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The influence of lipid compounds on the content of fluorides in antlers and cranial bones of roe deer (*Capreolus capreolus* L.).

[Article in English, Polish]

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Source

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Abstract

INTRODUCTION:

Fluorine is a lipophilic element and for this reason lipids play a significant role in the accumulation and metabolism of fluorides in organs and bodily fluids. One of the places where interactions between fluorides and lipids can be observed are bones and antlers of deer. Even though the overall content of fluorides and lipid compounds in bones has repeatedly been analysed, we still know little about their interactions in antlers which are shed every year. The aim of this study was to determine the relation between the total content of total lipids and five most important fatty acids, linoleic acid (C 18:2 delta 9.12), oleic acid (C 18:1 delta 9), palmitic acid (C 16:0), stearic acid (C 18:0), and eicosadienoic acid (C 20:2 delta 11.14), and the content of fluorides in cranial bones and antlers of roe deer (*Capreolus capreolus* L.).

MATERIAL AND METHODS:

The content of fluorides in antlers and cranial bones of roe deer was measured with an ion-selective electrode, total lipids were determined with a spectrophotometric method, and fatty acids were identified with gas chromatography and an internal standard (heptadecanoic acid C 17:0).

RESULTS AND CONCLUSIONS:

The mean amount of fluorides in antlers and cranial bones was 0.0004 mg/g (SD: 0.10718) and 0.0004 mg/g (SD: 0.14988), respectively. The mean content of lipids in antlers and cranial bones was 64.63736 mg/g (SD: 17.62648) and 73.03208 mg/g (SD: 22.69000), respectively. In older animals, a tendency for fluorides to accumulate in antlers and frontal bones may be the reason why antlers appear less impressive, i.e. undergo involution.

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