EXPERIMENTAL ANALYSIS OF A GREASE

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Abstract: *This paper presents the steps and materials needed for the construction of an experimental grease and experimental results in its analysis.*

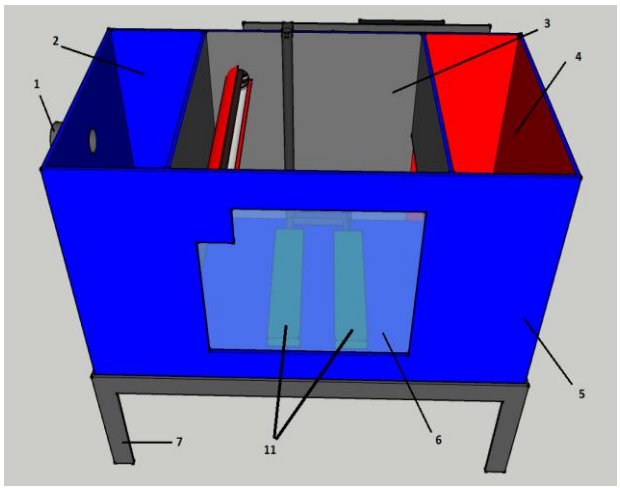
Key words: *pollution, water, fat separator*

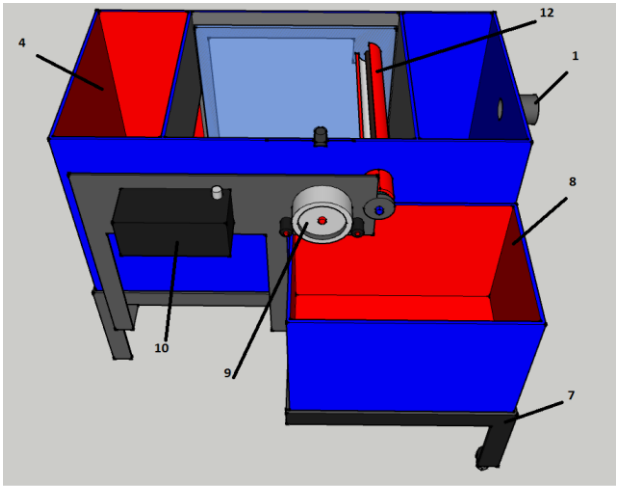
1. INTRODUCTION

The retention of organic material floating on the water surface is carried out by means of the fat separator and the separation and removal of emulsified substances is performed using the flotation process. Grease trap sizing and design chosen was a bubbling system. For sizing grease separator experimental bubbling system was done to calculate each component of the experimental system in software design and 3D simulation.

The components of the grease separator sparging system are:
- separation chamber,
- bubbling system,
- inlet chamber,
- room escape
- the exhaust pipe filtered water level control role
- catchment area,
- retrieval system fat screw type,
- reduction system and drive the screw,
- support.

The fat separator is a diagram of the sparger system is shown in Figure 1.





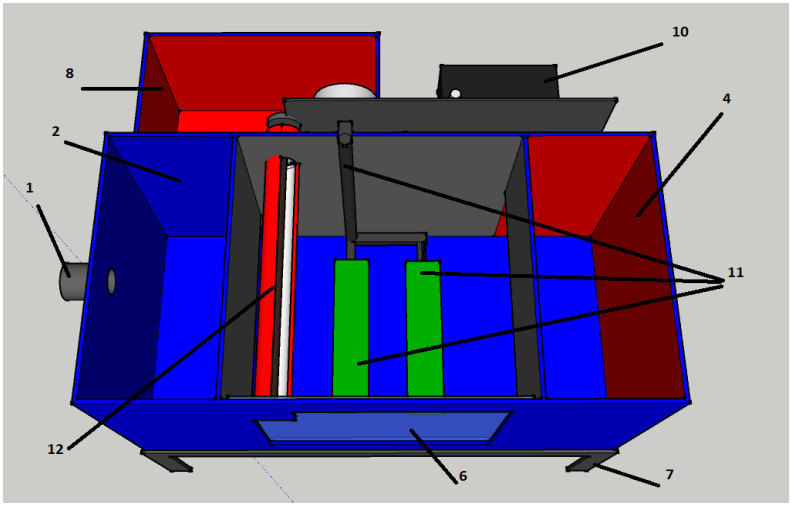


Figure 1 Scheme of construction of separator systems bubbling fats
1 - water outlet pipe; 2 - compartment water outlet; 3 - compartment for separating fats; 4 - compartment water intake; 5 - separator body; 6 - window supervision; 7 - Support grease; 8 - collective pool of fat; 9 - reduction system and a screw drive, 10 - blower; 11- bubbling system; 12 -screw collection.

2. CONSTRUCTION GREASE SEPARATOR

In producing the grease separator system bubbling following materials were used:
- glass fibers;
- resin;
- hardener;
- mold release wax;
- plexiglass;
- air pump;
- transformer;
- motor;
- support.

The first phase within a construction of the grease separator, is the production of a panel of glass fiber, followed by the transposition of the geometric dimensions of each component of the separator experimental fiberglass panel, and then have traveled the steps of cutting, assembling components of experimental fat separator.

The experimental grid was placed on a base of iron, and to prevent adverse action of UV rays it was putty and painted in the colors of standardized technical (Fig. 2).

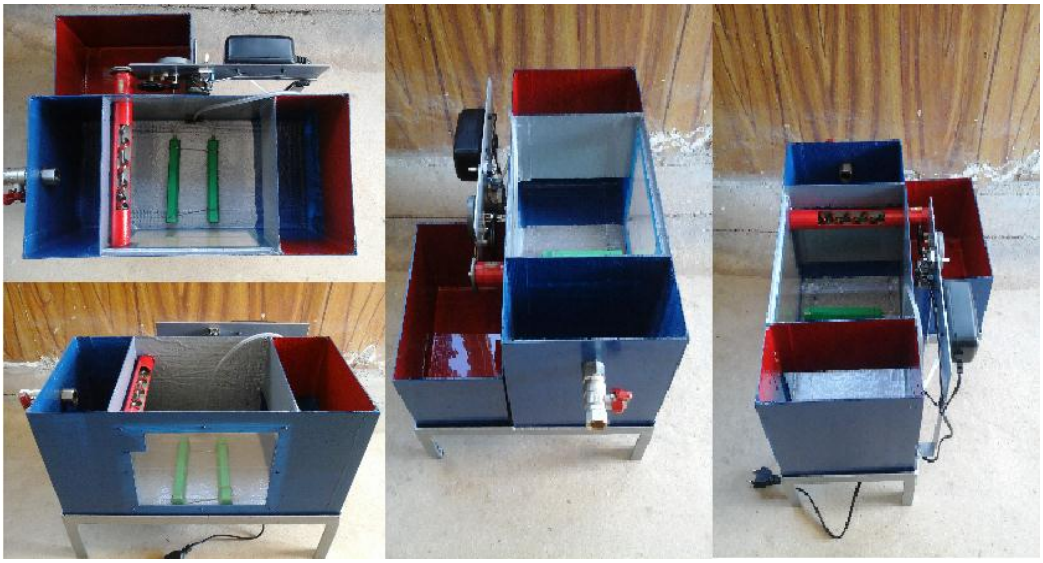


Figure 2. Grease separator

3. EXPERIMENTAL

Experimental tests of fat in the waste water retention was achieved using a mixture of water + oil (Fig. 3).

Figure 3. Wastewater used in experimental tests test separator fat

Experimental tests of retention of organic substances using fat separator involved the following steps:

-have identified the constituent elements of the test stand;

- wastewater was prepared sample (0.5 l water and 0.2 liters of oil);

-was introduced wastewater inlet compartment, maintained at a constant level wastewater separation compartment.

- was taken from the same area and separate fats were introduced into the cylinder;

- to measure the amount of organic matter retained by the separator.

The results of the tests were tabulated in Table 1 and determined the degree of restraint (yield fat separator).

Table 1. Results obtained from experimental tests

Nr. Crt.	Initial volume of waste [l]	Volume retained experimental separator [l]	Grease separator efficiency in the three trials [%]
1	0,2	0,170	85
2		0,165	82,5
3		0,172	86

CONCLUSION

1. Fat separator sizing and design chosen was a bubbling system.
2. Bubbling experimental separator sizing calculation was done (sizing) of each component of the experimental system in software design and 3D simulation.
3. The first step in the construction of the separator covered experimental panel consisted of the production of a glass fiber, followed by the transposition of the geometric dimensions of each component of the separator experimental fiberglass panel, and then were driven stages cutting, assembling components of experimental separator.
4. Experimental tests of substances in the waste water retention was achieved using a mixture of water + oil.

5. Separator fat yield in the three trials was between 82.5 and 86%.

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