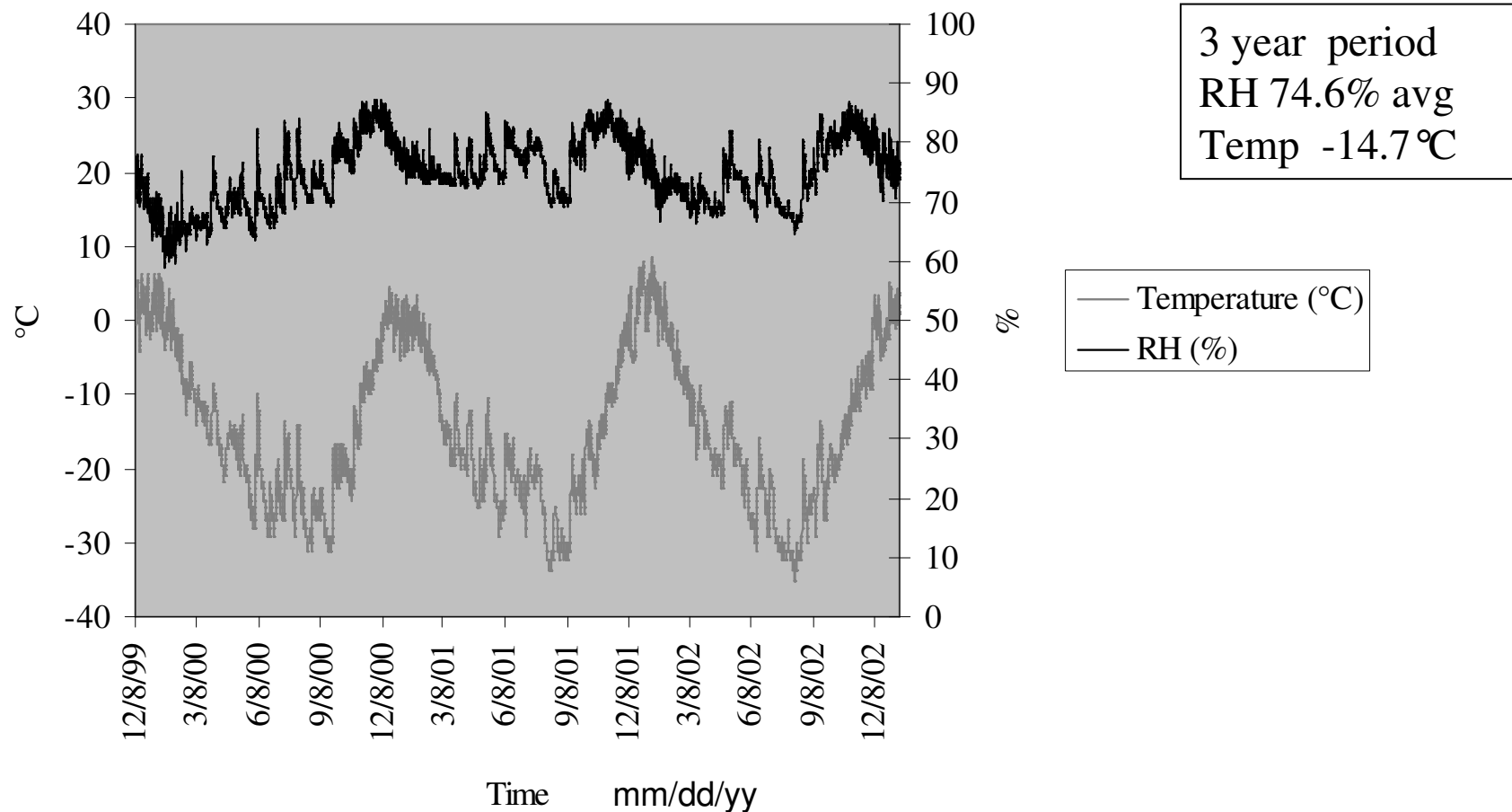
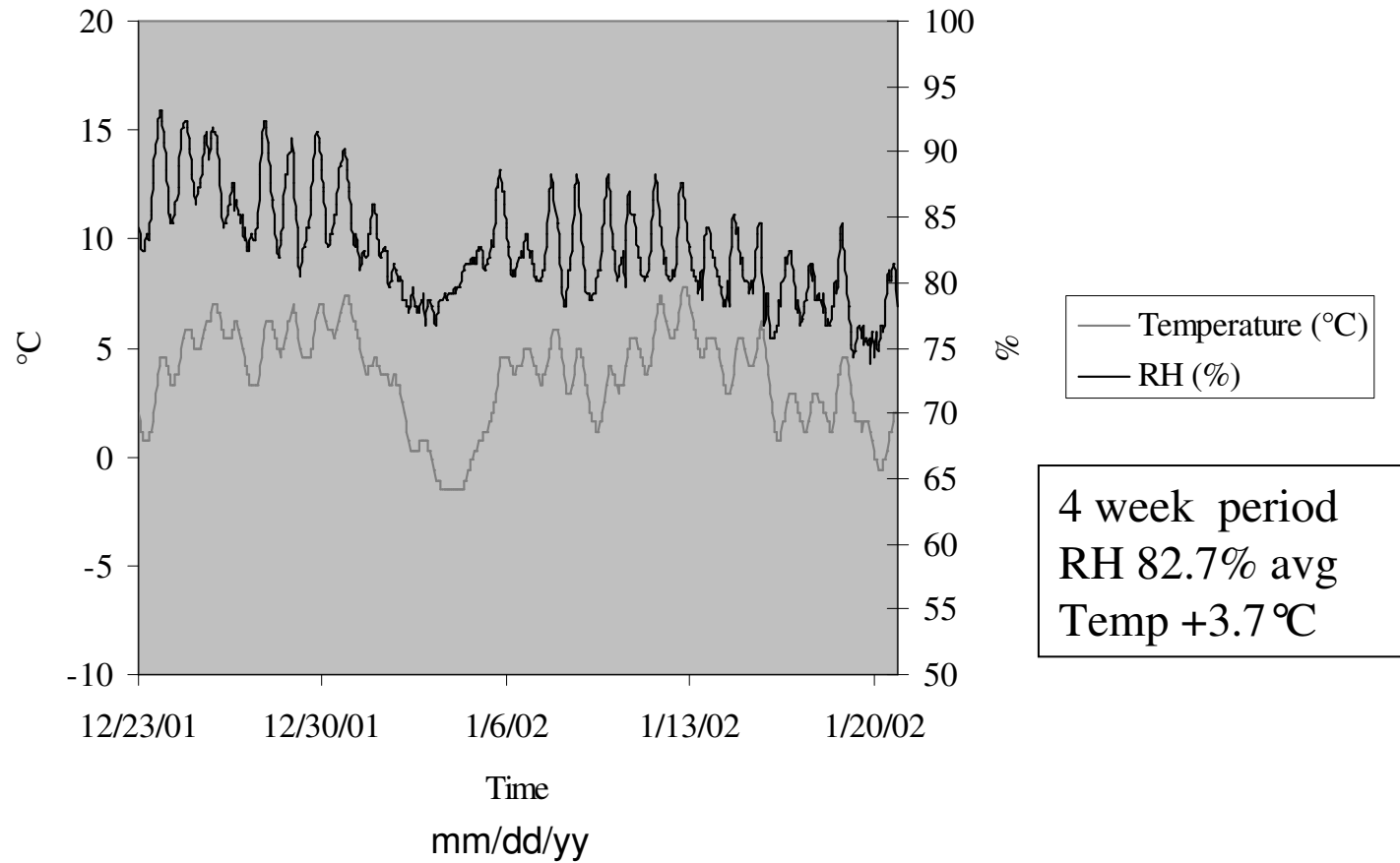


Environment monitoring within Cape Evans hut.



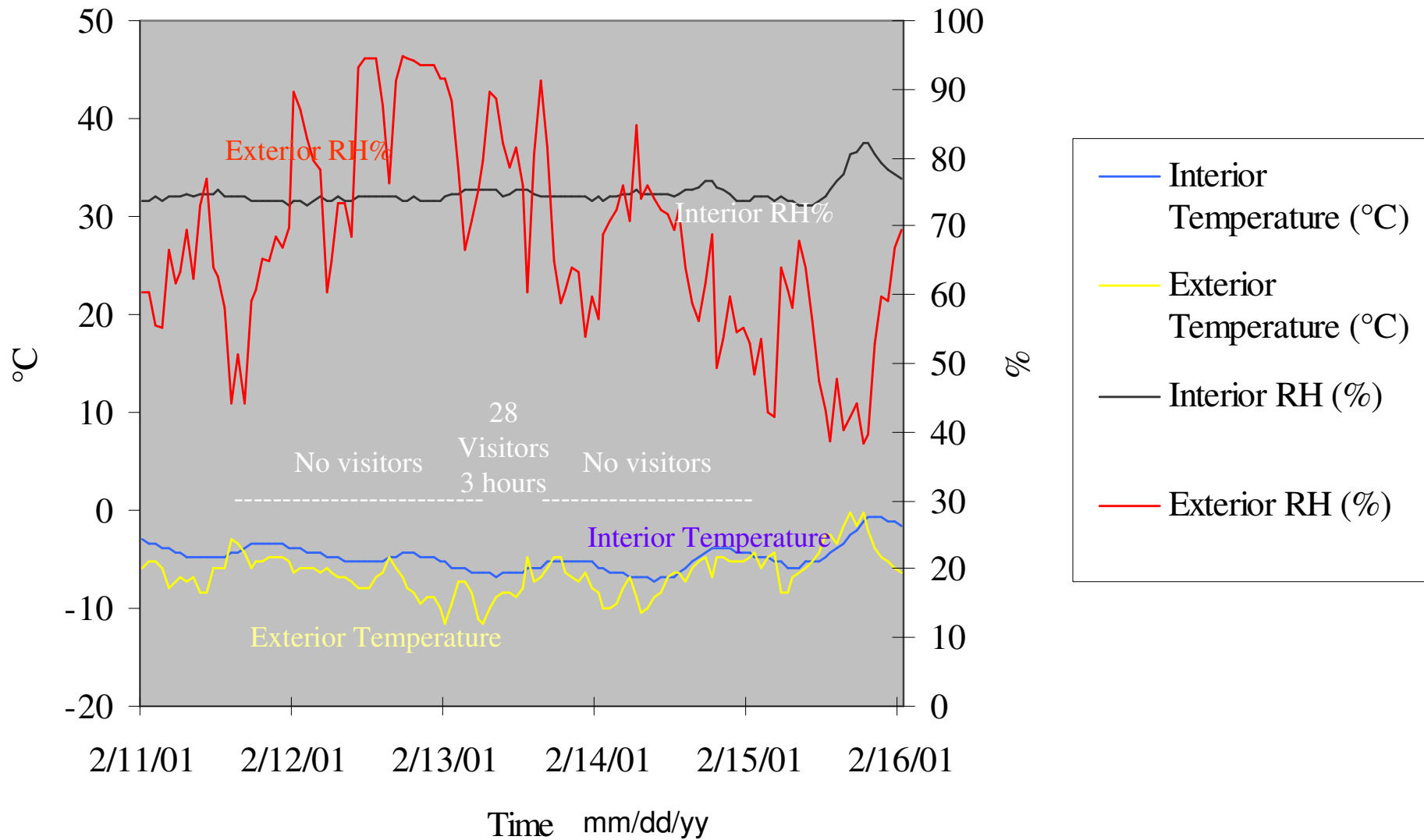
During winter (June – August) temperatures reach -30°C and average relative humidity is 74.6%.

Environment monitoring within Cape Evans hut.



During January and February, the average temperature rises above 0°C and relative humidity also increases.

Environment within Cape Evans hut - effect of visitors on temperature and relative humidity



**Hours per year acceptable growth conditions
(temperature > 0°C & Relative Humidity > 80%)**

2000 2001 2002

Cape Evans

Floor, S wall, under bunk		79	269	433
Middle of hut	1.7m	268	157	83
Shelf, nr entrance	2.0m		569	461
Darkroom	2.2m		257	120
Stables, stores	0.2m		185	138

Cape Royds

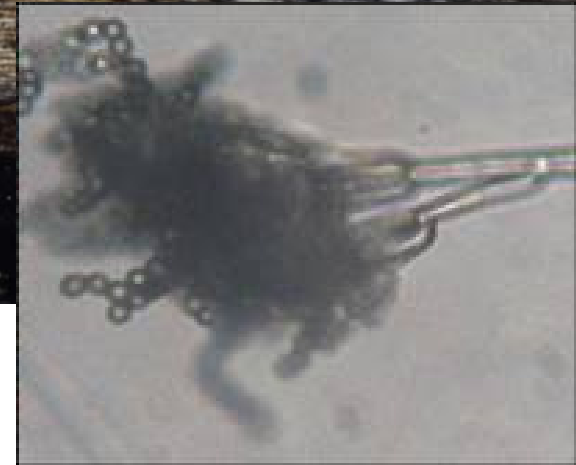
Floor, S wall		0	33	6
Shelf, N wall		13	0	0
Floor, N wall			55	12
Behind acetylene	2.3m		3	0
Shelf, Shackleton room			0	5

**Discovery
Hut**

Floor, center		8	0	0
Stove pipe hole	2.0m	11	0	0
Shelf	1.6m		0	0
Stores, east wall	0.2m		0	0

Hamilton, NZ would have 8760 hours/year where conditions are suitable for fungal growth

Surface Moulds – Cape Evans



Merck MAS 100 ECO air sampler

- used to collect samples from various positions in the huts
e.g. by the hay store entrance.



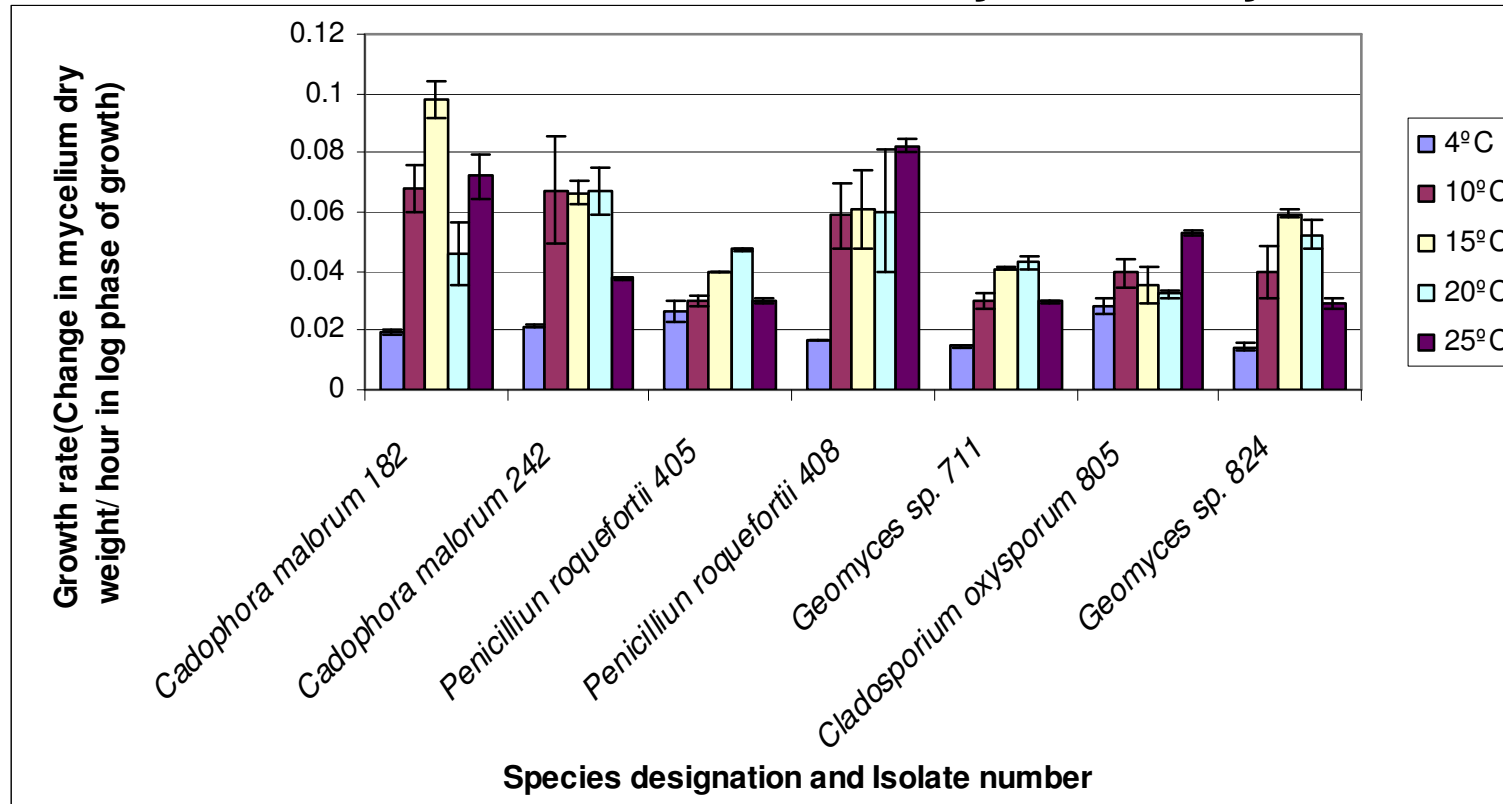
Results from inside Hut Point hut

All air samples were grown at 2 °C

Sample location	Total Colony Forming units (CFU) /m ³	Fungi (CFU)/m ³	Single cell organisms (CFU)/m ³
Inside in the pendulum room	10	5	5
Inside in Meat room	320	170	130
Inside near cooking area	20	20	0
Inside passageway to cooking area	340	130	200
Inside among stores in main area	140	90	50
Inside in front of hay entrance	>26,280	>26,280	0
Inside main room	126	62	58

Data from PhD thesis of Shona M Duncan

Cold Tolerance and Cellulytic Activity



- Isolates all grow at 4 °C, but slowest and with longest lag phase.
- *Cadophora malorum*, *Geomyces* sp. and *Cladosporium oxysporum* produced more biomass at 4 °C than any other temperature, and could sustain repeated growth at 4 °C, indicating cold adaptation.
- All fungi tested grow on wood, *Cadophora malorum* hyphae produced mucilaginous material when incubated with wood at 2 °C but not at ≥ 4 °C.

Data from PhD thesis of Shona M Duncan