



# INTRODUCTION

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Rodents cause untold economic loss to farmers, food manufacturers and processors as well as causing damage to the structure and buildings fabric. Undoubtedly by the economic loss due to rodents is enormous particularly in the tropics, but it is impossible to place exact monetary values on the damage caused. The World Health Organization estimates that about 33 million tons of food is destroyed world-wide each year. More recently it has been estimated that world-wide post harvest loss attributable to rodent and insect depredation is about 20% of its total value. Even on a smaller scale, estimates of the economic loss caused by rodents must be treated with reserve. For instance, \$ 900 millions / year was the figure put on rodent depredations in the USA in the 1960's **Clinton (1969)**; and in India up to 16% of food is claimed to be lost each year but the figure may be much higher **Bull (1972)** and **Krishnamurthy *et al.*, (1975)**.

Chemical pesticides were used to control rodents, therefore they caused environmental pollution. Concentration of pesticide are increasingly magnified in tissue and other organs along the food chain (**Mori *et al.*, 1983** and **Abd El-Gawad and Shams El-Din, 1990**).

The use of acute toxicants of chemical pesticides had been relatively ineffective, due to poison shyness, or behavioral resistance, developing as result of the rapid onset of poisoning

symptoms before ingestion of a lethal dose had occurred (Grand, 1976). (Ophof and Langeveld, 1969) and (Wang, 1978). Despite the fact that chemical control of rodents has been practiced for more than 2000 years. It was only 35 years ago that the introduction of anticoagulant rodenticides revolutionised the efficacy and safety control of rodents (Dubock, 1979). The majority of anticoagulants chemically belong to coumarin group. Naturally coumarins are present in plants in free as well as conjugated group (Hagen *et al.*, 1967). Histological studies showed that the lethal dose of coumarin had a necrotic effect in rats, whilst sublethal dose produced spotted mottled liver, enlarged adrenals, spotted kidneys and hyperaemia of the intestines, stomach, testes, pancreas. Repeated administration of coumarin doses produced toxic signs and histological changes in liver and kidney (Hazleton *et al.*, 1956. Patyza, *et al.*, 1965). An investigation into the establishment of biochemical criteria for detection of early manifestations of liver damage revealed that administration of various hepatotoxic compounds including coumarin, to rats brought about a reduction in liver (Feuer *et al.*, 1965). Thus, the aim of this work was to investigate Chlorophacinone, Warfarin and the toxicity of Brodifacoum against the albino Norway rat, *Rattus norvegicus*, var. albino and the albino House mouse, *Mus musculus*. Besides, the biochemical, teratogenic and biological effects of the above mentioned coagulants were studied in the laboratory using the albino Norway rat, *Rattus norvegicus* var. albino.