

Controlled Atmosphere for pestcontrol in Lassie Rice storage facilities

Coen Maas
Manager Quality & Technology
Lassie, a Sara Lee Company





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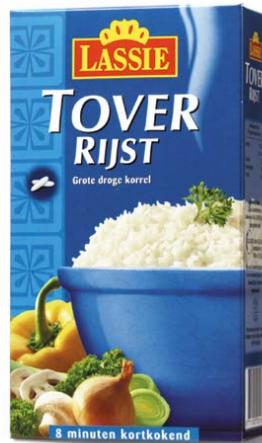
Lassie Rice
A Sara Lee company
In the Netherlands



- 50% of the Dutch consumer ricemarket
- 40 mio CU a year
- 15.000.000 kg Cargorice a year
- 50 employees



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Insects in rice



Raw material

** Countries of origin: Surinam, Guyana, USA, India, Pakistan, Thailand*

** Contamination of cargo rice in the boat before unloading*

Factory

** Cross-Contamination in production facilities*

Consumer

** Complaints we would like to minimize*

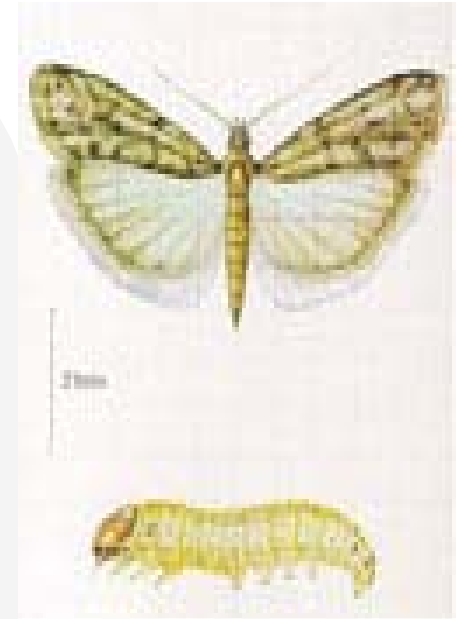




Tribolium confusum
Flour beetle



Sitophilus orizae
Rice weevil



Ephestia kuehniella
Flour moth

Formerly used solutions



Until 1998

- Preventive MB-treatment of cargo in the port

Until 2000

- Only curative MB-treatment of cargo in the Netherlands

At the moment MB is prohibited in the Netherlands

Disadvantages of MB and PH3:

- Bad for the environment
- Dangerous to work with
- Requires long ventilationtime before unloading
- Some insects are resistant

From 2000-2002

Controlled Atmosphere is used as a curative method

From 2003

Controlled Atmosphere is used as a preventive method from april -september



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Controlled atmosphere



- O₂ content of the cargo is decreased to < 1,5 %
- Insects, larvaes and eggs are eradicated
- Optimum conditions, 10 days at 30°C
- Method is effective from 18°C

- In summerperiod (april –september)
all the cargovessels are treated preventive

- Treatments outside the factory are preferred
because off safety-rules and temperature conditions
in the factory

Costs: about €9,- €10,- per ton in a shiphold
about €35,- €50,- per ton in a big bag or container



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Future, conclusion

- CA-treatment has replaced MB en PH treatments with a long term environmentally-friendly and cost-acceptable pest control measure

