

## Influence of air ionization on the mould reduction of tomatos

October/November 2005

In collaboration with "The Greenery."



The trials, which were organised and carried out by Bioclimatic BV in collaboration with The Greenery, demonstrated that ionisation is an effective solution for inhibiting mould growth on vegetables and fruit.

The trials were carried out at The Greenery site in 'De Lier.'

Two identical cold storage rooms were kept at a temperature of 18°C and a relative air humidity of 86%. Cold room 1 was ionised and was first allowed to operate for 48 hours without the product to kill off any air contamination that may have been present.

### Trial set-up:

Two cold rooms with loose tomatoes in boxes and tomatoes in small packs (SP). Cold room 1 was ionised and cold room 2 was not. Otherwise, the situation was identical in both cold rooms.



figure 1: set-up in the cold room

### Trial 1:

Ionisation was installed in the cold room on Tuesday 18 October.

The products were placed in the cold rooms on Thursday 20 October.

The results were discussed on Wednesday 26 October. The results were plain to see. After six days of storage in cold room 1 (ionised), there was absolutely no mould growth whatsoever. In cold room 2 (not ionised) the tomatoes exhibited serious mould growth. (See figures 2 and 3)



figure 2: the tomatoes in cold room 1  
(ionised)



figure 3: the mouldy tomatoes in cold room 2  
(not ionised)

### Trial 2:

This was a second trial in which the loose tomatoes were put in 'small packs,' to examine whether ionisation is necessary when tomatoes are packed in 'breathable film' (perforated plastic packaging).

The products were put in the cold room on 31 October.

The results were discussed on 7 November.

The result: One could clearly see that no mould growth occurred either in the loose tomatoes or the small packs of tomatoes in the ionised cold room. (See figures 4 and 5)



figure 4: small packs of tomatoes in cold room 1  
(ionised)



figure 5: small packs of tomatoes in cold room 2  
(not ionised)

## SUMMARY

This table shows when and where mould occurred.

INPUT	31 Oct	TREATED LOOSE	UNTREATED LOOSE	TREATED SP	UNTREATED SP
OBSERVED	3 Nov	NO MOULD	NO MOULD	NO MOULD	SLIGHT MOULD GROWTH
OBSERVED	7 Nov	NO MOULD	MOULD	NO MOULD	MOULD