Detection of cartilage in meat using low-energy X-ray

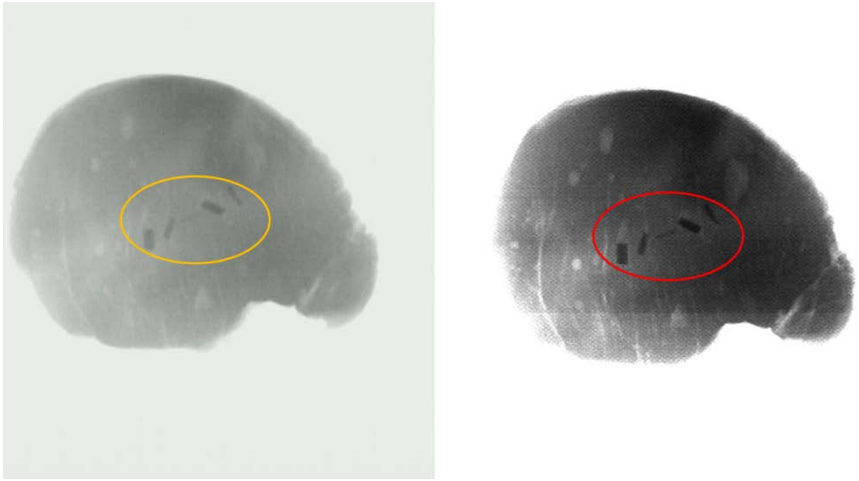
Aim of the InSPIRe demo project:

- Investigate if cartilage in meat products are detectable using low-energy X-ray automated radiology
- Quantify the detection ratio compared to conventional X-ray radiology

Project perspective & gains for industry:

For some meat products natural cartilage is considered as a foreign material not wanted in the raw product

Conventional X-ray systems in general are not capable of performing an robust automated screening of meat products for the occurrence of cartilage in the raw material.



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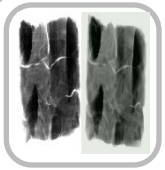
GOAL:
Quantify the detectability of cartilage in meat products using low-energy X-rays

WHY:
Cartilage is not detectable with conventional X-ray energies

HOW:
By benchmarking detection contrast p erformance on conventional and low-energy X-ray radiology

WHO:
Marchen Hviid, DMRI (Project leader)
mahd@teknologisk.dk, +45 72 20 26 77
Mads Jacob Kalisz Hedegaard, DMRI
Kaj Meldgaard, Danish Crown

Related to inSPIRe projekt:
I-2: Control and Surveillance of automated processes



OUTCOME:
It was demonstrated that low-energy X-ray radiography generates higher contrast between cartilage and fresh meat compared to conventional X-ray energies

Despite the higher contrast cartilage still remains a difficult material to detect in a sufficient robust and automated set-up

The total attenuation of low energies are higher than at conventional energies

Funds (~ 9.6 mio. DKK) were granted for the project I-2 ”Control and surveillance of automated production”.

Project duration: 3 years (2011 – March 2016).

Project partners are Danish Crown AS, Tulip Food, Danpo, and DMRI/Teknologisk Institute.

BUDGET: 300.000 DKK (539.000 DKK inkind)

FUNDING BODY: InSPIRe

PROJECT PERIOD: Oct. 2013 - Oct. 2014