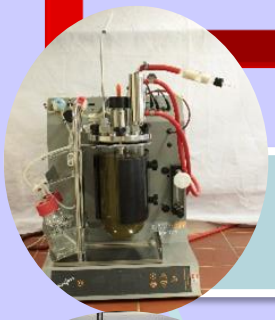
Overview of the experiment



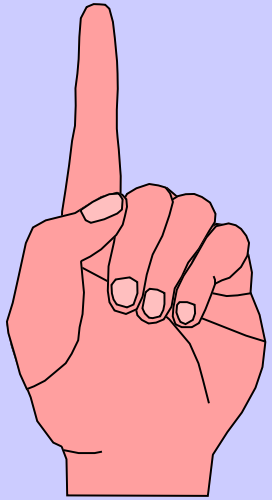
1. Fermentation

2. Quantitative determination of biogas

3. Qualitative determination of biogas

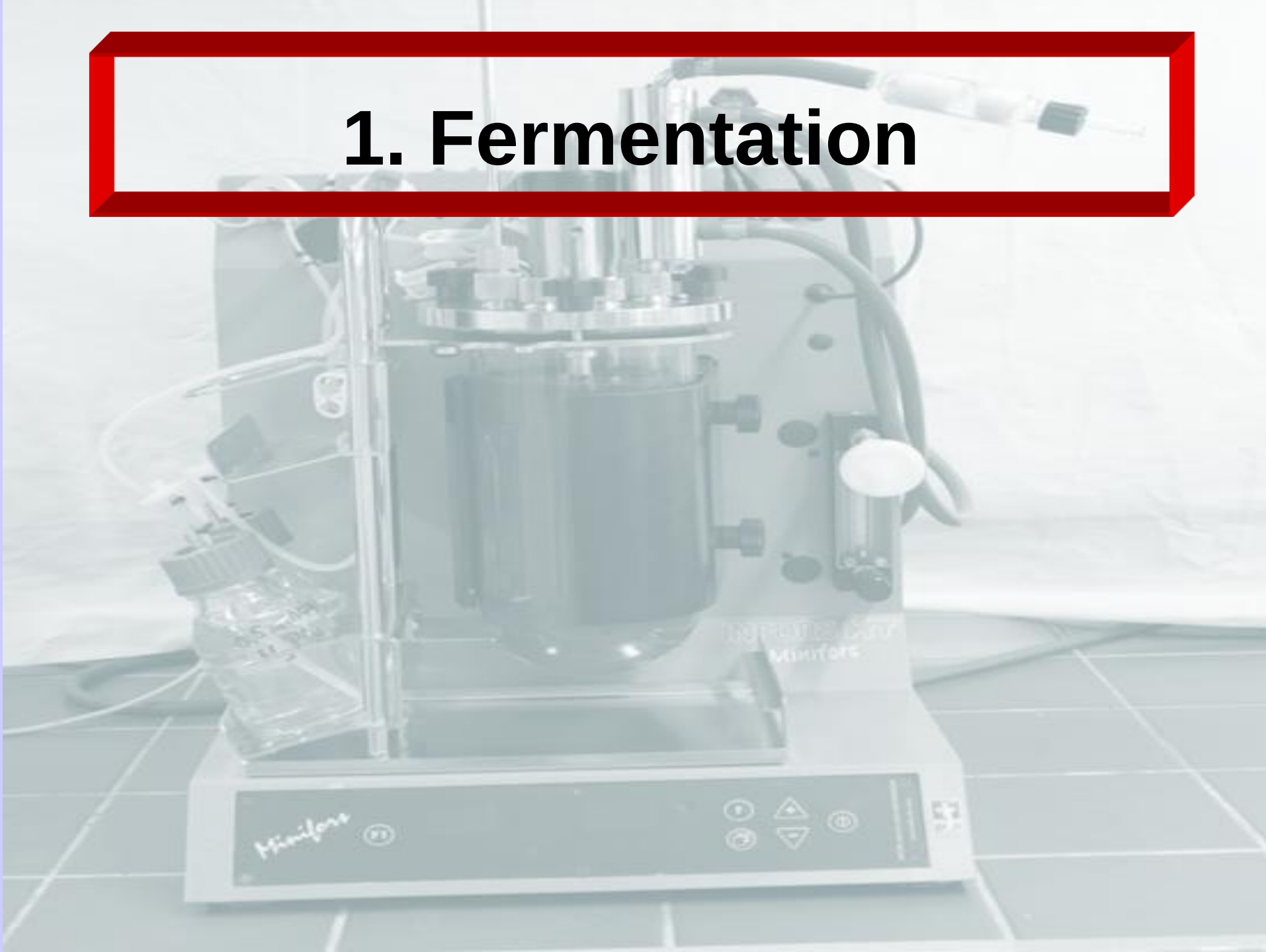
4. Determination of glucose

Safety note

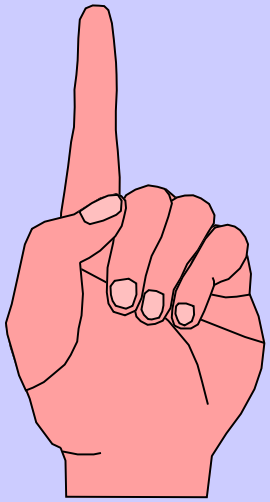


- In this experiment you work with living cultures and flammable gases
  - **Wear a labcoat, gloves and disinfect your hands after the experiment!**

1. Fermentation



Note

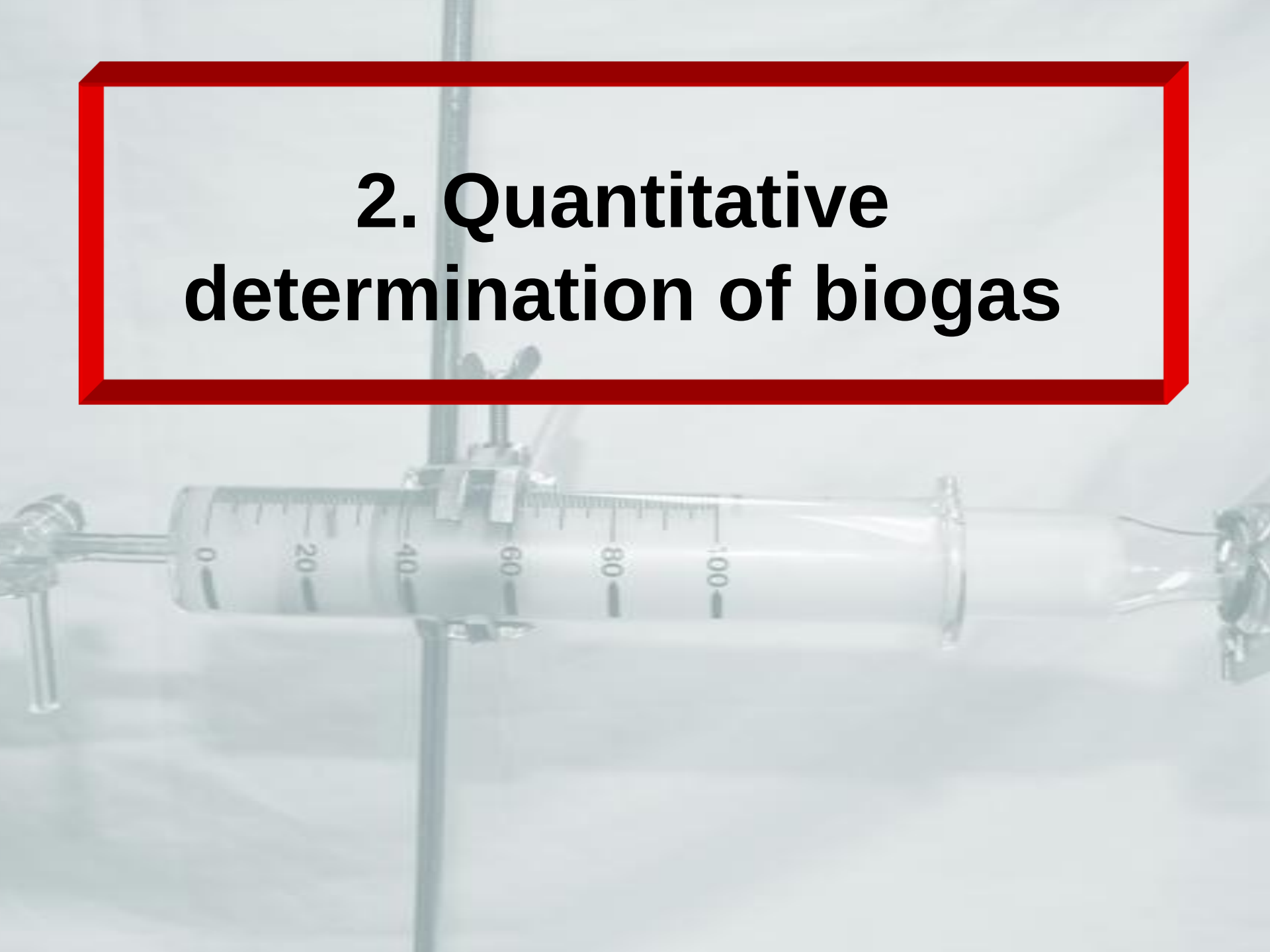


Attention!
The biogas production only takes place under anaerobic conditions, that means the fermenter has to be sealed gas-proof!

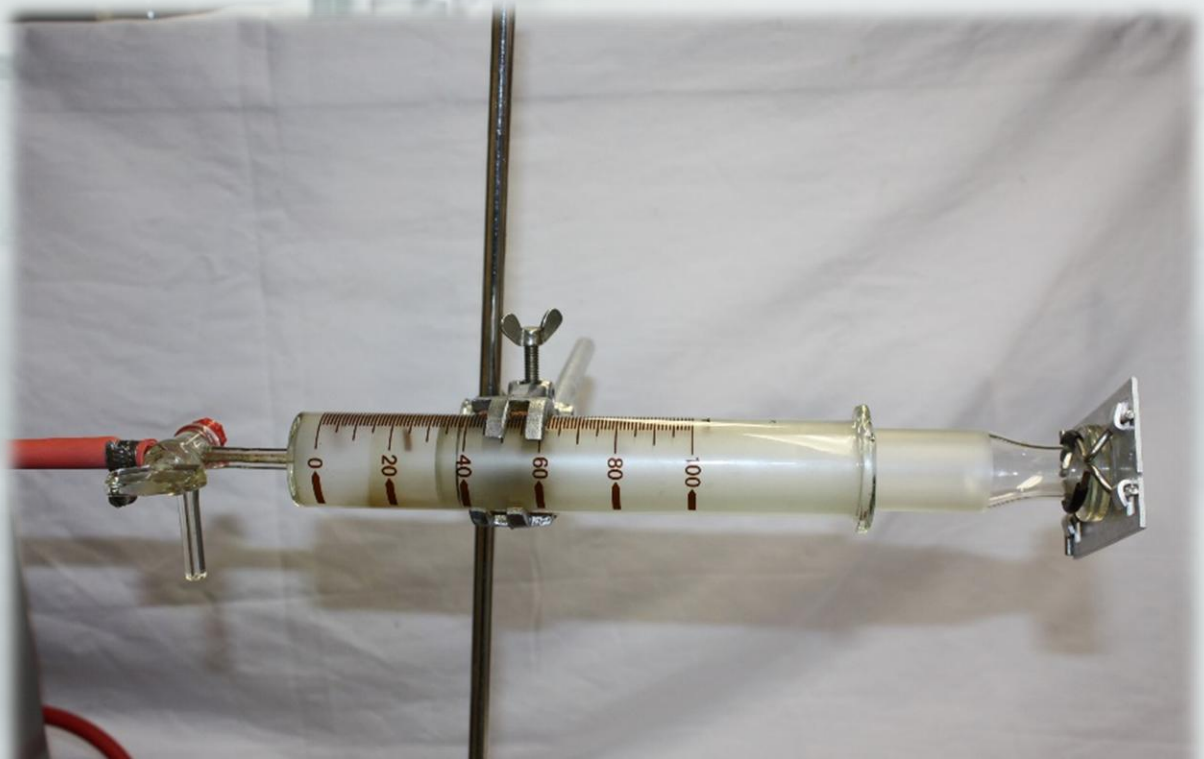
Anaerobic: $C_6H_{12}O_6 \rightarrow \underline{3CH_4} + 3CO_2$

Aerobic: $C_6H_{12}O_6 + 6O_2 \rightarrow 6CO_2 + 6H_2O$

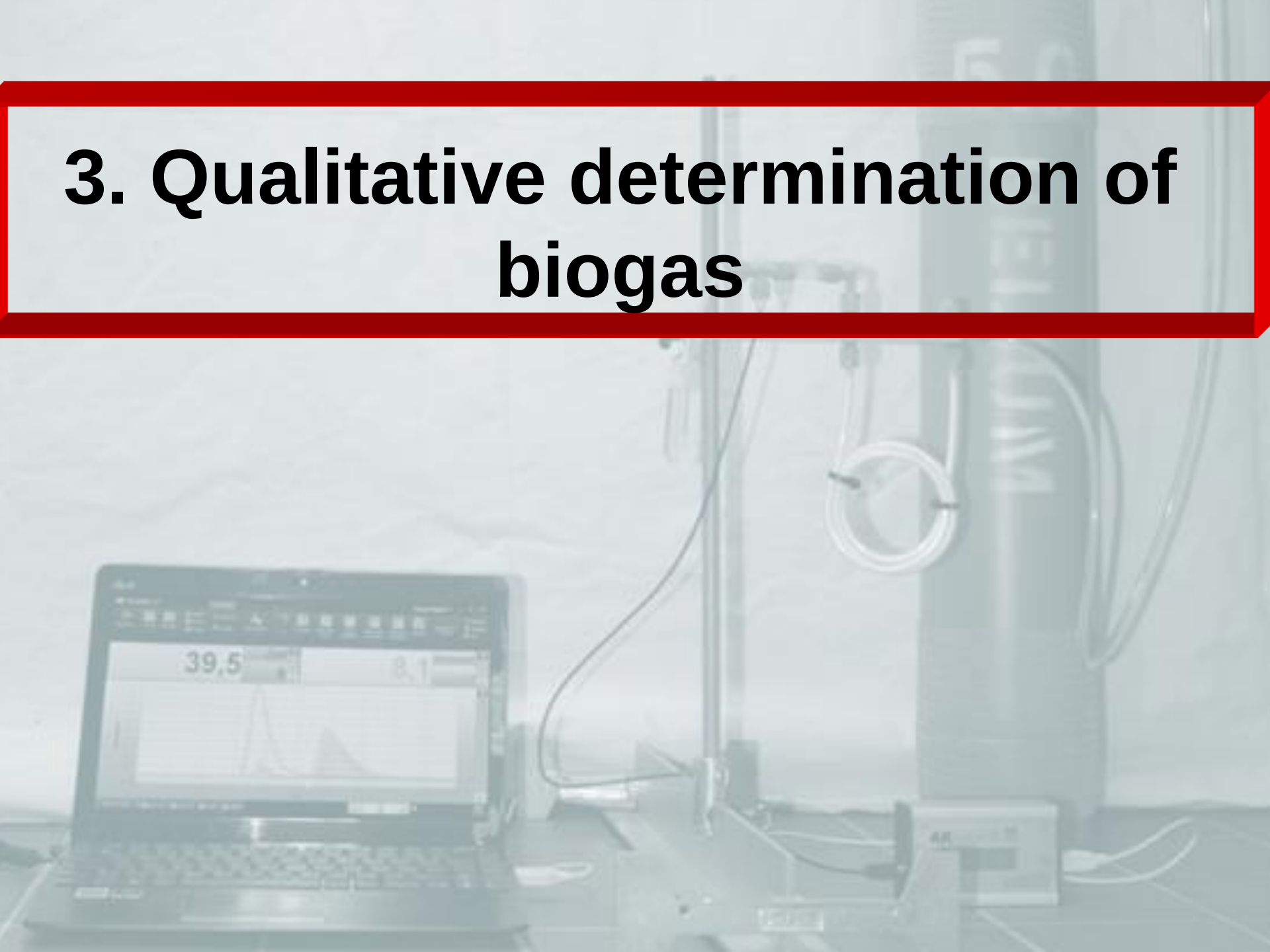
2. Quantitative determination of biogas



2. Quantitative determination of biogas with a gas syringe

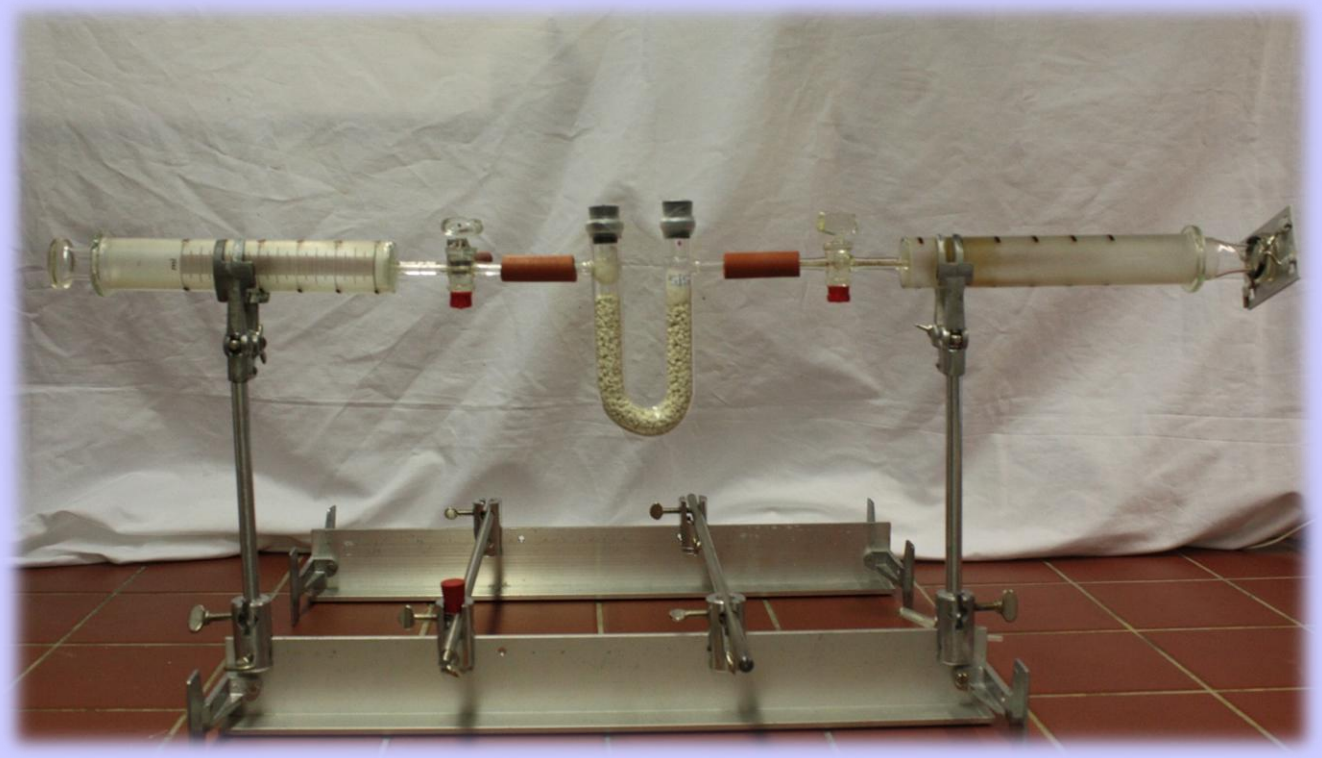


3. Qualitative determination of biogas



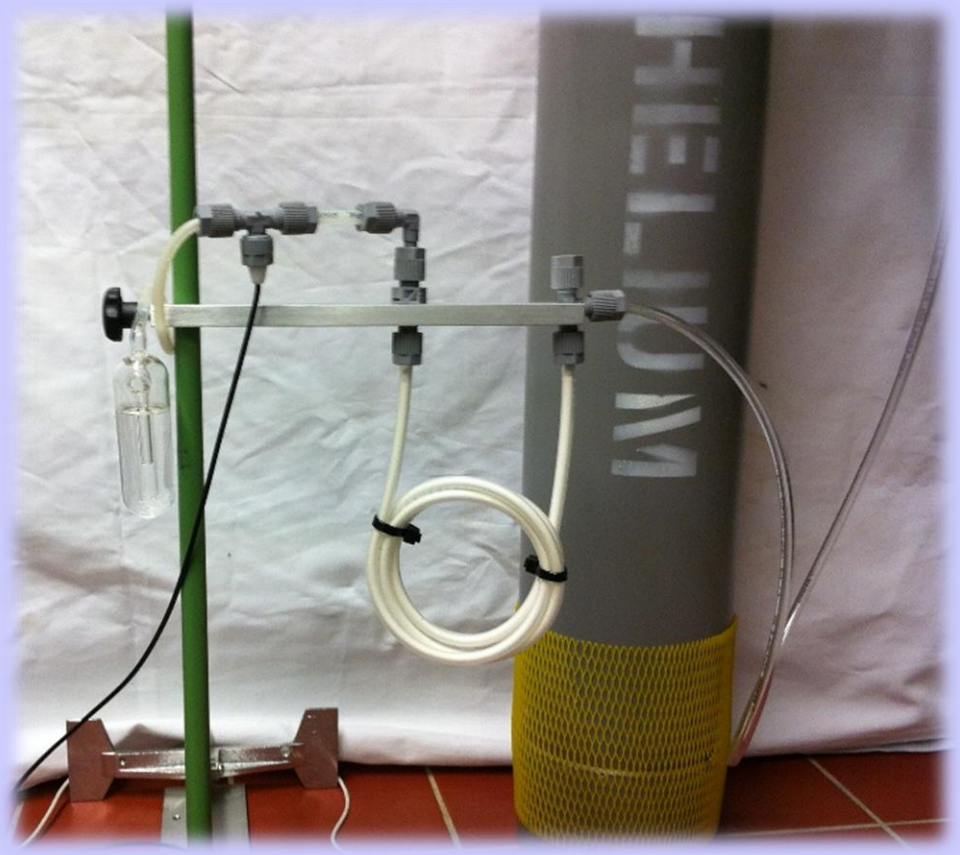
3. Qualitative determination of biogas

- By a chemical reaction which binds CO_2



3. Qualitative determination of biogas

- Gas chromatography



4. Determination of glucose

4.1 Control

- Glucose standard will be measured in the photometer

4. Determination of glucose

4.2 Sample

- the substrate from the fermenter will be measured in the photometer