

DR-62**FUNCTIONAL PROPERTIES OF THE PROTEIN FEED ADDITIVES BASED ON THE WASTES AND BY-PRODUCTS OF SLAUGHTER AND PROCESSING OF POULTRY****D. Y. Ismailova,^{1*} V. G. Volik,¹ T. V. Fedorova,² V. S. Lukashenko,³ I. P. Saleeva³**

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Abstract. The distribution of molecular weights (MW) of the peptides and anti-oxidative capacity (as oxygen radical absorbing capacity, ORAC) were studied in new protein feed additives produced by the short-term thermal hydrolysis and subsequent fermentation by proteolytic enzymes of the wastes and by-products of slaughter and processing of poultry. **Abstract.** The highest amounts of this fraction was found in FM (83.58%) and in new “Fermented Additive” (FA, ca. 80%); PM and new “Hydrolyzed Additive” (HA) contained 65.16 and 53.58% of this fraction, respectively. The percentage of heavyweight peptides (> 10 KDa) in FM and FA was ca. 8% and 5%, respectively, while in PM and HA 17.55 and 32.77%.

ORAC of hydrophilic fraction of all additives (to peroxide radical) was within the range of 152-2000 μM of trolox equivalents (TE) per 1 g. The highest ORAC was found in FA (ca. 1980 μM TE/g), the lowest in FM (ca. 153 μM TE/g); ORAC in PM and HA was similar and fell within the range 400–520 μM TE/g.

The conclusion was made that new protein feed additives have certain unique properties including anti-radical and antioxidative activity. MW of the most peptides within FA is below 3 KDa. Introduction of these additives to diets for animals and poultry can improve the quality of the feeds; allow for the saving on the expensive fishmeal; solve the problem of the utilization of poultry slaughter wastes and improve the ecological condition of poultry processing enterprises.

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