THE EFFECTS OF HIGH DOSES AND DOMINANT LETHALITY OF MONOSODIUM GLUTAMATE ON MALE DOGS (*CANIS DOMESTICA*)

A Thesis

Presented to

the Faculty of the Graduate School

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In Partial Fulfillment

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Master of Science in Biology

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by

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APPROVAL SHEET

This thesis entitled THE EEFECTS OF HIGH DOSES AND DOMINANT LETHALITY OF MONOSODIUM GLUTAMATE ON MALE DOGS (CANIS DOMESTICA), prepared and submitted by Ms. Salvacion E. Hate in partial fulfillment of the requirements for the degree of Master of Science in Biology has been examined and is recommended for acceptance and approval for ORAL EXAMINATION.

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ABSTRACT

The administration of monosodium glutamate to the dogs by different routes and in different concentrations affects blood pressure, pulse rate, and respiratory rate. The dogs given intravenous doses of monosodium glutamate was most sensitive to its presence, although the response offered was not as great as those offered by the dogs with subcutaneously and orally administered MSG. The dogs responded to the substance in different pattern. The first 20 minutes after the dose was given, showed blood pressure and pulse rate building to its peak. This was a prelude to salivation, vomitting, and sometimes urination. As salivation and vomitting subsided, there was a decline in the amplitude of the responses, almost nearing the baseline data. The effect on respiratory rate was very erratic without establishing a definite pattern. As the concentration of the dose of MSG was increased, the blood pressure and pulse rate increased with it. The respiratory rate in turn was inversely affected by the increase. Effects on the body organs depended on the routes of administration. In intravenously injected dogs, the heart was bloated with clotted blood inside which were not observed in the dogs given MSG through a different route. The lungs of the dogs showed varying degrees of collapse and the livers showed cyanotic patches. The dilation of the pupil of the eye of the test animals was also affected. Increase in concentration of the dose of MSG weakened the corneal and knee reflexes of the animal. A general analysis of these results showed that the lowest tolerance level to MSG was exhibited by the dogs given intravenous doses and the highest tolerance level was exhibited by the dogs given oral feeding of MSG. The administration of 50% sugar solution following a lethal dose of MSG appeared to diminish the intensity of the effects induced by monosodium glutamate.

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