

## THE EFFECT OF OLIGOSACCHARIDES AND ALKALOIDS CONTAINED IN YELLOW AND BLUE LUPINE SEEDS ON FEED INTAKE, BODY WEIGHT AND FERMENTATION PROCESSES IN THE CECUM OF RATS

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**Abstract.** The aim of this study was to determine the effect of different levels and composition of alkaloids and oligosaccharides contained in yellow and blue lupine seeds on growth rate and cecum function in rats. Experimental diets were supplemented with the seeds of three yellow lupine cultivars (Mister, Markiz, Taper) in the amount of 24.3%, 25.0% and 25.4%, and the seeds of three blue lupine cultivars (Sonet, Boruta, Elf) in the amount of 25.1%, 25.5% and 26.5%. The control diet contained casein as a protein source and cellulose as a fibre source. Diets supplemented with lupine seeds did not reduce feed intake, but they limited the growth rate of rats, and contributed to a significant increase in the weight of the cecum (0.66 g vs. 0.80 - 0.93 g) and cecal digesta (2.42 g vs. 3.29–4.25 g). The activity levels of bacterial glycolytic enzymes in the cecal microflora increased, and the pH of cecal digesta and ammonia concentrations in the cecum decreased in experimental groups. Desirable changes in the concentrations and profile of volatile fatty acids in the cecal digesta were noted. The values of the above parameters were not affected by lupine cultivar.

**Keywords:** yellow lupine, blue lupine, alkaloids, carbohydrates, rats, feed intake, body weight, cecal, fermentation.