



Dehumidification  
solves problems in  
small chilled stores

Cold and chilled stores, Denmark



Collection of algae cultures, The Botanical Institute,  
University of Copenhagen.

*In smaller chilled stores used by laboratories, catering facilities, and restaurants, the naturally high-relative humidity causes problems quite often.*

These chilled stores are high-traffic areas and doors are opened frequently. As a result, warmer air constantly penetrates the room, causing the relative humidity to rise. In laboratories, evaporation from Petri dishes and test tubes occurs, which is often unwelcome since condensation can possibly form in the tubes and there is a need to provide air to the incubated cultures.

When a chilled store is used to store vegetables and meat, for example, more moisture is brought into the room, and the relative humidity increases. Refrigeration of warm products increases condensation further. The evaporators, controlling the temperature in the chilled store, are normally not designed to control also the humidity that often increases to 90-100 % RH

The high relative humidity causes:

- Condensation and dripping of condensation
- Growth of mold, fungus and bacteria
- Risk of meat to spoil prematurely
- Reduced product lifetime and illegible labels

#### Case study

- Dehumidification of smaller cold rooms

#### Advantages:

- No condensation and no growth conditions for mold and fungus
- Improved hygiene conditions
- Reduced need for defrosting and increased temperature stability
- Continual operation of the cooling equipment

*Too high relative humidity in the chilled room causes growth of fungus on test tubes.*



*The chilled room at the Hvidøre training facility contains homemade delicacies and meat for maturing.*

## Controlling and limiting the humidity is key

Problems can be solved by means of dehumidification, lowering the relative humidity to maximum 70 % RH. At this level, condensation and following growth of mold- and fungus will not occur. The need for defrosting in the chilled stores will also be reduced significantly, since evaporators will no longer be blocked by ice formations. This will prevent the fluctuations in temperature that is caused by defrosting.

A Munters desiccant dehumidifier can be installed either outside or directly inside the chilled store, since the desiccant principle is not being affected by low ambient temperatures, as what happens to refrigerant dehumidifiers. Thanks to the desiccant principle, dehumidifiers can also operate directly inside cold stores, at minus degrees. For that specific application, Munters designed the award winning IceDry® dehumidifier.

### Laboratories

Six cold stores at the University of Copenhagen provide storage and cultivation of algae cultures in nutrient-rich water for research and education. Previously, problems were experienced with mold and fungus growth on walls, curtains, and test tubes and the labels became illegible. Six Munters' dehumidifiers were fitted outside the cold stores, blowing the dehumidified air into the rooms. The relative humidity is now kept constant, at 60 % RH, and these problems are avoided.



*Chef de Cuisine, Nikolai Wilking does not need to worry about hygienic issues anymore.  
Even a whole animal can now be hung up for maturation until it reaches the best quality.*

## Catering centers

At Novo Nordisk's Hvidøre training facility in Klampenborg, a cold store is used to store homemade products and maturing meat. The desire here is to purchase whole animals for maturing to ensure optimal quality, however, the hung animals began to spoil prematurely due to excessively high relative humidity.

Munters installed a smaller dehumidifier in the actual cold store, which now ensures that the relative humidity remains, and that the meat matures under the right hygienic conditions.

Would you like to find out if Munters has a solution for your company too? If so, please visit our website, [www.munters.com/food](http://www.munters.com/food)

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