Bry-Air

dry facts

...from BRY-AIR

JULY-AUGUST-SEPTEMBER '93 VOL 3, NO: 3

Intelligent Buildings! Indoor Air Quality! Energy Efficiency.....

.....“Key to high productivity and better living”

The Construction Industry is on 'high rise' in Malaysia as in other parts of the world. Worldover,architects, designers, consultants and occupants are striving to have intelligent building with better Indoor Air Quality and more Energy Efficient lighting and conditioning equipments.

It is now a well accepted fact, rather than just a 'fad' that a **clean, healthy, pollution free working and living environment result in better efficiencies, improved productivity reduced absenteeism and higher level of staff and customer satisfaction among other benefits.**

And this is where **Bry-Air comes in** with it's range of **air engineering 'equipments for a better environment'.**

Bry-Air's *Exclusieve Heat Wheel* allows introduction of more fresh air at lower conditioning cost. While the Bry-Air *dehumidifiers* help to maintain a controlled environment through effective humidity control.

The Bry-Air *Inceiling Energy Saving Ventilator* is another unique device which removes stale, contaminated, foul smelling, smoked filled room air by bringing in fresh air without raising the temperature of the conditioned air and all at no extra cooling cost.

MALBEX '93.....

The Building and Construction Exposition

The recently concluded Malbex'93 brought to fore the latest and the best available in the technologies related to the building and allied industries. Bry-Air displayed it's *Exclusieve Heat Wheel* which is an energy and cost efficient solution to Indoor Air Quality problems.

MALAYSIA INTERNATIONAL FAIR – MIF'93

A Show case for quality Malaysian Products

With Malaysian economy expected to remain buoyant for many years to come and continue to attract foreign investors, demand for quality products is increasing, both in the country and abroad.

MIF'93, – the sixth Malaysian Int'l Fair brought together a wide range of technology, products and services available in Malaysia for a better future.

The **Bry Air booth,** which **displayed** the complete range of **air engineering products** for a better environment - Dehumidifiers, Heat Wheel, Energy Saving Ventilator, Plastic Auxillary equipments, received a tremendous response from both participants and visitors at the show.

Good show Bry Air Malaysia!

Did you know?

Bry-Air can provide you with the A to Z of plastic auxillary equipments!

Surprised? Most people know us as a *specialised "Dryer"* company and not as a **"One Stop Shop"** for all plastic auxillary equipment. Yes! that's what Bry-Air is.

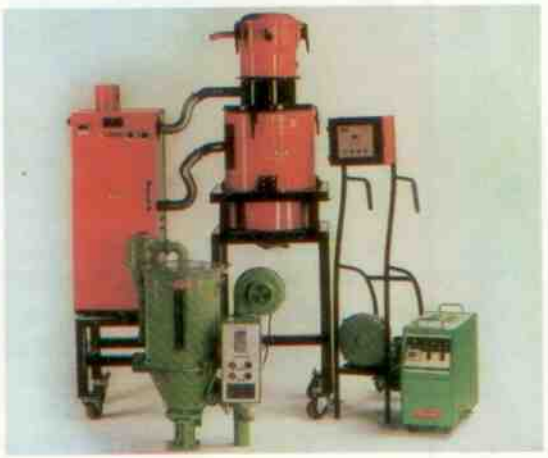
Along with the plastic Industry in the region Bry-Air has matured and grown and today has the capability to provide a wide range of products for

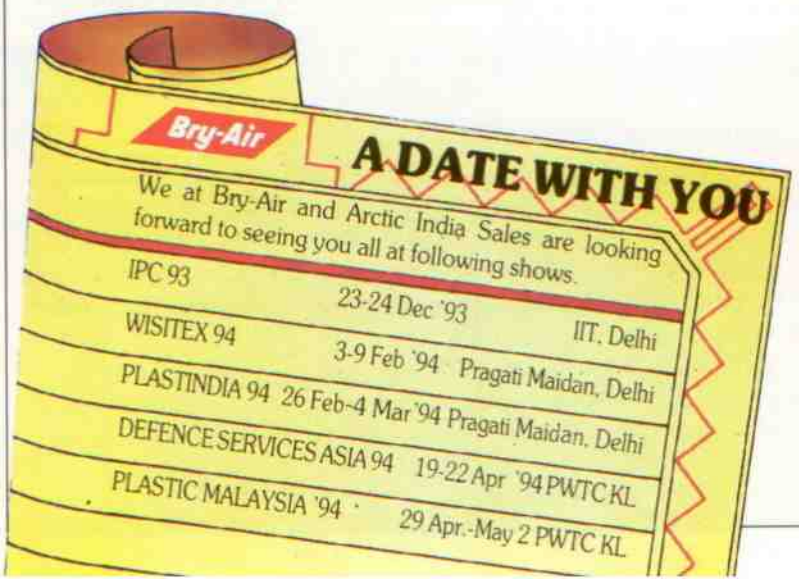
⋆ Drying ⋆ Colouring ⋆ Conveying ⋆ Other support systems

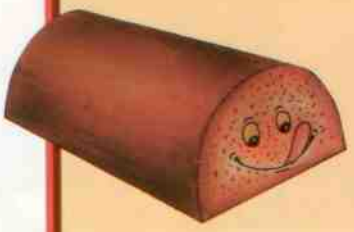
Take a look at the ***Bry-air range.***

- Microprocesser based dehumidifying type Dryer.
- Hot Air Dryers
- Hoppers
- Single loaders to plants wide automated pnuematic conveying system.
- Mould dehumidification systems.
- Mould temperature controllers.
- Granulators
- Compressed air systems.
- Chillers
- Blenders
- Crystallizers.....

Every thing Bry-Air makes, makes plastic handling easier.







CANDY

⋆ Processing ⋆ Drying ⋆ Storage ⋆ Packaging

Problem Identified

⋆ Sticky ⋆ Crusty ⋆ Hard ⋆ Loss of colour & aroma ⋆ Texture.

Highly hygroscopic nature of sucrose and corn syrup,(two of the basic ingredients in candy) makes them sticky, runny or moldy, when exposed to humid conditions. This inhibits natural flow as it sticks to high speed processing and packaging machinery and wrapping material, making the process slow and creating hygiene problems. Moisture gain also effects storage life.

Bry-Air Solution

The solution to the problem lies in surrounding the processing, packaging and storage areas with dry air. In coating operation, cool dry air speeds up drying, enhances the gloss of coating. Dry environment ensures free flow and increases storage life as (a) insects are rendered inactive (b) tendency to become stale and rancid is reduced (c) assurance against sticking to wrapper (d) colour, aroma and flavour does not change.

Recommended RH and Temperature conditions

	Temp. (C)	RH (%)
Hard candy making	24-27	40
Hard candy packaging	21-24	35-40
Raw material storage		
* nuts	7	60-65
* liquid sugar	24-27	40-30
Caramel rooms	21-27	40
Cold rooms	24	45
(chilling and drying of marshmallows, barcenters, cast cream centers)		
General storage	(Temp. as required)	40-65%

WHEN MOISTURE IS TORTURE!

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

Dehumidified silos ..... for safe storage

Silos are huge, cylinderical storage bins used to store large quantities of grains, food products, sugar, plastics, chemicals, fertilizers, and many other items. Silos are normally made of concrete or steel.

When material is stored in silos, generally it is not filled up to the top, but some space is left empty for air circulation. This empty space creates it's own problem as moisture builds up in the unfilled portion. Due to variation of temperaure outside the silos, condensation of water vapour takes place inside the silos leading to:

a) Corrosion of the silo itself.
b) Caking and agglomeration of hygroscopic material stored inside.
c) Increase of micobial activity leading to spoilage of material stored.

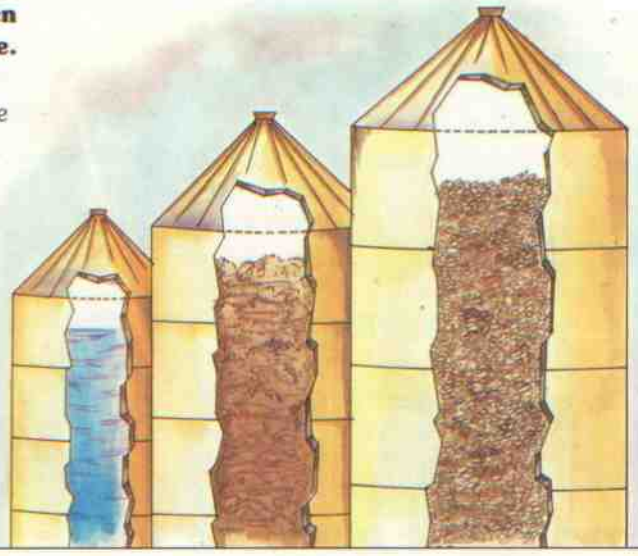
To give a few examples how moisture can be disastrous for stored material –

- **Chemical becomes explosive in contact with moisture.**
- **Seeds and grain rot due to fungus and bacterial growth due to moisture.**
- **Powdery products because soggy and moldy.**
- **Plastic resins show up numerous surface and internal defects when processing after absorbing moisture.**

... the list is endless.

Thus,tons of material which is stored inside the silos are always in the danger of complete spoilage due to moisture build up inside the silos. Spoilage of stored material can be a big commercial loss since quantity stored is very large.

Conventionally, to avoid moisture build up inside the silos, hot air is pressurized inside from the bottom. This preserves the stored material but is very expensive due to high power consumption.



Also, for powdery material, air at high pressure causes the powder to 'flake off', resulting is product spoilage.

The "Bry-Air" way to keep moisture away

It is necessary to keep the air inside the silos dry so that there's no moisture build up inside. One must also be careful that while drying the air, heat is not built up inside as many products are temperature sensitive and require very low dew points. Also the drying method adopted must be independent of ambient temperature outside.

The Bry-Air dehumdifier is designed to effectively dry air continously regardless of ambient condition outside at very low dew point.

Regardless of the ambient condition (Night or Day) the Bry-Air desiccant dehumidifier provides dry air inside the silo which is below the dew point of the air outside the silo, thus eliminating the possiblitiy of condensation inside the silo and thereby safeguarding the stored material inside.

The greatest advantage of the dehumidifier is that only a small dehumidifier is needed to do the job. The dehumidifier dries the air in the empty space, thus creating a low vapour pressure causing the moisture within to move up and being removed by the dehumidifier in a continuous cycle.

Multiple silos can be serviced by a single dehumidifier if required.

Some Guidelines – for proper choice of dehumidifier:

- The dehumidifier should be sized to deliver 100% fresh air equal to one air change per hour of the empty silo. Total volume of the silo divided by 60 gives the required CFM i.e. capacity of the dehumidifier required.
- For low dew point applications, it is preferable that the fresh air is precooled before entering the dehumidifier.
- Preferably efficient filters must be installed.

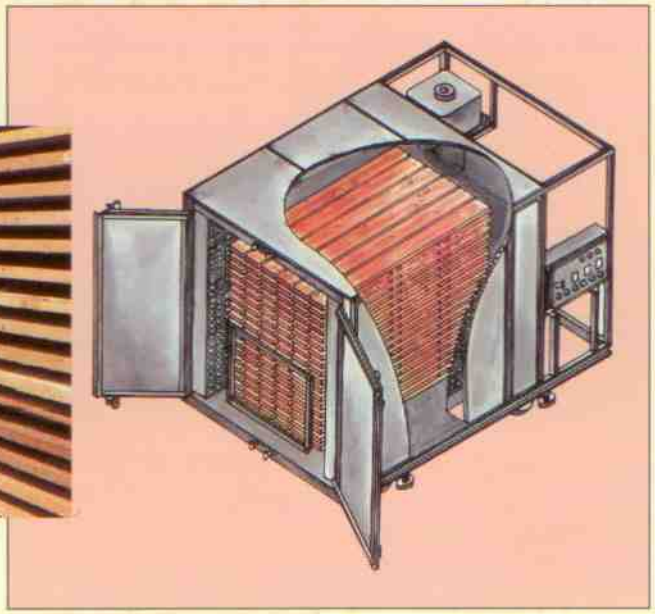
Introducing

A Revolutionary Concept in Wood Drying

THE Bry-Air WOOD DRYER

IDEAL FOR

*** Quality Manufacturers * Exporters**



The Bry-Air wood dryer allows you to season wood at your, site in small capacities economically,irrespective of the weather.

The Bry-Air wood dryer has been designed and manufactured for-

- Cost effective and rapid drying.
- Easy handling
- Seasoning in all seasons.

The Bry-Air Wood Dryer is a compact, castor — mounted, self contained, modular unit with a capacity for handling 125 CFT of wood per charge.

The unit comprises of 3 major components

– The Dehumidifying Dryer
– Completely insulated drying chamber
– Specially Designed Air distribution system.....

supported by other components like unique stacking arrangement on mobile trolley, automated controls, energy saving device to make the wood dryer user and environment friendly.

Drying Wood in the Bry Air Wood Dryer

The wood to be dried is stacked on the trolley. The trolley is then rolled on.into the insulated drying chamber. Special rails and wheels makes handling easily. Once the trolley with wood is moved "inside", the rails can be folded and kept inside the chamber and the door locked.

Drying Through Dehumidification

Drying of wood is basically dependent on the difference between the vapor pressure of the 'wet' wood and the vapor pressure of the surrounding air. The more the difference the faster the drying.

The Bry Air Dehumidifier 'built-in' system increases the vapor pressure difference removing moisture from the air surrounding the 'wet' wood in the chamber. The moist air is drawn into the dehumidifier where the moisture is adsorbed by a rotating desiccant bed and ducted out. The.now.dry air flows back into the chamber increasing the vapor pressure difference and thus forcing the wood to give up it's moisture to the dry surrounding air.

The drying process is enhanced by uniform air circulation within the stacked wood and inbuilt reheaters for heating the circulated air.

Automatic sensors control entire drying process, switching off when the required 'dryness' is achieved. This prevents damages like shrinkage,cracking, warping etc.,from over drying.

The Drying chamber which is completely insulated is designed to conserve energy with an in built reheat system.

The entire system is castor mounted thus making the unit mobile and compact.

Bry-Air

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