

Growth of Antlers

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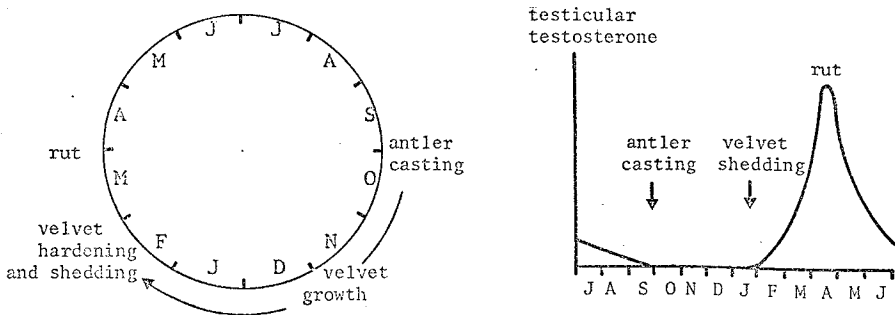
Antlers are not horns - they are laid down as cartilage which is ultimately converted into bone. In contrast horns are composed of keratin proteins, the same class of proteins as wool and hair. Antlers are generally grown only by males (an exception is the reindeer). Although research has extended over most species of deer, the following comments are drawn mainly from work on red deer.

Antlers grow from the pedicles which are outgrowths of the frontal bones. The pedicles are permanent and are present at birth whereas the antlers are shed. The antlers actually arise from the skin over the pedicle rather than from the bony part of the pedicle itself. Initially the tissue laid down is cartilage. The blood supply to the growing antler is provided through the velvet (and also possibly through the shaft of the antler). Once the antlers have grown to their full height they continue their internal development for another month or so. It is during this phase that much of the bone development takes place. Maturation of the antler tissue is accompanied by loss of blood supply to the velvet. Consequently the velvet dries up and is cleaned off by rubbing.

The seasonal pattern of antler growth is related to the sexual cycle which is under photoperiodic control. Casting of old antlers in September-October is followed by healing of the pedicle from which the new antler growth arises. The antlers grow over the period of October-January, the velvet is shed January-February, so that the stags are in hard antler for the rut. Generally growth starts earlier in older animals and velvet is shed earlier. Much of the understanding of the antler growth cycle has come from research on the effects of castration and hormone therapy.

The following diagrams outline the antler growth cycle and the relationship of antler growth and shedding to the concentration of testosterone in the testis.

CALENDAR OF VELVET GROWTH



Velvet Production and Harvest

Velvet shedding is associated with a rising concentration of testosterone. Antler shedding is associated with a falling concentration of testosterone. If a stag is castrated while it is in velvet, it will stay in velvet. If the stag is in hard antler when castrated it quickly sheds its antlers, then grows new antlers which remain in velvet.

An injection of testosterone causes velvet shedding, then as testosterone level falls, antlers shed.

Note: The above points do not apply to young calves. That is castration of calves does not lead to velvet growth.

Harvesting

R. Brookes

The method used by Rob Brookes is:

- run the stags into the yards in the coolest part of the day, i.e., early morning or in the evening.
- allow the animals to settle and cool for an hour.
- veterinarian gives the drug (Rompun or Fentanyl) and the tourniquet is applied. The pressure point to be got with tourniquet is located on the outer edge of each antler.

Farmed animals and wapiti require lower dose rates than feral animals.

- Velvet removal: While cattle dehorners can be used on spikers, a meat saw should be used on anything bigger. This is to avoid crushing the velvet which can lead to stripping of the velvet and difficulty in inspecting the texture.

The cutting point should be about 1 cm above the pedicle.

- the animal can be allowed to recover from the drug naturally or can be released by an antidote.
- velvet should be placed upside down in plastic bag (keep blood in) and frozen immediately. To maintain quality it should not be thawed again before sale.

Velvet cropping usually starts about the second week of December (onset depends on season). Thereafter need to crop every three or four days to make sure of a high percentage getting into A grade.