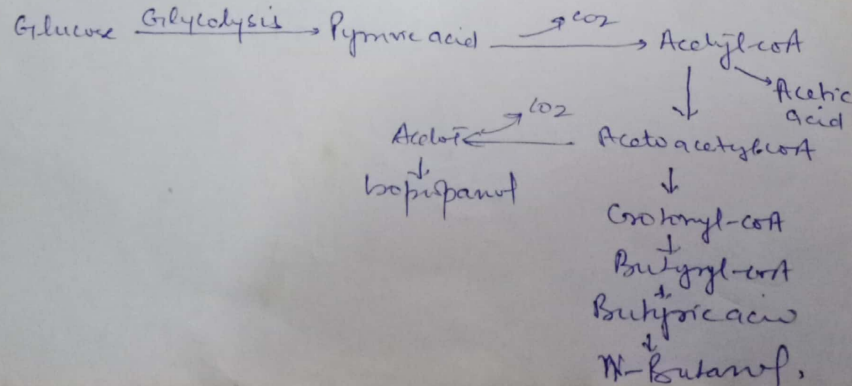


MFO Involved in Solvent Production

- * Here word solvent refers to the organic solvent which include class of complex organic compound (E.g. wood oil) which are used to dissolve the compounds which are otherwise not soluble in water. e.g. Lipids etc.
- * Various organic solvents includes Benzene, Acetone, Butanol, Propanol etc. But industrial point of view most important organic solvents are Acetone and Butanol.
- * Both Acetone-Butanol solvents are successfully synthesized by chemical process and used accordingly.
- * Alternatively Biochemical synthesized process is also available and mainly it is produced from the anaerobic bacterium (Spore form) Clostridium acetobutylicum. through anaerobic fermentation.
- * First of all process was used during world war-I for the production of acetone (used in making explosive manufacture).
- * C. acetobutylicum it is a spore forming bacteria and different strains of this bacterium can utilize different substrate e.g. Potatoes, Molasses, Corn etc.
- * Generally fermentation yields no of products out of which acetone, butanol and ethanol are the major one.
- * During fermentation starch is digested to yield glucose which is then metabolized to yield butanol and acetone.



→ Basically two medium is used in this fermentation

Corn meal medium

→ It is prepared by grinding the corn to form fine powder (grinding)

↓
Gelatinization (H₂O is added in which starch produces viscous solution (8-10%))

→ It is used by C. acetobutylicum

Molasses medium

To the Molasses addition

are 6% sucrose, NH₄OH, CaCO₃, Superphosphate and some time corn steep liquor.

C. Saccharoacetobutylicum

