



UNIVERSITY OF LIFE SCIENCES
 "KING MIHAI I" FROM Timisoara
**Multidisciplinary Conference on
 Sustainable Development**
 21 – 22 May 2026



EVALUATION OF THE INFLUENCE OF ESSENTIAL OILS ON THE PRODUCTIVE POTENTIAL AND HEALTH STATUS OF DOMESTIC RABBITS

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Abstract: The study investigates the effects of administering essential oils with antimicrobial and antioxidant potential such as thyme (*Thymus vulgaris*), oregano (*Origanum vulgare*) and basil (*Ocimum basilicum*) on the productive performance and intestinal microbiological parameters in German Sheep rabbits. Four groups were taken into the study, including the control group and three experimental groups. During the 60-day period, relevant zootechnical indicators for evaluating nutritional efficiency were monitored: average daily feed intake, average daily gain, specific intake and slaughter yield. In parallel, the microbial load at the intestinal level was determined, in order to assess how essential oils influence the balance of microflora. The animals were weighed at three experimental times: at the beginning of the study (26th of March), after 30 days (26th of April) and at the end of 60 days (26th of May), to capture the dynamics of body weight evolution. The results obtained provide an integrated perspective on the use of essential oils as natural additives in rabbit feed, suggesting the possibility of optimizing productive performance and improving health status by administering natural products. The data highlighted in this study may contribute to the development of modern nutritional strategies, oriented towards reducing the use of antibiotics and capitalizing on natural alternatives in current rabbit breeding systems.

Keywords: natural supplements, *Oryctolagus cuniculus*, productive performance

Introduction

The breeding of domestic rabbits represents an increasingly important livestock sector due to its high productive efficiency, advantageous feed conversion rate, and the nutritional value of rabbit meat, which is characterized by low fat and cholesterol content (Dalle Zotte & Szendrő, 2011). Natural products, particularly essential oils, are considered among the most promising categories of natural feed additives because of their bioactive compounds, which exert beneficial effects on digestion, gut microbiota, and productive performance (Windisch et al., 2008).

Materials and Methods

The study was conducted over a period of 60 days using German Lop rabbits reared under standardized microclimatic and management conditions. The rabbits were housed individually in metal cages, with ad libitum access to water and feed. The zootechnical parameters analyzed included average daily feed intake (g/day), average daily weight gain (g/day), and slaughter yield (%). The collected data were centralized and statistically analyzed in order to highlight the differences among experimental groups and to assess the influence of essential oils on productive performance.

Table 1

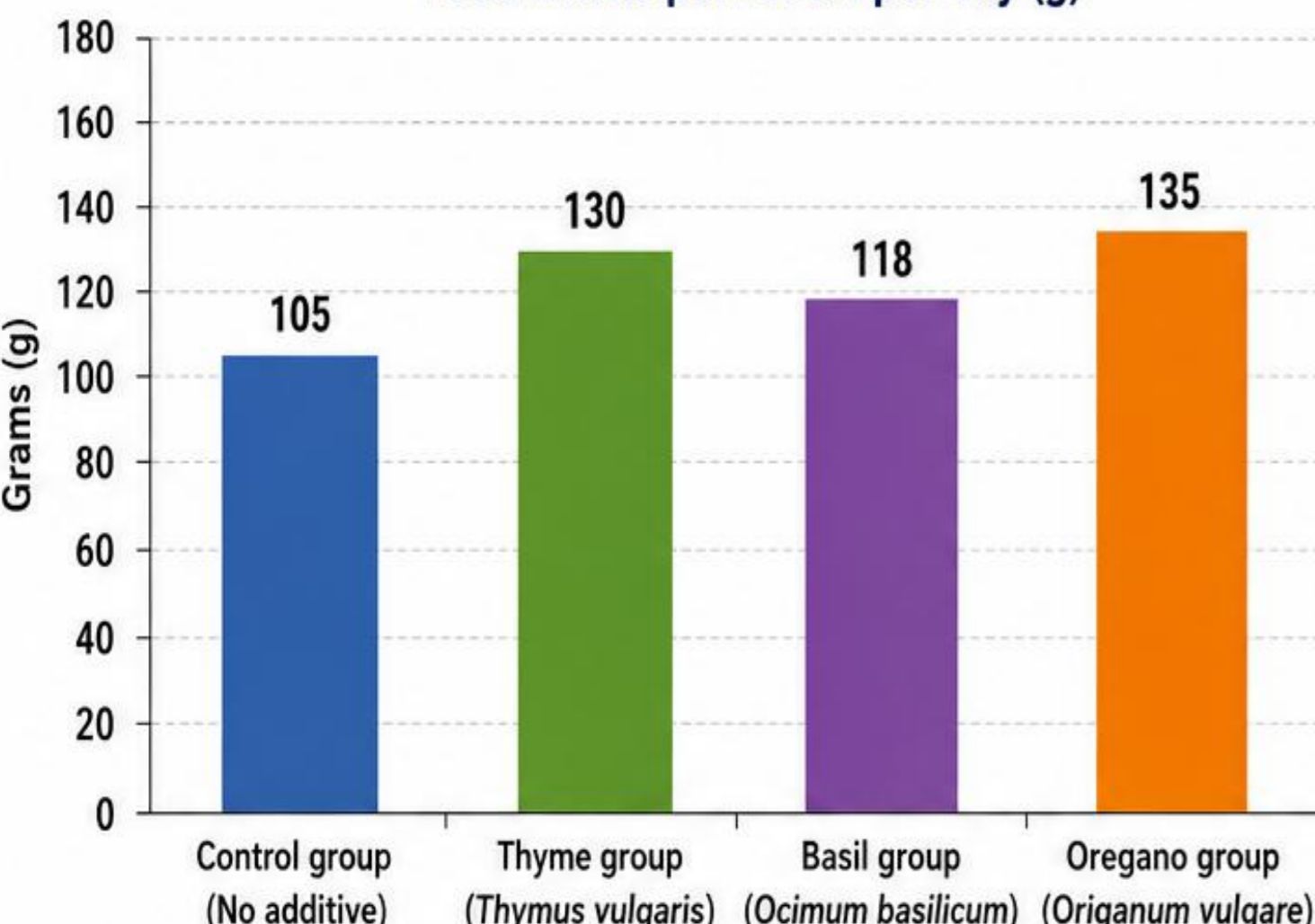
Experimental scheme

Parameter	C – Control Group	E1 – Thyme Group	E2 – Oregano Group	E3 – Basil Group
Breed	German Lop rabbits	German Lop rabbits	German Lop rabbits	German Lop rabbits
Number of rabbits/group	6 individuals	6 individuals	6 individuals	6 individuals
Essential oil administration	No essential oil	2 drops/administration	2 drops/administration	2 drops/administration
Route of administration	–	In drinking water	In drinking water	In drinking water

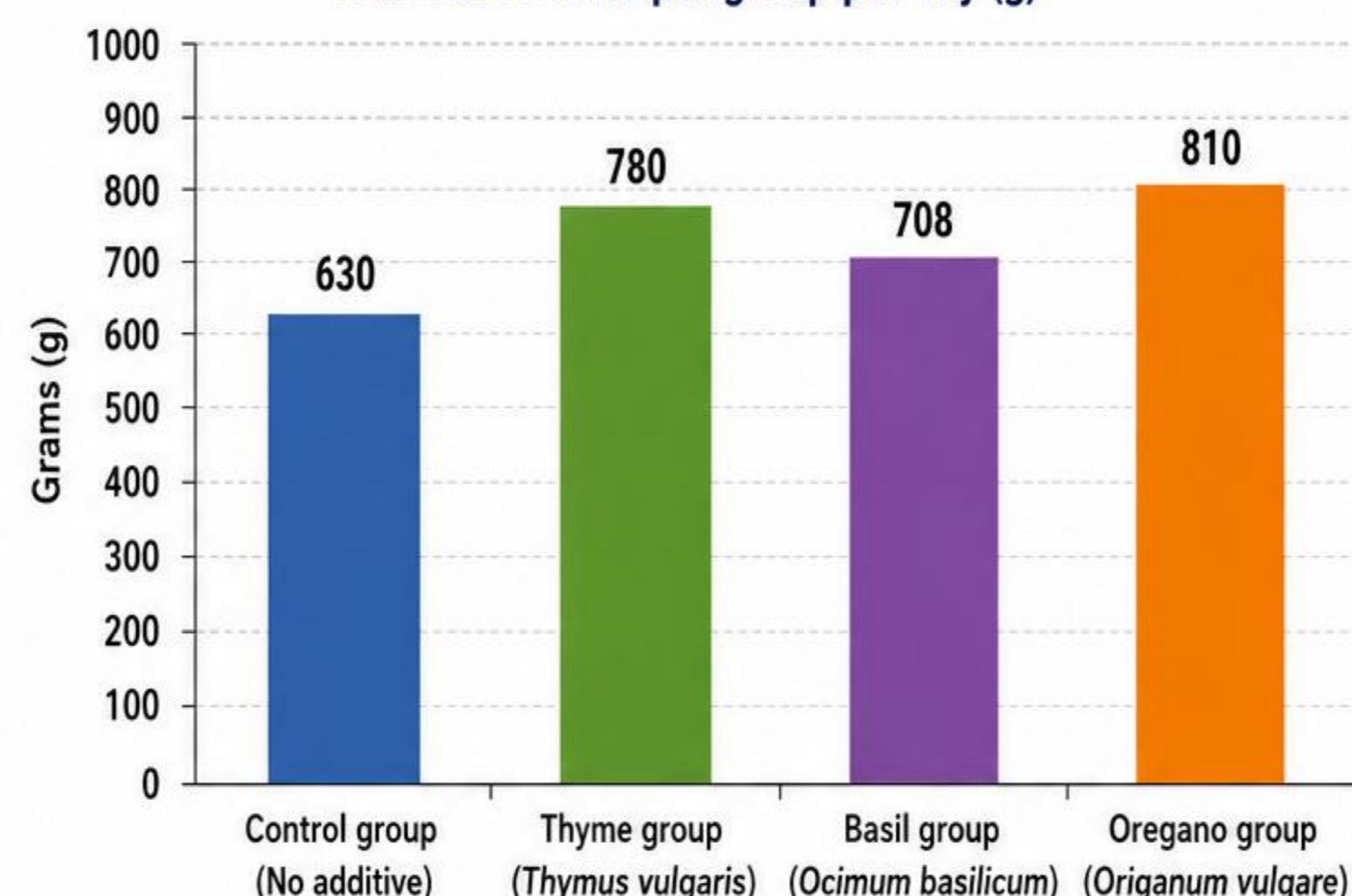


Figure 1. Weighing of rabbits (original photo)

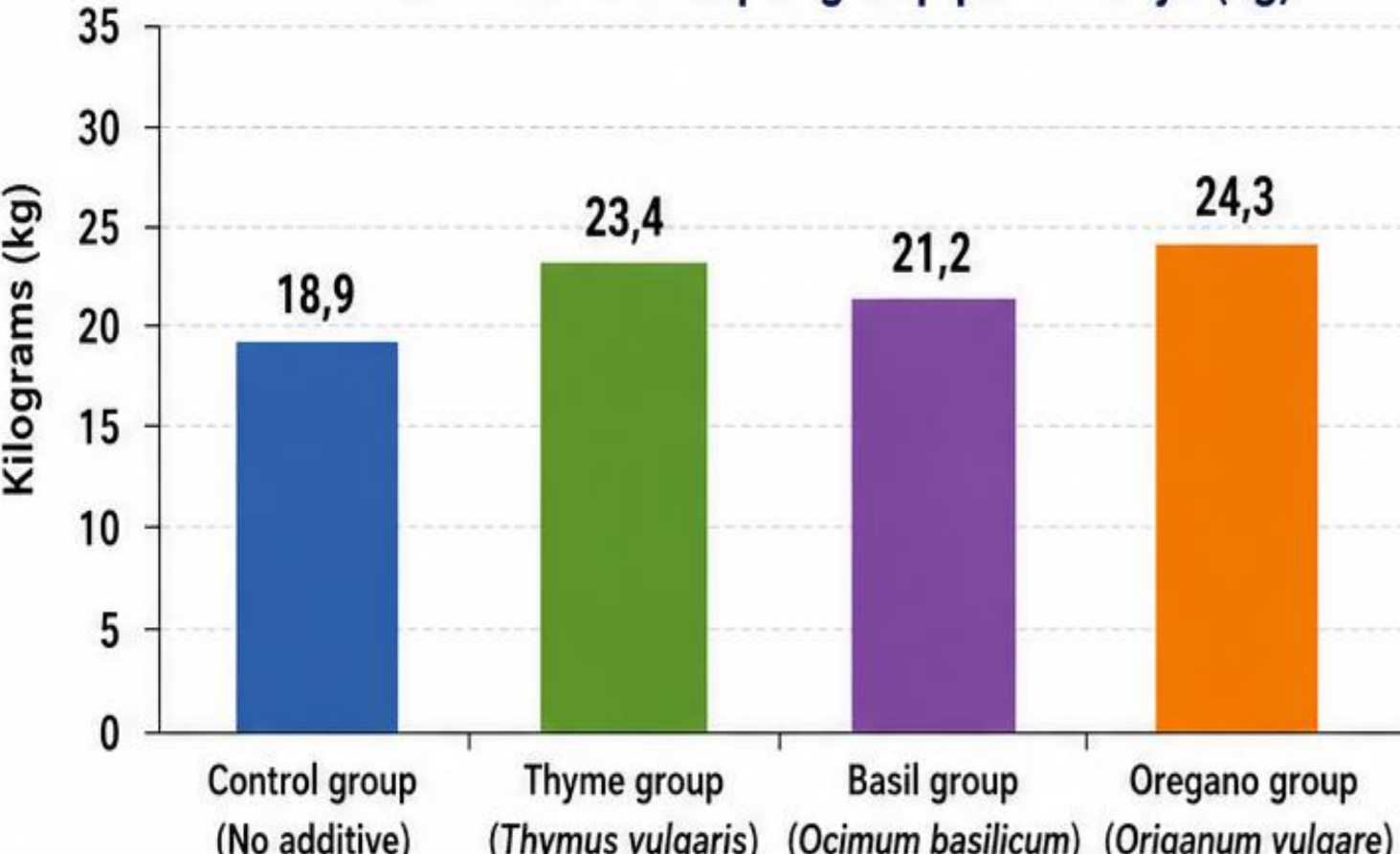
Feed intake per rabbit per day (g)



Total feed intake per group per day (g)



Total feed intake per group per 30 days (kg)



Comparative Summary of Feed Intake

Experimental group	Feed intake per rabbit per day (g)	Total feed intake per group per day (g)	Total feed intake per group per 30 days (kg)
Control group (No additive)	105	630	18,9
Thyme group (<i>Thymus vulgaris</i>)	130	780	23,4
Basil group (<i>Ocimum basilicum</i>)	118	708	21,2
Oregano group (<i>Origanum vulgare</i>)	135	810	24,3

Data represent the mean values recorded over a 30-day period.

Figure 2. Feed intake in rabbits according to the experimental group

Results

The results obtained during the experimental period highlighted significant differences between the control group and the groups supplemented with essential oils. Feed intake was higher in all experimental groups compared to the control group, suggesting a positive influence of essential oils on feed palatability and appetite stimulation in rabbits.

Conclusions

The study demonstrated that the administration of thyme, oregano, and basil essential oils may positively influence the productive performance and health status of German Lop rabbits. Depending on the type of essential oil and the duration of administration, improvements were observed in average daily gain and feed conversion efficiency. The obtained results support the use of essential oils as natural alternatives to synthetic antimicrobial additives, contributing to the development of modern and sustainable nutritional strategies aimed at reducing antibiotic use in rabbit production systems. However, further studies are required to establish precise recommendations regarding optimal dosages and combinations, as well as to investigate the mechanisms of action and long-term effects of these compounds