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Lymph Node Removal Protocol

Background

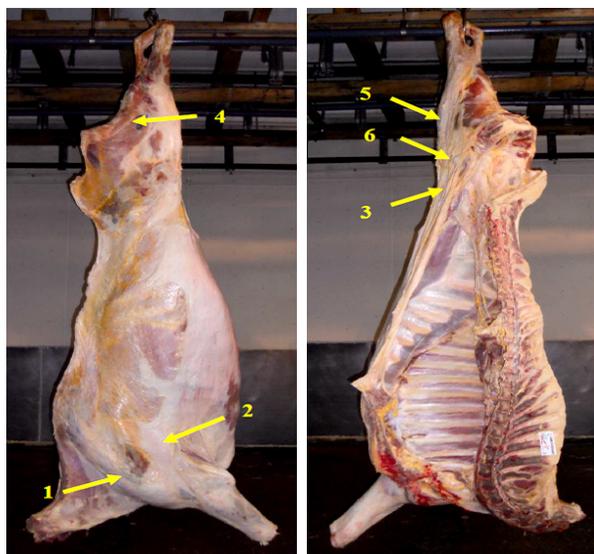
Despite successful control of surface contamination of carcasses through application of sanitary slaughter practices and effective HACCP plans, it is not uncommon for *Salmonella* to be recovered from ground beef at rates as high as 30% in some lots. The prevalence of *Salmonella* on final carcasses or trim is lower than prevalence in ground beef. Thus, the contamination of ground beef may occur by means of contaminated lymph nodes because *Salmonella* have the ability to reside within immune cells that are sequestered in lymph nodes. Inside the lymph node, the *Salmonella* is protected from chemical and thermal treatments, and as a consequence antimicrobial procedures are insufficient. The bovine lymph nodes in which *Salmonella* may reside are numerous and distributed throughout the beef carcass with approximately 26 located adjacent to muscle that can be utilized in the production of beef (intact or ground). As such, it may be necessary to remove the lymph nodes in order to exclude them from final products and reduce the prevalence of *Salmonella*.

To prevent a possible regulatory decision by FSIS, we are urging the industry to take a proactive role in the control of *Salmonella*. Recent evidence has indicated that sources of *Salmonella* in ground beef are hides and lymph nodes. Thus the control of *Salmonella* requires effective dressing practices to prevent hide to carcass transfer of *Salmonella* (and *E. coli* O157:H7) and removal of lymph nodes. The purpose of this document is to provide you with a protocol for removing six lymph nodes. We would like to continue to improve this document and appreciate receiving new photographs (particularly from fed cattle) as well as improved procedures.

Because lymph nodes may contain Salmonella, please take precaution not to cut the lymph nodes and if you happen to cut any of the nodes, please be sure to sanitize the knife used.

Locating lymph nodes for removal during beef carcass fabrication

It is much easier to locate lymph nodes (LN) in a lean than a fat carcass. We are targeting 6 lymph nodes for removal. The carcass pictures below show the general location of these 6 lymph nodes. 1) superficial cervical, 2) axillary, 3) subiliac, 4) popliteal, 5) coxalis, and 6) Iliofemoralis.





1. The superficial cervical LN is in the chuck in front of the point of the shoulder, anterior to the mock tender/blade bone underneath a couple of superficial muscles. It is closer to the larger end of the mock tender and is in the middle of the wedge or fish fat pocket. It is elongated and can be 0.5 to 4 inches in length and 0.5 to 0.75 inches wide.



2. The axillary LN is in the chuck at the bottom of the teres major in the fat of the shoulder clod. It is on the distal portion of the teres major and should be exposed by removal of the shoulder clod. It is usually 2 to 4 inches caudal to the shoulder joint.



3. The subiliac LN is also known as the prefemoral. It is located about 8 to 10 inches below the patella (hanging carcass), between the surface flank muscle and at the bottom edge of the knuckle muscles. It is in contact with or close to the tri-tip, in the fat between the tri-tip and the bottom sirloin butt. It is elongated, usually flattened and can be 3 to 4 inches long and 0.75 to 1 inch wide.



4. The popliteal LN is in the round, in the fat between the bottom round and the eye of round. It can be 1 to 1.5 inches long and 0.75 to 1 inch wide.



5. Coxalis LN is between the tri-tip and the loin tail towards the upper end of the tri-tip, in the heel meat.



6. Iliofemoralis LN is in the subcutaneous fat associated with and towards the rear of the bottom sirloin flap

For additional information or questions contact:

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