

## TECHNICAL CLASSIFICATION OF RAW MATERIALS FOR THE PRODUCTION OF BONE GLUE

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### ABSTRACT

This material discusses the technical classification of raw materials and the classification of bone grades for the production of bone glue.

**Keywords:** bone, glue, skin, gluten, collagen, gelatin, slaughterhouse waste, skin trimmings.

The chemical nature of the glue is a product of collagen hydrolysis. When various parts of the animal body (skin, cartilage, bones, tendons) are boiled with water or dilute acids, gluten and chondrin are formed.

The direct product of collagen hydrolysis – almost pure gluten – is gelatin. Adhesives, on the other hand, is a product containing, along with gluten, a significant amount of its decomposition products, which determines the difference in chemical structure and colloidal structure between both substances. Gluten has a stronger binding capacity and is obtained mainly from skins and bones; it is a colorless neutral substance without smell and taste.

According to the kind of material from which animal glue is made, the following varieties are distinguished:

- bone,
- mezdra,
- slaughterhouse waste,
- dermal, obtained from the waste of leather factories.

Animal bones and adhesive waste from leather production and slaughterhouses serve as raw materials for the production of bone glue.

Animal bone as a raw material for gluing is divided into 5 main varieties: 1) sausage bone, 2) table bone, 3) dump bone, 4) field bone, 5) fossil bone.

Sausage bone comes to the bone processing plant from sausage and meat canning factories. This bone is fresh, not boiled and contains a lot of fat and moisture.

In some places, the sausage bone is required to consist of a complete set of parts of the skeleton, including the head, bones and legs with hooves. In most cases, a sausage bone is understood as the whole skeleton, but without the head and legs.

It is necessary to distinguish between a sausage bone with shanks, the so-called whole sausage bone, and without shanks. The content of the shanks ranges from 20 to 30%. The shanks are the most valuable, since their brain contains up to 90% fat," and the bone itself is ornamental and is used for the production of haberdashery products.

Because of this, the sausage ordinary bone is regarded as lower than the whole bone and passes into the second grade. Sometimes sausage bone is divided into fresh sausage bone and dry. The value of a dry sausage bone depends entirely on the conditions in which it was stored.

To this category, as can be seen from the name itself, the Fresh canteen belongs to the bone coming to the plant directly from public canteens, hospitals, home kitchens. It is small in size, and there is much less fat and moisture in it than in a fresh sausage bone. It usually contains a tubular bone in a fragmented state and is regarded as lower than a whole sausage bone.

Landfill bone refers to bone collected in landfills. Before entering the landfill, the landfill bone was a fresh table bone, and its quality deteriorated due to the specific conditions of being in the landfill. Landfill bone contains relatively little fat and is contaminated with all sorts of foreign substances (dirt, glass, porcelain fragments, rags, metal scrap, etc.). The quality of landfill table bone is entirely determined by the degree of its decomposition and contamination.

A field bone is a dry weathered bone collected in fields and ravines. The field bone usually includes the bone of fallen animals, primarily from sheep and goats, horses and only partially from cattle.

Field bone, exposed to atmospheric influences and sunlight, loses almost all fat and dries. Its quality depends on a number of factors. There is often an admixture of table bone in the field bone, collected along the way in the fields. The richer the mixture of cattle bone, the more expensive it is, since horse bone gives glue of dark color and low qualities.

A fossil bone is a bone that has been in the ground for a long time. Fossil bone is almost completely devoid of organic substances and is used exclusively for the production of bone meal.

It is also necessary to note the following types of bone raw materials, used mainly for the production of gelatin.

The bone waste of haberdashery factories includes waste of tubular bone (lattice, whore, various fragments, etc.) obtained at button and haberdashery factories.

The frontal part of the skull is called the frontal part of the skull, usually containing a significant amount of fat, water and organic impurities.

Sausage, canteen, landfill and field bone are the main types of raw materials supplied to the glue factory. The first three varieties, unlike field bone, are often called adipose bone. But in their composition and value, all the above-listed varieties of bone differ significantly from each other. In terms of fat content and its qualities, fresh sausage bone is the most valuable, followed by a canteen, then a landfill and in last place, a field.

The water content in the bones also changes with the growth of the bone, namely: the wettest brush is fresh sausage, followed by fresh canteen, landfill, field and fossil.

**Table 1.**

**Fat and water content in raw bone**

Bone grade	Fat content in %	Water content in %
Sausage	12 – 14	35 – 40
Canteen	6 – 8	25 – 35
Landfill	5 – 6	16 – 20
Field	1,5 – 2,5	8 – 12
Fossil	1 – 1,5	20 – 25

According to the content of the adhesive substance and the quality of the resulting glue, fresh sausage and table bone differ little from each other and represent a good raw material for gluing. In the second place is the landfill bone and in the last – field and fossil, giving a dark-colored glue.

The glue yields range from 14-18% of the raw bone weight. Fat yields at individual plants, depending on the assortment of raw materials, range from 5-9%. The average fat yield for all plants can be assumed to be 6%.

It should be noted that glue factories usually process all sorts of bones, the proportional ratio of which is different for each plant.

#### REFERENCES:

1. <https://www.masterovoi.ru/stroy-mat/zhivotnyy-kley>
2. [https://alphapedia.ru/w/Animal\\_glue](https://alphapedia.ru/w/Animal_glue)
3. Virnik D.I., Khokhlova Z.V. Production of glue and gelatin - Moscow: Food industry, 1969. - 38 p.
4. Отамуродов Ж. О. Техническая классификация сырья для производства прочного органического клея //Вестник науки. – 2022. – Т. 2. – №. 10 (55). – С. 124-130.
5. Урозов М. К., Отамуродов Ж. О. Получение технического прочного костного клея //Вестник науки. – 2022. – Т. 2. – №. 10 (55). – С. 144-151.
6. Uroзов M., Otamurodov J. ПРЕИМУЩЕСТВА И НЕДОСТАТКИ ЖИВОТНЫХ И СИНТЕТИЧЕСКИХ КЛЕЕВ //Science and innovation. – 2022. – Т. 1. – №. А7. – С. 513-517.
7. Хайитов А. А., Отамуродов Ж. О. ЭФФЕКТИВНОЕ ПРОВЕДЕНИЮ ПРОЦЕССА ДУБЛЕНИЯ И ЖИРОВАНИЯ КАРАКУЛЕВЫХ ШКУР В ПРОИЗВОДСТВЕННЫХ УСЛОВИЯХ //Вестник науки. – 2021. – Т. 3. – №. 9 (42). – С. 45-50.
8. Отамуродов Ж., Урозов М. ИСПОЛЬЗОВАНИЕ ОРГАНИЧЕСКИХ КЛЕЕВ ДЛЯ ПРОИЗВОДСТВА КОЖГАЛАНТЕРЕЙНЫХ ИЗДЕЛИИ. – 2022.