Answer on Question #69608 – Math – Statistics and Probability

Question

The amount of Chilies that are produced each year by a farmer in Lali Village is normally distributed. The standard deviation of the bags of chilies is identified as 0.04 grams. Chilies that too small and unripe are not bagged. Using your knowledge of hypothesis testing and a 95% confidence level, execute a two – tailed to prove the claim that μ = 0.50 grams. The sample mean is 0.51 grams and the sample size is 25 bags of chilies.

Solution

Null hypothesis H_0: $\mu = 0.50$.

Alternative hypothesis H_a: $\mu \neq 0.50$.

Level of significance: $\alpha = 1 - 0.95 = 0.05$.

Test statistic: $z = \dfrac{\tilde{x} - \mu}{\sigma/\sqrt{n}} = \dfrac{0.51 - 0.50}{0.04/\sqrt{25}} = 1.25$.

P-value: $p = 0.2113$.

Since P-value is greater than 0.05 we can't reject the null hypothesis and should conclude that there is no sufficient evidence that the mean weight of the bag does not equal 0.50 grams.

Answer: there is no sufficient evidence that the mean weight of the bag does not equal 0.50 grams.