INHIBITION OF ANTLER DEVELOPMENT OF FALLOW BUCKS : THE POLLING TECHNIQUE

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Most fallow deer farmers are fully aware of the problems encountered with the management of antlered bucks. Even deer that have only vestiges of hard antler (i.e. buttons or spikes) are capable of inflicting severe injuries to other deer, especially during yarding. At such times, normal herd hierarchy is disrupted and bucks become unusually aggressive towards other members of the species. The resulting injuries probably account for more adult fallow deaths on farms than any other single cause.

As bucks do not exhibit overt signs of aggression during the annual velvet antler phase they can be safely yarded between October and January. However, many farmers will not attempt to yard bucks at other times of the year and this can place major constraints on intensive herd management, such as pre-rut sorting of sires for joining with does and the subsequent removal or replacement of sires at the end of the rut.

This problem prompted an investigation into the possibility of permanently inhibiting pedicle and antler development of fallow bucks, especially in individuals retained as herd sires.

The removal of pedicles from mature bucks (i.e. older than one year) does not completely inhibit antler growth, although it may be a useful practice for short-term handling requirements (e.g. transport of pubertal bucks to the DSP). On the other hand, "polling" bucks as weaners, by cauterising the primordial pedicles with an electric disbudding iron (as used for dehorning calves), appears to inhibit completely subsequent growth of both antlers and pedicles in most individuals. The success of the procedure depends upon the degree of primordial tissue (periosteum)

destruction, and this is achieved with considerably less trauma on five-month-old bucks (at approximately 25 kg liveweight) for which pedicle primordia are palpable but not necessarily visible, than for older bucks with clearly visible pedicles. Furthermore, as most weaner bucks will eventually be slaughtered before the onset of aggressive behaviour at 15 months of age, only those weaners intended for use as sires need be treated. It is likely that the top 20% of weaner bucks (in terms of liveweight or any other selection criteria) can be selected at or close to weaning. These are the animals that should be kept as potential sires and are the likely candidates for polling.

The polling procedure outlined below is intended for use by veterinarians as it is a reasonably skilled operation that, for ethical reasons, requires the use of local anaesthetics. A similar technique has been used with considerable success on German fallow deer farms (Reinken 1977).

Polling Procedure

- draft individual bucks for polling in May (five months of age) or at 25 kg liveweight.
- pre-heat the disbudding iron (mains electric or battery operated calf disbudding iron with 2 cm diameter concave cutting disc).
- clip the hair covering the pedicle site to highlight the primordial pedicles.
- administer a local anaesthetic to the general region of both primordial pedicles.
- after allowing time for the local anaesthetic to take effect, place the concave disc of the hot disbudding iron directly over each of the pedicles in turn, apply pressure while rotating the disc

slightly and remove the resulting wad of skin to expose the bony structure of the developing pedicle.

- with the cutting edge of the disc, remove the bony pedicle structure flush with, or even slightly below the level of, the frontal bone; making sure to cut away from the animal's eye.
- complete the operation by cauterising the general area over a 1.5 cm radius. It is important to eliminate all primordial pedicle tissue at this stage, otherwise small antlers may develop later in life.
- no further treatment is required, however, it may be wise to vaccinate fawns against clostridial diseases several weeks prior to treatment.

Success rate: Of 29 weaner bucks treated in either 1981 or 1982, three developed a small weak antler on one side by four years of age. The other bucks have remained polled.

Performance: Polled bucks have been used as sires for the last three breeding seasons. Trials have been conducted in which does and polled bucks have been yarded together up to 80 times during the mating period. During mustering and yarding the bucks did not exhibit aggression towards the does. Needless to say, the successful outcome of these trials was partly dependent upon the ability to yard deer frequently without aggression related problems. To this end, the polled bucks were worth their weight in gold.

However, polling does not completely inhibit aggression in fallow bucks. Rival polled sires will frequently fight during the rut if they share close territorial boundaries. Furthermore, adult polled bucks in bachelor groups also will have sparring matches during the autumn and winter months. The head to head confrontation of two polled bucks is an

amusing spectacle to observe, as the forward momentum often causes one buck to complete straddle its opponent in the absence of locking antlers.

Frequent sparring generally results in little more than temporary, partial baldness. However, in 1985 we experienced some deaths in our bachelor group of polled bucks that were directly attributable to fighting in the paddock even though they showed little aggression when yarded together. This problem was alleviated by breaking down the bachelor herd structure into buck pairs (in the absence of a large, broken paddock on the Ruakura Deer Unit) for the remainder of winter, as it appeard that groups of bucks were "ganging up" on individuals. This was probably induced by a high stocking rate within small (0.25 ha) paddocks and the fact that all the bucks were of the same age and approximate liveweight, leading to a fragile hierarchal structure. It is highly likely that, given the same conditions, the same problem would have occurred with antlered and velveted bucks.

Recommendations for the management of polled sires

- single sire mating of small (<35) numbers of does in each group is probably preferable to multi-sire mating with larger groups of does. Regardless of antler status, this tends to reduce valuable energy being lost defending territories. Also it ensures that top bucks (i.e. selected by merit) do actually service does and sire offsping.
- if multi-sire mating is practised, ensure that each buck has an adequate area for maintaining a defendable territory that does not overlap with that of other bucks.
- never run polled and antlered bucks together, especially during the rut.
- if bucks (polled or antlered) are to be removed from mating groups at the end of the main rutting period (i.e. May-June), maintain them

in loose bachelor herds; do not force them into high density herds over winter. It may be pertinent to overwinter them in large broken (e.g. some bush cover) paddocks. However, still provide high quality feed as their body reserves of fat are depleted after the rut.

- present experience indicates that yarding of does in the presence of a polled sire buck presents few problems. However, if a particular buck becomes unusually aggressive it may be wise to eliminate him as a future sire prospect. Even so, it is unlikely that an aggressive polled buck will do as much damage as a buck bearing antlers or vestiges of antlers.

Conclusions: Polling is not the complete answer to eliminating buck aggression problems on the farm. However, it may go a long way to reducing stock injuries during yarding, and as such deserves at least some consideration as a management tool. The success of the technique in permanently eliminating antler growth has yet to be fully evaluated but present indications are that, providing the operation is performed properly, antler growth is eliminated until at least four years of age. If the practice is to be adopted, the polling operation should be performed under veterinary supervision and will be no worse than velvet antler removal.

References: Reinken, G. (1977) Grun-und Brachlandnutzung durch Damtiere.

Angregungen fur Produktion und Absatz, 10.