Pre Lab Questions:

1. In your own words, what is a GMO?

   
   a) What type of plant (related to a tomato) is Dr. Lippman using in his research?
   
   b) List the three traits that Dr. Lippman attempts to alter in this plant with gene editing, and why?

During-lab observations:

1. Describe the purpose of each of the following steps or reagents used in this DNA isolation:
   
   a) Grinding with Pestle:
   
   b) Lysis Buffer:
   
   c) Boiling:
   
   d) Silica Resin:
   
   e) Wash Buffer:
   
   f) dH₂O:

2. During this procedure, centrifugation is performed a number of times. For each of the following centrifugation steps throughout the lab, describe the purpose for the step, and indicate whether the DNA is in the supernatant or pellet.
   
   a) Centrifugation after the 65 °C incubation:
   
   b) Centrifugation after the first 57 °C incubation:
   
   c) Centrifugation after the first addition of wash buffer:
   
   d) Centrifugation after adding distilled water:
Post-lab questions:

1. During amplification of the DNA by PCR, there are two sets of primers being used. Explain what each primer set will allow us to amplify, and how that is important to the experiment.

   a) Primer Set #1: 3SS

   b) Primer Set #2: Tubulin

2. In this lab, DNA is isolated from a food product as well as a piece of non-GM and GM corn plant tissue. What is the purpose of analyzing the corn DNA in this experiment?