Pig myology dissection atlas: potential tool for image labeling

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Contextual image analysis is a powerful tool, but it requires anatomical knowledge. Atlases have been developed in different species: human, beef, pig, red deer, etc. Most of them are based on cross-sections on which are identified the different structures (bones, muscles, …). In pig, for instance, the University of Nebraska has published such an atlas for a fatty slaughterpig. Nevertheless, both the 2D views and no information about variability limit the understanding of the carcass characteristics.

The authors have therefore created a new pig atlas giving in particular information in the longitudinal axis. This atlas has been specifically developed in the framework of pig classification. Its initial conception aimed at a help to the meat technicians performing dissections. A pig carcass was prepared, cut and dissected according to the EU reference procedure. For each joint, each muscle was isolated, a picture was taken and a movie was done. Furthermore, pictures of the muscular mass of each joint were taken after removal of each muscle.

From these pictures an interactive CD-rom was designed. Firstly appears a left side cut into 12 joints. A click on a joint shows a lateral view of this joint. A click on a muscle of this joint shows this muscle and its name. A video of the muscle is available. A double click on the muscle removes the muscle and shows the rest of the joint. At the end of the process a general view of all the muscles and bones of the joint is presented, each muscle being identified by a number. Moreover, a table gives the correspondence between the number and the name in Latin. Finally, another table gives both the anatomical name and the butcher name.

In a first stage this CD included only the 4 main joints (ham, loin, shoulder and belly), concerned by the EU reference for the lean meat percentage. Since 2009, the EU regulation authorizes the full dissection too. The CD has therefore been extended to the other joints in the same way. In complement, a series of articles has been publishing, each one concerning a joint. This material is intended to illustrate the future EU dissection procedure for assessing the reference lean meat percentage.

As the tomography should replace dissection in a near future this material would obviously help too. Contextual image analysis is not absolutely needed for measuring the muscle volume, but it could contribute to improve accuracy. Moreover, for assessing quality of the joints a precise labeling of the individual muscles and other structures would be useful. Some investigations on the variability of the spatial locations of the tissues are still needed. The CT collections of pigs from several countries could be helpful.