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Determination of pesticide residue in marketed hepato-protective herbal formulations by capillary gas chromatography

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Pesticide residue refers to pesticides, their poisonous metabolic and degradation products and impurities that may remain on or in the organism, agricultural product, and the environment, after they are applied. Sometimes pesticide residue is unavoidable. However, if the residue exceeds the maximum limit or a tolerance, it will pose significant risk to humans and animals or other creatures in the ecological system, through the food chain. The medicinal plants materials are liable to contain pesticide residue, which accumulate from agriculture practices such as spraying treatment of soils during cultivation and administration of fumigants during storage. It is, therefore, recommended that every country producing medicinal plants. In this research, the pesticide residues in different hepato-protective herbal formulations were determined by capillary gas chromatography. A Varian 6890N gas liquid chromatography equipped with a 230 m XO, 32 mm, I. d. glass column packed with SE-52, a constant current 63 Ni electron capture detector. The operating conditions were as follows: Injection volume was 2 µl; injector temperature, 200 °C; oven temperature, 160 °C; detector; mobile phase A:0.1% aqueous formic acid solution was used. From the result of determination of pesticide residue in marketed hepato-protective herbal formulation, it was observed that the pesticide residues in formulations were present as in HP1 (Alpha HCH-0.19 ppm), HP2 (diazinone-0.63 ppm), HP3 (Captafol-0.39 ppm, Trans Fluthrin-0.27 ppm), HP4 (Beta-HCH-0.20 ppm, Heptachlor-0.38 ppm), HP5 (Alachlor-0.27 ppm) which could produce ill effect on health of patient, using this herbal formulation.

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Development and evaluation of polyherbal mosquito repellent formulation

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osquito menace is a ubiquitous problem throughout the world. Large numbers of diseases are known to spread through Mosquitoes. Many attempts are made to control the mosquito menace and to eradicate the scourge of malaria and other severe diseases. Since there is no effective vaccine available for the control of these diseases, prevention of mosquito bites is one of the main strategies to control or minimize incidence of these diseases. The use of insect repellents can provide a practical and economical means of preventing mosquito-borne diseases. Most of the mosquito repellent formulations available in the market are mainly prepared with active ingredients of synthetic origin. Natural or herbal mosquito repellents available in the market are generally based on volatile oils. Mosquito repellent activities are reported with several medicinal plants. For present study, Sphaeranthus indicus (Ind. Var. Gorakhmundi; fruit), Piper betel (Ind. Var. Nagarvel Pan; leaf), Trachyspermum ammi (Ind. Var. Ajwain; oil), Cymbopogan citratus (Ind. Var. Lemon grass; oil) were used to prepare polyherbal formulation. Extracts prepared by using solvent reflux method and were subjected for phytochemical study. Quality and purity of ajwain oil and lemon grass oil was detected by GC. Species of mosquitoes such as Anopheles stephensi and Culex quinquefaciatus were breeded. Polyherbal lotion formulations were prepared by using different combinations of oils and extracts. They were studied and evaluated for pH, viscosity, spreadability, irritancy. Finding indicate optimum result with pH 5.20-6.87, viscosity 24025-4893 cps, spreadability 11.20-15.48 gm.cm/sec and the median effective time (ET99) 4.60 hours after application. The prepared formulations do not cause any irritancy and inflammation on skin. All formulations were studied for mosquito repellent activity. Formulation F4 has potential mosquito repellent activity showing 99.8% mosquito repellent activity.

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