

USE OF BY-PRODUCTS OF THE FOOD INDUSTRY IN THE ANIMAL FEEDS

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The fourth major crop after rice, wheat and corn, the potato plays an important role in human nutrition around the world. In the food industry, potatoes are used in the production of french fries, instant mashed potatoes, chips, which are gaining popularity among consumers due to their taste. In the feed industry, potato by-products are used in the production of feed for farm animals and poultry. In other industries, potatoes are used to produce starch, alcohol, lactic acid, acetone, glue, and biofuels. Growing and processing potatoes is a profitable industry, but the processing produces a large amount of by-products that must be processed. The food industry creates a huge amount of potato peels as a by-product, which poses a threat to the environment due to its microbial spoilage. Potato peeling can be done mechanically or manually. With the mechanical method of peeling potatoes, 15-60% of by-products are formed [1, 2]. Industrial processing of potatoes annually produces from 70 to 140 thousand tons of cleanings worldwide.

Physical properties, chemical and microbiological indicators were determined in fresh potato peels according to standard methods and techniques recommended for scientific research.

The physical properties of fresh potato peelings were studied, namely, the moisture content, which was 69.6%, and the bulk density, which was 620 kg/m³. Potato peelings are characterized by unsatisfactory physical properties, which distinguishes them from traditional raw materials and belongs to the class of heavy raw materials. Potato peelings are rich in nutrients and biologically active substances containing crude protein - 1.9%, crude fat - 0.1%, crude fiber - 1.1%, crude ash - 0.9%, nitrogen-free extractives - 21.6%. The use of potato peels as a feed component for farm animals and poultry reduces feed conversion. When wet, they can be introduced into cattle feed up to 20%. Fresh potato peelings in the first hours contained MAFAnM - 3.2*10³ CFU/h, when stored for 24 hours, MAFAnM increased to 90*10³ CFU/h, after storage of 48 hours, MAFAnM increased to 160*10³ CFU/h. Wet cleaning must be used in the immediate vicinity of the potato processing site on the first day due to microbial and enzymatic spoilage. Various technological processes for processing potato waste are used, such as drying, granulation with grain raw materials, ensiling, the extrusion process, which makes it possible to obtain a new generation of compound feed. Extrusion is an ideal technological process for enriching animal feed with nutrients and biologically active substances. The use of potato peelings as a component of extruded feed additives will make it possible to expand the range of the feed base, reduce the costs of concentrated feed per unit of production and reduce the harmful impact of waste on the environment.

Based on the analysis of the problems of using fresh potato peelings in the production of mixed fodders, their physical properties, chemical and microbiological indicators were studied, which distinguishes potato peelings from traditional raw materials and belongs to the class of heaviness, which must be taken into account when included in the composition of mixed fodders. It is proposed to include fresh potato peelings in the compound feed using extrusion, which will make it possible to obtain a new generation of compound feed.

Keywords: potato peelings, food waste, potato processing.