



## **BIOFUELS AND BIOACTIVE PRODUCTS OBTAINED THROUGH THE ADVANCED PROCESSING OF HIDE AND LEATHER WASTES**

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Leather industry generates a large quantity of solid wastes based on proteins, fatty matters and salts which are difficult to process due to the high content of water (50-80%). At international level there are few industrial plants for hide and leather reclaiming<sup>1-6</sup>, obtaining of leather fibre boards, organic fertilisers and separation of fatty matters for direct use as boiling installation fuel. The European regulations regarding organic waste disposal are more and more restricted and create a demand for research on new technology development for hide and leather wastes reclaiming.

In our paper we present a new route for bovine fatty matter separation, extraction and catalytic transesterification for obtaining of biofuel for plant heat and biodiesel. The kinetic study of bovine fatty acids methanolysis has revealed the appropriate conditions for the reaction.

Another direction of our researches was the separation of protein from chromium tanning salts by alkaline hydrolysis of leather wastes under atmospheric pressure conditions. A well defined collagen hydrolysate with average molecular weight of 10000 Da and amino acids content was obtained through the mathematical modeling of leather waste hydrolysis. The protein additive was used for designing of a new range of foliar fertilisers and was experimented with good results on horticultural crops.

### References

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