

INTRODUCTION

The world production of fats and oils has been increased during the period 1971-1981 by 35%, while the total world production of rapeseed has increased by 93%, during the same period and reached 9,636,00 tons in 1981. However, Brassica oil seed crops annually occupy over eleven million hectares of world's agriculture, and provide over 8% of the world's edible vegetable oil (Downey, 1983).

The oil was extracted from rapeseed in Asia before 2000 B.C. and introduced into Europe in the 17th century A.D. The oil was used primarily for industrial purposes such as lamp oil and latter as a steam engine lubricant. The presence of erucic acid gives rapeseed oil a superior ability to cling to steam-and water-washed metal surface.

Early before, rapeseeds contained high erucic acid content ^{الزيتون} ranged from 35 to 50% and had also high levels of glucosinolate compounds up to 10% (FDA, 1985). Oil prepared from rapeseed grown before the year 1971 contained up to 5%, but mostly less than 3% erucic acid. ^{دكترة} Efforts were made in Canada during the 1960's to breed rapeseed plant varieties that had a low erucic acid content, and produced in 1978 rapeseed oil contained less than 2% erucic acid which they called canola oil.

^{دكتور} Nowadays, in some countries low erucic acid rapeseed oil (LEAR oil) is being used for cooking and other uses of edible oil. While, there is still a market for high

erucic acid rapeseed oil (HEAR oil) to be only used in industrial aspects.

Several investigators mentioned that erucic acid was poorly metabolized and consequently fats could be accumulated in heart muscle and some other serious troubles on human life were established e.g. myocardial lipidosis, heart lesions and liver damage (Kramer et al. 1983). As a result, erucic acid rapeseed oil was never used as an edible oil in the United States (FDA, 1985). However, enzymatic hydrolysis of glucosinolate compounds in rapeseed meal (RSM) yielded undesirable and toxic substances which limits its use of livestock nutrition.

In Egypt, there is a great shortage in edible oils and hence large amounts are annually imported to cover the shortage in the local market for consumption. During the last five years, rapeseed has been introduced to Egypt as a cheap source for edible oil. High and/or low erucic acid varieties were cultivated and experimented under Egyptian environmental conditions. However, up till now, the use of rapeseed oil for human consumption in Egypt has not been yet confirmed and still its use is a big question for scientist to answer.

The main object of the present investigation is to through light on the chemical composition of oil and meal obtained from two varieties of rapeseeds cultivated under Egyptian conditions. Biological evaluation of the crude oil , crude meal and detoxified meal will be accomplished.