Normalized CDA for fat/muscle segmentation in salami

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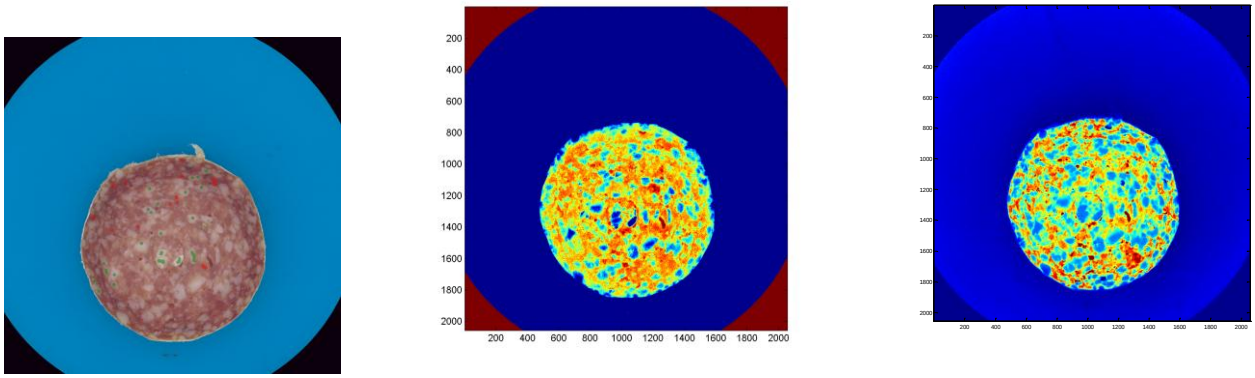
Abstract

Salami meat and fat color are two of the most important quality parameters for attracting consumers. Several s composition, process, and storage parameters influence the meat and fat color changes, i.e. meat type, muscle /fat distribution, herbs, fermentation culture , storage time and temperature.

The aim of this work was to assess the meat color and progress of the ripening of germen type dry fermented salami. A major task in this assessment is the segmentation of muscle and fat. Since both of these classes will be effected by color change, then the segmentation has to be robust to this variation.

In this presentation we compare the use of standard canonical discriminant analysis (CDA) to normalized CDA or nCDA. Both techniques are supervised and painted regions of muscle and fat are provided. The methods are optimized and compared using the maximum Rayleigh quotient,.The nCDA method chooses optimal band normalization on the pixel level and performs a CDA on the normalized pixel values. The nCDA obtains more than 8 times improvement in Rayleigh quotient, and the segmented images also look more correct.



Figur 1 Salami slice (left), CDA based segmentation (middle), and nCDA based segmentation (right).