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Iodine distribution in the environment as a limiting factor for roe deer antler development.

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Source

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Abstract

The iodine-containing hormones produced by the thyroid gland play a role in the complex neuro-hormonal regulation of antler development. The proper function of the thyroid depends on the adequate iodine supply of the organism, which is directly related to the iodine content of food and drinking water. The purpose of this study was to explore the connection between the iodine content of the water base, which has a strong correlation with the iodine concentration of environmental components available to animals, and the antler weight of roe deer (*Capreolus capreolus*) shot in Hungarian hunting areas. Using a general linear model, controlling for the collective effects of other environmental factors (deer population density, harvest rate, land use, and soil fertility information), the iodine content of the water base explained 51.4% of the total variance of antler weights. The results suggest that antler weights increase with increasing iodine concentration regardless of other factors; thus, the environmental iodine distribution can be a limiting factor suppressing roe deer performance assessed here as antler weight. Further experimental studies of controlled iodine uptake are needed to define the exact physiological iodine requirements of roe deer bucks.

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