Ixodes holocyclus)	Industry Partnered	●	●		
	EHEC vaccine	Novel antigens to reduce enterohaemorrhagic E. coli (EHEC) excretion by cattle	Available	●	●		
Natural cattle tick control	Micro-encapsulated tea tree oil formulations for control of cattle tick	Available	●	●			
Silica nanocapsules	Silica micro/nanocapsules for high active ingredient loading and controllable sustained release	Available	●	●			
VLP vaccine system	Recombinant protein derived low cost VLPs that can display large viral sequences	Available	●	●			
FOOD	Post Harvest and Food						
	PERKii™	A juice-based, low calorie probiotic drink using the ProGel™ technology	Start-up: Perkii Pty Ltd	●	●	●	●
	ProGel™	Micro-gel encapsulation of active food supplements, human & animal drugs requiring liquid stable, low cost, scaleable taste masking & controlled release	Start-up: Progel Pty Ltd	●	●	●	●
	Novel bacteria for hay (H57)	Novel bacillus strain for probiotic use in ruminants	Industry Partnered	●	●	●	●
	Novel brewers yeast	Locally sourced yeast isolates suitable for beer brewing with novel flavour	Industry Partnered	●	●	●	●
	Healthy baked goods	New baked good recipes incorporating specific, cholesterol-lowering functional food additives from plant cells	Available	●	●	●	
	Probisafe™	Probiotic lactic acid bacteria which kill/inhibit the growth of salmonella & listeria on fresh food products	Available	●	●		
	Algal food additives	Natural algal flavour and colour enhancers from cost-effective production systems	Available	●	●		
Algae food products	Food products using whole fresh unprocessed microalgae. Strains with optimum cell wall structure for digestibility matched with high yielding bioactives	Available	●				

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