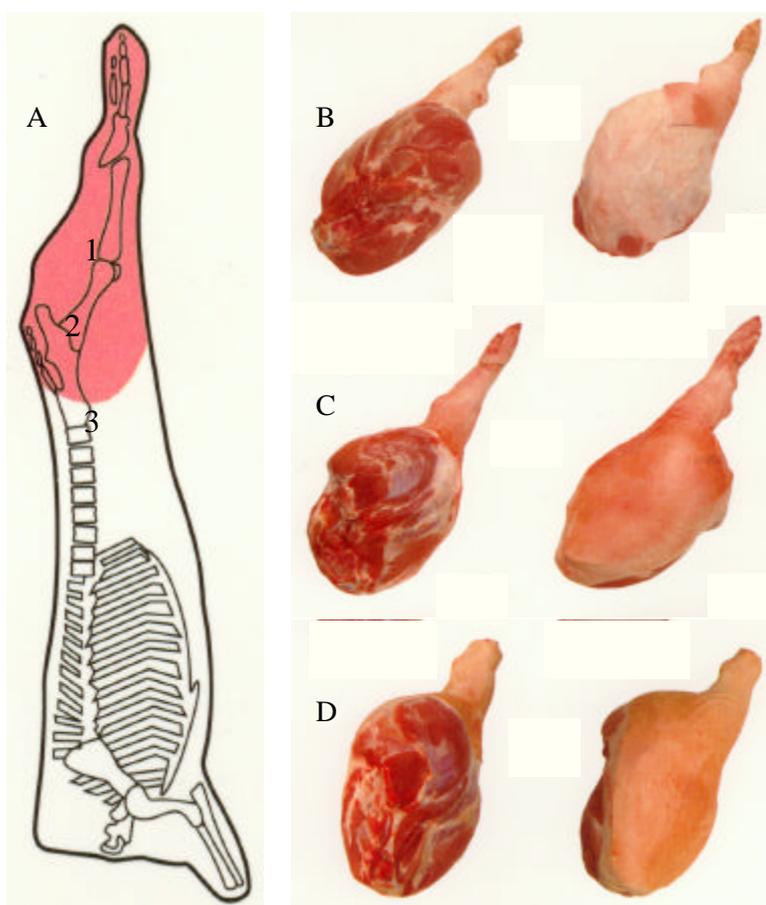


## 1.2. DESCRIPTION OF THE HAM

The aim of this section is to describe the ham and its anatomy. Different types of dry cured ham are produced, and each of them has a different cut of the pig carcass. For instance the following cuts can be distinguished in the Spanish hams (Figure 1.2.1): pork leg Serrano cut with foot (B), pork leg Spanish cut with foot (C), pork leg Spanish cut without foot (D).



**Figure 1.2.1** Pig carcass and ham cuts. A. Carcass. 1. tibia. 2. femur. 3. pelvis. B. Pork leg Serrano cut. C. Pork leg Spanish cut with foot. D. Pork leg Spanish cut without foot (Anonymus, 1996).

The ham can be divided in the muscular part, the bones and the skin. None of this parts are removed for the processing of the traditional dry-cured ham.

The following muscles can be distinguished (Figure 1.2.2):

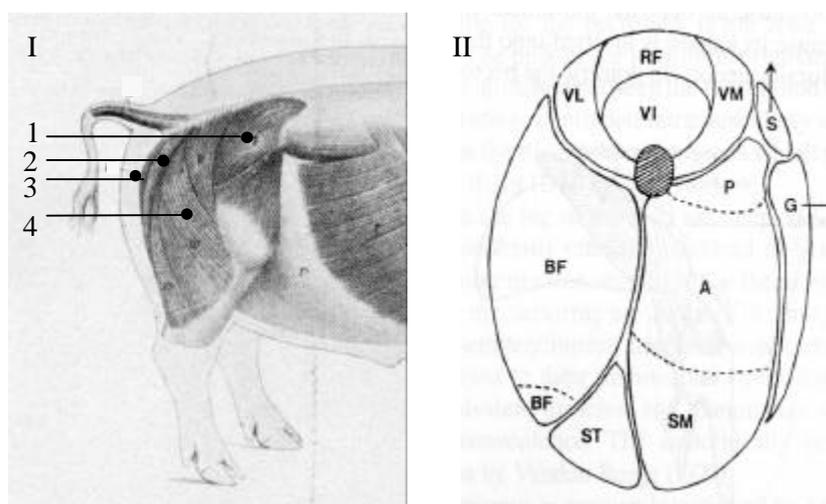
The *Gracilis* muscle is a thin sheet of muscle spread over the medial face of the hindlimb.

The *Quadriceps femoris* muscles form a group of four large muscles that pull on the patella when the leg is extended.

The *Vastus medialis* is medial, the *Vastus lateralis* is lateral and the *Vastus intermedius* that covers the anterior face of the femur. The *Rectus femoris* covers the *Vastus intermedius*.

The *Biceps femoris* is a single large muscle on the lateral face of the hindlimb.

The *Semitendinosus* and *Semimebranosus* are two large muscles located on the posterior face of the hindlimb. The *Semimembranosus* is medial to the *Semitendinosus*.



**Figure 1.2.2** I. Muscles at surface of pork leg: 1. *Gluteus medius*. 2. *Semitendinosus*. 3. *Semimembranosus*. 4. *Biceps femoris* (Sisson and Grossman, 1982). II. Arrangement of hindlimb muscles around the femur (shaded). The *Sartorius* (S) Indicates the anterior direction while the *Gracilis* (G) indicates the medial direction. Other muscles are: VL. *Vastus lateralis*. RF. *Rectus femoris*. VI. *Vastus intermedius*. VM. *Vastus medialis*. P. *Pectineus*. A. *Adductor*. SM. *Semimembranosus*. ST. *Semitendinosus*. BF. *Biceps femoris* (Swatland, 1994).

The *Adductor* and *Pectineus* are located in the medial part of the hindlimb, near to the femur. The *Pectineus* is anterior to the adductor.

The *Gastrocnemius* is a large muscle located deep in the hindlimb and is covered by distal extensions of some of the proximal muscles of the limb. The *Gastrocnemius* pulls on the Achilles tendon at the hock.

The *Gluteus medius* is located laterally, and covers the lateral face. From lateral to medial, there are three layers of muscles, *Gluteus medius*, *Gluteus accessorius* and *Gluteus profundus*. The *Gluteus medius* is the largest of the three.

The bone part of the ham contains the pelvis, the femur, the patella or knee, tibia and fibula, and finally, distal to the tibia are the tarsal bones of the hock (Figure 1.2.1).

The muscles used in our study are:

- *Gluteus medius*:
- *Semimembranosus*
- *Semitendinosus*
- *Biceps femoris*

where *Semimembranosus*, *Semitendinosus* and *Biceps femoris* are the most important muscles in weight of the ham. *Semimembranosus* was selected because is representative of an external muscle. *Semitendinosus* was selected because is representative of an intermedium muscle, and *Biceps femoris* was selected because is representative of an internal muscle. *Gluteus medius* is also an external muscle, and it was selected because is a muscle of low economical cost and it is not needed to destroy all the ham to be able to determine the required parameters, facilitating the experimental procedure.