| Project Code: | Project Name: | Use of GMO | Question 1 | | Question 2 | | Question 3 | Question 4 | Question 5 |
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| | | | Funders/Stakeholders | Breakdown | Start Date | End Date | Initator of Project | Estimated Return on income | Expected Benefits |
| 15795 | AI on hooves | Future - Limited Release | Ministry of Business Innovation & Employment | $ 1,150,000 | 01/10/2017 | 31/05/2021 | AgResearch | The original estimate for the project was for approximately $10m pa national benefit with adoption of the outcomes of the project (short tail easy care trait) in the national sheep herd. | Pathways to market, where release of rams with the trait developed from the project permitted, would be expected through providing access to those rams to stud breeders. End users would be expected to be farmers who would access the rams for genetic improvement of their flocks. |
| | Total Revenue: | | | $ 1,150,000 | | | | | |
| 50217 | Science Prize Plant Biotech | Research Tool | SSIF | $ 260,000 | 01/09/2017 | 30/09/2019 | AgResearch | No analysis has been completed for this project | HME technology raises metabolisable energy via accumulation of lipid in the leaf. It also simultaneously elevates photosynthesis. This work established the tools used in elucidating the cellular mechanism(s) underlying elevated photosynthesis. |
| | Total Revenue: | | | $ 260,000 | | | | | |
| 14520x03 | MBIE Fermented Foods Obj 3 Tastant Detection | Research Tool | Ministry of Business Innovation & Employment | $ 1,830,000 | 01/10/2017 | 31/12/2022 | AgResearch | At commencement of the project, estimated net export revenue gain, if the outcomes from the project are taken to market, was up to NZ$189m per annum by 10 years post completion of the programme. | The ultimate goal of the research programme this forms part of is to provide next generation fermented food products for export markets, through uptake of new knowledge and technology outputs from the programme. |
| | Total Revenue: | | | $ 1,830,000 | | | | | |
| 294056x03 | NGB Production and Formulation | Research Tool | Ministry of Business Innovation & Employment | $ 520,000 | 01/07/2016 | 31/12/2019 | AgResearch | No analysis has been completed for this project | This project is part of a wider programme of work to develop new generation microbial biopesticides to that might replace synthetic products. The ultimate goal is to create biopesticides for mainstream agriculture that will result in more high quality, chemical residue-free whole foods and ingredient exports. |
| | Total Revenue: | | | $ 520,000 | | | | | |
| PRJ0044654 | Insect active nano-machines | Research Tool | Ministry of Business Innovation & Employment | $ 1,000,000 | 01/10/2018 | 30/06/2022 | AgResearch | No analysis has been completed for this project | This fundamental research project may support future alternatives to chemical insecticides. The knowledge outcomes are being used to support an ACVM regulatory package. |
| | Total Revenue: | | | $ 1,000,000 | | | | | |
| PRJ0110180 | Epichloë Endophytes for the Future Farm | Future - Full Release | SSIF | $ 7,420,000 | 01/07/2019 | 30/06/2023 | AgResearch | After adoption, a new endophyte strain may yield approximately $300m per annum value to the New Zealand economy | Epichloë endophyte technology is a critical component of New Zealand pasture based production systems due to and abiotic advantages conferred to the host grass. Research will develop next generation Epichloe-forage grasses to mitigate emerging pressures such as greenhouse gas emissions, climate change, increased insect pressures and resource limitations. |
| | Total Revenue: | | | $ 7,420,000 | | | | | |
| PRJ0119461 | Improving resource efficiency using gene edited endophytes | Future - Full Release | Grasslanz Technology Limited | $ 6,110,000 | 01/07/2019 | 30/06/2026 | Grasslanz Technology | Direct value-add from new endophyte sales, if adopted, have an estimated marginal benefit to sellers of $118m after 20 years post-completion of the programme | Endophyte strains expressing new pesticidal compounds without affecting mammals can be introduced to further lift resource use efficiency, reduce environmental impacts, and provide health benefits to grazing livedtock. In the future, development of this platform will enable new beneficial traits to be conferred to forage grasses using endophytes as the delivery system. |
| | | | Ministry of Business Innovation & Employment | $ 4,090,000 | | | | | |
| | Total Revenue: | | | $ 10,200,000 | | | | | |

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| PRJ0126332 | Food Integrity Food Omics | Research Tool | Kiwi Innovation Network Limited | $ | 10,000 | 01/07/2019 | 28/06/2024 | AgResearch | No analysis has been completed for this project | The project aims to develop an assay to detect food borne pathogens using advanced technologies, such as in dairy and poultry. The technology may assist industry to respond to reduce contamination in the food chain. |
| | | | SSIF | $ | 1,710,000 | | | | | |
| | Total Revenue: | | | $ | 1,720,000 | | | | | |
| PRJ0133302 | High-value New Zealand pigs for transplantable biomaterial | Future - Limited Release | Ministry of Business Innovation & Employment | $ | 1,000,000 | 01/10/2019 | 30/09/2023 | AgResearch | At commencement of the project, NPV of estimated benefit to NZ at 10 years post adoption of the research outcomes was $86M | The ultimate goal of the research is to support the development of gene-editted pigs for harvesting of immune-compatible biomaterials for humans, principally kidneys. The technology would be applied domestically through Nzeno. |
| | | | NZeno Limited | $ | 35,000 | | | | | |
| | Total Revenue: | | | $ | 1,035,000 | | | | | |
| PRJ0133413 | Rapidly evolving climate-smart dairy cattle | Future - Full Release | CRV Ambreed NZ Ltd | $ | 250,000 | 01/10/2019 | 30/06/2025 | AgResearch | Directly introgressing two natural heat tolerance variants will return an estimated total (real) net present value (NPV) by 2034 of $200M, if the technology is adopted. Independent of regulatory approval, improved capture of unedited elite embryo genotypes has an NPV of $240M. | Proven impact of sequence variants will increase accuracy of genomic selection in New Zealand. Improved production efficiencies of the New Zealand dairy herd with improved genetics. |
| | | | Livestock Improvement Corporation Ltd | $ | 250,000 | | | | | |
| | | | Ministry of Business Innovation & Employment | $ | 10,000,000 | | | | | |
| | Total Revenue: | | | $ | 10,500,000 | | | | | |
| PRJ0140317 | MFAT CRB-G Biocontrol | Research Tool | Ministry of Foreign Affairs & Trade (MFAT) | $ | 11,450,000 | 01/11/2019 | 30/06/2025 | Partner | No analysis has been completed for this project | This programme is for AgResearch to implement a component of the Pacific Response to Coconut Rhinoceros Beetle under the New Zealand Aid Programme and is principally for the benefit of partner countries in the Pacific. The goals of the programme are to limit the spread of CRB, reduce existing populations to lessen impact on coconut and oil palm industries, develop long term solutions to CRB management through biocontrol and integrated pest management, and enhance regional capacity in pest detection and response managment. |
| | Total Revenue: | | | $ | 11,450,000 | | | | | |
| PRJ0187198 | Condensed tannins in white clover | Future - Full Release | Grasslanz Technology Limited | $ | 700,000 | 01/01/2020 | 30/06/2023 | AgResearch | Analysis has suggested that the return to the IP owner, if the white clover is commercialised and released in NZ, would be in the region of $1.44 per kg of seed sold in NZ, with slightly differing royalty rates applicable if the clover is released in other countries. | If successful and the outcomes adopted in the New Zealand market, this project has the potential to significantly increase economic net revenue to New Zealand farmers as well as improve environmental challenges facing the farming industry by: •reducing the $100M/year loss due to bloat<br>•increase milk yield and wool growth by up to 10%<br>•increasing ovulation rate and reduce parasitic load<br>•enhancing N use efficiency by up to 60%<br>•mitigating energy loss by as much as 5%<br>•increasing live weight gain by up to 30%<br>•reducing the emission of GHGs by 5-10% |
| | Total Revenue: | | | $ | 700,000 | | | | | |
| PRJ0239347 | Generating non-heading ryegrass - University of Otago subc | Future - Full Release | University Of Otago | $ | 200,000 | 01/07/2020 | 30/09/2022 | Partner | Non-heading ryegrass cultivars are predicted to provide an average profit increase for dairy farmers of $650 to $1,000 per hectare per annum | In late spring, ryegrass undergoes heading (flowering), which causes a significant drop in metabolizable energy from pasture. The goal of the programme is to develop non-heading ryegrass, that will maintain high levels of metabolizable energy through summer and autumn, principally for the benefit of the New Zealand farmer. |
| | Total Revenue: | | | $ | 200,000 | | | | | |

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| PRJ0279788 | Rhizobium technology | Research Tool | Kiwi Innovation Network Limited | $ | 104,000 | 09/11/2020 | 30/06/2023 | AgResearch | No analysis has been completed for this project | Provision of more effective rhizobium isolates and improved delivery systems will stimulate farmers to reduce N fertiliser input while still maintain the pasture production. This technology has possible environmental benefits, through directly reducing cost to make fertilisers and reducing potential run off from fertiliser application. Biological N fixation is the most sustainbale N source and 100% useage by legume plants. |
| | | | KIWINET | $ | 33,000 | | | | | |
| | | | PreSeed (AgResearch Internal Fund) | $ | 263,000 | | | | | |
| | Total Revenue: | | | $ | 400,000 | | | | | |
| PRJ0361322 | Gibberellins in HiCT white clover | Future - Full Release | Grasslanz Technology Limited | $ | 275,000 | 02/05/2021 | 30/06/2024 | AgResearch | See PRJ0187198 above | See PRJ0187198 above |
| | Total Revenue: | | | $ | 275,000 | | | | | |
| PRJ0376852 | Quality control - Mycorhiza product from Grasslanz | Research Tool | Grasslanz Technology Limited | $ | 12,000 | 01/07/2021 | 31/03/2022 | Partner | No analysis has been completed for this project | This was commercial fee for service QC testing for Grasslanz Technology. Mycorizha enhance nutrient and water uptake in host plants. |
| | Total Revenue: | | | $ | 12,000 | | | | | |