

Lab # 5 Results Pages for Carbohydrate fermentations (Dextrose, lactose and sucrose), Gelatin, Skim milk agar, Spirit Blue agar and Potato Dextrose Agar

Carbohydrate Fermentation Results

See Demonstration Set up

Materials - 5 tubes Phenol red glucose broth with Durham tubes
5 tubes Phenol red lactose broth with Durham tubes
5 tubes Phenol red sucrose broth with Durham tubes

Cultures Bacillus subtilis
Citrobacter freundii
Enterococcus faecalis
Serratia liquifaciens
Micrococcus luteus

Procedure –

1. Inoculate each organism into one of each type of phenol red tube. Place a visible amount of inoculum in the tube making sure it is below the level of the medium.
2. Incubate all tubes at 37°C.

Next period

3. Observe each tube for turbidity. Did the organism grow? If it is turbid, then observe the color. If it has turned yellow, acid has been produced. Look at the Durham tube for the presence of a bubble that indicates that gas has been produced. Record your results.

How to interpret the results of carbohydrate fermentation tubes

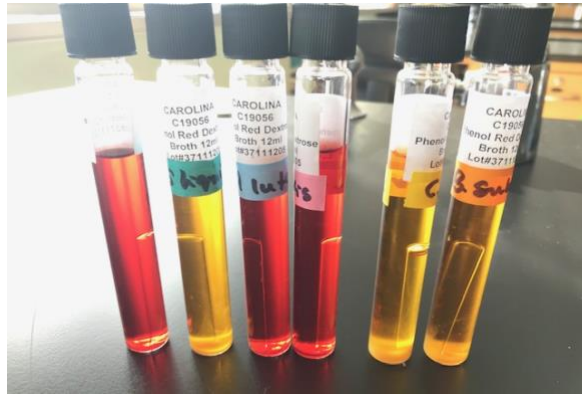
- ❖ Tube is yellow, then Acid produced, no gas if no bubble in Durham tube
- ❖ Tube is yellow and there is a bubble in the Durham tube, then acid and gas produced record as AG = Acid and gas
- ❖ Tube is red and clear = no growth, no fermentation of that carbohydrate
- ❖ Tube is red and cloudy = growth, but no acid

Order of tube sets of carbohydrates and order of organisms from left to right

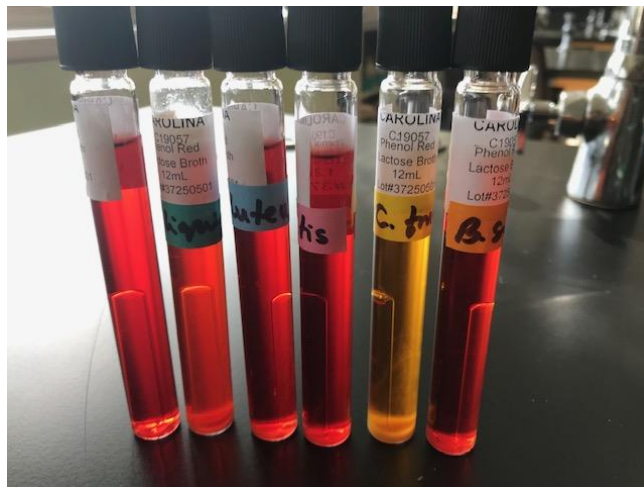
Tubes Set 1 Dextrose is another name for glucose
Tube Set 2 lactose
Tube Set 3 Sucrose

- ❖ Control (no organism)
- ❖ Serratia liquifaciens
- ❖ Micrococcus luteus
- ❖ Enterococcus faecalis
- ❖ Citrobacter freundii
- ❖ Bacillus subtilis

- ❖ Tubes Set 1 Dextrose is another name for glucose



- ❖ Tube Set 2 lactose



- ❖ Tube Set 3 Sucrose



- ❖ Gelatin Hydrolysis Test (Tubes L eft to Right are *B brevis*, *B cereus*, *B subtilis*)
 - ❖ Test results Tube 1, solid, Tubes 2 and 3 are liquid. I could not hold at an angle to take this picture without dropping the tubes.



Here is another set of gelatin tubes below, you can see that in this picture the bottom one or the left one if we can rotate the image 90 degrees, is solid (*B brevis*) and the other two (*B cereus* and *B subtilis* are liquid)

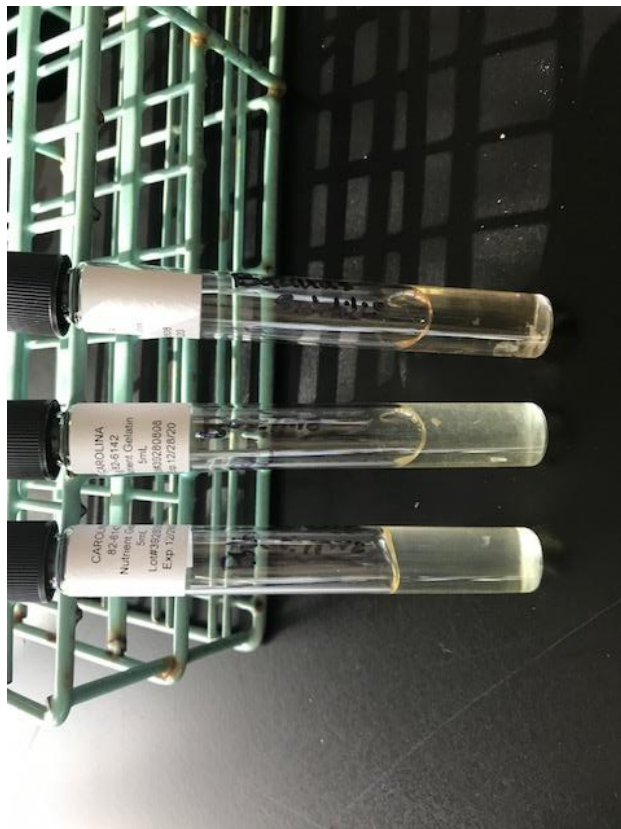
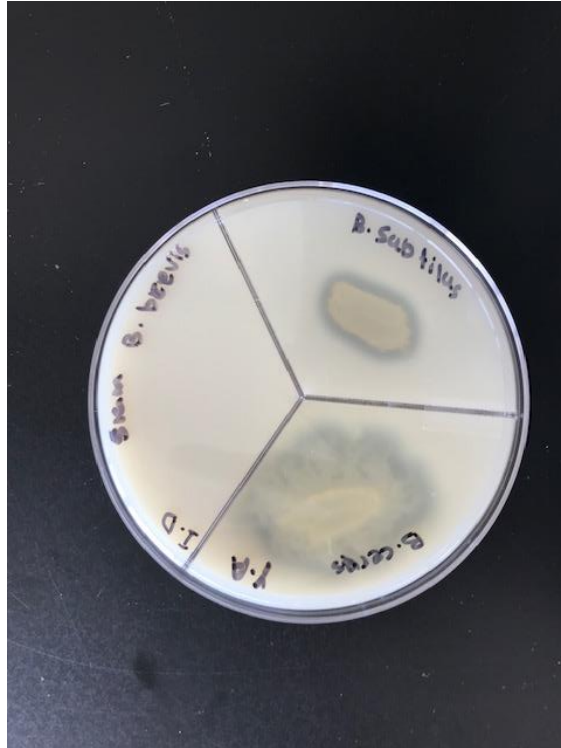
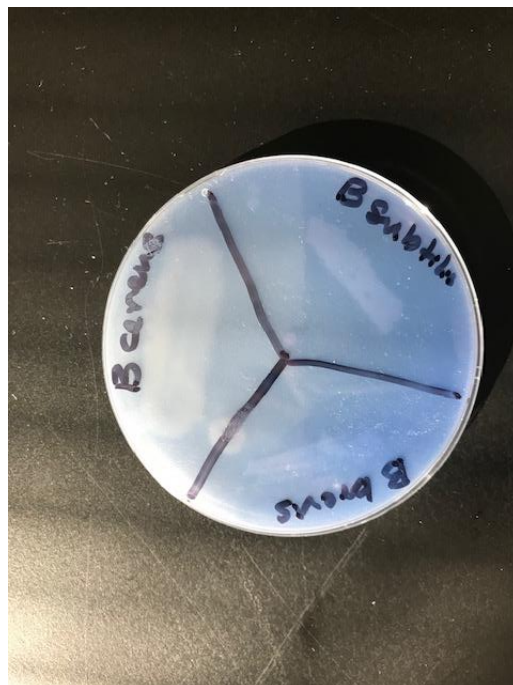


Plate media tests for the three organisms

Skin milk agar results



Spirit Blue Agar Results (Note the starting media color is bright blue but after incubation the color does change somewhat. See Photographic Atlas pictures as well)



PDA results before adding iodine



PDA results after adding iodine right B cereus, bottom subtilis, left top B brevis

