

Evaluation of Heat-in Bag and Serve Products Produced by Ambassador Foods

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Abstract

Food safety and consumer satisfaction are two key concepts known to have a very large impact on the food industry today. By analyzing food products provided by Ambassador Foods, we were able to evaluate both the quantity of micro-organisms over a ninety day refrigerated storage period, as well as panelists' scoring of taste and off-flavor detection over this time span.

Methods

- The product under evaluation was inspected upon arrival and refrigerated in a household refrigerator at 38 degrees F. Peptone water was prepared the day before microbiological evaluation (micro) was run.
- Micro was conducted by adding 50 milliliters of peptone water to 10 grams of the product in a stomacher bag, which was then placed in a stomacher machine.

Research Question

How does the refrigerated storage time of certain food products affect acceptability and off-flavor intensity?

- The resulting mixture was drawn out to five dilutions and placed in an incubator for 48 hours before the plate count was conducted. This process was repeated on days 30, 60, 75, and 90.
- A taste panel was conducted on days 30, 60, 75, and 90 for each product with eight to ten panelists. The product was evaluated for flavor acceptability, overall acceptability, and off-flavor detection in a controlled environment.

Results

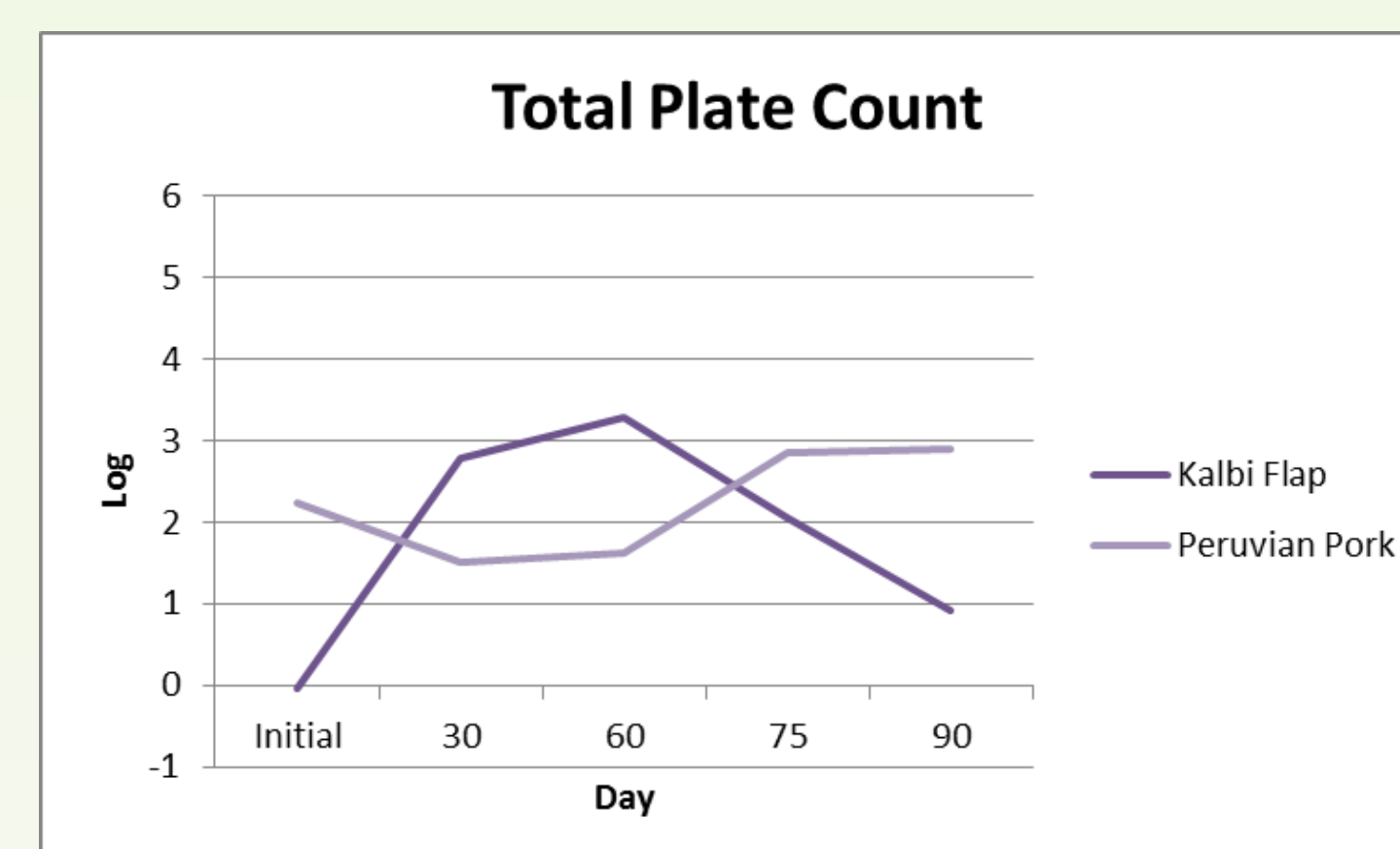


Figure 1

The total plate count (Figure 1) for Peruvian Pork and Kalbi Flap remained below the undesired colony-forming-units (CFU) level of 6.0 throughout the duration of the storage time.

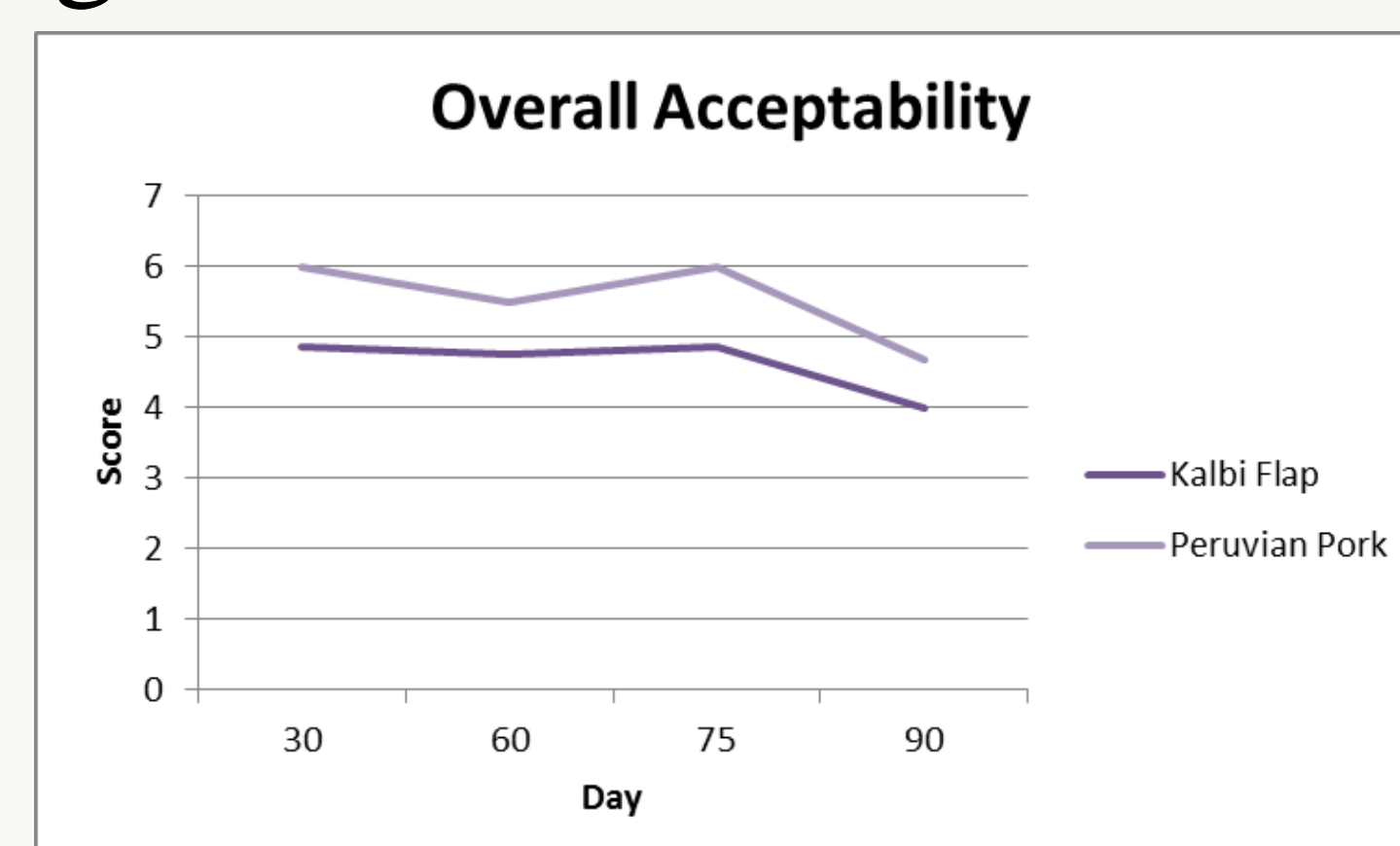


Figure 2

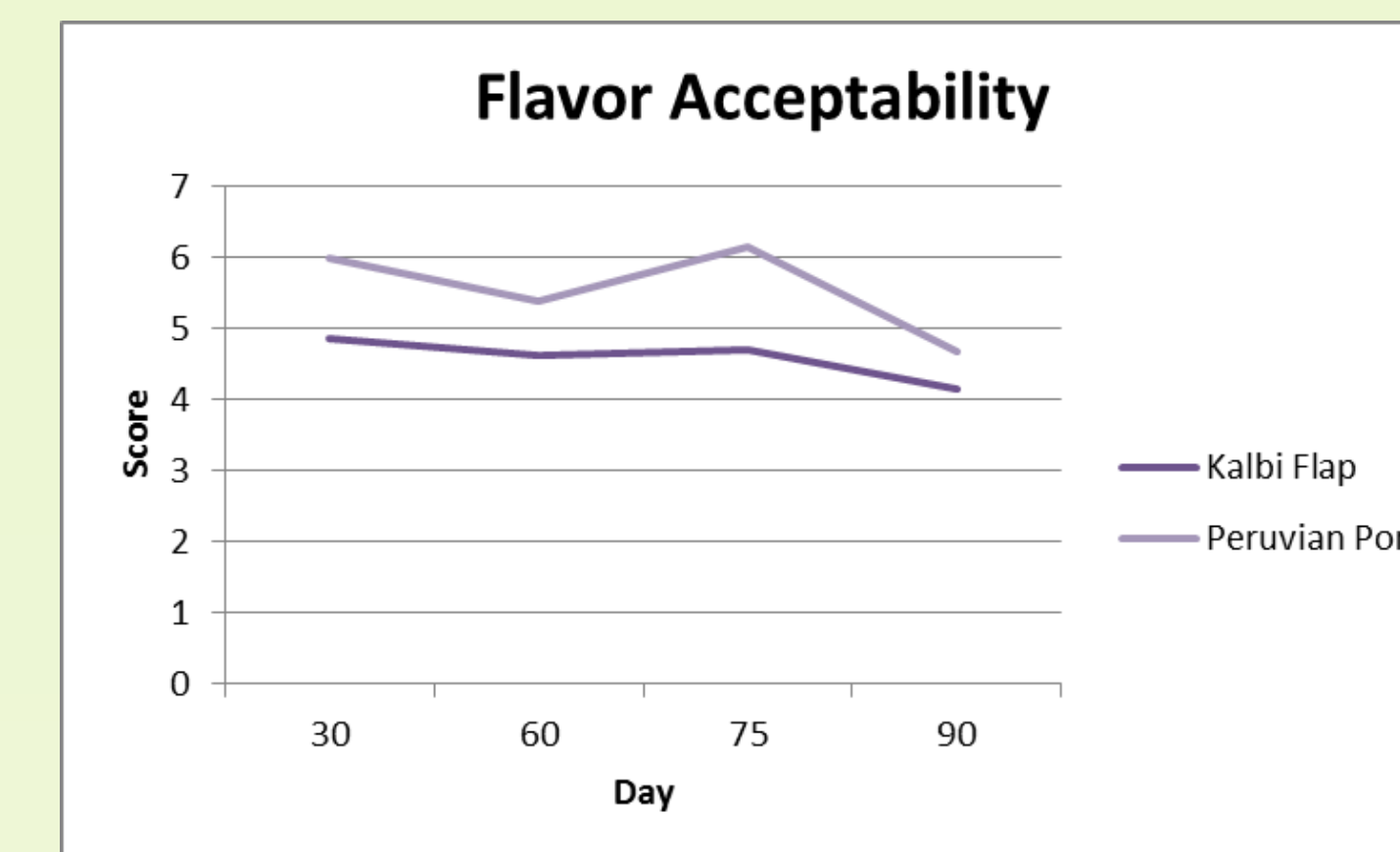


Figure 3

Overall acceptability (Figure 2) and flavor acceptability (Figure 3) were given a score between 1 and 8. A score of 1 being extremely liked and a score of 8 being extremely disliked. The results showed little fluctuation over storage time with only a slight decrease in acceptability from days 75 to 90.

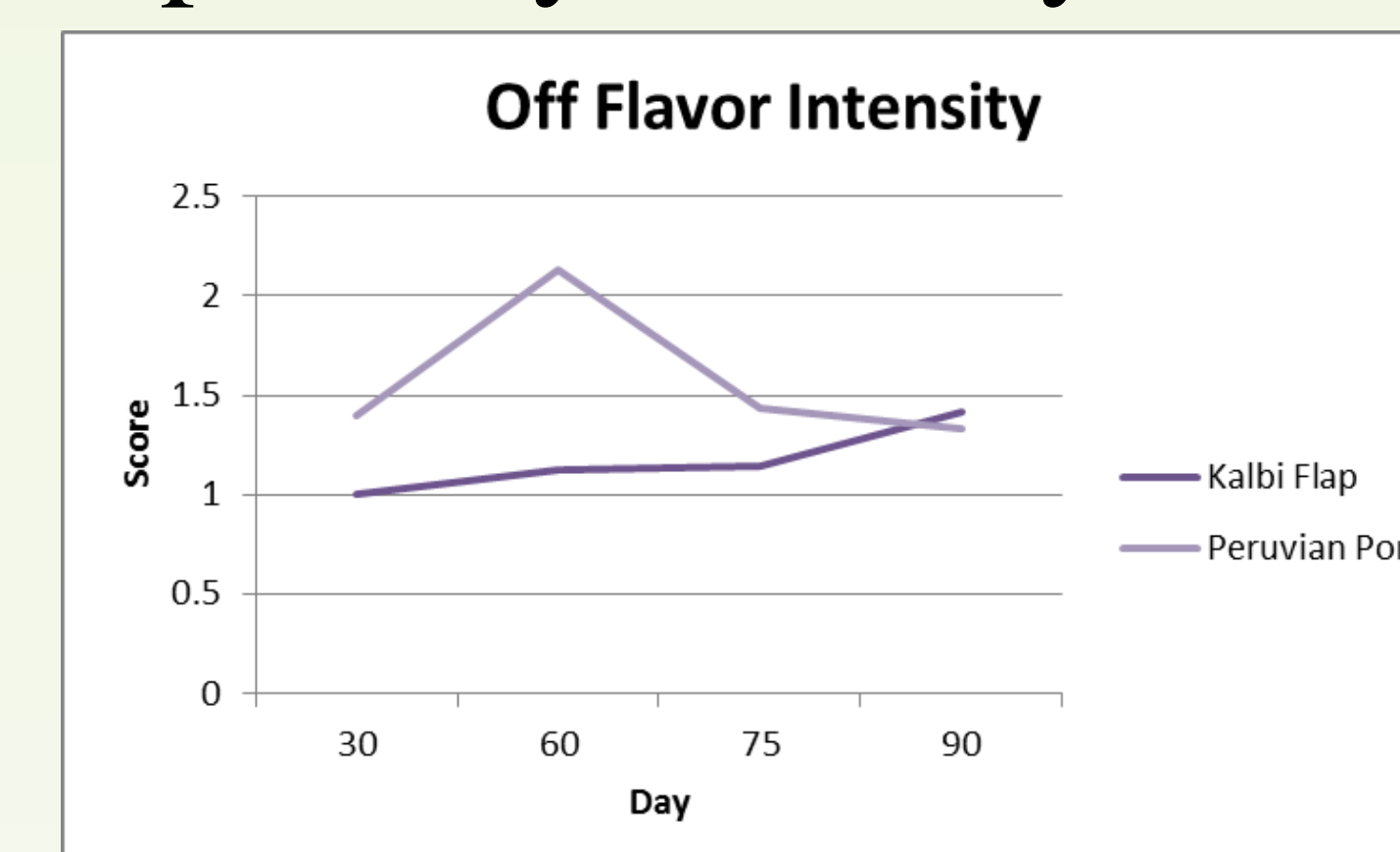


Figure 4

Off flavor intensity was given a score between 1 and 3. A score of 1 representing no off flavor detectable and a score of 3 signaling a strong off flavor. Off flavor intensity (Figure 4) was more apparent in the Peruvian Pork product, specifically on day 60. The Kalbi Flap product's off flavor intensity remained between the score of one and two throughout storage time.

Conclusion

The results for the two products tested for Ambassador Foods revealed that up to 90 day refrigerated storage time had little influence on taste acceptability or off-flavor intensity. The abundance of micro-organisms detected in the plate count also showed little correlation to the taste panel scores and remained within the levels deemed safe for consumption. From this, it can be concluded that Ambassador Foods meat products can be safely refrigerated for up to ninety days with no known negative impacts to flavor or detection of off-flavor.

Acknowledgments

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