Skim Milk vs. Tobacco Mosaic Virus

Wilson, Kaylie (School: New Tech Institute)

The purpose of this project observes the effects of the application of skim milk on the affects of Tobacco Mosaic Virus, the most common virus in the world, and its affects on the growth rate of stem diameter, height, and weight of dwarf Lycopersicon esculentum (tomato) plants. TMV stunts growth, makes leaves obtain a mosaic pattern, and makes the fruit undesirable for purchase. A study in the 1950's found that skim milk reacted with TMV, which possibly inactivated the virus. I studied three trial groups of 10 Lycopersicon esculentum plants and 10 Lycopersicon esculentum plants with skim milk applied were infected with the virus. The same amounts of plants were also used for a control group not being infected at all. After 28 days, measurements of their base stem diameter, in millimeters, and their height, in centimeters, were taken every Monday, Wednesday, and Friday for a total of 10 measurement days per trial. A total of 90 plants were studied throughout the experiment. At the end of the 10 measurements, data was compiled and compared to observe the effects of the skim milk on the stem diameters and heights of the plants. The stem diameter data concluded that, when skim milk was applied, TMV-infected Lycopersicon esculentum plants' base stem diameter grew more than the TMV-infected plants without skim milk. The same information was concluded for the plant heights. The wet and dry weights of both plants, with and without skim milk, were about the same, yet statistically significant. Total data concluded that the presence of skim milk inactivated the virus's effects on stem diameter and height.