



DETECTION OF BONES IN CHICKEN BREAST SLICES



Next generation quality control for food safety

- Automated detection of near-surface contaminants, invisible to the human
- Takes chemical image and detects chemically different contaminants
- Can be combined with alarm and sorting systems



HYPERA: Successful automated inline detection of undesired bodies in chicken slices

Description of the challenge: Fast on-line determination of naturally occurring contaminants in processed food, particularly, small bones in raw chicken breast slides, is challenging for X-rays and totally impossible for VIS artificial vision systems.



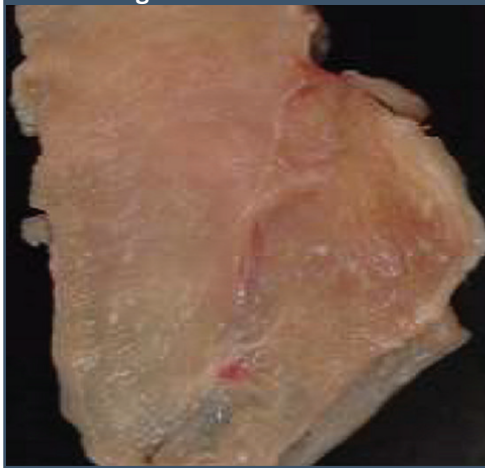
Case study

A chicken wing bone was placed between two 1.5-mm-thick raw chicken breast slices. A chemical image was acquired by means of the HYPERA Chemical Imaging System. An ad hoc chemometric model was then developed for distinguishing the wing bone spectral signal from

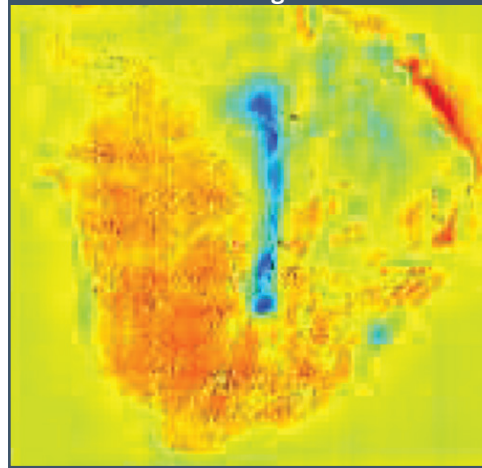
the surrounding meat. Meanwhile in the visible image (left) there is no clear evidence of the hidden bone, it is clearly visualized on the HYPERA image (right) in blue false colour (blue colour means higher probability of detection)

Detection of bone in the chicken breast slice

Visible image: Bone not visible



HYPERA chemical image: Bone in blue



Successful detection could be confirmed for chicken bones with a diameter of more than 2 mm in chicken slices with a thickness of less than 3 mm.

Conclusions

“The HYPERA chemical imaging system is capable of detecting naturally occurring contaminants such as thin bones in meat pieces, which is particularly useful for automated contaminant detection for quality control in poultry production lines.

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