

Results of competition: Agri-Tech Catalyst Early Stage Feasibility Award - Round 1

The Agri-Tech Catalyst competition is co-funded by the Technology Strategy Board, the Biotechnology and Biological Sciences Research Council and the Department for International Development.

Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.

| Participant organisation names | Project title | Proposed project costs | Proposed project grant |
|--|--|------------------------|------------------------|
| Adas UK Limited (lead) J Sainsburys plc; University of Manchester | WheatScan: Tractor-mount sensing for precision application of Nitrogen and control of milling wheat protein content. | £252,448 | £206,965 |
| Project description (provided by applicants) | | | |
| The project brings together agronomy research, on rapid protein assays for milling wheat, with engineering of photonic sensors, image recognition & mechatronic systems. The ultimate goal is to deliver a tractor-mount scanning unit for autonomous mapping of protein content across wheat fields, to a spatial resolution better than 2 square metres at full field application speeds (17km/hr) for precision application of nitrogen (N). N is the primary input cost and 80% of the carbon footprint, in milling wheat production, however it is over applied in 3 out of 4 cases. This system will enable growers to dynamically map protein distribution in the crop canopy so that all areas attain the threshold 13% protein content. The Sainsbury's 'Camgrain Consortium' of 500 growers will act as early adopters for the retrofittable system, which will incorporate emerging technologies in high-speed infrared photonics, steered on a miniature robotic gimbal through rapid embedded image processing. | | | |

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| Cambivac Limited (lead) Moredun Scientific Limited | Development of novel attenuated PRRS vaccine and disease model. | £235,950 | £176,963 |
| Project description (provided by applicants) | | | |
| <p>PRRS is widely regarded as the most economically important disease in swine, estimated to cost global swine producers in excess of £1billion per annum in production losses alone. These losses are largely the result of a failure to develop and deploy effective vaccines. Cambivac aims to produce vaccines that more effectively control the disease and can respond rapidly to emerging threats. We believe the technology under development collaborating with Moredun in this study, ultimately deployed towards effective PRRSV vaccines could derive substantial earnings for the UK animal health industry and be an important tool to combat the challenges posed by PRRS disease</p> | | | |

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| Royal Holloway, University of London (lead) Germaines Technology Group UK | Novel biomaterial engineering technologies, molecular and hormone analyses to improve lettuce seed priming and production in stressful environments | £404,648 | £330,200 |
| Project description (provided by applicants) | | | |
| <p>Seed priming is conducted by seed technology companies improve the quality of vegetable seeds including lettuce. Primed lettuce seeds provide alleviated dormancy, fast and uniform germination, followed by sturdy and uniform seedlings to ensure improved primary leafy salad crop production even in stressful environments. In this multi-disciplinary collaboration project between Germaines Seed Technology (Norfolk, www.germains.com) and the seed science lab at Royal Holloway University of London (RHUL, Prof G Leubner and Dr T Steinbrecher, www.seedbiology.eu) we will use novel biomaterial engineering technologies, growth imaging and molecular/hormone analytics to provide innovative diagnostic tools which will enable to further improve the lettuce seed priming process. The feasibility and commercial potential of these novel agricultural technologies will be explored with the vision to further improve priming, plantlet raising and primary crop production of leafy salad.</p> | | | |

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| Saturn Bioionics Limited (lead) University of Manchester | SaturnSense Hydrofeed: In-line sensing of the full composition of nutrients for precision management of hydroponic farming | £299,659 | £261,944 |
| Project description (provided by applicants) | | | |
| <p>The project will deliver the prototype of a new in-line sensing technology for smart real-time management of the nutrient composition within intensive hydroponic, aeroponic and aquaponic farming. The emergence of new growing protocols and batch production techniques, from the process sector, have positioned this approach at the forefront of UK horticultural and exotic fruits production, both reducing the UK's requirement to import such produce and offering category managers a flexible production facility to meet changing consumer preferences. This business proposition exploits emerging materials and sensor engineering to deliver an appropriately costed in-line unit capable, for the first time, of monitoring & closed-loop control of the individual major nutrients, notably N, P, K, S & Ca. By integrating this with light management, within a supervisory data-acquisition & control system (SCADA), 100% QA of produce may be achieved with optimised inputs and minimised energy.</p> | | | |

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| Scottish Association For Marine Science (lead) Celtic Sea Spice Company Ltd Otter ferry Seafish Limited | Seaweed as a Solution for Sustainable Economic and Environmental Development (S3EED) | £471,711 | £369,433 |
| Project description (provided by applicants) | | | |
| <p>Seaweed is healthy, nutritious and very tasty. Worldwide, seaweed for human consumption is the largest aquaculture industry. But here in the UK we are only just waking up to seaweed's culinary potential. However, the seaweed industry in the UK is growing and now requires more seaweed than can be harvested from the wild. And so there is a need to start farming it. This project, Seaweed as a Sustainable Solution for Economic and Environmental Development (S3EED), will develop the technology to grow two species of delicious seaweed in the cool, clear waters that surround the UK.</p> | | | |

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| The James Hutton Institute (lead) Enza Zaden UK Ltd Mylnfield Research Services Limited | Enhanced vector toolkit for vegetable germplasm improvement | £250,981 | £209,355 |
| Project description (provided by applicants) | | | |
| <p>Modern crop breeding aims to incorporate useful properties (traits) from related wild plants into the varieties that consumers are more familiar with. This project aims to develop a set of biological tools that will make it an easier, cheaper and faster procedure to identify the genes in the wild plants that are responsible for producing these desired traits. The tools will be based on a common plant virus, Tobacco rattle virus (TRV), that has already been shown to be adaptable for this purpose. The project will construct improved versions of the TRV-based tools, and will then test these new tools in a range of vegetable crop plants (including pepper and tomato). Beneficial plant genes identified using these tools will be selected for incorporation into the crop improvement programmes of Enza Zaden.</p> | | | |

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| The National Lobster Hatchery (lead) CEFAS Falmouth University Fusion Marine Limited University of Exeter West Country Mussels of Fowey Limited | Lobster Grower - Develop the technology to fast track the aquaculture potential for the European Lobster | £447,471 | £388,604 |
| Project description (provided by applicants) | | | |
| <p>Support from the Agri-tech catalyst has been secured for a 15 month project addressing fundamental food security challenges by examining novel angles to expand the aquaculture industry; to include a species not currently exploited, the European Lobster. This species commands the highest value (by volume) of any species landed in the UK and supply does not meet demand. Sea based culture, in containers (SBCC) exhibit potential for a low carbon form of rearing with no feed costs. The project will design and develop a SBCC system specifically designed for nursery and on-growing, that can be used to rear the product to a marketable size. The project will set up a marine licence, essential for establishing a pilot scale site, so that future work can develop the essential tools and techniques required in order to pioneer a new industry. The consortium will be led by the National Lobster Hatchery and consists of three SME's and micro SME's, two HEI's and a Government Agency.</p> | | | |

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| University of Nottingham (lead) Quality Milk Management Services Limited | Evaluation of MALDI-TOF-MS to differentiate sub species of the pathogen <i>S. uberis</i> to provide an improved approach to mastitis treatment and control | £267,480 | £230,662 |
| Project description (provided by applicants) | | | |
| <p>Mastitis, an inflammatory disease of the udder, is a major barrier to profitable milk production, dairy cow welfare and the sustainability of dairy farming worldwide. The aim of this project is to reduce the incidence of bovine mastitis.</p> <p>Mastitis is caused by a bacterial infection and a central premise of mastitis control is to minimise the risk of infection. In order to control mastitis, it is necessary to understand how and when infections occur and how pathogens cause an infection. Although only a few species of bacteria commonly cause bovine mastitis, it is now recognised that sub species (strains) of these bacteria behave in different ways in terms of disease transmission and outcome. The aim of this research is to develop a method to differentiate strains of a common mastitis pathogen, <i>S. uberis</i>, according to their disease transmission characteristics. Information of strain type will then be used to inform and improve mastitis control.</p> | | | |

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| University of York (lead) Syngenta | Putting the Ecology into Efficacy: a new paradigm for pesticide discovery | £356,520 | £173,363 |
| Project description (provided by applicants) | | | |
| <p>Chemical crop protection remains central to meeting the challenges of food security, changes in geographical distribution of pests, and emergence of pest resistance. Discovery of new pesticidal products adopts a screening approach with largely empirical optimisation once candidate molecules are identified. This project will investigate a new paradigm in pesticide discovery/optimisation. Therein, the development process will be driven by detailed understanding of the ecology of target species bedded within a modelling framework to identify optimal molecular properties, formulation, timing and placement of the crop protection product.</p> | | | |

Results of competition: Agri-Tech Catalyst - Industrial Research - Round 1

Total available funding for this competition was £13m from the Technology Strategy Board/Department of Business, Innovation and Skills, the Biotechnology and Biological Sciences Research Council and the Department for International Development.

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| Advanced Pest Solutions Ltd (lead) Agrico UK Limited Branston Limited McCain Food (GB) Limited Science and Advice for Scottish Agriculture (SASA) Scottish Agronomy Limited | Developing Bacteriophage Technology to Optimise Potato Production | £807,139 | £534,806 |
| Project description - provided by applicants | | | |
| <p>Bacterial pathogens of potatoes are responsible for substantial losses through disease, damage and failure to meet market specifications. An effective, sustainable solution is a priority across the UK and wider European industry.</p> <p>This project will build on proof-of-concept data from a previous Technology Strategy Board project in which an innovative biocontrol technology based on naturally-occurring antimicrobial agents (bacteriophage) was shown to control bacteria-induced blackleg in potatoes; the commonest fault observed during the growing crop inspections and associated reason for crops being downgraded/ failing. The technology also reduced associated tuber soft rots during storage.</p> <p>A business-led consortium will carry out further investigations on the technology, addressing key questions of technology deployment and efficacy in relation to dose rate, disease pressure and environmental stresses, together with formulation and integration into commercial practice.</p> | | | |

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| Cobb-Europe (lead) The Roslin Institute | Genome biobanking for the optimisation of valuable broiler genetic stocks | £815,904 | £648,680 |
| Project description - provided by applicants | | | |
| <p>World-wide poultry production must double in the next 25 years to meet the growing demand for animal protein in the developing world. Traditional commercial genetic resources need to have the genetic potential to meet local environmental conditions, which include severe climate and disease challenge pressures.</p> <p>This project applies cryopreservation and cutting-edge sequencing technologies to commercial poultry production to address food security and production efficiency. Using innovative genome technologies existing poultry genetic resources will be safeguarded and harnessed by i) biobanking genetic resources for broiler lines using new stem cell preservation technology to assure that current pure-line resources are available in the future and ii) further mine the genome of Cobb poultry resources to understand the genetic drivers of key economic traits and exploit existing genetic variation to drive significant improvements in commercial performance for emerging markets.</p> | | | |

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| East Malling Services limited (lead) Agrovista UK Limited Botanicoir Limited CPM Retail Limited East Malling Research Sainsbury's Supermarkets Ltd | Developing resource-use efficient strawberries for substrate production | £967,412 | £741,663 |
| Project description - provided by applicants | | | |
| <p>The realisation of optimal yield and quality from a crop is often dependent upon a complex interaction between the environment and the plant genotype.</p> <p>In the UK and across Europe growers are increasingly producing fruit crops such as strawberries in substrates, rather than in soil and in glasshouses and polytunnels rather than the open field. Despite this opportunity for cultivars tailored to this more controlled environment many breeding programmes still select and trial new varieties in the open field in soil.</p> <p>In this project the basis of key traits for optimum soil-less production will be investigated along with those yielding maximum fruit quality in this more controlled environment. Genetic markers will be developed for exploitation by breeders and by working with agronomists, substrate producers and supermarkets valuable knowledge and practical techniques for optimum production of new cultivars will be gathered to benefit UK growers of strawberries under protection.</p> | | | |

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| Finlay Flowers UK Limited (lead) Adas UK Limited Lambda Photometrics Ltd May Barn Horticultural Consultancy Limited North Bank Growers Limited Nutricycle Limited University of Nottingham Wight Salads Group Limited | Control of Botrytis in fresh produce pre- and post-harvest environments by integrated UV-B, -C and ethylene removal treatment | £1,970,093 | £994,344 |
| Project description - provided by applicants | | | |
| <p>One of the most costly problems growers of edible and non-edible horticulture crops face is loss in production and spoilage of harvested product to the fungal pathogen, Botrytis cinerea. Botrytis is commonly known as grey mould and is a significant factor in reduced shelf-life and consumer fresh produce waste. Standard 'control' techniques which involve direct spray application of fungicide are often ineffective.</p> <p>This project aims to develop an innovative non-contact approach to eradicate Botrytis both in the pre- and post-harvest environments for tomato and cut flower crops; this involves the use of ultra violet light to induce natural plant resistance mechanisms and the removal of the gaseous plant hormone ethylene to prevent Botrytis infection. The technique will minimise waste both in the production and domestic environments and extend shelf-life. It will also promote the industry's green credentials in meeting consumer expectations of available, residue free and safe fresh produce.</p> | | | |

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| Growhow UK Limited (lead) Adas UK Limited Chris Harry-Thomas Consulting Hill Court Farm Research Patchwork Technology Limited Precise Crop Nutrition Limited Syngenta Seeds Ltd | Develop an automated system for precision application of nitrogen fertiliser and plant growth regulators | £1,033,937 | £568,104 |
| Project description - provided by applicants | | | |
| <p>This proposal aims to develop an automated system for precise application of nitrogen (N) fertiliser and plant growth regulators (PGRs). Algorithms and software will be developed for integrating diverse forms of data from crop sensing instruments, yield maps, soil maps and soil N measurements. This will enable more accurate N fertiliser and PGR management through real-time decision making in the field, both on a field-by-field basis and on a metre-by-metre basis.</p> <p>Adopting this technology will improve crop productivity, increase farm profitability, maximise the efficiency with which N fertiliser and PGRs are used, and minimise pollution such as nitrate leaching and greenhouse gas (GHG) emissions.</p> <p>The project is highly innovative in that it seeks to develop the first technology for variably applying PGRs and it will be the first technology to successfully integrate the complete range of information sources required to reliably predict the crop's requirement for N fertiliser.</p> | | | |

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| Hockley International Limited (lead) Almac Sciences Limited Bangor University | Biotechnology for Anti-Weeds (BAW) | £1,256,654 | £904,582 |
| Project description - provided by applicants | | | |
| <p>The project aims to develop a technology for an organic natural based pesticide for use in agriculture and horticulture plus the homes and gardens market.</p> <p>The basis of this research is replacing steps in a chemical synthesis that uses a toxic metal catalyst by employing biological processes using enzymes, and to scale this up to a route workable for industrial production. The starting material is a sustainable natural oil available in large quantities at an economic price grown in third world countries. The separation of the oil into the wanted starting component uses recyclable chemicals and the by product has immediate industrial uses. The end result would be a „green“ product produced in a „green“ and sustainable way. This has wide application helping to protect the European food chain whilst contributing to the desired EU target of reducing the use of synthetic pesticides. There would be a large potential export market which the Industrial partner is well experienced to develop.</p> | | | |

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| ITM Power (Trading) Limited (lead) BPE Design and Support Limited FERA Limited University of Sheffield Waitrose Limited | Renewable Fertiliser Production to Improve Agricultural Efficiencies & Avoid Environmental Harm | £1,872,827 | £1,374,635 |
| Project description - provided by applicants | | | |
| <p>Nitrogen fertilisers provide essential nutrients for crop growth. World consumption in 2010 was 105m tonnes; in 2013 the total value was £1.6bn. The price is determined by the cost of natural gas which is linked to the price of oil. To maximise yield nitrogen fertilisers contain ammonia or urea, (made from ammonia & CO₂). Ammonia made from natural gas is responsible for 5% of global natural gas consumption (2% of world energy).</p> <p>Recent work has shown that it is feasible to produce ammonia using renewable energy, using hydrogen produced by the electrolysis of water and nitrogen captured from air.</p> <p>The project will design and build a pilot scale system on a UK farm for ammonia production and urea synthesis. By producing fertiliser at the point of use, it will be possible to decentralise fertiliser production, negating energy use to dry product for transport, reduce GHG emissions associated with production and transport, improve UK food security and provide valuable export revenues.</p> | | | |

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| KWS UK Limited (lead) Global Crop Innovations PTY Limited Indian Agricultural Research Institute University of Sydney | Hybrid Wheat for Food Security | £1,163,457 | £867,412 |
| Project description - provided by applicants | | | |
| <p>The project “Hybrid Wheat for Food Security” is an innovative wheat research and breeding project targeting food security in India and Pakistan as well as benefitting the UK wheat growers through the eventual introduction of high yielding wheat hybrids.</p> <p>Partners in India, Pakistan, Australia and UK will work together on establishing wheat hybrid testing in South Asia and UK utilising an innovative, non-GMO, non-chemically based, hybrid system. Experienced scientists in Australia will attempt to improve the hybrid system further using molecular and cytogenetic technologies. KWS, UK’s market leader for wheat, will manage and coordinate the project, with the main aim of improving the food security for millions of people in South Asia. In addition, through application of the technology to breeding programmes in the UK, the hybrid system can be rigorously scrutinised using state-of-the-art field trialling facilities, which will facilitate implementation in breeding programmes in South Asia.</p> | | | |

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| Marine Harvest (Scotland) Limited (lead) Biomar Limited Pharmaq Limited University of Stirling | Optimisation and implementation of sterile triploid salmon in Scotland | £2,036,779 | £1,252,791 |
| Project description - provided by applicants | | | |
| <p>The production and farming of triploid salmon, which are reproductively sterile, could be a highly beneficial culture option to industry to help prevent potential interbreeding between farmed escapees and wild salmon populations, thus allowing sustainable and environmentally sound aquaculture to be practiced whilst maintaining a food product of high nutritional quality and health status beneficial to the human diet. However, although triploid salmon can be easily produced, significant problems during culture have prevented the adoption of this technology within the farming sector.</p> <p>The proposed research seeks to overcome welfare concerns and production bottlenecks associated with the farming of reproductively sterile triploid Atlantic salmon in order to reduce the environmental impact and increase the sustainability of the aquaculture industry in the UK.</p> | | | |

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| Masstock Arable (UK) Limited (lead) RAGT Seeds Limited University of Nottingham Institute for Enterprise and Innovation | Exploiting novel canopy sensors for improved disease management, variety selection, and resilience in wheat | £836,133 | £626,713 |
| Project description - provided by applicants | | | |
| <p>Commercial production of wheat crops in the UK is currently highly dependent on timely applications of fungicides to optimise yield and the development of improved varieties by plant breeders with resilience to diseases and abiotic stresses. With recent advances in genetic marker technology, the bottleneck in predictive agronomy and wheat breeding is now in the ability to conduct field-based discovery and evaluation of traits (phenotyping) which are currently laborious, time consuming and inefficient.</p> <p>The project will develop canopy sensor phenomics platforms, based on chlorophyll fluorescence and hyperspectral imaging systems, which will allow a high throughput and detailed evaluation of crop performance (i.e., early detection of biotic and abiotic stress). The high-throughput canopy sensors (ground-based and aerial) will be tested as decision tools and provide a step change in the efficiency of wheat predictive agronomy and breeding and a basis for improving wheat for UK farmers.</p> | | | |

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| PlantWorks Limited (lead) Agrovista UK Limited Berry Gardens Limited East Malling Research | Use of arbuscular mycorrhizal fungi and plant growth promoting rhizobacteria in soil-less substrate strawberry production to increase resource use efficiency and fruit quality | £564,022 | £441,754 |
| Project description - provided by applicants | | | |
| <p>This proposal focuses on increasing the yield and ensuring fruit supply from substrate strawberry production. To avoid soil borne diseases, nearly 40% of strawberry production is grown in soil-less substrate under protection where nutrient and water are better controlled according to the crop requirement.</p> <p>This proposal will develop new biological products (arbuscular mycorrhizal fungi – AMF, and plant growth promoting rhizobacteria – PGPR) to amend the substrate in order to improve resource use efficiency, as one of key drivers in the delivery of sustainable intensive agriculture. The present proposal investigates whether application of AMF and PGPR products in commercial substrates will result in increased resource use efficiency, fruit quality, and tolerance to powdery mildew over different combinations of cultivars and substrate types.</p> | | | |

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| Processors and Growers Research Organisation (lead) BASF Public Limited Company Exosect Limited Oecos Rothamsted Research | Lure-and-kill technology to manage beetle pests (Sitona lineatus and Bruchus rufimanus) of field beans and peas | £765,097 | £563,216 |
| Project description - provided by applicants | | | |
| <p>This project aims to design and produce a control system for beetle pests of peas and beans, which does not use blanket sprays of insecticides. Instead, the beetles will be lured to simple devices, baited with beetle specific attractive odours, where they will be coated with spores of an insect fungal disease. When they leave the device they will spread the disease to other beetles like them. This will reduce pest beetle numbers and damage to the crops, but, unlike insecticide sprays, will not affect the environment or other beneficial and non-target insects such as pollinating bees.</p> <p>The insect fungal disease occurs naturally in the soil in the UK and does not pose a risk to other animals. The attractants used are either insect produced (a specific pheromone) or are odours produced by flowering peas and beans. The spores and the attractants will be prepared in a novel formulation that is electrostatically charged and sticks to the beetle's body and is passed on to other beetles when they meet.</p> | | | |

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| Produce World Group Limited (lead) Cranfield University | Soil-for-life Beta: Optimising Big Data to Drive Sustainable Intensification | £479,674 | £359,753 |
| Project description - provided by applicants | | | |
| <p>Soil-for-Life® (SfL) drives continuous improvements in crop production/utilisation resulting in direct increases in marketable yield and operational efficiencies. SfL is underpinned by an emerging innovative interdisciplinary field „agri-informatics“ whereby statistics and database management techniques are used to exploit knowledge held in multiple “big data” sets.</p> <p>This 3-year project will allow the in-depth analysis and exploration of this „big data“ providing scientific evidence to support sustainable intensification (SI) and maintenance of soil health at a field, farm and enterprise scale. In its current state SfL can be used to predict up to 70% of the variability of marketable yield within brassica cropping systems.</p> <p>This project will allow SfL to be rolled out as a fully functional product to the wider PW grower base encompassing a comprehensive range of rotations. It is expected that this will act as the catalyst for the wider adoption of SfL by UK growers and drive forwards SI.</p> | | | |

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| WM Morrisons Supermarkets PLC (lead) Scotland's Rural College (SRUC) | Solutions for sustainable lamb production and breeding for more taste and less waste to increase food security in the UK and beyond | £1,474,037 | £1,018,096 |
| Project description - provided by applicants | | | |
| <p>This project will measure new lamb carcass and meat quality (MQ) traits simultaneously, using non-invasive state-of-the-art technologies in live animals and in meat cuts, including computed tomography (CT) and Near Infrared spectroscopy, and use the data in a breeding programme, alongside carcass traits measured routinely in the abattoir, but not currently accessible on an individual lamb basis.</p> <p>Relationships between new CT- / NIR- and MQ traits will be investigated. A routine way to measure these traits efficiently on a large number of crossbred lambs will be developed, enabling contemporaneous selection for higher taste/healthier meat/lower waste using accurate crossbred estimated breeding values.</p> <p>The optimal way to incorporate these new traits into sheep breeding programmes will be investigated. British lamb has a 12-16% market share of red meat consumption. Improving eating quality and production efficiency of home-grown lamb will have a significant impact on the future of the industry.</p> | | | |

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| Zoetis (lead) Harbro Limited Innovent UK Limited Newcastle University RAFT Solutions Ltd | A Catalyst for Automated Capture and Analysis of Behaviour and Performance Changes in Pigs for Early Detection of Health and Welfare Problems | £1,766,941 | £1,212,780 |
| Project description - provided by applicants | | | |
| <p>Subclinical & clinical disease is the main factor responsible for pig system inefficiency & reduction in productivity and welfare. Currently disease detection is done through human observation or diagnostic surveillance, but monitoring continuously involves significant costs & effort.</p> <p>The project aims to develop & validate technology to automatically monitor performance and behaviour in growing pigs. Individual pig and group movements will be automatically captured and analysed using low cost camera installations and computer vision and learning techniques, thereby providing information about pig performance, behaviour and group dynamics so as to allow rapid intervention to improve health and welfare and increase farm efficiency.</p> <p>The consortium has skills in the design of software solutions, animal health & diagnostics, and pig management, with the academic partner being at the forefront of research in computer vision/recognition techniques and pig management & health.</p> | | | |

Results of competition: Agri-Tech Catalyst - Late stage award - Round 1

The Agri-Tech Catalyst competition is co-funded by the Technology Strategy Board, the Biotechnology and Biological Sciences Research Council and the Department for International Development.

Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.

| Participant organisation names | Project title | Proposed project costs | Proposed project grant |
|--|--|------------------------|------------------------|
| Exosect Limited (lead) Eseye Limited | Harnessing natural fungi to control insect and mite pests in grain storage | £185,514 | £92,757 |
| Project description - provided by applicants | | | |
| <p>Harnessing natural fungi to protect grain from insect pests: Customers want food products to be residue-free and grain producers want to eliminate the risk of using chemicals in controlling pest and disease infestations. Grain storage protection against insect pests is notoriously difficult.</p> <p>Exosect is developing a highly effective grain treatment using an indigenous isolate of an insect-specific fungus, <i>Beauveria bassiana</i>, (Bb) formulated with electrostatically charged wax particles. These particles help stick the fungal spores to the insect which gives the fungus time to kill the insect. The treatment is expected to achieve 90%+ control on a range of key grain insect pests. To address consumer and food producer concerns about the use of 'friendly fungi', Exosect will consult with industry experts and trade associations in order to prove that the product exceeds strict safety standards, performs to high commercial standards and is cost effective without causing any taint to food.</p> | | | |

Results of competition: Agri-Tech Catalyst - Late stage award - Round 1

Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.

| Participant organisation names | Project title | Proposed project costs | Proposed project grant |
|---|---|------------------------|------------------------|
| GrowUp Urban Farms Ltd (lead) I+S Associates Ove Arup & Partners Limited Sterner AquaTech UK Ltd | The potential for commercial implementation and operation of aquaponic urban farms. | £973,245 | £340,015 |
| Project description - provided by applicants | | | |
| <p>This project will build the UK's first aquaponic urban farm to quantify the economic and environmental potential of sustainable urban farming. Led by GrowUp - a start-up specialising in aquaponic farming - it will use aquaponics in an innovative configuration to exploit a symbiosis between waste streams of aquaculture and nutrients required for hydroponic plant growth. The consortium's expertise in aquaponics, commercial hydroponics & recirculating aquaculture will allow them to manage and investigate this relationship at scale in an urban location in London.</p> <p>The project will build a prototype to demonstrate scaled urban production, focused on optimised control of growing systems, creating an opportunity for the franchise of a UK global commercial offering in local, urban sustainable intensified agriculture. Consortium partners are GrowUp Urban Farms; I+S Associates; Sterner AquaTech and Arup, including support from the GLA, the London Borough of Newham, Siemens and Plymouth University.</p> | | | |