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QUALITY CHARACTERISTICS OF MEAT EMULSIONS MANUFACTURED WITH W/O/W MULTIPLE EMULSIONS AS FAT REPLACERS

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In recent years, multiple emulsions draw ever-increasing interest in food industry due to their innovative usage area as they have a big potential in production of healthier and low-fat products and encapsulating various aromas, bioactive compounds and sensitive food components. The objective of this study is to research the effects of W/O/W multiple emulsions used in model system meat emulsions (beef) as animal fat replacers. W/O/W emulsions were produced by using two-step emulsification procedure with water, salt, olive oil and characteristic emulsifying agents. External phase of W/O/W emulsions were stabilized by using egg-white powder or sodium caseinate. Model system emulsions were produced using meat, water, salt, nitrite and phosphate, in which control group was designed to contain 10% animal fat. W/O/W emulsions were used in meat emulsions as animal fat replacers with the percentages of 10%, 20% or 30%. Emulsion stability, water-holding capacity, total fat content, fatty acid composition, storage stability and TBA value were determined in trial groups. According to the results, it was concluded that usage of W/O/W emulsion groups modified fatty acid composition and decreased total fat content, compared with animal fat control samples. The stability characteristics of the emulsions made with W/O/W emulsions in terms of oxidation and storage were similar to control samples. The results of the study showed that W/O/W emulsions offer a good potential to be used in meat emulsions as animal fat replacers and to allow production of low-fat meat products, without causing quality defects.

Keywords**:** Emulsion, multiple emulsion, W/O/W emulsion, low-fat meat emulsion.

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