

# Eruption Pattern of the Permanent Incisor Teeth of Farmed Red Deer

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## Abstract

The eruption pattern of incisor teeth in farmed red deer (*Cervus elaphus*) is described. In the vast majority of animals all permanent incisors erupted between 12 and 24 months of age.

*Keywords:* *Cervus elaphus, incisors, eruption*

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## Introduction

The pattern of eruption of the permanent incisor teeth of farmed red deer (*Cervus elaphus*) was determined by periodic recordings on 2 properties in the Manawatu (North Island, N.Z.). Previous studies of tooth eruption in red deer in New Zealand have been confined to feral deer (e.g. Challies 1978). The present study was initiated to determine whether incisor tooth eruption of farmed deer follows the same pattern as that of red deer in the feral environment.

## Materials and Methods

Approximately 80 farm-reared red deer 11–24 months of age were used. Deer were from either the Massey University deer unit or a nearby commercial herd. Observations were made on groups from each property in 2 consecutive years using deer born in December 1979 and December 1980. Photographic and or visual assessments were made periodically, with numbers and dates as indicated in Table 1.

For the purpose of this study the mean birth date was taken as December 15 since actual birth dates were unknown, and calving in herds under observation occurred between November 25 and January 5. Similarly, to avoid confusion, in this study the fourth incisor which some regard as a canine tooth is referred to as an incisor.

## Results

Observations of tooth eruptions are presented in Table 1. The data indicate that the date of permanent incisor eruption varies between individuals by up to 7 months. The range of

eruption of permanent incisors (I 1–4) was as follows: I 1, January–March; I 2, June–October; I 3, June–December; I 4, June–December. More recent observations suggest that I 2 in some cases can erupt as early as February. Thus, with the exception of only 1 animal, all permanent incisor teeth erupted between 12 and 24 months of age. It appeared that the eruption of any 1 incisor tooth was completed within 1 month.

Asymmetrical eruptions were observed in some instances. For example, in Group IV where observations were made once or twice each month from June to December, 6 of the 9 animals were recorded as having asymmetrical tooth eruptions at various times. It was apparent in this group that complete eruption of permanent incisors can take as little as 2 weeks. With less frequent observations in the other groups it was not possible to determine the precise time at which any tooth erupted.

The only abnormality of eruption observed was an incomplete rotation of I 1 in 1 deer.

## Discussion

This investigation has shown that eruption of the permanent incisor teeth of farmed red deer was completed between the ages of 12 and 24 months with only 1 exception. Challies (1978) observed that in feral deer I 1 began eruption at 11 months, but eruption of I 4 was not completed until the deer were 27 months of age. The period over which any 1 incisor erupted during this study was up to 4 months less than that observed by Challies (1978). These differences may have been due to the harsher environment of the feral deer: mean body weights of deer in the present study were almost 50%

Table 1: Numbers of deer from 4 groups on 2 properties with permanent incisor teeth (I 1-4) erupted at various dates through the year

|               |     | Group I (12 months) <sup>1</sup> |        |       |       |                    |       |
|---------------|-----|----------------------------------|--------|-------|-------|--------------------|-------|
|               |     | Dec 3                            | Mar 10 | May 6 | Jul 7 | Nov 12             | Dec 8 |
| No. observed: |     | 11                               | 12     | 6     | 9     | 5                  | 5     |
|               | I 1 | -                                | 12     | 6     | 9     | 5                  | 5     |
|               | I 2 | -                                | -      | -     | 9     | 5                  | 5     |
|               | I 3 | -                                | -      | -     | -     | 5                  | 5     |
|               | I 4 | -                                | -      | -     | -     | 3 (1) <sup>2</sup> | 5     |

  

|               |     | Group II (12 months) |       |        | Group III (20 months) |        |        |        |
|---------------|-----|----------------------|-------|--------|-----------------------|--------|--------|--------|
|               |     | Dec 9                | Jan 9 | Mar 26 | Aug 4                 | Sep 22 | Oct 15 | Dec 22 |
| No. observed: |     | 4                    | 4     | 3      | 41                    | 56     | 57     | 46     |
|               | I 1 | -                    | 1     | 3      | 41                    | 56     | 57     | 46     |
|               | I 2 | -                    | -     | -      | 39 (1)                | 55 (1) | 57     | 46     |
|               | I 3 | -                    | -     | -      | 11 (5)                | 39 (8) | 52 (1) | 46     |
|               | I 4 | -                    | -     | -      | 6 (6)                 | 23 (6) | 34 (3) | 45     |

  

|              |     | Group IV (18 months) |        |       |        |       |       |        |        |       |       |
|--------------|-----|----------------------|--------|-------|--------|-------|-------|--------|--------|-------|-------|
|              |     | Jun 10               | Jun 25 | Jul 9 | Jul 27 | Aug 6 | Sep 3 | Sep 17 | Sep 31 | Nov 1 | Dec 9 |
| No. observed |     | 5                    | 5      | 8     | 9      | 9     | 9     | 9      | 9      | 9     | 9     |
|              | I 1 | 5                    | 5      | 8     | 9      | 9     | 9     | 9      | 9      | 9     | 9     |
|              | I 2 | 4                    | 4 (1)  | 8     | 9      | 9     | 9     | 9      | 9      | 9     | 9     |
|              | I 3 | 2 (1)                | 2 (1)  | 4 (1) | 4 (3)  | 6 (1) | 8     | 8      | 8      | 8     | 9     |
|              | I 4 | 0 (2)                | 1 (2)  | 1 (3) | 3 (3)  | 4 (2) | 7     | 7 (1)  | 7 (1)  | 7 (1) | 9     |

<sup>1</sup> Approximate age at date of first observation

<sup>2</sup> No. of deer with incomplete or asymmetrical eruption

higher than those reported by Challies. Further, it was observed that in group IV, 2 animals of considerably lower body weight did not complete eruption of I 4 until at least 2 months after the other deer in this group. This supports the suggestion that body weight has a marked influence on the eruption of incisor teeth.

This study has highlighted the fact that determining age from eruption of permanent incisors is limited to animals between 12 and 24

months of age and is therefore of little practical value to the New Zealand deer farmer. While this study which involved periodic observations has provided useful information, more frequent observation of the group under investigation would be necessary to determine more precisely the pattern of incisor eruption in this species.

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#### Reference

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