

Microbes that will be used to produce chemical products or other materials on an industrial scale has to go through the process of isolation and acclimatization. Microbial sources should be adjusted to the desired microbial species. For example, to get the microbes that can produce hydrogen, microbial sources can be obtained from biogas sludge. As already known, hydrogen contained in the biogas. Therefore we can conclude that in the biogas reactor is expected to have a hydrogen-producing microbial. Due to in the mud is not only the hydrogen-producing microbial so isolation is necessary for one of the microbes from other. From the literature says that the hydrogen-producing microbes can form spores. This information is used as the basis of the isolation process [3]. To separate the hydrogen-producing microbes by heating the sludge to the conditions in which microbial cells that do not form spores will die. The spores then cultured in a enriched medium to support the growth of hydrogen-producing bacteria. Isolation produces a particular microbial species [4]. But does not guarantee consists of stable microorganism so the next step is acclimatization. Acclimatization is done by expanding the culture of microorganisms that have been isolated in fresh medium several times. Stability of the microorganisms tested again using the non glucose substrates such as sucrose or molasses and then in real substrate i.e. lignocelluloses substrates. It is expected that the type of substrate does not affect the product.

2 Material and Methods

Isolation techniques are as follows: Sludge simmer for 30-60 minutes with the purpose of eradicating vegetative cells. In these circumstances the spores are still survive and spores will be grown in enriched media. Enriched medium composition is adapted to inflate the hydrogen-producing bacterial culture and suppress the growth of non-hydrogen bacteria. The composition of the media can be seen in Table 1. Table 1 shows the composition of the media components in one liter of media. Isolation of microbes is very important to obtain pure microbes. The process of isolation of microorganisms from biogas slurry. Can be seen in Figure 2.

Table 1 The composition of enriched media for hydrogen forming bacteria (MH).

No	Component	Amount for 1 L solution
1	Pepton	4.0 g
2	L-Cystein	0.5 g
3	NaCl	3.0 g
4	MgCl ₂	0.1 g
5	FeCl ₂	0.1 g
6	K ₂ HPO ₄	2.5 g
7	Liquid vitamins	10 ml
8	MnCl ₂	0.01 g
9	ZnCl ₂	0.05 g
10	H ₃ BO ₃	0.01 g
11	CaCl ₂	0.01 g
12	Na ₂ MoO ₄	0.01 g
13	CoCl ₂ 6 H ₂ O	0.2 g
14	AlK (SO ₄) ₂	0.01 g
15	NiCl ₂ 6 H ₂ O	0.01 g

The first stage is to take the sludge from the bottom of the biogas reactor to obtain microorganisms that can produce gas in anaerobic conditions. Phase two boiling mud to