STATISTICAL STUDY ON THE INFLUENCE OF CONSERVABILITY OF KABANOS ROLMIX

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Abstract
The study includes analyzes statistical interpretations, in order to investigate the influence on the quality of kabanas ROLMIX site, to increase validity. The correlation coefficient shows the extent to which variations of variables are correlated with changes in other variables. By statistical methods using polynomial regression function corresponding to the three samples we can determine the validity. Analyses were performed on three different samples of sausages which were added different amounts of additive. Therefore additives used in the manufacture of kabanas, expands capacity humidifiers and water retention, emulsion stability achieved, highlights the flavor of meat, prevents color changes, increases shelf life of products. The coefficient of determination is R2 = 99.52%, which shows a very good correlation between the temperature close to 100% and the period of validity. This function can make a forecast on the validity of the intermediate temperatures at which we made measurements.The method of least squares which gives the best approximation according to the validity of the variation with temperature, we observe that the validity of sample 1 (without additive) varies with temperature by decreasing logarithmic function: y = -57.414 Ln (x (=) 179.86. The samples analyzed r*etained in the product water content increases, because of the additive added in proof and increase the salt in the sample analyzed the evidence and aest content is due to additive added.*

Keywords: additives, food, antiseptic, industry, qualities

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1. INTRODUCTION

The use of additives in food is warranted if this ensures quality improvements;increasing the duration of storage; stabilizing properties; reduce food losses; maintaining nutritional value; encouraging for the process(Orănescu E.,2002, Darabă A.,2007).
As noted, the chemical additives used in the food industry can be grouped into: antioxidants; flavorings and flavor enhancers; sweeteners; dyes; thickeners and stabilizing; emulsifiers; antiseptic; preservative (Banu et al.,2010, Banu C.,2000).
The use of additives in the food industry must be in compliance with sanitary effect to the dose concentration and purity standards specified as a number of additives can harmful effects on the body(Neveu I.,1970, Uilks S.,1967)
Rolmix reduce specific, direct effects on the growth of economic profitability and:

- improves quality, organoleptic (appearance, color, taste), physico-chemical properties (texture, elasticity) and bacteriological finished product;
- expands period conservability of the product up to 30 days;
- when using functional protein concentrates (Danpro S-760 and FL 371 Danprotex) Rolmix's use is unavoidable, casein (the most valuable known protein), giving the finished product nutritional qualities, taste and great commercial aspects, in addition, provides a more efficient production and a significantly reduced price of the finished product, which reflects positively on the buyer (Chou.,1989, Kendall et al.,1969).

The sodiumchloride has an important effect upon the preservation process that has to be appreciated overall taking on account the following reactions of the salt:- reducing the humidity content;- eliberating the proteases from the deadcells of the bacteria; - making soluble some proteic fraction that become in

this way accesible to some enzymes;- changing the acido-basic equilibrium;- modifying the proportion between the bound and the free water (Gontariu et al., 2015, ***, 2012).

2. MATERIALS AND METHODS

The first sample analyzed is blank containing no additive, the second sample containing 600 g to 100 kg paste additive and third samples containing 1 kg to 100 kg paste additive.

3. RESULTS AND DISCUSSION

In the fig.1 will calculate the period of validity of a sample calculated using the function y =-57.414Ln (x) + 179.86 determined by the method of least squares.
Because the amount of additive added to samples, duration increases and decreases the number of hours. The pictures below will calculate the duration of sample 2 calculated using the function y =-61.161Ln (x) + 209.41 determined by the method of least squares.

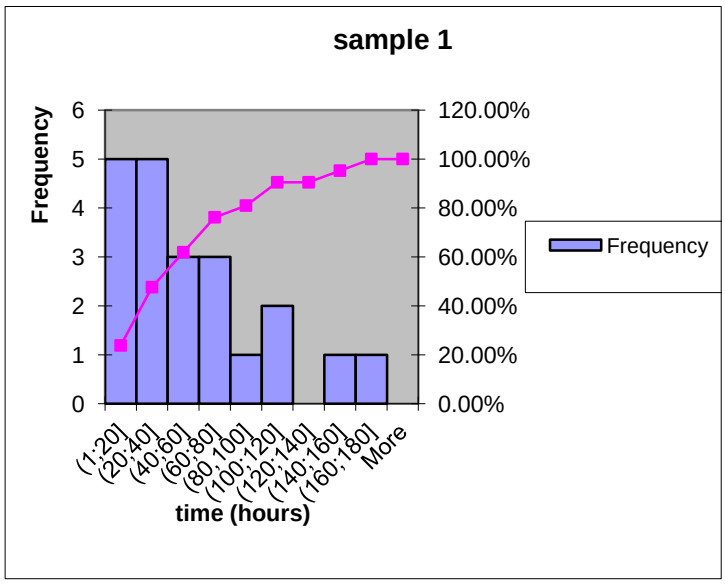

Fig. 1: Histogram of the period of validity - Sample 1

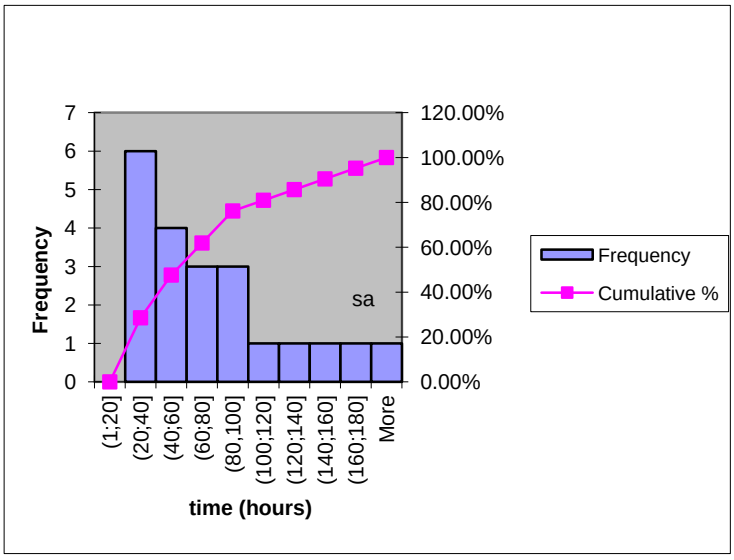

Fig. 2: Histogram of the period of validity- sample 2

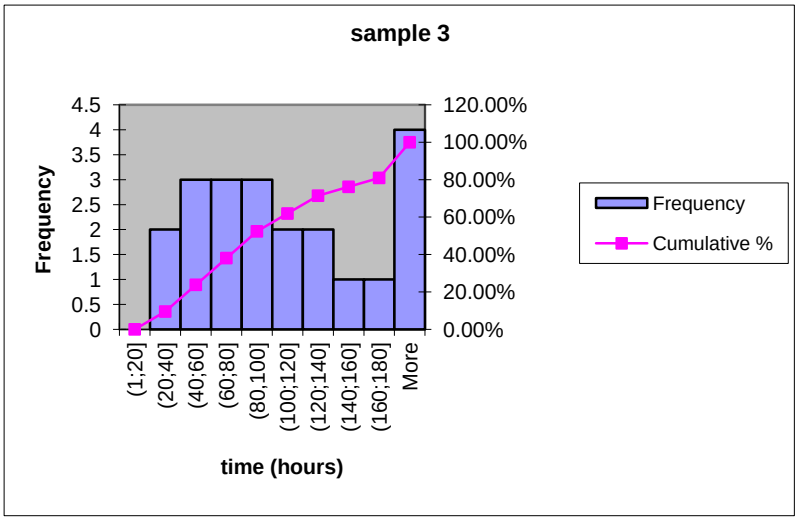

Fig. 3: Histogram of the period of validity- sample 3

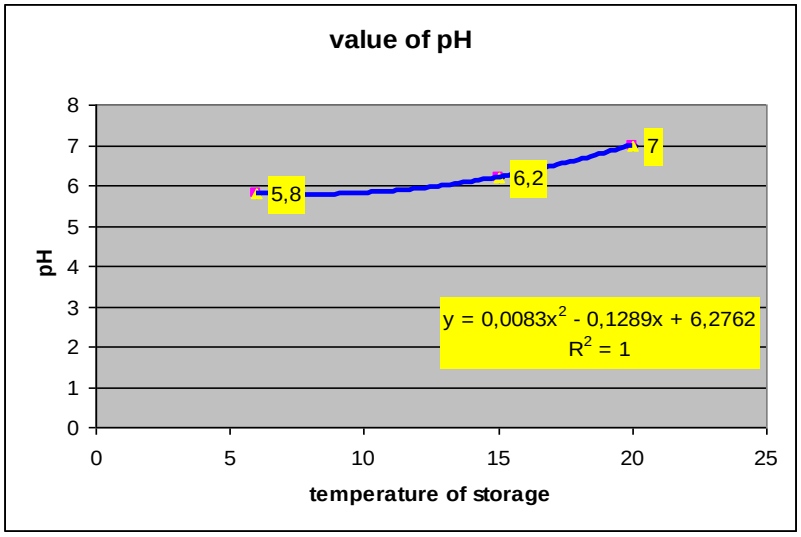

Fig. 4: Corelation of pH with storage temperature

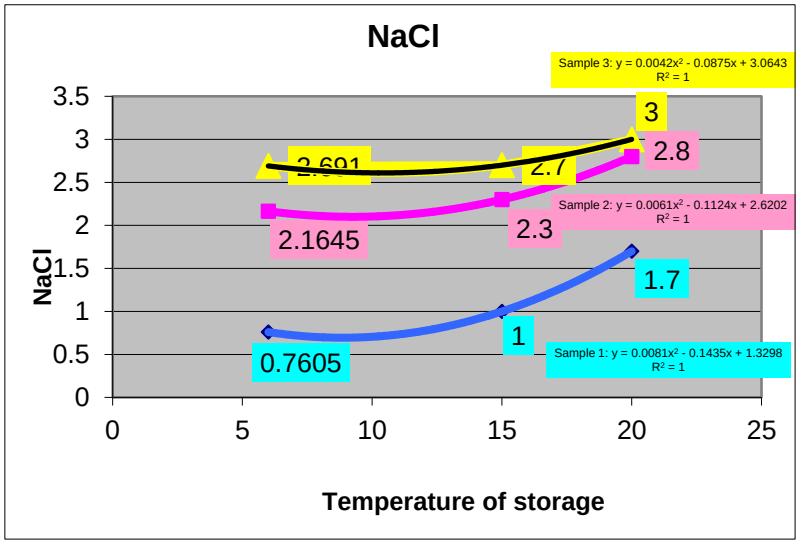

Fig. 5: Correlation between the amounts of NaCl with storage temperature

Determination of pH

The three samples have the same variation of pH (pH values do not depend on the amount of additives added). Sample 3 contains the highest amount of NaCl, but the rate of increase in the amount of NaCl with temperature (justified by reducing the amount of water lost by evaporation) is the smallest (0.0042 coefficient given by the function of x2 regression).

Although the amount of NaCl in sample 1 is the lowest rate of increase in the amount of NaCl is higher (given the coefficient of x2 0.0081 in the regression function).

Sample 1 contains the highest percentage of moisture but the rate of increase in the percentage of water with temperature (justified by reducing the amount of water lost by evaporation) is the smallest (0.0002 coefficient given by the x2 of the regression function). Although the percentage of moisture in sample 3 is the smallest rate of increase in the percentage of water with temperature is higher (given by the coefficient of x2 0.0006 in the regression function).

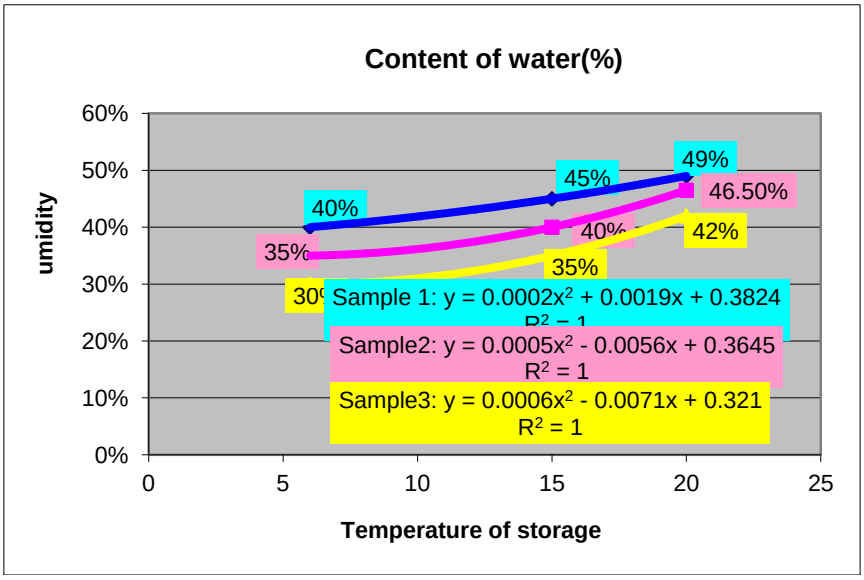

Fig. 6: Correlation between the percentages of water storage temperature

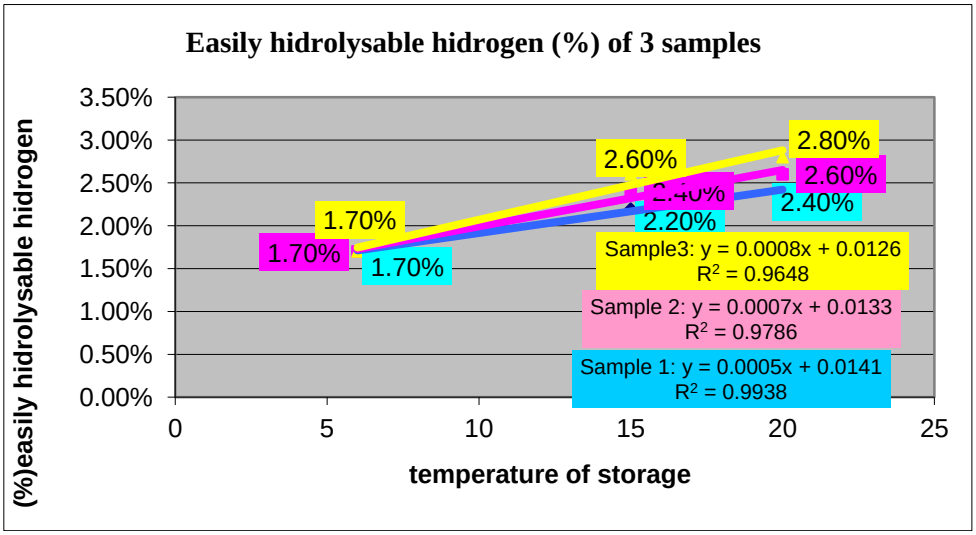

Fig. 7: Correlation easily hydrolysable nitrogen (%) storage temperature

Easily hydrolysable nitrogen (%) for the fastest growing kabanos containing the highest amount of ROLMIX.

4. CONCLUSION

Physical-chemical analyzes performed at the cottage reveals the following:
a) retained in the product water content increases, because of the additive added in proof.
b) increase the salt in the sample analyzed the evidence and aest content is due to additive added.
c) The samples analyzed were found small and equal amounts of starch which leads to a counterfeit product.
d) The pH of the samples remains constant because the amount of additive added does not change the pH.
Shelf life for the first sample.
The method of least squares which gives the best approximation according to the validity of the variation with temperature, we observe that the validity of sample 1 (without additive) varies with temperature by decreasing logarithmic function: y = -57.414 Ln (x (=) 179.86
X - storage temperature, Y - the number of hours of life
The coefficient of determination is R2 = 99.47%, which shows a very good correlation between the temperature close to 100% and the period of validity. This function can make a forecast on the validity of the intermediate temperatures at which we made measurements (metrics).
Period of validity for the 2nd test.
The method of least squares which gives the best approximation of the variation depending on the period of validity, depending on temperature, we observe that the validity of sample 2 (600 g additive added to 100 kg paste), varies with temperature as decreasing logarithmic function y = - 61.161 Ln (x) 209.41
X - storage temperature, Y - the number of hours of life
The coefficient of determination is R2 = 99.52%, which shows a very good correlation between the temperature close to 100% and the period of validity. This function can make a forecast on the validity of the intermediate temperatures at which we made measurements.
Period of validity for the 3rd test.
The method of least squares which gives the best approximation according to the validity of the variation with temperature, we observe that the validity of sample 3 (1 kg additive added to 100 kg paste) varies as a function of temperature decreasing logarithmic y = -94.604 Ln (x) 323.26
X - storage temperature, Y - the number of hours of life
The coefficient of determination is R2 = 92.43%, which shows a very good correlation between the temperature close to 100% and the period of validity. This function can make a forecast on the validity of the intermediate temperatures at which we made measurements

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