AGROINDUSTRIAL BYPRODUCTS AS POSSIBLE ANTIMICROBIAL INGREDIENTS IN ANIMAL FEED

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Introduction

A wide range of antibiotics are used worldwide in the poultry industry for therapeutic or prophylactic purposes, and as growth promoters [1]. However, as bacteria resistance to the most widely used antibiotics is a concern [2], to develop alternative substances and strategies for animal growth promotion and disease prevention is a requirement. Phytotherapeutics are natural alternatives to antibiotic growth promoters in poultry industry [3]. Essential oils from aromatic plants are recognized as phythobiotics. Within the sector of aromatic plants, several byproducts are generated, representing about 50-70% of the plant dry weight, being discarded as waste [4].

Objective

In the present work, essential oils from aromatic plant byproducts were obtained, using different hydrodistillation methodologies, and chemical characterized. The antimicrobial activity of essential oils from agro-industrial byproducts are evaluated as possible ingredients in broiler diets.

Results

Essential oils yield

The EO’s yield were similar using conventional hydrodistillation (HD) and solvent-free microwave hydrodistillation (MHD).

Antimicrobial activity of essential oils

Zones of growth inhibition of EOs using Agar disc diffusion

The冬季 savory showed the highest antimicrobial activity, probably related with the higher carvacrol concentration.

Conclusions

As the winter savory, thyme, and oregano byproducts revealed antimicrobial activity against the main poultry’s infectious species, it can be concluded that they have potential to be incorporated in animal feed formulations.

References