

FOOD TECHNICAL SERVICES

PROJECT: FOOD SURFACE CONDENSATION & MOISTURE CONTROL ON MEAT & SEAWEED Applying Food Technology / Psychrometry to control condensation/moisture & food spoilage

The Issue

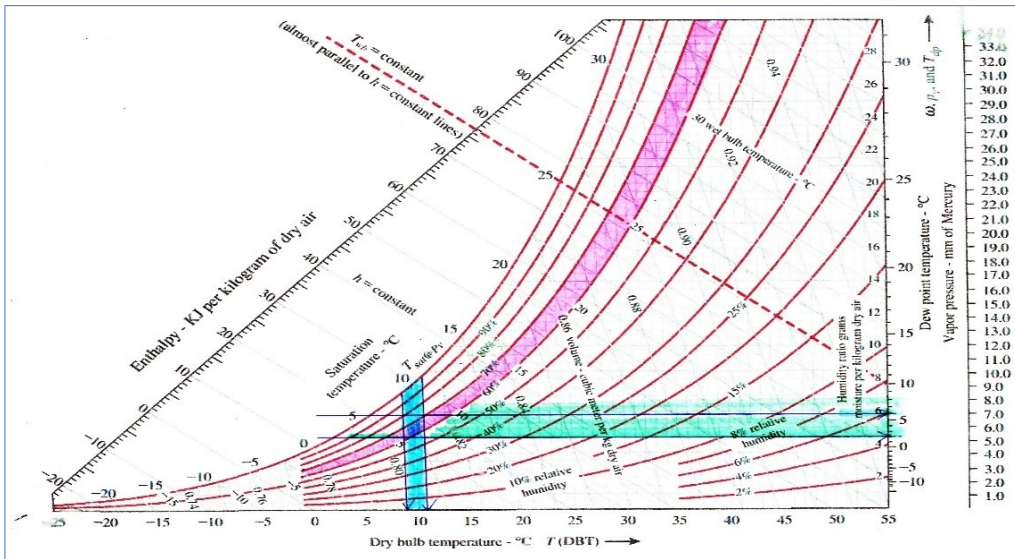
A cured meats manufacturer had been experiencing condensation problems on product surfaces prior to & after final skin packing; customer complaints & microbe counts had risen & were thought to be related. The process involved part processed (packed frozen unsliced cuts) being routinely defrosted then transferred to a “de-pack - slicing -re-packing” area (which was controlled at 9-11°C).

The solution

After chat on the phone re: options on controlling microbe/moistures - measurements were taken:

- Water activities (equilibrium relative humidity) of the cured meats
- Ambient air humidity and temperature ranges of the de-pack/re-pack area
- Surface temperatures of defrosted product after de-pack and prior to re-pack.

Armed with the data & basic Psychrometric charts we could see that surface condensation and microbe growth were inevitable but probably manageable with the facilities available at the premises.



Action and Results:

With dry bulb air temperatures restricted to 9-11°C (blue on chart), and air humidity within 60-70% (pink on chart) - the business would be able to eliminate surface condensation if product surfaces were kept above the max dewpoint (ie 5.5°C - top of green band). As 6-8°C was acceptable for each of: slicing yield, product safety & staff comfort, we'd very quickly found a low cost solution.



Seaweed Issue: Similar techniques were used for a new seaweed processor in Scotland who'd as part of another project requested advice on controlling condensation inside loose packed sealed bags of dried seaweed during cold storage/transit.

