

20+ Research projects completed in 5 years!!

Category	Project Title	Timeline	Project details	Project Objective/Outcome
	Projects researched at SDH			
Multi-year Farm System Evaluations	4 Year farm system comparison Kale vs Fodder beet Reducing nitrate leaching by 30%	2018-2022	Funding: DairyNZ Lead: DairyNZ Key person: Dawn Dalley	To understand the impact of winter crop choice on environmental loss risk, animal performance and farm profitability Investigating the impact of nitrogen inputs on; environmental outcomes including GHG, animal performance, people, and farm profitability
	3 Year farm system comparison Off Paddock Infrastructure vs paddock-based wintering Reducing nitrate leaching by 30% with improved profitability	2022-2025	Funding: DairyNZ Lead: DairyNZ Key person: Dawn Dalley/Pierre Beukes	To understand the impact of wintering with; crop, baleage or infrastructure, on environmental loss risk, animal performance and farm profitability Investigating the impact of nitrogen inputs on; environmental outcomes including GHG, animal performance, people, and farm profitability
	SFF Participatory Research	2018-2022	Funding: MPI/DairyNZ/SIDE Lead: DairyNZ Key person: Dawn Dalley	This project will deliver a network of four satellite farms, with associated Communities of Practice (CoP), which are 'research-ready' with demonstrated confidence, capability, and capacity to adopt new farm practices for lower environmental footprint and strong community wellbeing
Impacts of winter crops on animals and performance	SFF Making fodder beet sustainable	2018-2022	Funding: MPI/DairyNZ/PGGW Seeds Lead: DairyNZ Key person: Roshean Woods	To bring new confidence to FB feeding through mitigating against known risks by: (1) understanding macro nutrient interactions in FB feeding systems, (2) developing decision-support tools to identify when animal health issues may occur, and (3) implementing tools for supplementary feeding strategies.
	Effect of crop type on calf traits	2018-2023	Funding: DairyNZ Lead: DairyNZ Key person: Dawn Dalley	(1) Investigate the relationship between dam winter diet, calf mineral status and on-going growth characteristics (2) Investigate the cumulative effects of winter crop choice on animal performance and welfare
	Crop type & allocation effects on behaviour & lactation performance	2017-2018	Funding: DairyNZ Lead: DairyNZ Key person: Dawn Dalley	(1) To compare BCS gain, nutrient intake, and early lactation milk production of groups of cows offered two feeding levels of winter diets differing in crop type (FB and kale) (2) To establish any effects of winter crop type (FB and kale) on the animal health status, as indicated by blood metabolites and behaviour of mixed-age dairy cows
	Crop type & R1 feeding behaviour	2019	Funding: DairyNZ Lead: DairyNZ Key person: Paige Harris	To compare the growth of rising-one-year-old dairy heifers grazing either kale or FB from May until August and determine if crop type affected grazing behaviour and rumination.
Wintering, Environmental and Animal studies	Nitrate leaching from winter forage crops	2018-2021	Funding: DairyNZ Lead: AgResearch Key person: Ross Monaghan	To measure N leaching losses from autumn & winter grazed fodder beet, winter grazed kale and selected pasture paddocks to determine and compare the farm system comparison losses of N
	Crop Establishment for better wintering outcomes	2021	Funding: Thriving Southland Lead: SDH Key person: Louise Cook	Investigate whether utilising strip tillage or direct drilling to establish fodder beet crops and direct drill to establish kale crops maintains soil structure and strength, thereby reducing the occurrence of pugging and improving animal welfare during winter grazing, compared to conventional cultivation
	Weather & soil effects on animal behaviour	2020	Funding: DairyNZ/AgResearch Lead: AgResearch Key person: Dawn Dalley	To determine how weather and paddock conditions affect the lying behavior of dairy cows managed outdoors in crop paddocks during winter

Pasture	Forage value index validation	2017-2021	Funding: MBIE/DairyNZ Lead: DairyNZ Key person: Wendy Griffiths	To determine the performance of low and high value FVI cultivars under two nitrogen fertiliser regimes in Southland
Nutrient loss to water studies	Linear lysimeter for nitrate leaching	2019-2022	Funding: MBIE, via AgResearch SSIF funding Lead: AgResearch Key person: Ross Monaghan	To compare N leaching loss estimates from a prototype linear lysimeter that measures drainage and estimates N concentrations in real time to those estimated from a water balance model and suction cup sampling of field leachates.
	Drain discharge mitigation options	2020	Funding: AgResearch Lead: AgResearch Key person: Ross Monaghan	To investigate diversion or mitigation strategies to minimise contaminants entering the stream at the foot of the terrace at SDH.
	Mapping the tile drain and streams at SDH	2017-2019	Funding: AgResearch/DairyNZ Lead: AgResearch Key person: Ross Monaghan	Monitoring of the stream at the foot of the terrace to determine whether it would be a useful catchment to measure the environmental impact of the conversion to dairy.
Projects hosted at SDH for other Researchers				
Plot trials we host	Catch crops for cleaner water	2020-2023	Funding: SLMACC Lead: Plant and Food Key person: Brendon Malcolm	Lysimeter trial measuring leachate nutrients under plots with varied sowing methods and dates of agricultural catch crops
	Plantain Plot Trial	2022-2024	Funding: SFFF Lead: DairyNZ Key person: Kate Fransen	Plot trial comparing plantain cultivars for plant characteristics that support reduced nitrate leaching.
Other projects supported by data or samples from SDH				
Information Technology projects	Connected farm NZBIDA	2019-2020	Funding: MBIE Lead: AgResearch Key person: Mark Shepherd	Generate new insights and new research opportunities from a digitally enabled, data rich research farm to improve the performance of existing dairy farms in the southern South Island
	Makarewa Catchment Group Land Scanning	2022-2023	Funding: Thriving Southland Lead: Makarewa -Hedgehope Catchment	
	LIC Space	2018-2022	Lead: LIC Key person: Lorna McNaughton	Testing of algorithms for accurate satellite estimation of pasture cover
Animal investigation	Evaluation of Smaxtec rumen boli	2020-2023	Funding: Fonterra Lead: DairyNZ Key person: Paul Edwards	Determination of the extent of heat stress in dairy cows at SDH and monitoring of water intake during lactation and the dry period.
	Vet South Tail scoring	2022-2023	Funding: Lead: Vet South Key person:	Welfare project collecting additional data alongside tail scores
Milk composition	Milk molecule phenotyping	2019	Funding: AgResearch Lead: AgResearch Key person: Cameron Craige	Detailed scientific characterisation of the effect of farm system choice on milk composition
	Feed impact on milk composition	2017-2019	Lead: Fonterra	
Blood analysis	Blood indicators of stress	2020	Lead: AgResearch Key person: Heather Neave	Assessing blood telomeres as indicators of cow welfare
	MPI Blood collection	2020	Funding: MPI Lead: SDH	Providing blood samples for use in evaluating new testing methods for M.Bovis