

Name:

Lab 14: Unknown Worksheet

Learning Objectives:

- Apply knowledge acquired in the laboratory exercises
- Predict the identity of an unknown bacteria in the given case study
- Based on the two dichotomous keys given, answer the following case studies. For each case study you should write 1-2 paragraphs, using complete sentences, as to how you arrived at your conclusion. You should take us step by step through the process AND indicate how you ruled out other microorganisms. Simply saying I used the dichotomous tree isn't sufficient.

Case Study 1:

Justin was spending the summer with his father on their ranch in Wyoming. One day, as they were clearing brush and branches from a deserted barn, Justin was struck in the eye with a tree branch. Part of the tree branch penetrated Justin's eye. The eye continued to worsen over the next few days and Justin's father took him to the emergency room. A culture was performed with the results shown below. Based on the dichotomous tree, what organism has infected Justin's eye.

Gram positive rods, lactose fermentation negative, glucose fermentation positive.

Bacillus subtilis due to the gram positive stain and the rod shaped bacteria. B. subtilis due to the negative lactose fermentation. B. subtilis thanks to the positive glucose fermentation.

Case Study 2:

Sharon just graduated from high school and her parents took her on a celebration trip to Venezuela. On the trip, Sharon and her family visited many small villages and Sharon had the opportunity to experience life in these villages. Sharon and her family were treated to local cuisine made from fresh vegetables. On the final day of the trip Sharon and her family all came down with an intense case of diarrhea. Lab tests were performed with the results shown below. Based upon the dichotomous chart, what organism caused the diarrhea?

Gram negative rods, Lactose fermentation positive, citrate test negative, oxidase positive

E. coli due to the gram negative rods. This was narrowed down due to the Lactose, citrate and oxidase tests.