

### **Immunocastration and chemical castration**

Immunocastration involves the use of hormones to suppress the production of testosterone. Chemical castration includes the injection of toxic chemicals, such as lactic acid, directly into the testes to cause irreparable damage. Immunocastration only offers a temporary effect and the injections must be repeated (usually at six month intervals) throughout the animal's life. Chemical castration requires a lot more skill than other methods of castration and has a much longer healing time – and therefore a greater negative impact on animal welfare than other forms of castration. It also has a high failure rate: one study showed that 17% of animals continued to produce male hormones after chemical castration.

### **Surgical castration**

Surgical castration involves the complete removal of the testicles using a scalpel or Newberry knife.

Animal Welfare Approved allows surgical castration without the use of pain relieving drugs for calves up to the age of two months. You may surgically castrate calves that are older than two months but only when appropriate pain relief is provided.

### **Emasculator or Burdizzo castration**

This method of castration uses a clamp which crushes the blood vessels around the testes, cutting off blood supply and causing them to die and drop off.

Animal Welfare Approved allows **emasculator or Burdizzo castration** without the use of pain relieving drugs for calves up to the age of two months. You can castrate a calf older than two months using this method but only when appropriate pain relief is provided.

Ting et al (2005) showed that the calves castrated with Burdizzo at 1.5 months old showed lower cortisol readings (an indication of stress), less scrotal swelling and lower scrotal temperature (a measure of inflammation) than calves castrated by Burdizzo at 5.5 months of age. Calves castrated at 2.5 months and 3.5 months had intermediate reactions to the two extremes, strongly suggesting that pain and inflammation increase with age.

### **Rubber rings and high tension latex bands**

Ring or band castration involves fitting a tight rubber or latex ring or band to the neck of the scrotum to cut off the blood supply to the testes, causing them to die and drop off