

Answer on Question #60595 - Math - Statistics and Probability

Question:

Based on studies conducted in various regions across the country, the average cost of pumpkins for consumers is \$3.18 per kg.

From a random sample of 15 farmer's markets in the Montreal-area you determine that the average price for pumpkins is \$4.25 per kg with a standard deviation of \$1.90 per kg.

Construct a 98% confidence interval for the average price of pumpkins in the Montreal-area and determine if it differs significantly from that of the rest of the country.

Solution:

Confidence interval for the average price of pumpkins:

$$CI = \left(\bar{x} - t_{crit} \frac{s}{\sqrt{n}}, \bar{x} + t_{crit} \frac{s}{\sqrt{n}} \right) = \\ \left(4.25 - 2.624 \frac{1.90}{\sqrt{15}}, 4.25 + 2.624 \frac{1.90}{\sqrt{15}} \right) = (2.96; 5.54)$$

Answer:

$$CI = (2.96; 5.54)$$

Average cost of pumpkins for consumers (\$3.18) fall into confidence interval, therefore we can conclude that the average price of pumpkins in the Montreal-area does not differs significantly from that of the rest of the country.