

# Innovate UK

**Results of Competition: Open Round 3 - 24 to 36 Months**

**Competition Code: 1706\_EE\_OPEN\_R3\_36M**

**Total available funding is £15M across all streams**

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

<b>Participant organisation names</b>	<b>Project title</b>	<b>Proposed project costs</b>	<b>Proposed project grant</b>
<b>APS BIOCONTROL LIMITED</b>	Combined Biocontrol for Economically-Important Diseases of Mushrooms	£382,362	£267,653
MONAGHAN MUSHROOMS LIMITED		£470,000	£235,000

### **Project description - provided by applicants**

Mushrooms are the third largest vegetable category behind potatoes and tomatoes and are growing in popularity due to consumers increasingly recognising the health benefits of mushrooms. The UK industry is growing annually at 3%, yet it is highly challenged from both economic and biological pressures. The UK mushroom market is facing fierce competition from EU growers and rising operating costs; imports now make up 55% of the UK marketed total. One of the major concerns of the industry and limitations to productivity is wastage due to disease, which is responsible for production losses as high as 10%, representing several hundred million dollars of lost revenue globally. For the UK industry, these losses are in the region of £20M p.a. There are five main mushroom disease organisms; one caused by bacteria, for which there is no effective control and four fungal pathogens; these are partly controlled by a chemical fungicide but its lifetime is limited by increasing resistance to it and health and safety concerns. It is likely to be withdrawn by the EU by the end of 2017, with no replacement. Chemical control products are also being challenged by EU policy to reduce the impact of pesticide use, industry pressure to address health and safety issues with their workers and a growing consumer need for chemical residue-free food. The development of non-chemical disease control is critical in order for the UK mushroom industry to remain sustainable against import competition and to ensure long-term food security. This project would develop an innovative co-formulation of two naturally-occurring biological agents, isolated from mushroom material itself and having specific inhibitory activity against the key bacterial and fungal mushroom diseases. The mushroom industry has limited opportunity to apply control products, which usually require water for delivery; irrigation is limited to the first few days of cultivation and in between mushroom flushes or harvests (3 per commercial mushroom cultivation cycle). Hence, a single product to target all of the economically-important diseases would be extremely attractive to growers, in addition to the potential benefits of decreased wastage, energy savings, increased yield and the opportunity to extend their market share. This project will be carried out by an industry partnership representing a major player in the UK mushroom industry and an SME developing biocontrol technologies. It will assess the compatibility of the two innovations, their efficacy in farm-scale trials, together with the formulation and integration into commercial practice.

**Note: you can see all Innovate UK-funded projects here**

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<b>UNILEVER U.K. CENTRAL RESOURCES LIMITED</b>	A novel biomanufacturing platform to accelerate and to increase industrial use of cold-active enzymes	£199,500	£99,750
Imperial College London		£99,405	£99,405
INGENZA LIMITED		£500,285	£350,200
University of Edinburgh		£200,000	£200,000
<b>Project description - provided by applicants</b>			
<p>Bio-inspired processes will have a major impact on the challenges of the global society in 21st century, including those associated with environmental sustainability. The employment of biocatalysts in industrial processes is expected to boost a sustainable production of chemicals, materials and fuels from renewable resources. The scope of this proposal is to encourage and translate academic research and its outcome into a novel industrially usable platform for the sustainable production of scientifically improved biomaterials by exploiting new analytical and biotechnological technologies. Molecular Biology and enzyme technology together with NMR analytics will provide disruptive innovation and lead to the development of unique new and sustainable products. Amongst the broad spectrum of potential applications for this new biomaterial, we will successfully demonstrate the cost-efficient and industrially compatible production of this new biomaterial using novel biomanufacturing technology and its benefits in reducing the environmental and economic costs of laundry. By applying analytical NMR to the novel biomaterial, its structural conformity can be verified, serving as a technical tool to potentially accelerate design and creation of cold-cleaning HPC relevant product formulations.</p>			

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