

Abstract

Using unauthorized tissues such as the spleen, esophagus, aorta, salivary glands, lymph nodes, hair, lungs, breast tissue, skin epidermis and nerves are considered as fraud in meat products. However, some products use plant tissues instead of meat. Therefore, the purpose of this study was to investigate the presence of unauthorized tissues in hamburgers in Zabol city stores and to quantify them with using specific staining. For this purpose, for sampling, the city was divided into four Districts and 6 samples of hamburgers with different percentages (3 hamburgers 30%, 3 hamburgers 60% samples) were randomly collected from the stores of each districts. Collected samples were evaluated by a specific staining method to determine the extent of fraud and the presence of unauthorized tissues. The results showed that the highest frequency of unauthorized tissues in hamburger samples were 24 fat, 24 cartilage, 24 connective tissues, 21 plant tissues, 19 bone, 13 gizzard, 10 stomach and bowel, skin 10 trachea 7, tendons 6, blood vessels 6, lungs 5, esophagus 4, salivary glands 4, breast 4, lymph nodes 3 and hemolymph glands 1, respectively. Also it should be noted that the results of the present study regarding the frequency of unauthorized tissues in the hamburgers in terms of type of hamburger (hamburger 30% and hamburger 60%) showed that the frequency of unauthorized tissues is not significantly different between the two types of hamburgers. According to the results, it can be said that the hamburgers which offered in Zabol city have poor quality. This study showed that the specific staining can be used to detect the unauthorized tissues.

KEYWORDS : Hamburgers, meats, unauthorized tissues, specific staining



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**Investigation of unauthorized tissues in hamburgers in stores of Zabol city
by using special staining**

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