For Food on Top

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Content:

The present report assesses whether a reduction (germ killing) of possible contamination with *Salmonella* of dry products. The aim was to reduce the quantity to "absent in 25 grams" by means of infrared treatment. The equipment used was the KREYENBORG – IRD, which gave satisfactory results.

Construction of tests:

Since working with *Salmonella* was not possible, an *Enterococcus faecium* (ATCC® 8459 ™) was used for the experiment. This type corresponds largely in its behavior to *Salmonella ssp*. In order to produce a typical contaminated goods [1] with germs, sesame seeds were loaded under standard conditions in the pilot plant with 10^4 CFU /g [2] [15,000 g Sesame with 150 ml of a solution containing approximately 10^6 cfu/g *E. faecium*]. This goods were three times subjected immediately to the infrared treatment at 105°C. In each case four samples were taken. Afterwards the samples were given to microbiological examination, which were analyzed with three different methods.[3]
(Parallel two samples from an IR treated sesame seed without germ injection and two samples of germ added goods without IR-treatment were produced and analyzed.)

Results and evaluation:

The Reducing of the "Compare germ" *Enterococcus faecium* (ATCC® 8459 ™) is at each sample - performed by the processes, which is described above, safely at absent in 25g. However, this also corresponds to the effects which are typical for a natural contamination with salmonella.

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[1] The contamination was about 10^2 to 10^3cfu/g.
[2] The values obtained in the test were determined 24 hours after inoculation. In a preliminary experiment, the mortality rate in this period was at the factor 10^2.
[3] The sample preparation (cfu count) of all samples was carried out within 24 hours after inoculation and treatment.

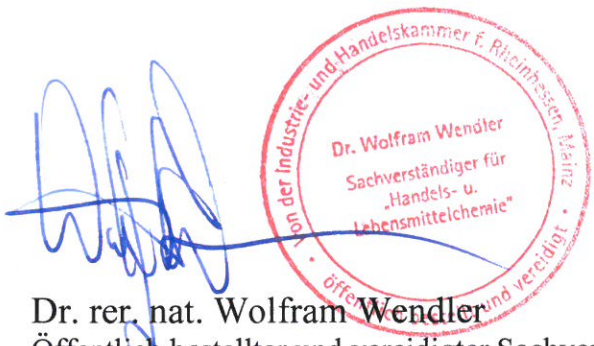
Summary:

The germ reduction with infrared light at FS IRD is able even with seed types which correspond to those of Salmonella, this certainly kill so that they are not detectable in 25g.

Applied documents:

- Test reports
- experimental procedures
- ATCC information

Mainz, Sept. 16th 2016



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