

What the bolters?

PRECOCIOUS PUBERTY

IN RED DEER STAGS

by Jimmy Suttie and Peter Fennessy, Invermay

TYPICALLY RED deer stags born in November-December, begin pedicle growth at about six to nine months of age and complete antler growth at about nine to 12 months of age. This first antler is cleaned of velvet in February, and at 15 months of age the stag is capable of reproducing should a chance come his way.

However, some well grown young stag calves commence pedicle growth at three months of age and by six months of age have clean antlers and look like miniature yearlings rather than calves. These antlers are often cast when these stags are about one year of age and a branched set of antlers are grown. If we reckon that clean antlers equal fertility, then these

stags go through puberty about one year ahead of their fellows. Such stags we call "bolters".

What is a bolter?

Red deer stags must reach a minimum weight of about 58 kg before they begin to grow pedicles. Bolters are often better-grown calves



The two-year-old stag photographed in October in the foreground was a bolter in his first year of life. He was the largest in the weaner stag mob and grew two sets of antlers in his first 15 months of life. He is now conspicuously smaller than the normal stag behind him. Note also his antlers are smaller (delayed casting) and his moult to summer coat is delayed.

▷ who achieve this weight in March. But instead of waiting until winter or spring to begin pedicle growth, this happens in early autumn. The bolter grows very rapidly during the autumn and may be 10 kg heavier than his fellows.

The transition from pedicle to antler takes place and antler growth stops in late autumn, when the antlers may be cleaned of velvet. It is at this time that the stag ceases bone growth and takes on the appearance of a stag one year older. Typically the antlers are very small — they may be only 5-15 cm long and they are frequently rounded at the tips. This rounding is indicative of premature growth arrest by steroid hormones.

The bolter which cleans and casts

If the bolter has cleaned his antlers of velvet, then these tiny antlers are cast, usually in November. Branched antlers replace the short spikes. The stag usually cleans these antlers in

February in synchrony with non bolters and indeed remains in synchrony with them from then on. However, the bolter is frequently penalised for his precocious growth spurt and puberty. Bones stop growing earlier, which results in a skeletally small animal — the bolter who was the biggest stag in the weaner herd at six months of age may be one of the smallest at 15 months.

What makes a bolter?

From talking to farmers, veterinarians and from our own observations, two things are clear. Some sires produce more calves who become bolters than others . . . and only very well grown stag calves bolt.

Some farmers stopped producing bolters when certain sire stags were no longer used. Nutrition clearly plays a part; we believe that some stag calves have in their genetic makeup the propensity to become bolters, which a high place of nutrition early in life releases.

Variations

However, the bolter story is not quite as simple as painted above, and several variations on the theme have been seen. It is unlikely that early pedicle and antler growth itself sets bolters apart from their fellows. Pedicle initiation can occur any time from March onwards, but only true bolters clean these early antlers, subsequently cast them and suffer a growth penalty. There is thus a continuum between bolters and normal stags in terms of timing of pedicle initiation.

A stag could commence pedicle growth in April or May (which would still be early) and then remain in velvet, with no further antler growth being shown for up to 8 months, until cleaning in February. These stags show no growth penalty. Alternatively, despite lack of casting of the still velvet spike antler, a new antler can develop round the base in November.

Another variation is that the bolters show no growth penalty, but this is much less common than the normal situation where bolters are small as two year old stags. Some bolters do not ever return to synchrony with their fellows — they cast their antlers early, clean them early, roar early and stop roaring early, all of their lives.

How important is bolting?

There is considerable variation in the effects of precocious puberty, but as occurrences are largely reported anecdotally, little firm evidence is available to positively relate causes to consequences. What do you do if you've got a bolter? There is no problem in recognising him, he's the big weaner stag who has got pedicles in March. If there is a line of them all sired by the same stag, don't use him next year. If there are only one or two bolters there probably isn't much problem, but a dose of Depo Provera (Upjohn Pharmaceuticals — see your veterinarian) will delay pedicle growth long enough to prevent very early antler growth and a possible growth penalty.

Economically, precocious puberty is not a big problem, nor is it likely to become one. It would be wrong to restrict feeding to weaner stags to try to prevent it. Early roaring stags may be of some use in early breeding programmes but it is probably not wise, to the best of our evidence, to use as a sire a stag who has bolted himself. ○