

Results of competition: Agri-Tech Catalyst - Early stage feasibility - round 2

Total available funding for this competition was £3.5m from Innovate UK/Department of Business, Innovation and Skills, 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
Aberystwyth University (lead) Unilever Research and Development Colworth: Hindustan Unilever Ltd	Development of pearl millet for health benefits for type-2 diabetes – feasibility study of physicochemical properties and genetic enhancement	£499,896	£412,407
Project description - provided by applicants			
<p>Pearl millet is a drought hardy and sustainable cereal with superior glycaemic control over wheat and rice. The number of (type 2) mainly non-insulin dependent diabetics in India is currently estimated at 40 million and rising while in the UK it is estimated that 5 million people will have diabetes by 2025.</p> <p>This project will explore variations in pearl millet to understand how this sustainable crop can be developed further to ultimately produce improved bread products for glycaemic control. Such variations will then be deployed in future breeding programmes to develop pearl millet cultivars that will be optimised for both agricultural sustainability and glycaemic control. These lines will be made available as both improved food crops for direct growth and consumption by smallholder farmers and also as a valuable raw material for bread products.</p>			

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
Acidophil (lead) Isomerase Therapeutics Limited	Novel macrocyclic lactone compounds for crop and livestock protection	£494,235	£370,676
Project description - provided by applicants			
<p>Worldwide, £100s of billions of crops and livestock are lost annually to pests and disease. Population growth and global improvements in standards of living mean that even more productivity must be gained from limited arable land. Unfortunately, some existing crop and livestock protection agents are losing effectiveness due to pest resistance and fewer novel agents are entering the market.</p> <p>Macrocyclic lactone compounds represent over a £1 billion annual market share, but existing products have significant shortcomings. Acidophil's innovation, to be evaluated in this early stage feasibility study, consists of combining synthetic biology and chemistry to generate novel and improved versions of these compounds addressing the shortcomings of existing products.</p>			

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Adas UK Limited (lead) University of Nottingham	Vaccination based control of fasciolosis in farmed ruminants	£379,175	£299,246
Project description - provided by applicants			
<p>Fasciola hepatica, (liver fluke) is a common pathogen of sheep, goats and cattle and the causal agent of a disease known as fasciolosis. This is the cause of serious financial losses within the agricultural sector in terms of animal production resulting from poor growth and fitness to even loss of animals.</p> <p>The control of F. hepatica has been through the use of anthelmintic drugs, however widespread drug resistance means that these are now much less effective. An alternative treatment could be vaccination which would either prevent infection or reduce worm burden in the animal, both would prevent disease transmission. No vaccine to F. hepatica has been successfully brought to market.</p> <p>This Agri-Tech catalyst project will use a range of novel in vitro and in silico strategies to identify panels of F. hepatica components for potential multi-subunit vaccine design. This could lead to the development of effective vaccines for the control of fasciolosis, improving both animal performance and health and welfare.</p>			

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Bangor University (lead) Anamolbiu (APL) Nepal Agriculture Research Council: SKUAST	KASP™ technology to improve new rice varieties and farmers' livelihoods. New rice varieties developed in DFID-funded research have been widely adopted in Nepal, India, and Bangladesh.	£319,673	£279,708
Project description - provided by applicants			
<p>Bangor University (BU) will manage this project to address the international challenge of increased rice production in selected countries across Asia for the alleviation of poverty. The project will apply KASP technology to conventional marker-assisted selection protocols that will accelerate breeding efficiencies for resistance to the two most serious diseases of rice - blast and BLB.</p> <p>LGC Genomics (UK private-sector) will develop novel KASP markers that can be exploited in marker-assisted backcrossing for disease resistance. They will be validated using mapping populations generated in a breeding programme to transfer these resistance targets to novel rice varieties (produced from 20 years of DFID funding).</p> <p>The breeding programme will be led by Anamolbiu Pvt Co. Ltd (Nepalese SME set up with some DFID assistance) supported by phenotyping and genotyping by the Nepal Agriculture Research Council (NARC). A KASP toolkit will be commercialised globally by LGC for rice breeders.</p>			

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
Berry Gardens Growers Ltd (lead) East Malling Research Meteor Communications Limited Russell IPM Limited	Feasibility of developing autonomous SmartTraps for remote monitoring Spotted Wing Drosophila in soft and stone fruit	£220,095	£190,472
Project description - provided by applicants			
<p>This project will investigate the feasibility of developing an autonomous SmartTraps system for remotely monitoring adult Spotted Wing Drosophila (SWD), an invasive fruit pest. The feasibility of rapidly and accurately identifying the near microscopic Spotted Wing Drosophila males and females by image analysis in a compact, autonomous, non-saturating trap will be determined as the key preliminary step and technological challenge.</p> <p>Other key processes that will need to be developed for a full system beyond a successful outcome of this feasibility study include between trap communications, cloud based data aggregation and analysis, and web and app-based tools to integrate summary data from traps in order to provide decision support for growers. The trap will allow much closer and more reliable monitoring of SWD, and will be a significant advancement in pest specific monitoring technology which will have wide application for numerous pests globally.</p>			

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
East Malling Research (lead) Marlow Foods Limited	Maximising mycoprotein substrate utilisation and nutrition	£388,724	£320,467
Project description - provided by applicants			
<p>The production of high quality protein with a low carbon footprint is essential to the future global food security. Mycoprotein is a healthy alternative to meat and has a lower carbon footprint than chicken production. Through this project, this will be improved still further, by reducing the dependence on a single type of sugar, utilised during the production process. Ultimately this may allow the production of mycoprotein to be carried out using other types of sugars, that the naturally occurring fungus used for the production of Quorn can utilise for production of high quality protein. This means that the production of Quorn will be less affected by price-spikes on global food markets and also will allow Quorn production to further reduce carbon emissions during production, by creating better supply chains leading up to production.</p>			

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
Hunshelf Hall Farm (lead) Digital Concepts Engineering Limited G32 Technologies Limited	IBEX2: Autonomous robot weed sprayer for less favoured areas	£254,179	£182,414
Project description - provided by applicants			
<p>IBEX2 is an extreme mobility autonomous weed spraying system. Unlike most previous agribots it operates on Less Favoured Areas of farm land, i.e. sheep and dairy, undulating and hilly farms, and bracken-covered moorland. IBEX2 is a self-driving tracked vehicle approximately 1m long, based on bomb disposal robots. Its software performs weed recognition from on-board cameras and terrain navigation using a suite of on-board range sensors coupled with prior knowledge from OS maps and satellite images.</p> <p>Software is based entirely on existing, now-standard approaches as found in commercial autonomous systems. A user group of 40 real farmers feeds back continually into the design via a series of demos and discussions. The project has no academic partners and its approach is to focus purely on producing commercial and technical feasibility studies of existing, off-the-shelf research and components as quickly and simply as possible.</p>			

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
Pangaea Agrochemicals Limited (lead) Agrosmart Limited The University of Birmingham	Overcoming glyphosate resistance	£427,311	£351,285
Project description - provided by applicants			
<p>Glyphosate resistant weeds are a critical issue for worldwide food production. Pangaea Agrochemicals together with their collaborating partners at AgroSmart and the University of Birmingham have come together to develop a piece of patented herbicide technology that addresses this problem into a commercial product. The technology relies on the use of a formulation containing micro-encapsulated glyphosate to provide a herbicide which is capable of controlling many different glyphosate resistant weed strains.</p> <p>The project is focussed around the transfer of existing micro-encapsulation technology from other sectors into agrochemicals and the subsequent development of a small pilot plant to develop the initial manufacturing process. The product of both the lab scale development and the pilot plant will be tested for efficacy at trials centres in Australia and South Africa.</p>			

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
Texel Sheep Society (lead) SRUC	Using genomic technologies to reduce mastitis in meat sheep.	£451,006	£371,505
Project description - provided by applicants			
<p>This project addresses the sustainable intensification of sheep meat through the exploration of genomic selection for disease resistance. With pure- and crossbred Texel sheep, genome-screening technology and bioinformatic procedures will be used to identify genomic regions and bloodlines of sheep that are more resistant to mastitis.</p> <p>The project will put in place the computational and data recording protocol infrastructures so that farmers can include new measures of mastitis alongside their other breeding goals (such as aspects of lamb growth and meat quality) in the future. The project will also investigate if cheaper alternatives to the new genomic technology can provide similar information without losing accuracy, to identify the more resistant animals for breeding. New methods for identifying animals with clinical or subclinical mastitis will combine farmer records with on-farm milk testing and lab test indicators of disease to determine which method is most likely to be used routinely in the future.</p>			

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
University of Edinburgh (lead) Genus Plc University of Cambridge	Engineering resistance to disease into pigs	£440,155	£362,840
Project description - provided by applicants			
<p>This project addresses food security and environmental sustainability by increasing the efficiency and decreasing the carbon footprint of pork production. Specifically, we target the significant impact of influenza virus on one of the UK core livestock industries.</p> <p>Swine influenza ranks consistently among the top 3 economic diseases affecting breeding, nursery, and finishing herds. Second among viral diseases only to PRRS, influenza is the top zoonotic viral disease of swine. Using new technology we will produce GM pigs expressing decoy RNAs to prevent replication and propagation of virus.</p> <p>The aim is to mitigate if not eliminate mortality and morbidity due to influenza infections of pigs, while additionally protecting human health by reducing the zoonotic flu pandemic potential. The strategy is based on the recent validation of a novel RNA decoy approach in chickens. This project will produce a 'prototype' study and, if successful, further method refinement required to develop a commercial product.</p>			

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University of Nottingham (lead) Cambridge Glasshouse Company Ltd Geo Green Power Limited Kevothermal Limited Micropropagation Services (E.M.) Limited TerOpta Ltd	Innovative Energy Saving and Climate Control System for Greenhouses	£498,768	£436,076
Project description - provided by applicants			
<p>The project main aim is to provide a sustainable solution to the inherent problems of the greenhouse protected cropping industry through proposing a low-cost energy saving and climate control system. The project presents an innovative integrated approach to enhance the energetic performance of greenhouses and improve the yield of various protected crops through employing a seasonal underground thermal energy store with an innovative vacuum insulation panels in addition to utilizing heat insulation solar glass as the greenhouse glazing, natural ventilation windcatchers and innovative LED lights.</p> <p>The proposed solution enhances the glasshouse indoor conditions, improves the productivity and reduces the reliance on conventional fuels to provide energy needs and thus reducing the carbon emissions and the high running costs. Successful project implementation will benefit the whole community including the protected cropping growers and industry, the customers and the UK economy.</p>			

Results of competition: Agri-Tech Catalyst - Industrial research awards - round 2

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
Agroceutical Products (lead) Aberystwyth University Harper Adams University	Yellow Gold: Innovative systems for sustainable daffodil-derived galanthamine production in the uplands.	£1,339,791	£1,071,682
Project description - provided by applicants			
<p>Galantamine is a pharmaceutical product that had been an approved Alzheimer's Disease treatment since 1998. Galantamine can be synthesised chemically but it is a difficult and expensive process. Producing galantamine from galanthamine extracted from plants is more cost effective, but supplies are limited. Daffodils are an economically feasible plant source for cultivation in the UK, and growing daffodils in upland areas triggers a 50% higher yield of galanthamine.</p> <p>This proposal will deliver a new approach for producing galanthamine based on integrating daffodil growing into existing upland pasture. This will increase the economic sustainability of hill farming by providing farmers with a high value crop while maintaining traditional farming systems in the upland areas. The project will develop the required machinery, quantify the yield of galanthamine achievable, and assess the impact on sheep performance of incorporating daffodil production into grazed pastures.</p>			

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Arch UK Biocides Limited (lead) I2LRESEARCH LTD Food and Environment Research Agency (FERA) University Of Durham	Next generation biopesticides for environmentally benign control of crop pests	£953,452	£677,400
Project description - provided by applicants			
<p>The aim of this project is to translate innovative research into commercial products for the control of UK and European crop pests. The academic partners have developed a platform (fusion protein technology) that converts naturally occurring spider venom peptides into orally effective pesticides.</p> <p>Venom peptides, known to be harmless to mammals, are linked to a 'carrier' protein, when the resultant fusion protein is ingested by invertebrates the carrier protein transports the attached spider toxin across the gut and into the circulatory system where it can access its target site of action in the central nervous system.</p> <p>The project will produce fusion proteins on a commercial scale by fermentation of genetically engineered yeast. This approach can be used to generate a new class of environmentally friendly pesticides that are harmless to non-target organisms such as bees. Our initial programme will develop formulations targeting slugs and beetle pests of wheat and oil seed rape.</p>			

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Berry Gardens Growers Ltd (lead) Delta-T Devices Limited Eden Irrigation Consultancy Ltd East Malling Research Weatherquest Ltd	Developing a decision support system to improve crop management, yield forecasting and resource use efficiency in UK soft fruit production	£772,109	£556,425
Project description - provided by applicants			
<p>The UK soft fruit industry has invested heavily in new technologies and marketable yields have increased 3-fold in recent years, but further increases are possible if crop agronomy is optimised. However, 33% of all harvested fruit is wasted each year, due to disorders such as rots, bruising and a poor shelf-life that are exacerbated in changeable weather.</p> <p>A 30% reduction in soft fruit waste would stem UK imports and generate extra income for growers. To achieve this, we will develop a Decision Support System that will enable growers to improve decision making and reduce the impact of changeable weather on crop yield and quality.</p> <p>Growers, retailers and consumers will benefit from more accurate yield forecasts leading to better pricing, greater resource use efficiency leading to cost savings and improved environmental performance, lower waste during production leading to increased tonnage to sell, improved consistency of supply of high quality fresh fruit with an assured shelf-life leading to reduced wastage in store.</p>			

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
Dunbia (Wales) (lead) Gildea Photonics Limited Sainsbury's Supermarkets Limited	Imaging systems and the development of a new lamb carcass grading system	£891,187	£470,573
Project description - provided by applicants			
<p>The current proposal aims to develop a new system for assessment of lamb carcasses that will objectively and more accurately quantify carcass classification and composition. Furthermore, the project aims to develop an alternative pricing model that more closely reflects the retail value of lamb. This system will be based on Imaging technology and will facilitate a more targeted approach to lamb production and has the potential to drive new breeding strategies to deliver carcasses that more accurately meet retailer specification and consumer demand.</p>			

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
<p>Lucozade Ribena Suntory Limited (lead) ABB Marketing Limited Agrovista UK Limited AHDB Potato Council East Malling Research Michael H Keene & Son Limited Pixley Berries (Juice) Limited The Asplins Producer Organisation Limited The James Hutton Institute Yara UK Limited</p>	<p>Winter chilling in blackcurrants: adapting to climate change, through new technologies for improved dormancy release</p>	<p>£890,055</p>	<p>£681,694</p>
<p>Project description - provided by applicants</p>			
<p>This project addresses the effects of climate change in the UK on blackcurrant production, where the trend towards warmer winters has adversely affected dormancy break and subsequent crop yields and quality, substantially reducing profitability. The use of existing dormancy-breaking treatments, developed for other perennial crops, will be assessed for their efficacy in blackcurrant, their use optimised, and their mode of action evaluated. Best practice guidelines for growers will be developed. Additionally, models predicting responses to the chilling environment for different varieties will be established, and this information will be used to direct the use of dormancy-breaking treatments to improve yield and quality.</p>			

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
M & W Mack Limited (lead) East Malling Research East Malling Services Limited Fruit Advisory Services Team LLP Norton Folgate Marketing Ltd Sainsburys Limited Total Worldfresh Limited	Sustainable Intensification of UK plum production.	£1,395,956	£1,081,373
Project description - provided by applicants			
<p>The food retail industry is experiencing increasing demand from consumers for UK grown fresh produce and would like to substitute imports with home produce. The demand for home grown plums cannot currently be met due to unreliable and inefficient cropping systems. This collaborative project will develop integrated new technologies that will address the major existing production problems and limitations for fresh plums. The sustainable intensification of this horticultural crop will be achieved through integration of a high-density growing system with new rootstocks, varieties and manipulation of tree architecture for increased yield, coupled with protected cropping regimes and component technologies that will regulate crop load, fruit ripening and give significant season extension. This intensive and profitable growing system will enable UK growers to confidently invest in plum production, delivering substantial economic impact (>£10 m/yr) to the UK horticulture industry.</p>			

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
Mylnfield Research Services (lead) AHDB Castleton Fruit Ltd Delta T James Hutton Institute M&S plc S&A Group Holdings Ltd SoilEssentials Thomas Thomson Ltd	Improving yield stability in UK blueberry production	£1,494,755	£941,615
Project description - provided by applicants			
<p>Yield instability negatively impacts UK soft fruit growers, preventing accurate profit prediction and maximisation, causing volatility of UK supply. The problem is now well recognised within industry, though the causes of significant season to season yield variation are unknown. This proposal aims to identify the physiological and biochemical processes underlying yield limitations, thereby identifying causes of the yield volatility phenotype. An examination of the impact of growing environment and management practices on yield will be undertaken to allow development of predictive yield maps & models that provide frameworks for yield optimisation in the short to medium term.</p> <p>This knowledge of available tools to assist management will be transferred to growers and also used to develop molecular markers for yield stability allowing long-term solutions to the problem, thereby future proofing the UK soft fruit industry, particularly blueberry crops with application to other fruit crops.</p>			

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
<p>North Bank Growers Limited (lead) Adas UK Limited Finlay Flowers UK Limited May Barn Horticultural Consultancy Limited Nutricycle Limited Suncrop Produce Limited Stubbins Limited University of Nottingham Waitrose Limited Wight Salads Group Limited</p>	<p>Targeted supply chain ethylene removal to control the development of fresh produce</p>	<p>£2,258,468</p>	<p>£1,126,715</p>
<p>Project description - provided by applicants</p>			
<p>Fresh tomatoes and peppers are high value crops and are an important part of a healthy human diet. These products are highly perishable and are subject to peaks and troughs in production. Low temperatures are currently used to extend shelf life, but the shelf life is short and energy costs are high. As a result, the supply chain for such products remains unacceptable wasteful.</p> <p>A plant hormone, ethylene, is key to the ripening process, the production of which can be minimised by the use of chemicals. Chemical application however remains a barrier to consumer acceptance; the project will develop the use of an innovative non-chemical non-contact technique which safely removes ethylene from the air around fresh produce. Commercial scale trials and laboratory investigations will be conducted to establish when and how to safely suspend ripening within the supply chain to deliver safe, high quality nutritious fresh UK produced food to the consumer.</p>			

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
PepsiCo International Limited (lead) Cranfield University	Implementing novel, cost effective alternatives to CIPC for sustainable potato storage	£1,137,252	£833,530
Project description - provided by applicants			
<p>Long-term storage of potato tubers is essential for year round supply. Maintaining sprout suppression and low reducing sugars during storage of processing potatoes is paramount for supply quality and minimising the formation of acrylamide; key priorities for the processing industry.</p> <p>Potato storage is still heavily reliant on the chemical chlorpropham (CIPC) to manage sprouting but further restrictions are coming into force. The proposed work will build upon recent research and develop novel, cost effective, benign, physiologically-targeted storage interventions which will suppress sprouting and maintain low sugars. This offers a route to incremental reduction in and ultimately the elimination of CIPC within the UK and beyond.</p>			

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
PepsiCo International Limited (lead) Aberystwyth University James Hutton Institute Mylnefield Research Services Limited NIAB URSULA Agriculture Limited	Optimising oat yield and quality to deliver sustainable production and economic impact (Opti-Oat)	£1,872,072	£1,313,802
Project description - provided by applicants			
<p>This project will provide UK oat producers with world leading agronomic ‘tools’ to maximise grower returns and capitalise on the increasing demand for food grade oats. The objectives are</p> <ol style="list-style-type: none"> 1) Develop and validate algorithms for translating visual / spectral sensor data from Unmanned Aircraft Systems (UAS) into quantifiable crop parameters to enable growers to optimise management for yield and quality across fields; 2) develop an Oat Crop Model and associated decision support tools; 3) develop an Oat Growth Guide which will provide a reference to assess crops status against key development bench-marks. <p>Focused dissemination of these innovative tools will increase average yields by at least 1t/ha (equivalent to a ~£15M uplift p.a. in output from the existing oat land base), contribute to sustainable intensification, reduce supply risk for millers, reduce imports, catalyse product innovation & consumer access to healthy grains and stimulate milled product export.</p>			

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
Silent Herdsman Ltd (lead) Gilden Photonics Ltd Harbro Ltd Richard Keenan and Company SRUC University of Strathclyde Wm Morrisons Supermarkets PLC	PrecisionBeef	£1,346,685	£1,001,282
Project description - provided by applicants			
<p>The goals of the project are:</p> <p>(i) to develop animal-mounted sensor systems that capture beef cattle feeding behaviour patterns and integrate this information with a feeding system that accurately estimates feed intake at the individual animal level and</p> <p>(ii) to develop techniques for monitoring, in a commercial environment, the performance efficiency of individual animals. The aim is to integrate both input (feed) and output (growth/yield) measurements at the individual animal level, allowing beef farmers to make appropriate management decisions to improve the overall efficiency of beef production.</p> <p>The decision support platform will inform the livestock producer of the correct and balanced amounts of nutrients to be administered to individual beef animals in order to maximise production and profitability.</p>			

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
Soilessential Limited (lead) GRIMME (U.K.) Limited McCain Food (GB) Limited Newcastle University The James Hutton Institute	TuberZone – Development of an innovative spatial crop model and decision support system for improved potato agronomy	£1,099,919	£690,320
Project description - provided by applicants			
<p>The potato industry has witnessed a 10-year long yield stagnation; coupled with increasingly stringent demands on potato quality, there is a compelling need for farmers to increase marketable yield.</p> <p>This project aims to develop an innovative spatial crop model & integrated decision support system for improved variable rate seed planting, fertiliser use & irrigation scheduling to increase productivity of the potato value chain. Converging the multi-disciplinary expertise of Soil Essentials (SE), Newcastle University (NU), Mylnefield Research Services (MRS), Grimme (GR), & McCain (MC), we will build upon the MAPP point model (Management Advisory Package for Potatoes) by taking a holistic approach & considering the spatial variability of tuber size distribution to inform a new & improved adaptive spatial meta-model.</p> <p>The resulting spatial decision support system is cross-sectorial & has the potential to transform in-field decision-making, not just for potato farming but also for other root & arable crops.</p>			

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
Yorkshire Dairy Goats (lead) SRUC	Exploitation of genomic technologies for sustainable intensification of dairy goats	£823,657	£599,831
Project description - provided by applicants			
<p>This project addresses key challenges facing the sustainable intensification of dairy goat milk production by using new genetic and genomic technologies to improve the efficiency of milk production and continuity of supply.</p> <p>This project will identify sires with daughters that readily breed out of season and generate genomic predictions of merit for this trait. The exploitation of such ability by the wider commercial goat industry in the UK and abroad will be enabled via genomic predictions for this and a range of other key traits via the development of a low density (LD), lower cost customised single nucleotide polymorphism (SNP) array for UK goats. This allows the imputation from LD to the higher density SNP arrays and a greater proportion of the outer herd nucleus to be genotyped, thereby creating greater uptake and impact to a the wider UK goat population and beyond.</p>			

Results of competition: Agri-Tech Catalyst - Late stage - round 2

Total available funding for this competition was £0.39m from Innovate UK/Department of Business, Innovation and Skills, the Department for International Development.

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
Grove Smith Turkeys Ltd (lead) Anglia Autoflow Limited	The design and prototyping of a controlled atmosphere stunning system for farm based poultry producers and processors	£581,770	£203,620
Project description - provided by applicants			
<p>The aim of this project is to develop a process of slaughtering poultry species by using gas stunning in a controlled atmosphere. This will achieve higher welfare standards by ensuring birds are subjected to minimal handling and stress prior to killing, whereby they simply lose consciousness and become insensitive to pain.</p> <p>The design of this equipment will ensure it is suitable for and can be afforded by smaller farm based producer - processors .In addition to the higher welfare standards this proposed system will achieve there are very positive benefits in the quality of meat produced due to the lower stress levels to which birds are subject to.</p>			

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
<p>Russell IPM Limited (lead) ACI Formulations Limited, Bangladesh Association of Mango growers Tanzania Bangladesh Agricultural Research Institute (BARI) Bytrade Tanzania Ltd CEAPRED, (NGO, Nepal) Dahal Trading Concern, Nepal; Elgon Kenya Ltd EPRC, (NGO, Bangladesh) ICIFE, Kenya National Agriculture Research Council (NARC) Nepal</p>	<p>Demonstration and commercialization of biorational pheromone based male and female attract and kill system for the successful control of fruit flies in Asia and Africa.</p>	<p>£341,729</p>	<p>£185,948</p>
<p>Project description - provided by applicants</p>			
<p>Damage caused by fruit flies is a huge problem, both in the developed and developing world. The insects lay eggs in soft fruit and vegetables which means the food rots and cannot be harvested. Fruit flies cannot be controlled effectively by insecticides because farmers in developing countries cannot afford to buy them and in addition, the fruit flies have become resistant so that the chemicals do not work.</p> <p>An increase in the productivity of soft fruit and vegetables is a vital part of the development of these countries as it will allow farmers to grow and harvest more produce for their own use and to sell to the lucrative overseas markets. Russell IPM has developed a highly effective and safe biological system for controlling fruit flies which utilises food and sexual attractants to lure the insects into traps. This project will test and promote this technology in Africa and Asia.</p>			