

**Bry-Air**

# Dry facts

...from BRY-AIR

APR.-MAY-JUN'94

VOL.4 No.2

## MARCHING AHEAD...

... the war against moisture continues.



Major Gen. Dato Hj. Ahmed Ibrahim's visit to the Bry-Air Malaysia plant strengthened Bry-Air's offensive against moisture.

Seen here are Major General Dato Ibrahim and his officers at the Bry-Air shop-floor.



**DSA'94** Defence Services Asia'94 was the stage for the most comprehensive display of arms, ammunition and defence related technology in the region.

Bry-Air's booth at DSA'94 received a lot of attention, as the defenders (*defence officers*) updated themselves on protection measures against moisture attacks through the use of dehumidification systems.

### Preserving Seeds

Preservation of seeds was the focus of the Second National Seed Symposium organised by 5 premier agricultural research organisations-MARDI (Malaysia Agricultural Research and Development Institute), FRIM (Forest Research Institute of Malaysia), Agriculture Department University Pertanian Malaysia (UPM) and Asean Plant Quarantine Centre and Training Institute. Formation of a seed bank was proposed by the Agriculture Research Agencies.

Bry-Air specialises in long term and short term seed storage and seed drying. Bry-Air's dehumidifying seed dryers and storage systems are being used world-over for drying and storage of vegetable, ground nut, flower seeds in research institutes and seed banks and also in preservation of germplasm.

A technical paper on preservation of seeds with help of desiccant dehumidifier was presented at the symposium by Mr. A.P. Misra, CEO, Bry-Air Malaysia. Copy of the paper is available on request.





# Did you know ?

## HEAT PIPES CAN . . . .

. . . . heat space

. . . . extract heat from electric/electronic components

. . . . de-ice super structure of vessels operating in Arctic Region.

. . . . and . . . .

The application opportunity of heat pipes are immense and varied .

In the **Rural-agrarian sector**, effective usage of heat pipes can be made for saving energy as well as for enhancing product quality in brick kilns where the waste heat can be recycled, thereby saving on fuel inputs.

**Wood drying** i.e. seasoning kilns can also effectively recover waste heat and heat up incoming air thus saving on energy inputs.



**Mushroom farming**, which requires controlled temperature and humidity, is another area where heat pipes can be used to transfer heat from the ground to the growing areas, thus helping in maintaining temperature at a reduced energy input cost.



In the **Hilly areas**, heat pipes can be used to enhance the comfort levels of homes in winter by transferring the ground heat to the rooms, thereby reducing dependence on electricity or other fuel for maintaining comfort temperatures.



In the **Industrial sector**, the most common use of heat pipes is as a **Heat sink** for electronic components, electric motors, generators and transformers.



As a **temperature flattener** and a **Heat extractor**, the heat pipes have found a very important application in the die casting and injection moulding processes.



The usage of heat pipes in the industrial segment for waste heat recovery applications has tremendous benefits as it cuts down energy costs substantially.

## EXCLU-SIEVE EXCLUDES CONTAMINANTS

Airconditioning systems for hospitals are normally designed as 100% fresh air, *once through* systems, to eliminate the risk of carryover of airborne infections and odour.

Thus, heat wheels, which are commonly integrated to recover energy and cut down size of airconditioning systems in hotels, auditoriums, super-markets etc., are generally avoided while designing systems for hospitals due to fear of cross contamination and bacteria carryover.

The **EXCLU-SIEVE** heat wheel solves both these problems. It's **EXCLU-SIEVE** media and in-built purge sector eliminates risk of cross contamination totally.

The Exclu-sieve HRW uses an aluminium media, coated with a 3° A molecular sieve desiccant adsorption material. Pore openings in this sieve allow only molecules smaller than 3° A in diameter, 5,000 times smaller than the diameter of a human hair, to pass into the fresh air supply. Water molecules 2.8° A in diameter, can enter and exit the sieve, but pollutants, larger in size, are excluded. Only 'EXCLU-SIEVE' provides this kind of selective adsorption.

Purge section provides strict separation of the airflows, preventing carry over of bacteria and dust particles from the exhaust air side of the supply side.

Purge section and labyrinth sealing system combine to

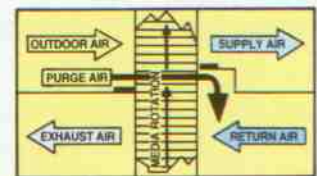
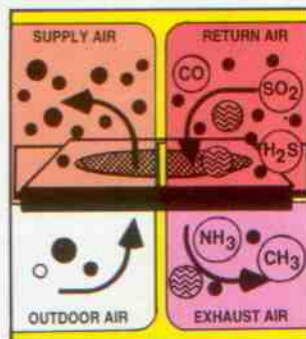
limit cross contamination to .04% of the exhaust air by volume.

'EXCLU-SIEVE', thus makes healthy air affordable, and gives you the best of both worlds : **more outdoor air** and **lower energy consumption**. That means cost-effective, healthier indoor environments, and dramatically reduced chiller and boiler loads.

Only 'EXCLU-SIEVE's advanced desiccant technology removes airborne pollutants such as carbon-di-oxide and volatile organic compounds, and at the same time recovers sensible (heat) and latent (moisture) energy. This significantly reduces the extent to which outside air must be heated and humidified in the heating season, and cooled and dehumidified in the cooling season. **Low in first cost and rapid return on investment** make

'EXCLU-SIEVE' energy recovery systems an ideal choice for hospitals. **EXCLU-SIEVE** reduces the energy required to heat,

cool, humidify or dehumidify outdoor air by as much as 90%. Adding 'EXCLU-SIEVE' to a new facility designed in accordance with the **ASHRAE IAQ** (Indoor Air Quality) Standard reduces the operating cost of the **HVAC** system to the extent that initial investment is typically returned in energy cost savings in about 6 months. Existing systems are easily retrofitted, and typically, have slightly longer payback periods.





# WHEN MOISTURE IS TORTURE !!

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

## A SIMPLE EXPERIMENT

### TOOLS

1. ONE GLASS OF WATER.



2. ONE 'CLUMSY' SUBORDINATE



3. YOUR TABLE 'FULL' OF IMPORTANT PAPERS.

### PROCEDURE

1. PLACE THE GLASS OF WATER ON THE CENTRE OF YOUR TABLE.
2. GET YOUR SUBORDINATE TO UPSET THE GLASS FULL OF WATER "ACCIDENTALLY" ON YOUR TABLE AND LET IT FIND IT'S WAY ALL OVER YOUR PAPERS.

### RESULT

- YOUR NEATLY STAPLED PROJECT REPORT SOON RESEMBLES ARCHIVAL MATERIAL.
  - THE INK FROM THE HIGHLIGHTED PORTION OF THAT IMPORTANT FAX MESSAGE MAKES ABSTRACT DESIGNS, ON THE WHOLE MAKING IT ILLEGIBLE.
  - YOUR DESKTOP COMPUTER CONKS OUT.
  - THE LIST OF DAMAGES CAN BE ENDLESS.....
- BY NOW, YOU WOULD HAVE REALISED 'WATER' (MOISTURE) THOUGH VERY IMPORTANT IN LIFE, SHOULD BE KEPT UNDER CONTROL.

From this issue we are starting a series of articles which deal with tortures that humidity or 'moisture' can impose on your business!!!

## THERE IS TROUBLE IN THE AIR !!

The invisible 'water' which you can't see, commonly known as humidity- is the trouble. Humidity is always present in the air around us and it's effect on machine and material is long term and devastating. Every industry in any corner of the mechanised world is affected, both in terms of material and money.

## HOW HUMIDITY AFFECTS THE INDUSTRY.

**Humidity is a constant threat to both production efficiency and product quality.**

Many companies discover that waste is extremely high during certain months of the year. These are usually the summer- monsoon months, when high temperatures create humid conditions. The phenomenon occurs, because, as the temperature of the air increases so does its ability to hold water. Conversely, as air temperature is decreased, its moisture holding capabilities are thereby decreased. In the food industry, dry food such as potato chips and powders exhibit an affinity for water and become soggy when exposed to relatively high humidity conditions. Powdered food tends to agglomerate or lump together. The presence of humidity interferes with the operation of processing and packaging machinery as well.



For similar reasons, careful monitoring of humidity levels

in the pharmaceutical industry is essential. Too much moisture, in the air, may retard the growth of certain organic cultures and specific humidity levels may be necessary for the production of certain drugs.

Humidity, if left unchecked, may cause the lumping or caking of powdered material. In fact, many of the powders used depend upon dry conditions for adherence in the form of tablets and capsules. In some cases, humidity can even cause a specific drug to decompose and its medicinal value to be lessened.

In the electronic industry, humidity causes Printed Circuit Boards (PCBs) to corrode. Transistors may break down or suffer a decrease in longevity, and the uniform growth of crystal is unachievable.

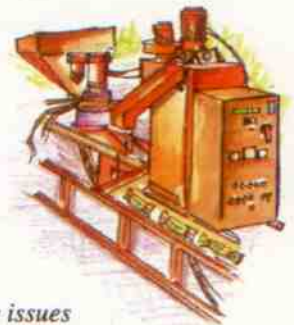
**Generally speaking wherever there is humidity, there are humidity problems.**

Seeds lose their germinative power and dry fertilizers agglomerate. In pumping stations and high voltage rooms, expensive installations may rust as a result of unchecked condensation.

The point is that humidity has and will continue to cost industry millions in terms of product and efficiency waste, if left unregulated.

**Humidity can easily be controlled and it's effect restricted by use of desiccant dehumidifiers.** Bry-Air has done thousands of jobs in numerous industries where control of humidity is critical. The application areas where humidity control is a must can be broadly categorised into; production, storage, packaging processing, controlling corrosion, preventing condensation and moisture regain, retarding mould and fungus growth, low temperature drying of products and drycooling.

*In the next few issues we will be covering effect of humidity and application of dry air in each of these categories.*





# ISN'T IT ABOUT TIME YOU GOT A BREATH OF FRESH AIR . . . . . INDOORS !!

## WHAT IS THE "QUALITY" OF YOUR INDOOR AIR ??

You may not realize it but the conditioned air inside . . .



... the fast food joint where you grab a quick lunch . . . .



... the conference room where you work out strategies . . . .



... the pub where you enjoy a cool beer. . . . .

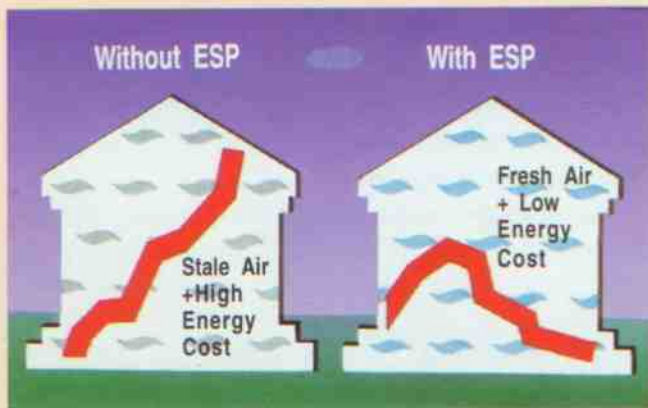


... the club where you play bridge . . . . .



... the restaurant where you dine out . . . . .

. . . . may be more hazardous to your health than the 'polluted' air you breathe when you walk down a busy street. That's because most airconditioned spaces are designed to keep indoor air in and outdoor air out . . . . . to save on airconditioning i.e. energy costs.



**The result !!** Old stale air continuously recirculated. This causes a build up of Allergens, Pathogens, Bio-effluents, Mould, Carbon-di-oxide, By-products of cigarette smoke and potentially dangerous chemicals emitted from furniture, carpeting, paint and other fixtures. *Headaches, dizziness, nausea and worse have been attributed to air borne pollutants.*

**To remove these, sufficient outdoor air is required.** Additional airconditioning tonnage does not help because all the air conditioner does, is recirculate the stale indoor air.

### Get a Fresh Air Solution Today !

Adding an ESP . . . Energy Saving "Fresh Air Adding" Pre-conditioner your facility could change the way you breathe. The ESP adds more fresh air to the conditioned room air without adding to the energy bill/costs or appreciably changing the temperature. Your payback starts the day you install the ESP . . . . .

How many times have you watched your 'guests' wrinkle their nose at the smell of food, cigarette smoke, cologne, sweat combined . . . when they walked in your restaurant, pub or bar. How many times have they complained of feeling suffocated. And, how many times have you added extra airconditioning in an effort to give your customers the best . . . and yet have not succeeded in removing the 'smell', the feeling of suffocation. Here is an answer to all your "suffocating" problems! Give your clientele the benefit of breathing fresh air and save on your energy costs. Add a benefit and reduce operational energy costs. Add on ESP to your facility and breathe easier.

**CALLING**

**Owners, Managers**

**Fast Food Joints, Restaurants, Pubs, Clubs,**

**For more information :**  
on how ESP can solve your Indoor Air Quality problems contact us today.



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