



SAFETY
安全



HIGH EFFICIENCY
高效



DURABLE
耐用



GREEN
環保



PRECISE CONTROL
精準控制



AUTOMATION
自動化

食物及飲料加工

煤氣抽濕機

食物及飲料加工工場

在食品製造的環境中，如何防止食品被微生物，特別是霉菌污染乃重要課題。食品工場使用大量水、熱和水蒸氣，工場內部形成高溫高濕的環境，壁面常會潮濕並出現冷凝水，容易滋生霉菌。為追求對美食精益求精的信念，香港某大型食品製造工場於其糕點工場安裝煤氣抽濕機，將濕度控制至理想範圍之內，以確保食材的新鮮以及糕點鬆脆香軟。

食品工場嚴格監控溫濕度 以確保食品質素



精準控制



22°C
設定溫度



70%
設定濕度

樓面面積



300 平方米

安裝設備



1 台 煤氣抽濕機

食品工場容易滋生霉菌 需要溫濕度嚴格監控

霉菌除了受潮濕環境所影響外，蛋白質及碳水化合物等食品原料均是霉菌的營養源，進一步加速霉菌生長。霉菌一般在溫暖潮濕的條件下生長，於食品產生霉菌毒素，令其變質並縮短保存期限，使食品或原料廢棄，對工廠造成極大經濟損失。

除此之外，麵糰的發酵容易受烘焙環境所影響，如果濕度太高，麵糰就會太軟並容易扁塌。為嚴格監控工場內的溫濕度，以確保牛油、雞蛋、麵粉等原材料的新鮮並保持產品及包裝質素，此香港大型食品製造工場於天台安裝了煤氣抽濕機，以抽走新鮮空氣所帶的濕負荷。

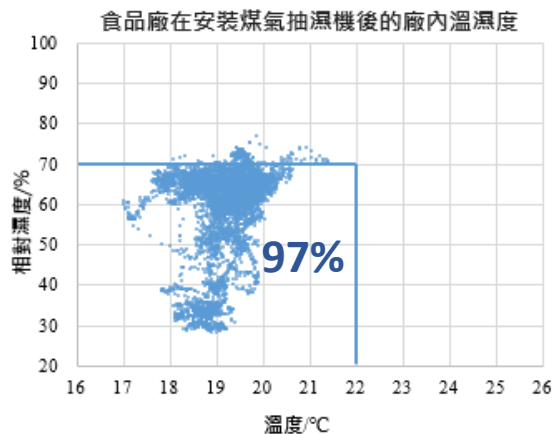
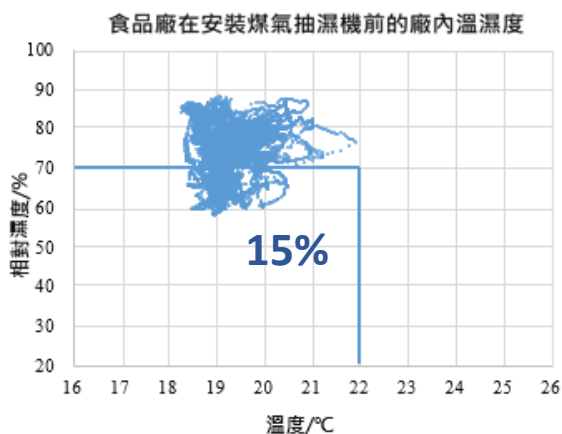


於食品製造及包裝工場安裝煤氣抽濕機以確保糕點保持新鮮及鬆脆

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研究發現: 有效將室內溫濕度控制至舒適水平

在2019年，煤氣公司委託香港城市大學於本港某大型食品廠糕點工場安裝煤氣抽濕機對房內溫濕度的影響。研究指出，在使用煤氣抽濕機後，室內濕度持續保持於70%內，表示煤氣抽濕機在長時間有效將室內空氣質素調節至指定水平。



香港城市大學能源及環境系於2019年在本港某大型食品廠進行為期一個月研究，圖表指出食品生產工場內溫濕度的分佈與變化，證明符合濕度要求的比率由15%提升至97%

調節廠內溫濕度以優化包裝程序

煤氣抽濕機除了應用於食品生產的環節，還會用於包裝工場。用於包裝糕點的紙製品容易受烘焙的整體環境所影響，一旦吸濕受潮便會軟塌，並出現面紙與瓦楞分離的現象，失去其保護包裝物品的功能。濕度太高同時會令紙箱發霉，滋生微生物並影響糕點的衛生。因此，一般食品製造工場都會選用抽濕機而不單靠空調來調節廠內溫濕度，以保持儲存空間乾爽、通風及潔淨，並防止濕氣入侵，影響產品的品質。選用煤氣抽濕機的客戶不僅表示滿意抽濕機的表現，員工也能感受到室內空氣經處理後變得更乾爽與涼快，有效提高生產效率。



煤氣公司為該大型食品廠於天台安裝煤氣抽濕機

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Food & Beverage
Processing

Dehumidification

Food & Beverage Processing Plants

A large amount of hot water and steam is used in food processing. This creates a warm and humid environment that is conducive to mould growth, which undermines food quality and shortens its shelf life. To strive for excellence in food processing, a leading food manufacturer in Hong Kong installed a desiccant dehumidifier in its factory to better control humidity so as to ensure the freshness of ingredients and quality of pastries.

Food Processing Factory Strictly Monitors Humidity to Ensure Quality of Food



Precise Control



22°C

Design
Temperature



70%

Design
Humidity

Floor Area



300 m²

Equipment



1 desiccant dehumidifier

Mitigating Food Safety Issues

In addition to environmental factors such as humidity, mould growth is also accelerated by food ingredients such as proteins and carbohydrates, which serve as nutrient sources for mould. Through producing mycotoxins in food, mould undermines the quality of food and shortens its shelf life, leading to wastage of raw materials and substantial economic losses to the factory. In addition, the fermentation of dough is easily affected by the baking environment. If the humidity is too high, the dough will become sticky and mouldy. In order to bring the humidity levels under strict control as well as ensure the freshness of ingredients such as butter, eggs and flour, the food manufacturer installed a desiccant dehumidifier on the rooftop of its factory to remove the moisture from the fresh air load and maintain the quality of its products.



Installation of desiccant dehumidifier in food manufacturing and packaging plants helps ensure product quality



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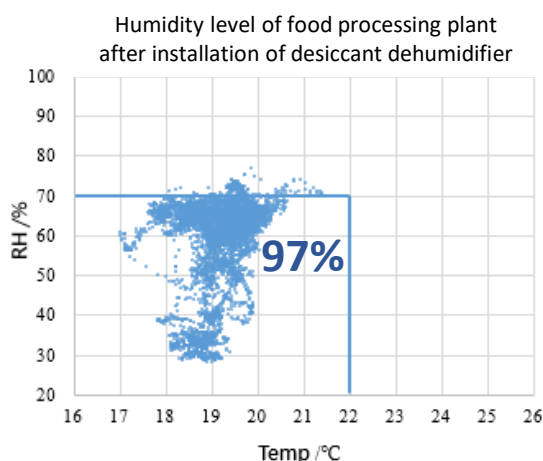
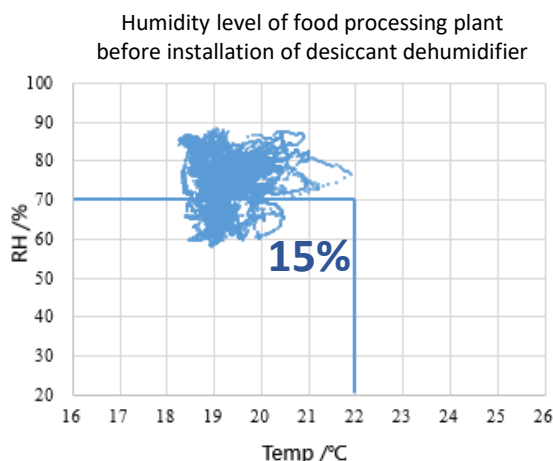
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Proven Success of Controlling Humidity within Comfort Level

In 2019, Towngas cooperated with the City University of Hong Kong to conduct research at the food manufacturer to measure the impact of desiccant dehumidification on humidity levels in its pastry workshop. The study revealed that after the installation of a desiccant dehumidifier, the indoor humidity is continuously maintained at around 70 per cent, demonstrating the dehumidifier's effectiveness in adjusting indoor air quality and maintaining a high comfort level.



City University of Hong Kong School of Energy and Environment conducted a survey at the food manufacturer in 2019, which indicated a difference in temperature and humidity in the plant in the presence and absence of a desiccant dehumidifier.

Improve Packaging Process

Not only is the desiccant dehumidifier useful in food processing, it is also suitable for packaging lines. When cardboard boxes absorb excess moisture, the top layer of the cardboard separates from the corrugated layer, thus failing to serve their function of protecting the packaged goods. To ensure the quality of products and packaging, dehumidifiers are commonly found in the storage areas of food factories to maintain a constant, low humidity level. The food manufacturer is satisfied with the performance of the desiccant dehumidifier, while its staff also enjoyed the cooler and more hygienic working environment, thereby bringing about enhancements in productivity.



Towngas installed a desiccant dehumidifier for the food manufacturer on the rooftop of its plant



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