

STANDARDISED PEEL FORCE MEASUREMENT OF SALAMI SKIN

The force to initiate and maintain the peel of a salami skin was measured in a reproducible and consistent manner.

Requirement

A major salami producer required a method to reproducibly quantify the peel profile of artificial sausage casings. The method had to take into account:

- maturation and storage conditions
- pre-test handling
- sample preparation and fixing

The information generated was used in cross-comparison with natural sausage skins. Maturation and fermentation conditions were manipulated to optimise finished product quality. For example the bacteria used to coat casings, drying of the internal meat, maturation times, as well as actual peel properties of the sausage skins.

Solution

The FTC Assisted Peel Table, coupled with good experimental design, generated reproducible results. A constant 90° angle was held at the test interface whilst the Peel Table facilitated controlled movement of the sample.

The TMS-Pro system identified a number of significant events during analysis relating to the peel profile of the salami samples.

Benefits

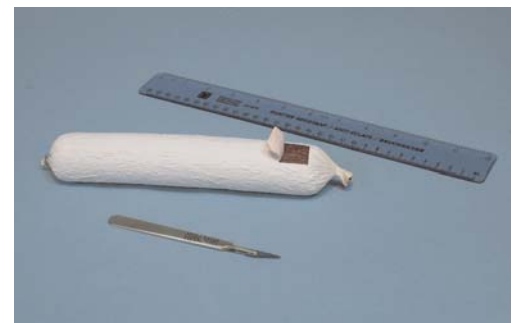
Peel Force • The method established has produced reproducible data from a small sample set.

Peel Energy • Peel skin strength methodology has commercial value in quality environments.

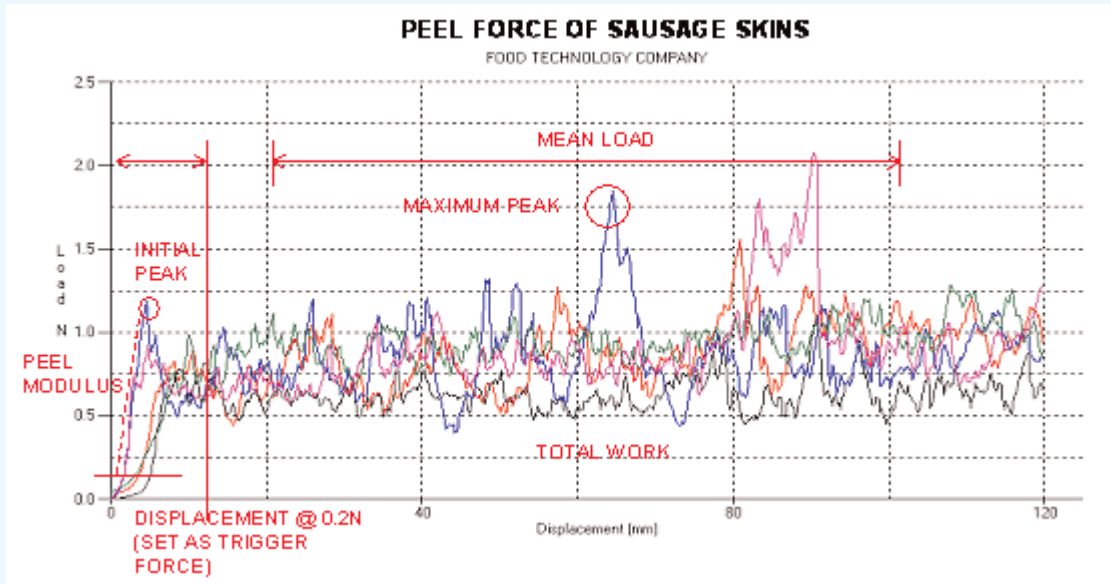
Peak Force • Variation in sample processing and handling can be measured..



Test assembly configured with assisted peel table to maintain 90° throughout analysis.



Preparation of the sample is critical for reproducible results



Conclusions

Analysis has provided objective information relating to the peel profile of the salami samples. A large amount of information can be drawn from the investigation, which in turn can be correlated to the process variables, such as maturation time, fermentation and skin formulation.

The parameters of mean peel force and work were most accurate in predicting peel profile of the sample and should be used in future investigations. The test was representative of treatment by the consumer, quick to set up and easy to repeat.

Overall the objective was met through good experimental design and understanding of the test application. Future studies should build upon this experience and be used to quantify the effect of additional process variables.

Characteristics			
Parameter	FTC System		
	TMS-Pro	TMS-Console	Manual Stand
Maximum Load	✓	✓	✓
Initial Peak	✓	✓	
Mean Peel Force	✓	✓	
Displacement at Initial Peak	✓	✓	
Peel Modulus	✓	✓	
Total Work	✓		
Work to Propagate Peel	✓		

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