



How to get the  
right climate in  
food processing



# Introduction

Air humidity control is a crucial, and yet often overlooked, quality factor within food production facilities. Manufacturers aim to produce high quality products as cost-efficiently as possible. To support them, Munters provides precise climate control for production facilities.

As the world's biggest supplier of desiccant dehumidifiers and air handling solutions, Munters has extensive experience in helping food manufacturers optimize climate to ensure optimal product quality and the highest possible level of hygiene.

Munters air treatment solutions secure quality and sanitation, boost production output and save energy. In this white paper we will cover:

- Moisture in food manufacturing environments
- How to control moisture in your food manufacturing environment
- Ensure product quality
- Secure hygiene
- The Munters desiccant rotor
- Optimized dehumidification with the DSS Pro
- Munters service
- About Munters



# Moisture in food manufacturing environment

Food processing facilities' cleaning processes require large amounts of water. While nearly all is removed, some remains and evaporates. This water vapor condenses on cold surfaces and can cause problems in the production process, for example:

- Drips onto food.
- Droplets from a refrigeration unit land on exposed product.
- Moisture from a loading dock ceiling drips onto boxes of product, weakening the packaging.

Ambient or treated air above 50% Relative Humidity (RH) allows some level of microbial growth to take place. Condensation on cold surfaces increases this growth and bacteria begins to develop once the 90% threshold is met. Equipment malfunctions and worker safety are compromised. Downtime, shutdowns, and lost revenue are all possible outcomes.

## How to control moisture in your food manufacturing environment

Condensation control is an important aspect of food-processing facility design and operation. Reduction of moisture in the air will lower the dew point, help prevent condensation and reduce the potential for microorganism growth.

Temperature control is not enough, as some microbes can survive extreme temperatures. Humidity control, below 50% RH, will stop all microbial growth and reduce lipid envelope virus transmission.

Sanitation, temperature control and optimized Munters dehumidification will keep bacteria, and mold away.



# Ensure product quality

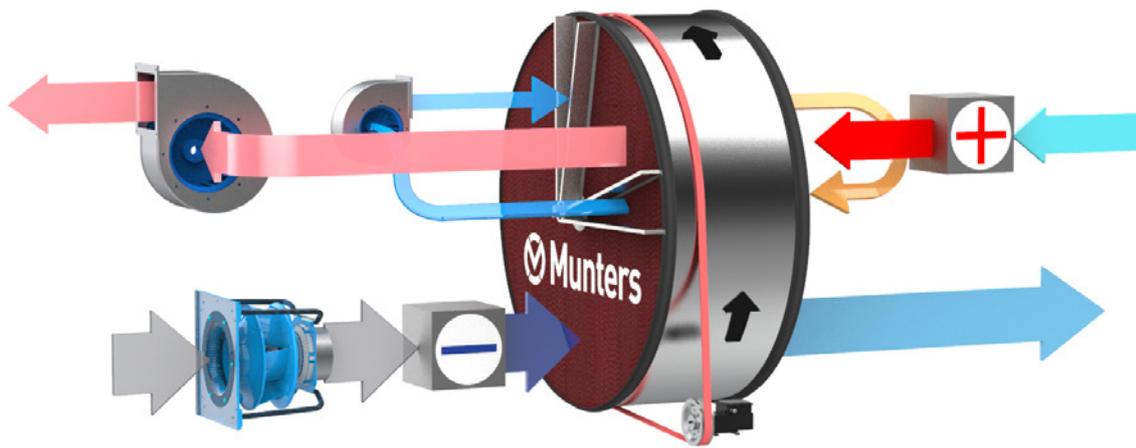
Production cost and quality are two parameters of highest importance when it comes to food products. Finding ways to increase production throughput and reduce energy consumption, thereby lowering the price per produced item, is always on the agenda.

Uncontrolled humidity can often impact product quality and production capacity. During the summer months when moisture loads are at their peak many manufacturers experience a drop in production levels and product quality. By controlling the humidity within production areas, and especially those that handle hygroscopic materials, you can ensure that capacity and quality are maximized, regardless of the time of year.

## Secure hygiene

Undesirable moisture leads to waste and health risks. Melting ice or pooled condensation can damage product and possibly lead to bacterial growth. The result can be reduced profit margins and negative customer relations.

Remove moisture before it forms. Eliminate maintenance events and shutdowns caused by uncontrolled humidity with a Munters dehumidification system. Optimized climate control improves product quality and increases output. Munters tailored dehumidification systems help to reduce contamination and keep food processing facilities working at maximum efficiency and safety.



# The Munters desiccant rotor

The desiccant rotor is the standard for all high performance industrial dehumidifiers. It allows the dehumidifier unit to remove moisture to the levels required by the process it has been designed to serve. Desiccant rotors are the most energy efficient technique for creating humidity controlled environments.

## How it works

Air passes through the flutes of the rotor contacting the desiccant. The incoming process airstream gives off its moisture to the desiccant. The process air is dry as it leaves the wheel. The humidity-laden wheel rotates slowly into a second, smaller airstream which has been heated.

This smaller exhaust airstream, known as reactivation air, warms the desiccant. The warmed desiccant gives off its moisture which is then carried away by the reactivation air. The newly dried desiccant material is rotated back into the process air, where it adsorbs moisture once again.

## Why choose Munters?

Desiccant rotors all look similar, but when it comes to performance, they couldn't be more different. Munters has designed a rotor which adsorbs more water and performs more consistently across all rotor speeds than the competition. This means better energy efficiency, a smaller physical footprint, and lower operating costs.



# Optimized dehumidification with Munters DSS Pro

## The next level of dehumidification

Munters DSS Pro represents an evolutionary leap forward from the market-leading Munters DSS system, with performance upgrades that make a real difference. It will provide food manufacturers the right climate more efficiently than ever before.

Munters DSS Pro is designed to deliver a stable, hygienic climate all year round with class-leading, dehumidification efficiencies that control condensation, secure sanitation and boost uptime.

Equipped with the Munters custom configured control system, the DSS Pro offers full function integration, delivering the perfect climate whenever and wherever it's needed. It comes in twenty configurable sizes with three different desiccant rotor types.

The DSS Pro offers key energy-saving features. It consumes up to 30% less energy with its Green PowerPurge™ and when it's time to transition to renewable energy the DSS Pro is ready for a seamless switch.

Another positive energy saving feature is the new AirPro casing, an innovative enclosure that significantly improves durability, reduces air leakage, and reduces energy consumption.

When it comes to size, the DSS Pro offers a reduced physical footprint, which makes the system more convenient to install and can free up much-needed space that can be used to generate revenue.

Munters offers more than a benchmark dehumidification system with the DSS Pro. As a partner with the knowledge and expertise to ensure indoor climate is always exactly as it needs to be, Munters provides support from design and quotation to ongoing service from our offices all over the world.

Find your nearest Munters office at [www.munters.com](http://www.munters.com)

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