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DEVELOPMENT OF A NOVEL CAT LITTER FROM OLIVE OIL WASTE PRODUCTS

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Abstract

The aim of this study was to develop and test a novel cat litter (O-Litter) from the waste products of olive oil production. In order to do this, the waste products had to be tested to see if they had the characteristics of marketable cat litters. This was accomplished through three main experiments: cat preference for the litter, litter absorption capacity, and litter odour control.

To date, there is very little published research on cat litter and cat preferences. Therefore, much of the background information for the experiments described in this thesis came from patents, websites, or cat owners unsatisfied with litters and providing suggestions. Before starting any experiments on the development of a new cat litter from a waste product, determining which characteristics of a cat litter were of most importance was needed. A review of the available information did identify the main characteristics required, and subsequent experiments were performed to test them.

A pilot study was performed to determine an appropriate amount of time to leave the litter boxes in the cage with the cats in order to determine a preference between litters. Ten cats were given two types of litter in two litter boxes, with the positions interchanged daily for ten days. From this pilot study, we were able to determine that cats only needed exposure to the litter for two days to properly determine which litter they preferred.

The preference experiment was conducted with ten cats from the Centre for Feline Nutrition at Massey University. The cats were tested using a pair-wise preference test. Ten combinations of five different cat litter types (Vitapet Cat Litter, Natural O-Litter, Pellet A O-Litter, Pellet B O-Litter, and a control (empty litter box)) were used for a total of twenty days. Records of litter weight change and amount of excrement produced were used to determine which litter type the cats preferred. The results determined that based on the measurement criteria, the cats preferred the commercial brand, followed by Natural O-Litter.

For the absorption and odour control experiments, eight litter types were compared (VitaPet Purrfection, Breeder Celect, Excellence Ultra-Hygienic, VitaPet Cat Litter, Pellet A O-Litter, Pellet B O-Litter, and two versions of Natural O-Litter: old and new**)**. In the absorption experiment a specified volume of water was added to the eight litter types (above). After 30 minutes the litter was strained, and it was determined that VitaPet Purrfection (which is a clumping variety of litter) was the best litter at absorbing water, followed by the two pelleted varieties of O-Litter.

For the odour control experiment, an ammonia-based cleaner was added to the litter which was contained in a preserving jar to prevent the ammonia from escaping. A filter paper soaked with hydrogen sulphate was used to absorb the ammonia that was not absorbed by the cat litter. An auto analyser was then used to determine the amount of ammonia absorbed by the filter paper, thus not absorbed by the cat litter. The results from this study showed that the two pellet varieties of O-Litter were the best at odour control for each time interval tested. In fact, all four O-Litters tested performed better than the commercial brands at absorbing the ammonia.

From these experiments, we are able to show that O-litter has the potential to make a marketable cat litter. When the O-litter products were compared to commercial brands, they either had qualities that were equal to or better than the commercial products they were compared with. Due to time constraints, not all of the characteristics of the litter were fully tested and some of these characteristics (e.g. dust control, clumping, and tracking) should be tested before the product goes on to the market. However, even without these additional tests, O-litter shows great potential as a cat litter.

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