

Meat adulteration, methods of detection, its economic and public health importance

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Abstract

The Meat adulteration and quality assurance of meat and meat products are very important for human health protection. For detection of adulteration of meat and meat products by unauthorized plant food additives and low-priced, illegal or decomposed animal tissues was detected. adulterated with lung, heart, connective tissue, smooth muscles, cartilage, and plant tissues. Burger meat products may show parasitic infestation with sarcocysts within skeletal muscles. Meat Kofta mea products adulterated with lung tissues, connective tissue, smooth muscles as intestine, cartilage, blood vessels, and plant tissues food additives. Meat Sausage adulterated with intestine, connective tissue, smooth muscles, cartilage, blood vessels, fat and plant tissue. This confirmed the availability of using methods of detection in meat products adulteration and parasitic infestation.

Keywords: meat adulteration; lung tissue; connective tissue; meat sausage product; low priced meat product; donkey

Introduction

The Meat adulteration of meat and meat products, Meat is sold fresh, chilled after slaughter, or frozen Equipped or not equipped.

Or sold in the form of processed, canned, smoked, dried or... Salted or spiced [1-5, 91]. To know its quality and health safety, several procedures must be performed Tests. Tests vary from product to product [6-10, 92].

Methods for evaluating meat and meat products adulteration and quality

By using analytical and sensuality:

Physical, Chemical and bacteriological for detection of adulteration of meat and meat products

The Sensory means:

It is a group of natural and sensory characteristics carried out by a group of Panelists, People with knowledge and experience of these qualities [11-15, 93].

Either a small number of arbitrators, trained arbitrators, quality assessment, or a larger number of arbitrators to avoiding the mistakes of some arbitrators and evaluating the degree of acceptability of Consumer [16-20, 94].

Judging is done by giving a score for each desired characteristic by distributing questionnaires Analyze the data statistically. One of the most

important sensory qualities tested in meat is the appearance Texture and freshness, color, Taste, smell, flavor and juiciness [21-25, 95].

The Analytical means:

It is a set of analytical estimates used to estimate specific values in meat through which Judging the quality of the meat or its conformity for specifications. Some analytical tests can be associated with Sensory tests [26-30, 96].

The Physical means:

Estimation of meat texture, Determination of meat pH, Determination of the refractive index of the meat tissue extract and Color estimation of meat [31-35, 97].

The Chemical means:

Decomposition of meat components by microbes, autolysis enzymes, or as a result of chemical reactions such as fat rancidity, Chemical compounds, Total reduced volatiles, Estimation of the indole number, Determination of ammonia and Fat rancidity test [36-40, 98].

The microbiological means

Total viable Bacterial count, Total anaerobic bacteria count, Coliform group, Total Mold and Yeast Count [41-45, 99].

The Commercial adulteration methods used in meat and meat products

Adding preservatives as boric acid, sulfur salts and others with the aim of delaying or concealing the spoilage of meat and giving the meat color Bright and appears fresh [46-50, 100].

Public Health Hazard of the adulteration of meat and meat products

It has a harmful effect on health, Hides the smell of rotting meat, it hides the true color of raw meat, Adding nicotinic acid compounds (one of the elements of a group) Vitamin B (garage) or sodium nicotinate to meat Preserved to maintaining the desired red color of meat For the consumer [51-55, 101].

Eating a large amount of these compounds leads to symptoms appear Pathology in humans as flushing of the face and neck with itching, nausea, Sweating and abdominal cramping [56-60,102]. Selling meat from animals infected with diseases This is done by slaughtering sick animals outside approved state slaughterhouses indicates It is recommended to avoid buying meat without seals and Selling goat meat as lamb by sewing a lamb into the back of the goat [61-65, 103].

The differentiation between lambs and goats' meat through carcass identification:

Selling female meat as male meat, also by sewing, Selling fetal meat as veal meat, one of the types of veal or beef meat or Young buffalo, which feed only on milk; As the average age to obtain veal meat, The flesh of the fetus is saturated with water, pale in color, and contains a high percentage of glycogen (104, 105, 106, 107 and 108). Selling the meat of lean animals after slaughtering them without medical treatment, Inflating the carcass to make the consumer think that it is full of meat, Sell pastrami before it dries, the moisture content must not exceed %40, Selling cat meat as rabbit meat [109-113]. Injecting chicken meat with water with syringes to increase weight and freeze it, imported canned meat made from unhealthy meat as madness, Cows, spoiled meat, containing entrails, heads, or appendages, Meat not fit for human consumption, Forgery of the declaration label on packages by changing the country of origin [66-70, 114].

The Methods for detection of adulterated in meat and meat products

Color tests:

Each type of meat has a special color as Cows meat is bright red and yellow fat, Buffalo's meat is dark red and the fat is white, Goats and sheep meat hair tends to stick to it, Donkeys meat is dark red to dark bluish brown, bad smell, its fibers are prominent, a little fat with a copper color and a greasy consistency [71-75, 115].

The Pre-cooking tests of meat:

Heat the knife and then cut the meat produce bad smell it is invalid, to find out the meat of dead animals the meat is very tough and we put a piece of meat in water, if it is contaminated with blood indicate it is from dead animal [76-80, 116].

The tests while cooking of meat:

When donkey meat is immersed in water, yellow oily spots appear The texture of boiled meat is rough plus a sweet taste [81-85, 117-119].

The Ehrlich test of meat:

Add formalin to a piece of meat after one day if it appears, a distinctive smell similar to that of a roasted goose. The meat is donkey meat [86-90].

Conclusion:

Adulteration of meat and meat products has economic and public health importance. The food fraud in meat products by unauthorized tissue as heart, intestine, lung, Foetal flesh, fat, and several kinds of plant tissue. As well as, parasitic infestation by sarcocysts. The use of cheap, rapid, and valuable method for detection of food fraud.

Meat and meat products are highly nutritive value and susceptible to spoilage, which can be caused by both chemical reactions and microbial growth. Meat and meat products are lost every year, mostly because of adulteration, chemical deterioration and microbial spoilage. Adulteration of meat and meat products and their public health effect, trial to investigate the adulteration either by addition of other animal tissues or plant food of plant origin, antimicrobials as well as effectiveness on the safety and the quality of meat products during marketing storage and use for human consumption. Improving the shelf life of meat and meat products and that inhibiting or

retarding microbial growth of bacteria and fungi which affect the sensory properties of meat and meat products.

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