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The Effect Of *Helianthus Tuberosus* As A Source Of Inulin On Rats Suffering From Obesity And Chronic Liver Diseases

As a completion of gating the master degree of education for specific studies in Home Economics Dept. Nutrition & Food Sciences

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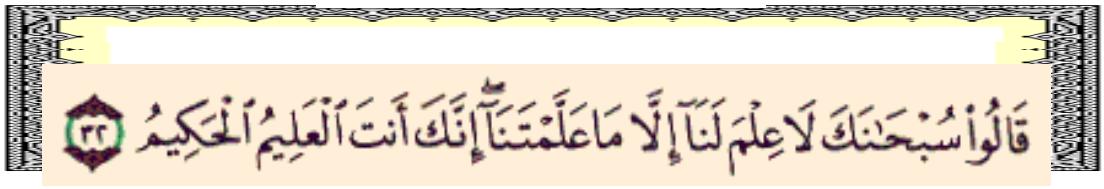

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Abstract

The Effect Of Helianthus Tuberosus As a Source Of Inulin On Rats Suffering From Obesity And Chronic Liver Diseases

ABSTRACT:

The present work was conducted to study the chemical composition of Helianthus Tuberosus and the effect of four levels from (Helianthus Tuberosus) feeding on some nutritional and biological parameters in rats suffering from obesity and chronic liver diseases. Normal male's albino rats (35) of Sprague Dawley Strain weighted 150 ± 10 g. used in this study. The rats divided into two main groups ; The first main group (6 rats) was fed on basal diet (as a control negative group). The second main group was fed 6 week on high fat diet HFD to induce obesity in rats, then the rats in the second main group were treated with CCl4 in paraffin oil (50% v/v 2ml/kg) twice a week subcutaneous injection for two weeks to induce chronic damage in the liver. Then the rats in this group were divided into 5 subgroups, one of them fed on high fat diet "control +ve group" and the other subgroups fed on high fat diets containing different levels of Helianthus Tuberosus (2.5%, 5%, 7.5% and 10%). Our results indicated that: the copositions of moisture, protein, ash, crud fiber, oil and Soluble carbohydrates were 10.500, 8.841, 6.22, 3.250, 0.61 and 70.579%, respectively. On the other hand the amounts of total sugars and inulin were 29.250 and 20.490%, respectively. Feeding obese rats which suffer from chronic liver disease on high fat diet induced significant increase in final weigh, BWG%, organs weight/body weight%, serum glucose, leptin hormone, lipid profile "except HDL-c", liver enzymes and kidney functions. Treating obese groups which suffer from chronic liver diseases with the four levels of Helianthus Tuberosus (2.5%, 5%, 7.5% and 10%) decreased the weights of rats, BWG%, the organs weights and all biochemical parameters, except HDL-c which recorded significant increase. The lowest improvement in these parameters recorded for the group which treated with 2.5% Helianthus Tuberosus, while the highest improvement recorded for the group treated with 10%. From this study it could be concluded that, Helianthus Tuberosus is safe and can be used as a source of inulin and reduce the weight gain and also improved the side effect of liver diseases.

***Key words**: obesity, liver diseases, rats, Helianthus tuberosus*

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ACC	Altering theacetyl carboxylase
ACLF	Acute-on-Chronic Liver Failure
AgNORs	Argyrophilic nucleolar organizer regions
ALF	Acute Liver Failure
ALP	Alkaline Phosphatase
ALT	Alanine Aminotransferase
AST	Aspartate Aminotransferase
BMI	Body Mass Index
BUN	Blood Urea Nitrogen
CAT	Catalase
CCl_4	Carbon tetrachloride
CVDs	Cardiovascular diseases
DILI	Drug-induced liver injury
DM2	Diabetes Mellitus Type 2
DNA	Deoxyribonucleic Acid
EASD	European Association for the Study of Diabetes
EASL	European Association for the Study of the Liver
EASO	European Association for the Study of Obesity
ECM	Extracellular Matrix
FAS	Fatty acid Synthase
FDP	Freezedriedpowder
FOS	Fructo-oligosaccharides
GGT	Gamma-Glutamyl Transpeptidase
GSH	Glutathione
HBV	Hepatitis B Virus
HCC	hepatocellular carcinoma
HCV	Hepatitis C Virus