The content of benzo(a)pyrene in smoked meat products

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Introduction

Smoking is one of the best Technologies for conservation of meat and fish products.

Today it is supposed that the technology is applied in many forms to treat 40-60% of the total amount of meat products and 15% of fish.

Results

Results were compared with maximum acceptable levels set by European Commission regulation (EC) No 1881/2006

All data were presented as mean with Standard deviation significance was set at $p<0,05$. Analyzed samples contained BAP in concentrations below the EU permitted maximum limit.

Fig.1. clearly shows that the highest content of BaP was detected in breakfast ham (4,05μg.kg-1) and the lowest BaP content was detected in smoked pork chop (0,11 μg.kg-1). This study clearly demonstrates that the production of smoked meat products with BaP levels lower that 1 μg.kg-1 is possible in non intensively smoked products.

Conclusions

1. Analyzed samples contained BaP in concentrations below the EU permitted maximum limit.
2. This study clearly demonstrates that the production of smoked meat products with BaP levels less that 1,00 μg.kg-1is possible in non-intensively smoked products
3. Based on the conclusions of EFSA, the current system of using benzo(a)pyrene as the only marker for the group of PAH-s can not be maintained.

Materials and methods

Approximately a sample of 150g of smoked product was taken according to the sampling procedure.

In this study meat and fish samples were analyzed using the method for HPLC. Homogenized samples were hydrolyzed with the solution of potassium hydroxide in ethanol for 2 hours in 40 0C, and the filtered and extracted with cyclohexane. The cyclohexane solution was washed with water and then with a mix solution of menthol/water (4:1). For re-extraction cyclohexane liquid extraction with N, N-dimenthyformamide : water (9:1) solution was used. Afterwards – repeatedly combined DMF layer extraction with cyclohexane were used.

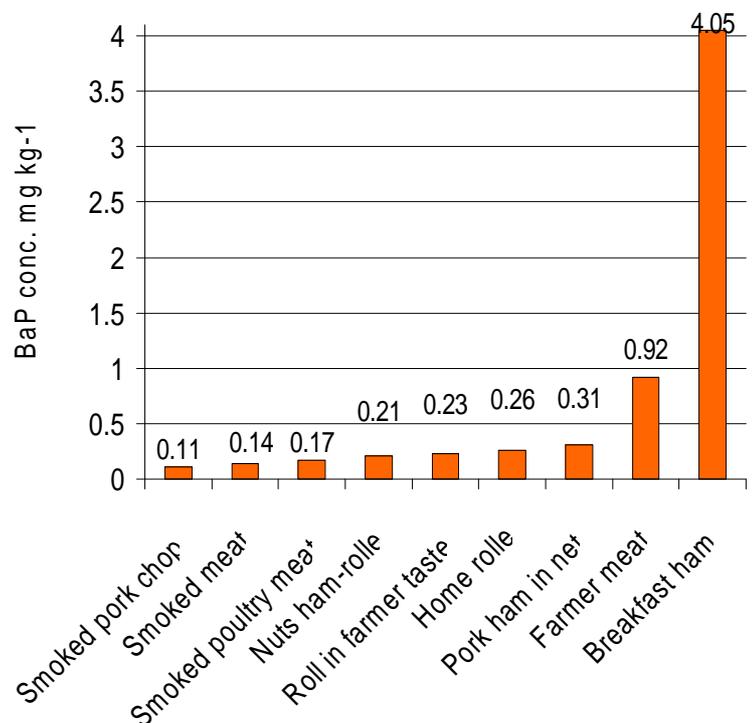Statistical analysis. All data are presented as mean with standard deviation, significance was set at $p<0,05$.

Fig. 1. **Benzo(a)pyrene content in industrial smoked meat products**