



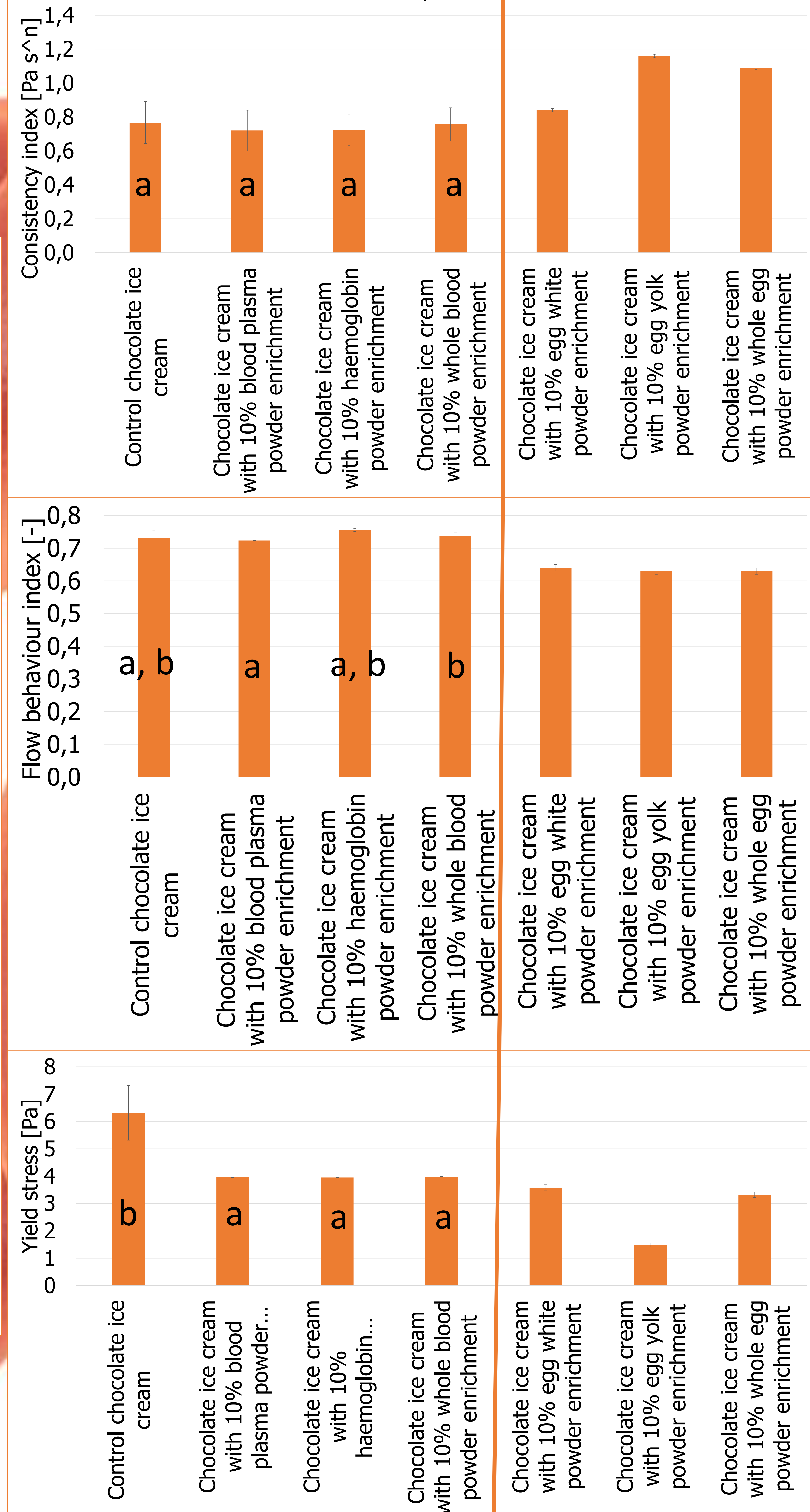
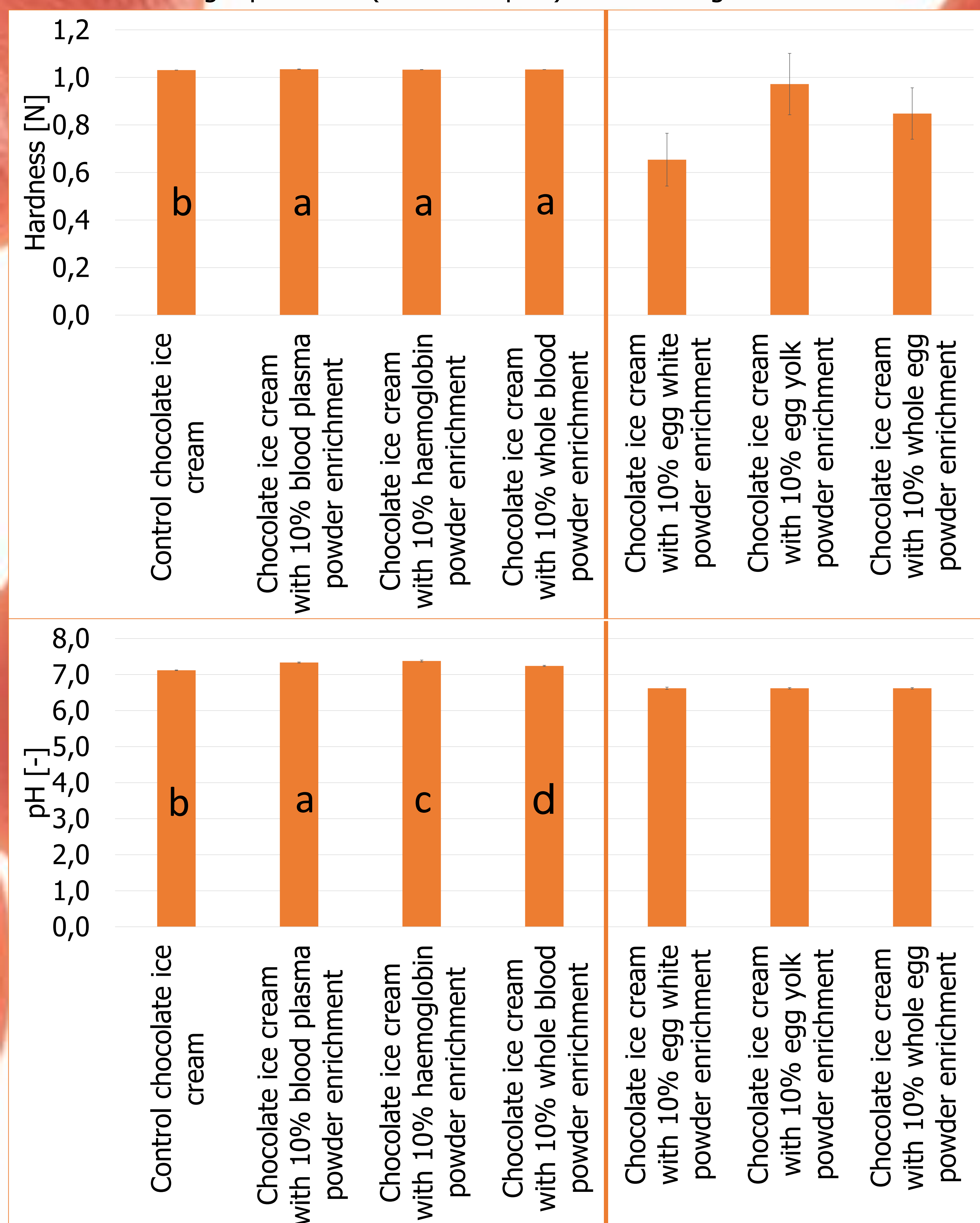
To ensure sustainability, by-products of animal origin especially blood should be utilized. The absolute and relative overpopulation with increasing meat demand may be the cause of a protein crisis. Besides, iron deficiency anaemia is also a serious problem in developing countries and developed countries as well. Utilization of slaughter animals' blood in food industry may solve these problems as well as blood could be a very good raw material for food development.

Two main fractions can be separated from whole blood: plasma and red blood cell (RBC) fraction. Plasma is a good protein source, cold-set binder and gel-developer, but it has a high salt content. RBC is a good iron and protein source. It is good for dark and red colouring, but it has an effect on sensory attributes.

There is no doubt that ice cream is a very popular dessert, which can be the perfect matrix for investigating the effect of different high biological value animal products and by-products as well as prevent the children iron deficiency anaemia.

The hardness of the frozen ice cream samples was performed by TA-XT Plus (Stable Micro Systems, UK) at -18° C. The pH values of the samples were determined using a pH meter (Testo 206-pH2) after heating them to 0° C.

The investigation of the rheological behaviour of the pasteurized, homogenized but unfrozen samples was performed by MCR 92 rheometer (Anton Paar, Les Ulis, France) at 5° C. Coaxial cylinder system (after Searle) was used for the measurements (cup diameter 28.920 mm, bob diameter 26.651 mm, bob length 40.003 mm, active length 120.2 mm, positioning length 72.5 mm). Controlling the rheometer was performed by Anton Paar RheoCompass software. An increasing shear rate was applied from 10 to 1000 1/s, then it was decreased to 10 1/s and shear stress values were recorded. Herschel-Bulkley model was fitted to flow curves



Results of Kolmogorov-Smirnov test: yield stress: the normality was not accepted but this dependent was investigated by MANOVA as well because of the completeness; consistency index:  $D(12)=0,222$ ;  $p=0,107$ ; flow behaviour index:  $D(12)=0,227$ ;  $p=0,089$ ; Results of Shapiro-Wilk test: pH:  $W(36)=0,962$ ;  $p=0,249$ ; DMC:  $W(36)=0,95$ ;  $p=0,107$ ; hardness:  $W(36)=0,834$ ;  $p<0,001$ ; a\*:  $W(36)=0,829$ ;  $p<0,001$ ; b\*:  $W(36)=0,933$ ;  $p=0,03$ ; L\*:  $W(36)=0,954$ ;  $p=0,144$ ; C\*:  $W(36)=0,919$ ;  $p=0,012$ ; Results of Levene's test: yield stress:  $F(3,8)=7,512$ ;  $p=0,01$ ; consistency index:  $F(3,8)=7,134$ ;  $p=0,012$ ; flow behaviour index:  $F(3,8)=6,147$ ;  $p=0,018$ ; pH:  $F(3,32)=1,761$ ;  $p=0,174$ ; DMC:  $F(3,32)=1,689$ ;  $p=0,189$ ; hardness:  $F(3,32)=0,393$ ;  $p=0,759$ ; a\*:  $F(3,32)=14,431$ ;  $p<0,001$ ; b\*:  $F(3,32)=13,541$ ;  $p<0,001$ ; L\*:  $F(3,32)=6,157$ ;  $p=0,002$ ; C\*:  $F(3,32)=0,365$ ;  $p=0,005$

Results of MANOVA, which was carried out by IBM SPSS, were marked on the diagrams.