

## INTRODUCTION

The terrestrial snails (gastropods) had become an economic serious pest in Egypt during the last few years (Khidr *et al.*, 2005 and Zedan *et al.*, 2005). They cause considerable damage to the majority of vegetable and fruit field crops as well as ornamental plants (Kassab and Daoud, 1964; Ghamry *et al.*, 1993 and Ismail, 1997). Such animals were recorded with a relatively high population density on the majority of economic crops cultivated in the northern newly reclaimed desert land due to the availability of favourable weather conditions (mainly; temperature and relative humidity), sandy soils and manuring. (El-Okda, 1980; Godan, 1983 and Nakhla *et al.*, 1993). These animals cause serious yield reduction of infested crops and fruits, as well as destroying plant seedlings.

Land snails caused high injury to the Egyptian clover, leave unpleasant slimy traces on the injured parts (El-Okda, 1980), high reduction in clover cutting (Ismail, 1997; Zedan *et al.*, 2005).

The land snails were mostly controlled chemically by using molluscicides or insecticides (El-Okda, 1981 and Crowell, 1967) such as Methiocarb (Okka *et al.*, 1996), Niclosamida (Zedan, 1999), Aldicarb, Copper sulfate, Aluminium sulfate and Magnesium sulfate (Ismail *et al.*, 2001), Methiocarb, Carbofuran and Thiodicarb (Abd-El-Aal, 2005) and Methomyl, Fenamiphos, Sethoxydim and Malathion (Salem *et al.*, 2006).

Plant extracts have more attention in controlling many of serious pests especially in tropical and subtropical countries, also they are

biodegradable, very low in mammalian toxicity and potentially compatible with natural enemies. (Ebenso, 2004) such as seeds powder from cabbage, cauliflower, garden rocket, radish and turnip (Ghamry, 1994), powder of pimpnel plants and cortexes of fruits pomegranate (Ghamry, 1997), crude plant extracts of neem, spotted gum, oshar, cauliflower, santonica, radish, peppermint, khila, alocasia and cabbage (Zedan *et al.*, 2001), crude extracts of Neem, *Azadirachta indica* (Ebenso, 2004) and oils of Asso and Delile (Soliman, 2007).

The present work aim to throw light on the following points:

- 1- survey and population dynamics of land snails infesting Egyptian clover (*Trifolium alexandrinum L.*) and Cotton (*Gossypium hirsutum L.*) in both Gharbia and Fayoum Governorates.**
- 2- Toxicological studies on glassy clover snail (*Monacha obstructa*) using:**
  - a- pesticides, mineral salts and mineral oils.
  - b- plant extracts of six different plants.