

Ukraine does not have enough existing regulations, standards, instructions, rules, etc, that would determine the ways of selling and using such materials in the in the future.

For the introduction of a mechanism that will already allow the use of demolition waste as a secondary raw material with minimal negative environmental impact, we propose the following stages of work.

1. Before carrying out work related to the dismantling of rubble, first of all, it is necessary to neutralize the object from explosive substances and obtain a specialist opinion on demining.

2. Settle legal relations with the owners of the destroyed facilities, obtain permission to access the property, as well as to transfer ownership to the waste generated in the course of the work.

3. In the process of waste collection, separate hazardous waste (slate, roofing material, waste electrical and electronic equipment, etc.) Hazardous waste shall be transported to industrial waste landfills, to industrial waste landfills.

4. Safe construction waste should be crushed on site, if possible. dismantling, crush it with mobile crushers. The crushed material shall be transported to household waste landfills.

5. In the absence of mobile or stationary shredders construction waste, we propose to remove the waste to a specially designated for this purpose at solid waste landfills.

It is advisable to use shredded construction waste as an insulating layer when compacting household waste, or for the construction of temporary roads, or to strengthen slopes [2].

Given that a significant number of landfills in Ukraine require reclamation, and in the current economic conditions with insufficient such work is almost never carried out in the current economic environment, construction waste should be used in the reclamation process. Namely, during the technical stage of reclamation, when the landfill dome is levelled and compacted. of the landfill and its compaction.

Thus, the use of waste is possible as a lateral outer insulation layer, intermediate insulation layer, which does not contradict the requirements of state building codes.

Implementation of the proposed method of recycling demolition waste will reduce the need for new land allocation. will reduce the need to allocate new land plots for temporary storage of waste for temporary waste storage, which will reduce the negative impact of waste on land resources.

#### REFERENCES

1. Порядок поводження з відходами, що утворились у зв'язку з пошкодженням (руйнуванням) будівель та споруд внаслідок бойових дій, терористичних актів, диверсій або проведенням робіт з ліквідації їх наслідків. URL: <https://zakon.rada.gov.ua/laws/show/1073-2022-%D0%BF#Text>

2. Державні будівельні норми України. Проектування. Полігони твердих побутових відходів. Основні положення проектування. ДБН В.2.4-2-2005.

### **COMPREHENSIVE APPROACH TO FOOD PRODUCTION WASTES USING AS PART OF COMPOUND FEED**

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Food production wastes using as part of compound feed correspondence to sustainable development goals number 2 “End hunger, achieve food security and improved nutrition and promote sustainable agriculture”, number 8 “Foster sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all”. Such technology helps to reduce:

- a) volume of food production wastes;
- b) using plant materials such as corn, barley, wheat, oats for compound feed production;
- c) final price of compound feed.

Food production wastes using as part of compound feed also correspondence to hierarchy of waste management, which is adopted in Ukraine. According to this hierarchy, the main way to reduce the amount of waste is waste reuse as resources for the production of new products. From a technological point of view, the use of food waste in compound feed is not difficult and does not require unique, new equipment designing. However, this use of food waste is quite limited due to economic and marketing reasons.

A food production waste contains variety valuable nutrients, including carbohydrates, vitamins, minerals. It depends on type of food production enterpriser, where food wastes are formed.

In order for food production waste using in compound feed to be economically feasible, the following must be taken into account:

1) the distance from food waste generation and storage place to the processing plant should be minimal and not exceed 200 km. This will allow to minimize transportation costs and reduce the carbon footprint;

2) the compound feed composition, in which waste from food production is used, must meet the needs of livestock farms, which are potential consumers. Depending on the livestock's type, breeds, purpose the compound feed composition differs significantly;

3) low energy consumption when processing food waste into compound feed. This will reduce the impact energy prices on the compound feed final cost;

4) the compound feed with the use of food waste price should be lower than similar feed without food waste. The products must also have all the necessary certificates;

5) the possibility of selling compound feed using food waste in small batches. This approach will allow small farms to optimize their costs for livestock feeding.

A comprehensive approach to food waste using, which is based on the above points 1-5, requires close cooperation between the food waste generators, feed manufacturers and farmers.

In our opinion, the key factor is farmer's interest as end consumers in compound feed containing food waste using. The growth demand from farmers can encourage feed manufacturers to cooperate with food waste producers. Another effective tool for spreading the practice of using food waste in compound feed is financial support for manufacturers. This can be implemented at the state level through tax reductions, at the level of municipal authorities through interest-free loans for this area development, at the level of non-governmental organizations through the provision of grants for development, marketing or management. It is also important to raise the level of environmental education among Ukrainians and understand the principles of sustainable development and their practical application in business.

## **THE POTENTIAL OF COLLAGEN OBTAINED FROM LEATHER WASTE FOR BIOMEDICAL USE**

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Collagen is a versatile biomaterial with many applications in the biomedical field due to its excellent biocompatibility, biodegradability, and mechanical properties. Leather waste is a promising source of collagen, and recent studies have explored its potential for biomedical applications [1-3]. Since 2020, several studies have investigated the use of collagen obtained from leather waste for various biomedical applications. The aim of our study was to summarize the most