

Study on meat species shows mislabeling in commercial products

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Researchers in Chapman University's Food Science Program have just published two separate studies on meat mislabeling in consumer commercial products. One study focused on identification of species found in ground meat products, and the other focused on game meat species labeling. Both studies examined products sold in the U.S. commercial market; and both study outcomes identified species mislabeling among the product samples.

In the study on identification of species found in ground [meat products](#), 48 samples were analyzed and 10 were found to be mislabeled. Of those 10, nine were found to have additional meat species and one sample was mislabeled in its entirety. Additionally, horsemeat, which is illegal to sell in the United States, was detected in two of the samples.

"Although extensive meat species testing has been carried out in Europe in light of the 2013 horsemeat scandal, there has been limited research carried out on this topic in the United States," said Rosalee Hellberg, Ph.D., assistant professor at Chapman University and co-author on both studies. "To our knowledge, the most recent U.S. meat survey was published in 1995."

A total of 48 fresh and frozen ground meat [products](#) representing a variety of species were collected for the research and tested using a combination of DNA barcoding and real-time polymerase chain reaction (PCR). The study speculates that the presence of multiple species commonly found in ground meats suggests the possibility of cross-

contamination at the processing facility. Unintentional mislabeling may occur when several species are ground on the same manufacturing equipment, without proper cleaning in between samples. Another trend observed in the study indicates the possibility of lower-cost species being intentionally mixed in with higher-cost species for economic gain.

Overall, mislabeling was found to be most common in products purchased from online specialty meat distributors (versus supermarkets), which showed a 35 percent rate of mislabeling and included products labeled as black bear and yak burgers.

The second study, focusing on game meat species labeling, used a total of 54 game meat products collected from online retail sources in the United States. Of these 54 samples, a total of 22 different types of game [meat](#) were represented based on the product label. Like the previous study, the samples were tested using DNA barcoding.

The results showed 10 products to be potentially mislabeled. Two products labeled as bison and one labeled as yak were identified as domestic cattle. Other mislabeling included a product labeled as black bear that was identified as American beaver, and a product labeled as pheasant that was identified as helmeted guineafowl.

Additionally, there were also five products identified as a near threatened (bison) or threatened (lion) [species](#) and these were all determined to be correctly labeled and legally sold.

Game meats represent an important specialty market in the United States with an estimate value of \$39 billion. According to the U.S. Food and Drug Administration (FDA), game meats are defined as exotic meats, animals and birds, which are not in the Meat and Poultry Act. Game meats produced in the United States are regulated by the U.S. Department of Agriculture, while game meats imported into the U.S. are

regulated by the FDA.

Both studies were published in the journal *Food Control*.

Provided by Chapman University

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