Physiological effects of A plant extract and biocide on male albino rats

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Rodents are considered as one of the most important pest groups in Egypt. They causegreat economic losses to growing and stored crops, poultry and animal farms, foodmanufactories as well as structure and fabric of buildings. They grow through almost anyobject to obtain food and shelter. Rodents are involved in the transmission and disseminationof many parasites and diseases to man and his domestic animals (Meehan, 1984, Brooks andLavoie, 1990).These animal pests were controlled by chemical compounds which cause health andenvironmental pollution in addition to the toxic effects to non-target organisms. Recently, theemphasis in plant protection has definitely shifted from the dominant chemical pesticides tointegrated pest management (IPM) where the focus is on biological control and other naturalresources with reduce reliance on chemicals. Health and environment problems increasingpest resistance to any of these synthetic pesticides clearly indicate that basic research must bedirected to the discovery of new safe types of pest control agents in order to insure highproduction and preservation of agriculture products (Schmutterer, 1981 and Saleh et al.,1986).Some natural products as Calotropis procera (Oshar) and Vertemic biocide(abamectin) promising efficiency for control of rodent species Gabr (2006).Calotropis procera (Oshar) belongs to the family Asclepiadaceae. This plant iscommonly found in Asian temperate region (Arabian Peninsula), Asia-tropical (Indiansubcontinent and Indo-China) and Africa (North, Northeast, East tropical, West Central andWest tropical), particularly the semi-arid regions of Bauchi, Borno, Kano, Kaduna and mostparts of Northern Nigeria (Liogier, 1995; Sharma et al., 1997 and Ahmed et al., 2005).Calotropis procera poses varying toxic effects in animals through air borne allergies,touch and consumption in live stock. The widespread loss of livestock and low animalproduction are attributed to the existence of C. procera in the arid Northern regions of Nigeria(Burkill, 1985).Toxicity of C. procera is reported in sheep in the form of anorexia and diarrheaMahmoud et al. (1979). Consumption of this plant leads to severe poisoning to livestock aswell as man (Lewis and Elvin-Lewis, 1977).2@ @Introduction and Aim of WorkAbamectin is a macrocyclic lactone product derived from the soil microorganismStreptomyces avermitils. Abamectin is highly toxic to insects, may be highly toxic tomammals and with effects on fertility and reproduction (Lankas and Gordon, 1989 and Elbetiehaand Da,as, 2003). Symptoms of poisoning in laboratory animals include pupildilation, vomiting, convulsions, and/or tremors, and coma (Lankas and Gordon,

1989; USEPA, 1990 and Eissa and Zedan, 2010).The explanation for how ivermectin works is that it specially increase membranechloride ion permeability, there are clearly other sites of action at which ivermectin affectseither the host or target organism (Lankas and Gordon, 1989 and Amy 2006).Abamectin is nearly insoluble in water and has a strong tendency to bind to soilparticles. Although pesticides like abamectin may be valuable in agriculture, many pesticidesor their breakdown products can be found in trace amounts or higher levels in air, soil andwater. Environment exposure to these agents may cause serious health risks including fertilityand reproductive function. Recent reports have indicated a strong link between male infertilityand exposure to more than 50 pesticides (Cox, 1996).Therefore, the present work aims to study the effects of oshar leaves extract andabamectin biocide on adult male albino rats to reduce the damage of rats to agriculture andpublic health.The main objectives of the current research are to study the physiological andbiochemical effects of single and repeated doses of oshar leaves extract and abamectin biocidein rats. The study includes:1. Determination of the LD50 values of the oshar leaves extract and abamectin biocidefor rats (Rattus norvegicus).2. Study the impact of the sublethal dose of the two compounds on:a- The body and organ weights.b- Haematological parameters: red blood corpuscles count (RBCs), white bloodcorpuscles count (WBCs), haemoglobin content (Hb), and haematocrite value(Hct).c- Biochemical and physiological parameters including