Dairy Distillation Grants

Projects aim to find environmentally friendly, cost-effective solutions for turning dairy waste into marketable by-products

Funding awarded: $3,880,000

Project timeframe: June 2018-June 2019

Goals:

- Evaluate innovative technology that will turn manure into nontoxic by-products that can be used on-farm or sold to other markets.
- All technology should be cost-effective for dairies of various size to use.

Grant recipients and project summaries:

**Coldstream Farms and Regenis / Flocculation and Membrane System for Treatment of Dairy Manure to Produce Fertilizer Concentrates and Dischargeable Clean Water**

Partners will install and test operation of a combined fine solids separator and clean water membrane system. Co-products from manure treatment will be a nutrient-rich solid, a liquid ammonia/potassium concentrate, and dischargeable clean water as a potential new water right.

Since the award of this grant, Coldstream Farms has been nominated for the 2019 National Outstanding Dairy Farm Sustainability Award.

*Award:* $930,305

*Location:* Whatcom County

*Other partners:* Whatcom PUD

**Organix / Installation and Operation of BioFiltro BIDA System: Operation Efficiency, Effects on Air and Water Quality, and Marketability of Byproducts**

This project will install a processing system that uses worms to convert wastewater into irrigation-grade water. Partners will evaluate potential impacts to air and water and explore market options for the “worm tea” generated by the system.

*Award:* $762,900

*Location:* Yakima County

*Other partners:* J & K Dairy, Washington State University (WSU)

**Stillaguamish Tribe of Indians / Demonstration of an Innovative Distillation and Nutrient Separation Processor for Dairy Wastewater**
Partners will demonstrate and evaluate a Vapor Recompression Distillation (VRD) processor for the whole treatment of dairy manure. The VRD processor will convert manure wastewater in real time into distilled recycled water, concentrated liquid ammonia, and a pathogen-free, dry, organic fertilizer or nutrient product.

**Award:** $1,750,000  
**Location:** Snohomish County  
**Other partners:** Janicki Bioenergy, Natural Milk Dairy, Snohomish Conservation District, WSU

**WSU - Puyallup / Capture and Recycling of Phosphorus from Dairy Manure as Struvite: Focus on Cost Reduction and Organic Production**

This project will test a mobile processing system that turns manure into struvite, which is a non-toxic, sand-like mineral fertilizer. Partners will demonstrate the use of struvite fertilizer on commercial alfalfa hay operations to develop a regional nutrient recycling relationship.

**Award:** $186,795  
**Location:** Testing on dairies in eastern and western Washington  
**Other partners:** Alfalfa hay growers in eastern Washington, dairy producers in eastern and western Washington, Washington Dairy Products Commission

**George DeRuyter and Son Dairy and DVO, Inc. / Installation and Evaluation of a Lagoon-Based Nitrification Denitrification for Treatment of Digested, Solids/Liquid Treated Dairy Manure**

Partners will build on existing digester technologies to achieve nitrogen removal efficiencies and reduce nitrogen concentrations in dairy manure. The project will convert reactive nitrogen to non-reactive nitrogen gas, providing valuable by-products and the potential for new market opportunities for dairies.

**Award:** $250,000  
**Location:** Yakima County

**Next steps:**

- All projects will conclude by June 30, 2019. Grant recipients will submit reports of project findings to the Washington State Conservation Commission (SCC) at that time.

- The SCC will compile results from all projects into a final report for the Washington State Legislature by December 1, 2020.

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