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ORIGINAL PAPER

Effect of dietary supplementation with *Ascophyllum nodosum* on selected growth performance indicators and blood parameters in sheep*

Łukasz Perżyło, Iwona Chwastowska-Siwiecka

Department of Sheep and Goat Breeding, Faculty of Animal Bioengineering University of Warmia and Mazury in Olsztyn, Poland

Abstract

The aim of this study was to determine the effect of dietary supplementation with brown alga (*Ascophyllum nodosum*) meal on selected growth performance indicators, hematological parameters, and blood iodine concentration in rams. The experimental material consisted of 18 rams of the White-headed Mutton Sheep (*Polish: Białogłowa Owca Mięsna*, BOM) aged 16 months. Before the experiment, the animals were divided into three groups with comparable initial body weight: a control group (K) and two experimental groups (D1 and D2), with six animals per group. Control group rams received a standard diet, whereas the diets of animals in the experimental groups were supplemented with 5 g (D1) or 15 g (D2) of brown alga meal mixed with 500 g of ground carrots as a carrier. The seaweed supplement was administered individually once daily in the morning. In each group, animals were weighed individually at the beginning (day 0) and at the end of the experimental period (day 42) to determine body weight gain and the relative growth rate (RGR). Whole blood and serum samples were collected at the same time points to assess hematological parameters and serum iodine concentration. A significant interaction between dietary treatment and the duration of seaweed supplementation was observed for the following parameters: WBC, Ht, MCHC, and PLT. Seaweed supplementation at 5 g and 15 g resulted in higher WBC and PLT counts in group D2 and lower mean MCHC values in groups D1 and D2. At the end of the supplementation period (day 42), WBC and MCHC values decreased but remained within the normal reference ranges. A significant increase in thrombocyte production and an increase in erythrocyte parameters (RBC, Ht, and Hb) were also noted at the end of seaweed supplementation. An analysis of serum iodine concentration in the experimental groups revealed that both dietary supplementation with 5 g and 15 g of seaweed and intake duration contributed to a significant increase in this parameter.

Keywords: White-headed Mutton Sheep, nutrition, brown alga (*Ascophyllum nodosum*), hematological parameters, serum iodine concentration

Iwona Chwastowska-Siwiecka, PhD, Department of Sheep and Goat Breeding, Faculty of Animal Bioengineering, University of Warmia and Mazury in Olsztyn, Oczapowskiego 5, 10-719 Olsztyn, Poland, e-mail: iwona.chwastowska@uwm.edu.pl, phone +48602116769.

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