

APPLICATION OF COMPUTER VISION FOR EVALUATION DISTRIBUTION OF MOLDS *PENICILLIUM ROQUEFORTI* ON BLUE CHEESE

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Abstract

Blue cheeses are group of cheese produced with mold (*Penicillium roqueforti*). A significant features for quality of blue cheese are quantity and distribution of mold *Penicillium roqueforti* on cut surface. Many producers are making efforts to achieve significant quantity and even distribution of blue mold on cut surface. It is used a special shape of cheese (truncated pyramid) or penicillin injection that helps to even distribution of blue mold. This paper presents an approach for automatic evaluation quantity and distribution the blue mold on cut surface of the blue cheese.

Cut surface of four trademarks blue cheese are captured with digital camera Olympus E-PM1. Examined trademarks are: Gran Bavarese, Bergader, Roquefort and Longwood Danablu. It is proposed an image processing algorithm for evaluation cut surface of examined blue cheese. The algorithm uses segmentation thresholds and it is implemented in environment NI Vision Builder. The processing results are ratio of pixels with mold to all pixels, ratio of pixels of pores without propagated mold to all and ratio of pixels of pores with and without propagated mold to all.

The biggest quantity of pores without propagated mold is obtained for cheese Roquefort which could be explained with some specifics in technology process. The smallest quantity of pores without propagated mold is obtained for cheese Longwood Danablu because the cheese have been pierce with needles for good airing and mold propagation.

The proposed algorithm could be used for automatic evaluation distribution of mold on cut surface of the blue cheese and the results could be used for production process optimization.

Key words: *Computer vision, Blue cheese, Molds.*