



Manufacture of Mist Cooling Systems for Farms

Customer:	Cattle and Chicken Farmers
Application:	Filtration of Remote Water Sources
Products:	PolyKey™ Cartridges
Primary Motive:	Keeping Animals Cool to Improve Conditions and Production Rates
Location:	USA
Project Date:	2021
Division:	Ashland, USA



Customer Overview:

The customer runs beef cattle and chicken farms in Northern Georgia and US Prairies.

The customer wanted to reduce heat stress as dairy cows who suffer severe conditions may face a number of challenges from reduced milk production, poor pregnancy rates, and overall poor animal health.

Therefore they installed a misting system to their existing fans to improve conditions. The High-Pressure Fogging (HPF) Systems cool the air around the cow by forcing water through special nozzles at high pressure (1,000 to 1,200 PSI), creating micron-sized fog droplets that evaporate quickly, before it hits the bedding.

This reduces the ambient temperature in the barn, parlour or holding area anywhere from 2°C (5°F) to 16°C (30°F). This system works best in arid climates but is also useful in the hottest times of the day in humid climates when the relative humidity is at its lowest.

The same system was required on the poultry farm, the overall stress of high heat conditions on the poultry is said to affect egg production and even taste but the animal welfare benefits are paramount.

Customer's Problem:

The customers main problem is that water taken from the remote streams, wells or aquifers were causing the misting nozzles to clog and allow any bacteria to become airborne.

Pre-filtration of the low grade water through a high rate filtration system resolved the issue.

Porvair's Solution:

The 10µm PolyKey™ disposable cartridges supplied by Porvair had two main advantages:

- 1) The removal of particulate from well-drawn water to prevent clogging the fine spray nozzles that are used to create the mist.
- 2) The removal of any bacteria that may be in the water in order to not jeopardize the health of the animal.

Project Overview:

Customers normally require an initial filter housing and pump arrangement to be connected to a distribution manifold and pipework but once installed will just present an ongoing need for new disposable filters.

Product and System Information:

- PolyKey™ Cartridge Filters

Other Opportunities:

Global farms and dairies requiring cooling system for animal welfare and improved hygiene levels.