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## Wishing you a Happy New Year

Food & Drink Industry-December 2020

### Spot the moisture menace in food industry

The consumer pattern of buying and consuming food has evolved over years. From spending hours to cook a hearty meal for the family to now packets of Ready-to-Eat food flying off the shelves in a supermarket, the change has also pushed the F&B industry to change too. As more and more people move out of their homes to cities for better income and brighter futures, the time to consume and prepare meals seems to least of the priorities and this has given a boom to the production of food items in an easy to avail form. Now when the meal is not coming to your table fresh, it is important for the F&B sector companies to meet the demand by providing, if not fresh, something that is closer to the fresh meals.

And this freshness factor of food right from the ingredients to the end product has given rise to the demand of more sophisticated ways of food processing.

Fueled by changing consumer needs, the F&B sector is convinced to preserve the quality of ingredients used in any food item, right from the seed processing to packaging. However, there is one challenge that faces them at all stages and is the biggest menace for any food processing company- It is, Moisture.

The uncontrolled humidity created due to water vapours in and around the processing plants during processing, packaging, storage, often, plays a party spoiler. Moisture control is essential in every segment of the food industry in the spheres of storage, production, packing, processing, and low-temperature drying. Uncontrolled humidity is the enemy of an efficient food processing system and moisture in the air can lead to condensation to develop and is the perfect ground for the bacteria to grow – both of which can cause severe damages in terms of food, and money invested.

#### Microorganism growth the chief problem of food processing plants

Food safety is, probably, one of the most important issues that food processing companies face day-in and day-out.

Concern for public health in the case of potentially devastating consequences of contaminated food have driven industry associations, safety experts and watchdog organizations to establish guidelines not only for food handling but for plant and process line design.

Following these recommendations can reduce the possibility of a catastrophe.

**By: Dinesh Gupta, Director, Bry-Air**  
Microorganism growth is one of the main causes of potential Food contamination. Moisture results in increased microorganism growth. Microbial growth and dispersal can be controlled if the surroundings and the food processing machinery and equipment inside the food processing plant and food processing facility are kept dry. But keeping a plant dry is not easy as water is an essential part of the product and process of food processing.

With an increasing demand for processed food, for example, instant coffee, soups, ready-to-eat, frozen food, food supplements, etc. it has become almost non-negotiable to tackle the moisture menace during storage, production, packaging, processing and drying to retain the taste and give the products longer shelf life. To give you a view of what can moisture do to the food you consume if now produced in a controlled environment, here are some examples of some of your favourite food types and the consequences:

#### Powder food

Presence of moisture during the processing of powder food like soups, milk powder, etc., causes stickiness, lumping, caking and cluster formation.



Read the full article, visit [www.bryair.com](http://www.bryair.com)





**Bry-Air**

# Keep yourself warm with hot beverages

The quilted jackets and layers of the blanket are enough to keep your body warm in the chilly winters. It is a sip of hot and calming beverage can blow away those winter chills. The hot drinks comfort body and keep seasonal cold and cough at bay.

## Drink high on antioxidants tea

To get rid of winter blues, the perfect cup of hot and aromatic tea brings relief to mind and warmth to the body. It is produced using dried tea leaves. Do you know that to bring the perfect cup to your table, tea leaves go through the various processes like withering, drying, sorting, storage, blending and packaging, where it may gain moisture from the atmosphere and release its key characteristics like its taste, colour, liquoring quality and aroma? Thus, tea leaves need dry air at all stages of processing. Keep yourself warm with Hot Beverages

## Brew a perfect cup of coffee

Steaming hot coffee is another hot beverage that reduce the body chills. However, the excessive moisture content in the coffee beans can also impact its taste and aroma. The humid environment can accelerate microbial growth. This leads to further deterioration in the quality of the beans and doesn't match your taste buds.

## Sipping steaming hot soups

Instant soups are a healthy and convenient option for winter evenings. There are plenty of flavours in soup powders available in the market. But humidity can destroy the health benefits of soup powder concentrate during powder processing, packaging or storage. Thus, humidity control is essential in food powder industry. Moreover, during processing soup powder concentrate, the presence of moisture in the surrounding air can cause lumping and caking in powders. It causes the tiny particles to stick or cluster together, thus inhibiting their free flow in the manufacturing or packaging process.

## Satisfy chocolate cravings with hot chocolate

The hot chocolate is the most loved hot drink of the year. It not only makes you feel warm but also instantly lifts your energy levels. However, when moisture comes in contact with its key ingredient i.e. chocolate, it hardens and makes it difficult to mix and ultimately impacts its flavour.

**Moisture deteriorates the characteristics like its taste, colour, liquoring quality and aroma**



During storage, presence of moisture or condensation on the surface of the chocolate causes sugar to dissolve and be visible in the form of white dots and streaks. Later, when water evaporates it forms sugar crystals. One has to prevent temperature fluctuations.

## Bry-Air Solution

Bry-Air Desiccant Dehumidifiers offer simple and most economical solutions to humidity control. It can maintain RH as low as 1% or even lower at a constant level, regardless of ambient conditions. When tea leaves are processed with dry air during blending, storage and packaging at the controlled temperature, it retains its quality, without suffering the inevitable deterioration which would otherwise take place.

With Bry-Air desiccant based dehumidifiers, cocoa beans are stored with less than 7% moisture content and later allowed to have a moisture content of 7 to 8%. It ensures cocoa beans retain their original aroma and physical characteristics and free from mould, fungal growth.

In powdered food like instant soup concentrates, absence of moisture ensures a free flow of powder and prevents moisture regain during storage, retains the original taste and flavour longer and extends the shelf life.

**Hence, Bry-Air Dehumidifier can be the ideal solution to the moisture menace in tea, coffee, powdered food and chocolate.**





# When *moisture* is Torture

*In this column, we share our experience with you regularly in major application areas where usage of dehumidification is both extensive and essential.*

## Leather sheds its radiance

The demand for genuine leather is typically attributed to its growing adoption in fashionable accessories like jackets, footwear, belts wallets and luxury handbags. The handcrafted designer leather products look elegant and considered as best-selling fashionable products globally.

The finished leather items are known for long-lasting characteristic. However, the raw material used in a leather item is not long-lasting. The waste product of slaughterhouses and meat processing units is turned into shining leather products at leather tanneries.

In tanneries, in the various stages of processing/curing phase, colouring, finishing moisture level has to be maintained to prevent microbial growth.

### Leather Sheds

Since leather is highly hygroscopic, and it tends to absorb moisture from the surrounding air during packaging, storage and shipping.

During processing, when leather is exposed to the surrounding air, the porous surface of leather makes it highly susceptible to mildew buildup in humid climates. Mould, mildew and fungi germinate when relative humidity is above 40%.

The uncontrolled humidity could cause:

- Loss of sheen
- Bad Smell or musty Odour
- Spots, stains, discolouration
- Mould and mildew growth
- Gradual decomposition and loss of strength

Once mould and bacteria have established on the product then cleaning will only remove the visual effect but structural defects aren't easily rectified.

### Leather Storage

Finished leather products regain moisture while in storage, prior to packaging. This result in the high rate of product spoilage due to mould/ fungus/ mildew growth fueled by moisture absorbed by the leather. In order to prevent this spoilage, it is necessary to store the leather in humidity-controlled warehouses where conditions are maintained at less than 40% RH at ambient temperature. This prevents leather from regaining moisture and thus, growth of mould, mildew and fungus are reduced.

### Leather Packaging

The only way to prevent fungus growth is to ensure that the leather does not regain any moisture during packaging. The best, most simple and economical method is Dehumidification. Control the humidity at less than 40% RH in the packing area. Moreover, unhygienic environments don't provide breathing air to leather.

### Leather Shipping

During shipping, temperature fluctuations due to land and sea breeze cause irreparable harm to the leather consignments. As temperature



comes down, the moisture condenses over the leather goods, providing ideal condition for fungal growth on the surface of leather goods.

While there are mechanical means for removing mould from leather, the process itself is time consuming. In certain instances such as leather being shipped, delay can prove costly as the damage done is beyond repair. The best alternative is maintaining the required environmental conditions that forestall mould and mildew growth during leather storage and packaging. Leather that is stored and packed dry, stays dry.

### Bry-Air Solution

A dry and well-ventilated environment prevents the incidence of leather mildew and mould growth occurring in the first place. Installing dehumidifiers in the leather storage and packaging areas and ensuring dehumidified conditions prior to shipping will ensure fewer rejections.

**Enter Bry-Air... exit moisture**





# Do you know... Temperature fluctuation can affect employee performance?

Researchers have found, a cooler environment boost the human mind and help people to think clearly. In high temperature, the human body loses water and energy level which affects our physical & mental ability to perform better.

Thus, the extremely hot temperature can affect the workplace productivity, accuracy and can make the employee sluggish and unfocused.

Therefore, cooling the workplace is important for industrial units and ensure consistent productivity throughout the year. Similarly, people visiting commercial buildings like malls, hospitals, cinemas, educational institutes, restaurants, etc. need a comfortable and cool environment to maintain their energy levels & for better comfort.

**There are three ways to provide cooling solutions to large Industrial units and commercial buildings:**

- Ventilation
- Evaporative Cooling
- Refrigeration based air-conditioning

Usually, industrial units use the traditional method of ventilation. By switching on fans and opening windows approach can bring some relief but not in all seasons and to all industries.

Sometimes, the outside air may interrupt the manufacturing process. High process heat, fumes & vapor if present need to be exhausted for instance.



Out of the lot, Evaporative Cooling is the smartest and cost-effective solution to cool these large establishments. It requires less maintenance as compared to other methods and it brings fresh air & oxygen from outside and cools the workspace. This method uses water to cool the environment and do not produce fog or mist making it suitable for dry climate.

Arctic Evaporative Coolers are the best choice and can be customised as per the needs of the industrial unit. It can achieve the desired temperature drop in the arid climate. Arctic Evaporative Coolers has a greater array of industrial and commercial applications from malls to schools and small to large industrial units.

It is eco-friendly and minimises carbon footprint. It keeps carbon dioxide emission down as it uses water & fan. It is easier to maintain with EcoCool pads. Inside noise levels are low.

**ARCTIC™**



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