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CUTTING METHOD OF BEEF HALVES FOR EXPORT

Abstract. The experiment relates to the meat industry and can be used for cutting beef half-carasses in slaughterhouses for wholesale trade, mainly for export. The technical result of the claimed experiment is the cutting of beef half-carass in accordance with international standards, which allows to export beef meat to foreign companies, since it fully meets all the stated requirements for these companies.

Keywords: beef, standard, scheme, carcasses, butchering, border, export, trade, harmonization.



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Introduction. Known interstate standard “GOST 32606-2013. Beef. Carcasses and cuts. Requirements for delivery and quality control” where it describes the cutting of beef half carcasses into 71 cuts, which of them 25 cuts on the bone and 46 cuts boneless meat. Graphical schemes and tables of cuts and their characteristics are shown in detail and visually. Differences of this cutting from the proposed one:

- the number of cuts does not meet the requirements of foreign companies, namely their greater number compared to the necessary, which entails difficulty for retail sales by these companies;
- meat processing plants need to purchase and maintain additional expensive equipment for cutting beef halves.
- some boundaries are not clearly defined, which causes some difficulties in deboning beef carcasses.

The interstate standard “GOST 31797-2012. Meat. Cutting beef into cuts. Technical conditions” where the boundaries of cuts are schematically outlined, names and their boundaries in the half carcass are described. The differences of this type of cutting:

- only the scheme of beef carcass cutting is drawn, without drawings of real cuts and their locations on the carcass;
- 24 cuts are drawn on the scheme, which does not meet the requirements of buyers [1-3].

Also known scheme of beef cutting for retail trade in Germany, based on which beef half carcass is cut along clear anatomical boundaries into 10 cuts,

which in turn does not meet the requirements of the buyer to the number of cuts of beef half carcass.

Comparing the literature data with in-depth analysis of our own research, we came to the conclusion that there is a need to define the boundaries of beef carcass cutting and to designate the exact number of cuts. The presented beef carcass cutting will allow to give the initial materials for the development of a new standard for beef according to international requirements. The main advantage of which is the harmonization of the beef carcass cutting scheme in order to sell meat to the consumer in accordance with its requirements [4,5].

Materials and methods. Beef half carcasses of meat breeds (Auliekol, Kazakh white-headed, Galloway) were cut in South-Eastern, Eastern and Northern regions of the Republic of Kazakhstan in early winter, spring, summer and autumn periods. Cutting was carried out at the enterprises of the Republic of Kazakhstan: 1) "Tumar" FE, Zhambyl region; 2) "Shamakhsut" LLP, Zhambyl region. Before cutting animals at this enterprise, they were subjected to full sanitary inspection. Cattle were raised and fattened on pastures of the Republic of Kazakhstan. Typical heads of cattle aged 18-30 months with live weight of 380-480 kg were selected for cutting. A total of 48 beef carcasses were cut into cuts.

Based on the preferences of retail and wholesale beef buyers, the authors proposed to divide the beef carcass into 26 cuts, the names and boundaries of which are outlined below:

- 1) boneless hind shank – obtained by deboning the hind shank;
- 2) heel muscle – obtained from the cut by separating the gluteobiceps muscle, consists of the gastrocnemiusflexor and superficialis muscles, both muscles should be retained;
- 3) inner thigh without top – obtained from the inner thigh by separating the gracilis muscle along the natural line of fusion, fat deposits are completely removed;
- 4) thigh eye – obtained from the outer thigh by separating the two muscles along the natural line of fusion: gluteobiceps gluteus maximus muscle and semitendinosus muscle of the thigh eye;
- 5) thigh flat of the outer thigh – obtained from the outer thigh by separating the flat of the outer thigh along the natural fusion line between the semitendinosus muscle eye and the flat of the outer thigh of the gluteobiceps muscle, the dense connective tissue at the edge of the peritoneum is removed;
- 6) ogusok – obtained from the thick part of the abdomen after removing the proper muscle, as well as the fat covering it and the lymph node located under the iliac bone;
- 7) boneless upper part of the hip cut without top – obtained from a group of gluteal muscles (superficial, middle, accessory and deep), separated from the iliac bone and stripped of the surface film and layer of subcutaneous fat;
- 8) loin – obtained from the hindquarter, separated in one piece from the ventral surface of the lumbar vertebrae and the lateral surface of the iliac bone, the small lumbar muscle psoasminor is not separated;
- 9) sirloin – obtained from the hindquarter by a cut at the lumbosacral junction to the abdominal part of the paschino;
- 10) thin part of the paschino – obtained from the hindquarter and partly from the forequarter by a cut that starts from the superficial inguinal lymph node, dissects the rectusabdominus muscle, goes along the contour of the thigh, continues to the 13th rib and runs along this rib to the abdominal surface;

11) ribbed edge of brisket – obtained from the forequarter after removing the scalp and scapular part of the rectangular cut, the line of separation of the ribbed edge of brisket is approximately 75 mm from the long muscle of the back and parallel to the vertebral column;

12) short part of the ribbed edge of brisket – obtained by cutting the ribbed edge of the breast cut in half;

13) short part of the rib edge of the brisket without top – obtained by cutting the rib edge of the pectoral cut in half and removing the fat cover;

14) boneless pectoral cut – obtained by deboning the pectoral cut, the fat cover and superficial fascia are removed;

15) triple top (triangle) – it is a part of the fasciaelatae muscle (triangular muscle), separated from the rump by the natural line of fusion between the tensorfasciae and gluteusmedius muscles;

16) dorsal flesh roll – it is obtained from the forequarter, and it consists of the long muscle of the back and the muscles connected to it, located under the dorsal portions of the ribs;

17) scapular flesh roulade – obtained from the scapular portion of a rectangular cut with bones, the cut line in the abdomen is approximately 75 mm from the longissimusdorsi (long back muscle) and parallel to the vertebral column near the 1st rib, the rhomboideus muscle is removed and the subscapularis (undercut) muscle remains firmly attached to the cut;

18) scapular flesh – obtained from the forequarter by separating along the natural line of fusion between the ribs and the latissimusdorsi, trapezius (proper muscle) and serratusventralis (subordinate muscle) muscles, located caudal to the humerus and under the scapular bone and includes a significant portion of the triceps muscles;

19) trimmed scapula – obtained by removing the subscapularis muscle from the medial surface of the scapular bone, this muscle has three parts, and it is refined as required;

20) tender scapula flesh – obtained from the scapula by separating the base of the scapula along the line of natural fusion from the infraspinatus muscle;

21) scapula base – obtained from the scapula by separating the infraspinatus and trapezius muscles caudal to the humerus, includes a significant portion of the triceps muscle group;

22) cervical – derived from the neck with bones, when the bone is cut, the cartilage, exposed tendon and umbilical ligament are removed;

23) cervical – separated from the forequarter by a grade cut running parallel and cranial to the first rib and through the junction of the 7th cervical and 1st thoracic vertebrae;

24) shank of the forequarter – obtained from the muscles of the front leg, namely the extensor and flexor muscle groups, the heel muscle is removed;

25) bones of the hind and foreleg – obtained from the hind and forequarter after deboning;

26) boneless meat in bulk – meat and fat trimmings are obtained after deboning the cuts [6-8].

Research results and discussion. The method of beef carcass cutting is characterized by the fact that the cutting into cuts is carried out along clear anatomical boundaries, which are named and later will be assigned identification numbers. Figure 1 shows a scheme of cutting a beef carcass into 2 cuts. The names of the 26 cuts of beef carcass are as follows: 1) boneless rear shank; 2) heel muscle; 3) inner thigh without top; 4) thigh eye; 5) flat cut of outer thigh; 6) scuttle; 7)

upper part of hip cut boneless without top; 8) tenderloin; 9) sirloin edge; 10) thin part of the breadcrumbs; 11) rib edge of the brisket; 12) short part of the rib edge of the brisket; 13) short part of the rib edge of the brisket without top; 14) boneless breast cut; 15) triple top (triangle); 16) roll of back flesh; 17) roll of shoulder flesh; 18) flesh of shoulder blade; 19) trimmed shoulder blade; 20) tender flesh of shoulder blade; 21) base of shoulder blade; 22) neck part; 23) neck part; 24) shank of forequarter; 25) bones of hind and front legs; 26) boneless meat in bulk.

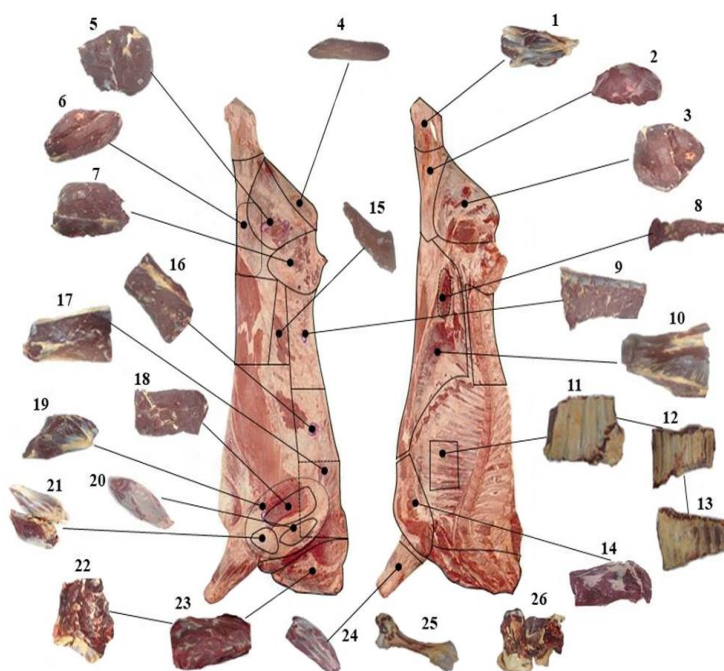


Fig. 1. Schematic of beef carcass cutting into cuts

Conclusion. Thus, the distinctive features of the proposed method of beef half carcass cutting are:

- when using the new cutting of beef half carcass there is an opportunity to multiply the number of meat supplies to foreign countries, and thus, subsequently there is an incentive to increase the number of cattle in our country;
- the proposed scheme of beef half carcass cutting fully meets the stated requirements of the companies, in particular, the required number of cuts and clearing from the surface film and fat cover in most cuts of beef;
- the new beef half-carcass cut meets all international sanitary and epidemiologic norms and beef safety standards.

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ЭКСПОРТҚА АРНАЛҒАН СИЫР ЕТІНІҢ ЖАРТЫЛАЙ ҰШАСЫН КЕСУ ТӘСІЛІ

Аңдатпа. Эксперимент ет өнеркәсібіне қатысты және сою пункттерінде көтерме саудаға, негізінен экспортқа арналған жартылай ұшаларды кесу үшін пайдаланылуы мүмкін. Ұсынылып отырған тәжірибенің техникалық нәтижесі – халықаралық стандарттарға сәйкес ірі қара мал етінің жартылай ұшасын кесу, бұл шетелдік компанияларға сиыр етін экспорттауға мүмкіндік береді, өйткені ол аталған компанияларға қойылатын барлық талаптарға толық сәйкес келеді.

Тірек сөздер: сиыр еті, стандарт, схема, ұша, бөлу, шекара, экспорт, сауда, үйлестіру.

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СПОСОБ РАЗДЕЛКИ ГОВЯЖЬИХ ПОЛУТУШ НА ЭКСПОРТ

Аннотация. Эксперимент относится к области мясной промышленности и может быть использован для разделки говяжьих полутуш в убойных пунктах для оптовой торговли, преимущественно для экспорта. Технический результат заявляемого эксперимента заключается в разделке говяжьей полутуши в соответствии с международными стандартами позволяющее реализовать на экспорт мясо говядины зарубежным компаниям, так как в полной мере соответствует всем заявленным требованиям для этих компаний.

Ключевые слова: говядина, стандарт, схема, туши, разделка, граница, экспорт, торговля, гармонизация.