



CHARACTERISTICS OF TECHNOLOGICAL PROCESS OF THE "BIOKOM" COMPLEX FOR UTILIZATION OF ORGANIC WASTE

When utilizing organic waste, BIOCUM uses a system of technologies, including anaerobic digestion of organic waste, ultrasonic substrate preparation, increased productivity and efficiency of the anaerobic digestion process using a patented anaerobic composite reactor.

The technologies used are confirmed by patents for invention.

The technology of anaerobic digestion, known as far back as the 1930s in Russia, is brought to the maximum efficiency and independence from climatic factors (be it cold or heat).

Anaerobic (in the absence of oxygen) fermentation is carried out by microorganisms that are contained in organic waste or added to them artificially. In the process of implementing our technology of "pure decomposition", no harmful substances and emissions are produced, but on the contrary pathogenic microorganisms and harmful organic elements are removed.

The main problem of any decomposition is the duration of the process. Therefore, the speed and quality depends on the preparatory measures. The preparation technology is mechanical (rough) and ultrasonic (thin) processing.

Fine preparation of organic substrates is used, which allows to carry out decontamination without heating, remove components harmful to the bacteria, make nutrients for it more accessible and, thereby, increase the decay factor of organic matter to 90%. The higher this coefficient, the more nutrients in the resulting organic fertilizer, because this is mainly the result of the life activity of methanogenic microorganisms.

Climate independence is ensured thanks to the material of the methane tank - fiberglass, as well as a number of constructive and technological solutions, indicated in the patent formula "Anaerobic reactor" and "Anaerobic biomass processing reactor". We manufacture and use the second generation reactor due to the porous structure of the wall, thereby achieving effective retention of biomass inside the reactor and maintaining the optimum temperature inside the reactor due to the low thermal conductivity of the material.

The bacteria used are the development of a company that allows the process to be as quickly as possible put on a stable biological treatment regime, or to remove from the crisis situations the process (falling pH, exceeding the permissible concentration of inhibitors), and fermenting organic matter that does not contain methanogens, like bird droppings.

As a result of the utilization of organic waste at BIOCUM:

- dry organic fertilizers of high quality and nutritional value are produced.
- biogas is dried and accumulated in elastic gas holders, then fed to the boiler to heat the coolant in the heat exchanger of the reactor and to the gas piston power plant. It is fed to the boiler in the form of biogas (70% methane plus 30% carbon dioxide), and for gas piston (according to the example of foreign use, in order to increase the methane number, but, at the same time, to avoid the cost of cleaning) is fed in a mixture with propane.

Raw materials - 27 types of organic waste, including manure cattle, poultry manure, activated sludge, flax bonfire, etc.

Виды используемых органических субстратов в технологическом процессе БИОКОМ

<i>№№ п/п</i>	<i>Виду субстрата</i>	<i>Удельный выход биогаз, л/кг, СОВ</i>
1.	Навоз КРС	310
2.	Солома общ.	310
3.	Солома ячменя	350
4.	Содержание желудка свиньи	370
5.	Меласса	380
6.	Густая картофельная масса	380
7.	Куриный помет	390
8.	Жидкий свиной навоз	390
9.	Листья	400
10.	Содержание желудка жвачных животных	400
11.	Солома пшеницы	400
12.	Ботва свеклы	500
13.	Биомусор	510
14.	Отходы овощей	530
15.	Клевер	550
16.	Укос лужаек	550
17.	Кукурузный силос	550
18.	Травяной силос	560
19.	Травы	580
20.	Пивная дробина	590
21.	Навоз лошадей	590
22.	Мезга свеклы	750
23.	Силос из сахарной свеклы	810
24.	Кукурузная солома	870
25.	Жир	1050
26.	Флотационный жир	1050
27.	Смесь субстратов на активном иле очистных сооружений	900

Biogas is used for own needs to generate electricity and heat, for drying fertilizers, moisture during drying is cleared to the required parameters (the higher the parameters, the more expensive the cleaning unit).

