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## Patented Hermetic Storage Cocoon<sup>TM</sup>



-Long-term (multi-month)  
storage/quality preservation of  
commodities

-Preservation of seed viability

-Safe storage of staple  
grains without  
pesticides





## Hermetic Storage Systems

- Allow staple grains and commodities to be stored without the use of pesticides or fumigants
- Preserve quality and flavor---Protect against Ochratoxin-A
- Endorsed by the Coffee Institute Honduras and the International Rice Research Institute





## Hermetic Storage Systems

### Coffee Storage Benefits

- Preservation of flavor for parchment or green coffee
- Prevents development of Microflora
- Maintains moisture content (no gain or loss)
- Can be used in conjunction with futures and options instruments

### Cocoa Storage Benefits

- Eliminates insect infestation (low oxygen levels, 2%, and high CO2 level, 60 %)
- Maintains moisture content
- Reduction in oxidation (Free Fatty Acids)
- Can be used in conjunction with futures and options instruments



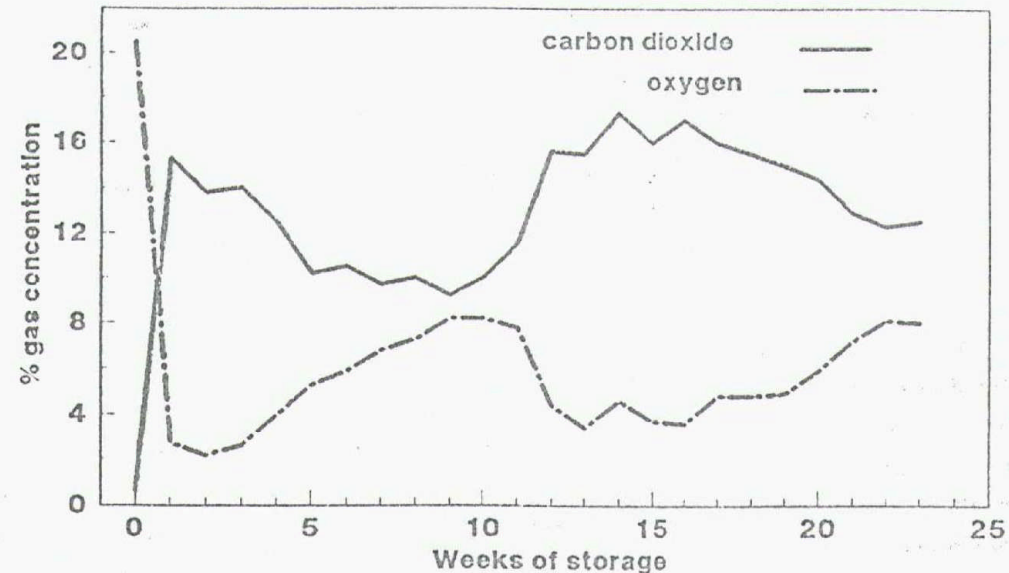
# Hermetic Storage Systems

## Staple Grains

Living organisms in the grain cause O<sub>2</sub> depletion and increase of CO<sub>2</sub>. If the storage facility is gas-tight, the resulting gas environment kills living insects and suppresses new development.

The moisture barrier prevents formation of mycotoxin or aflatoxin

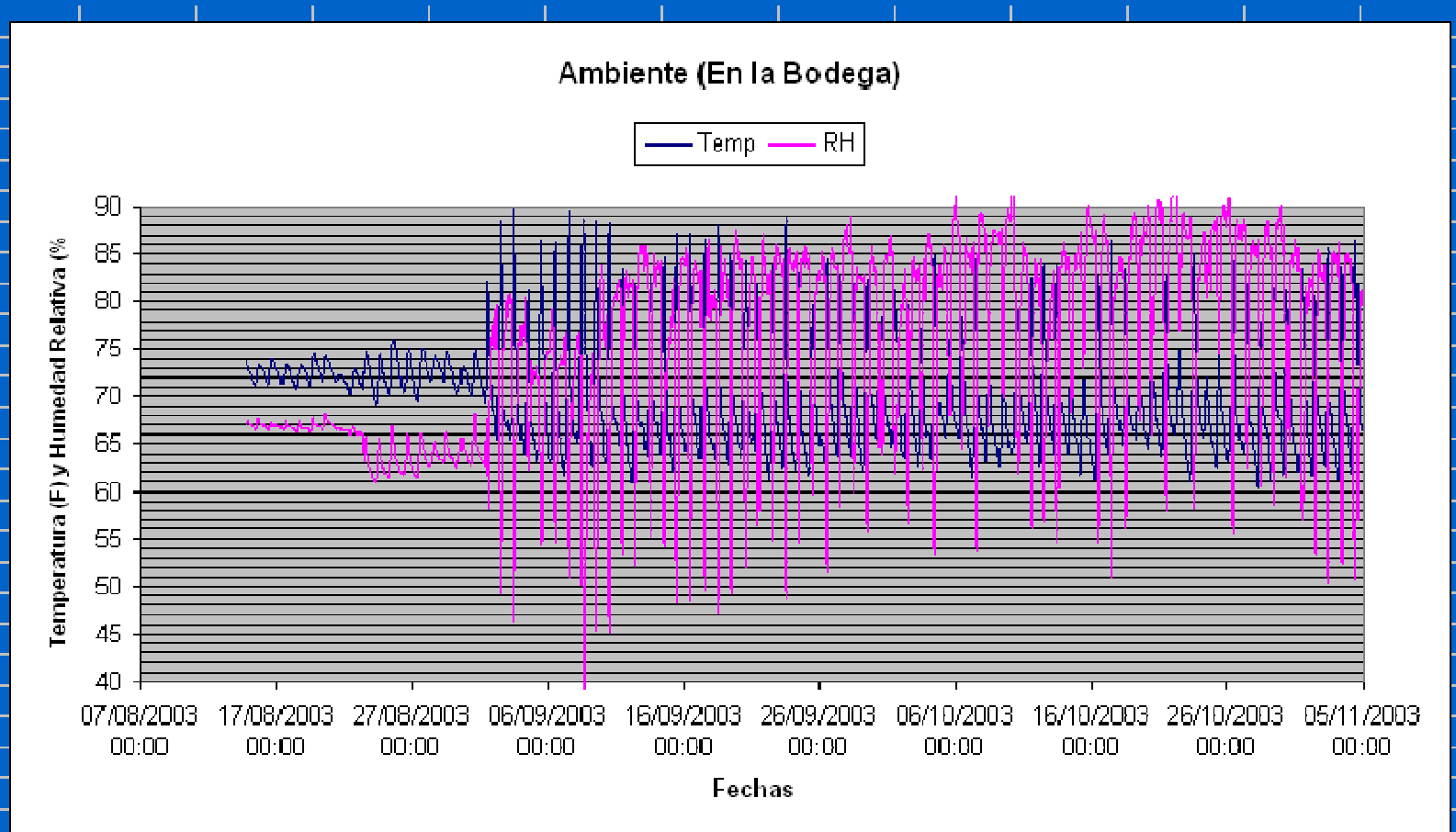
Fig. 7 - Average CO<sub>2</sub> and O<sub>2</sub> concentrations (%) in a gastight PVC cube containing 10.4 tonnes of wheat in bags (Navarro *et al.*, 1990).





# Hermetic Storage (Coffee & Cocoa)

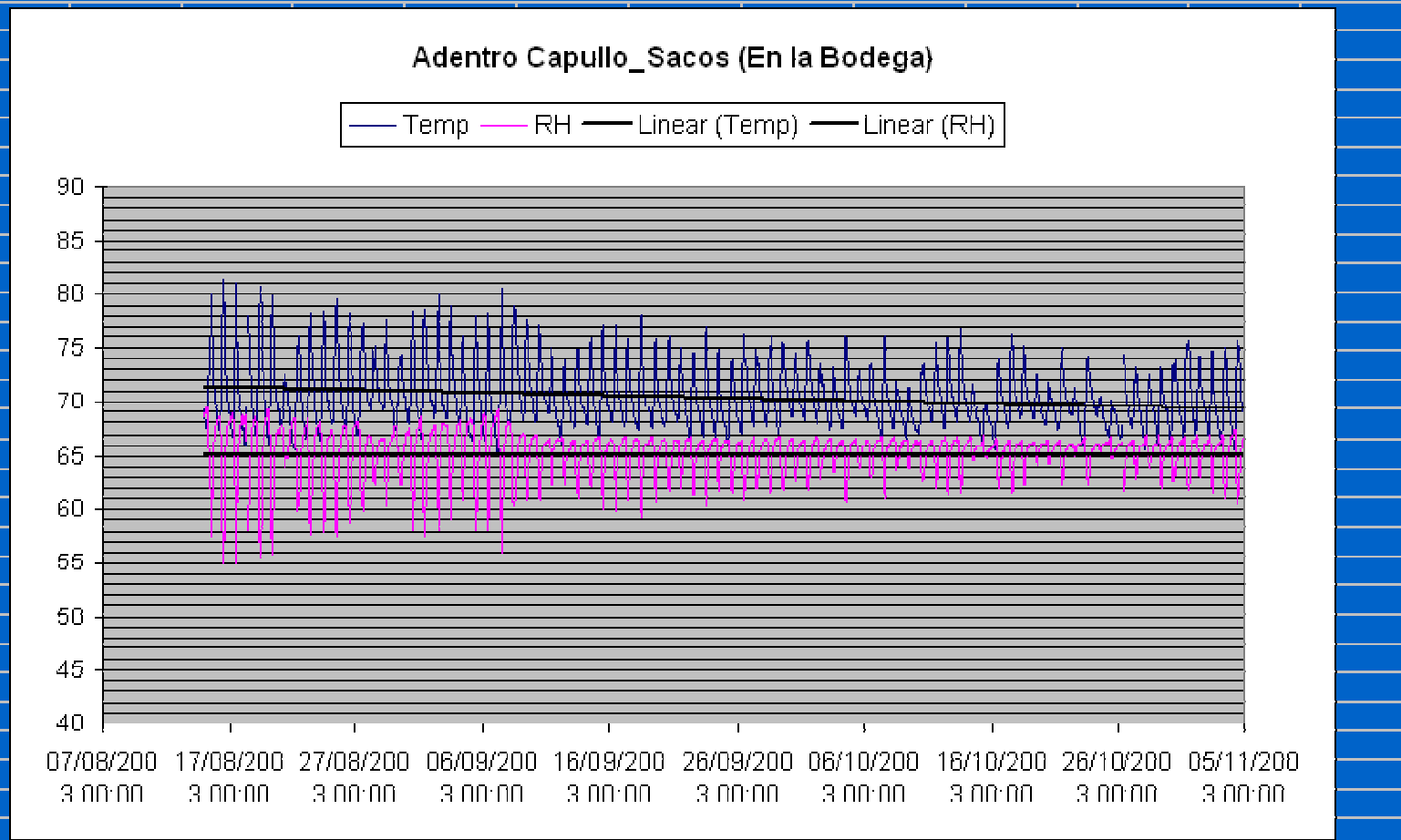
## Ambient Warehouse Conditions



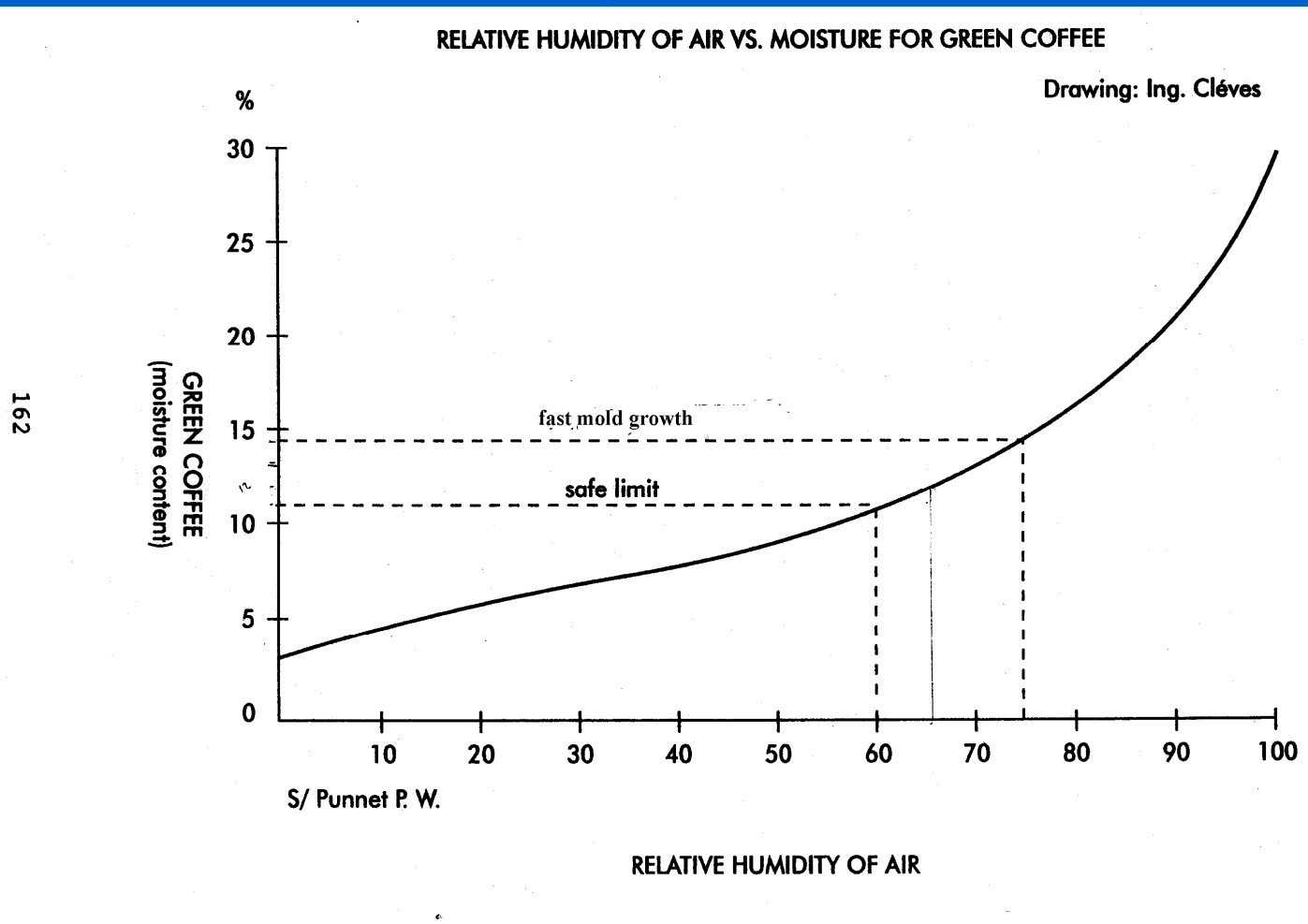


# Hermetic Storage (Coffee & Cocoa)

## Conditions Inside the Cocoon™



# Hermetic Storage (Coffee & Cocoa)







# Hermetic SuperGrainbags™



## Hermetic Liners

50 x more hermetic than regular plastic bags

Permit hermetic storage during transportation

Patent Applied For





[info@mesoamerican.org](mailto:info@mesoamerican.org)

**For More Information:**

[www.grainpro.com](http://www.grainpro.com)

