



Faculty of Home Economics  
Dept. of Nutrition & Food Science

# POSSIBLE EFFECTS OF CUCUMBER AND SNAKE GOURD FOR HYPOGLYCEMIA OF MALE ALBINO RATS

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**LIST OF ABBREVIATIONS**

AET	<b>Aqueous Extract Of <i>Trichosanthes cucumerina</i></b>
AI	<b>Atherogenic Index</b>
AIDRs	<b>Alloxan Induced Diabetic Rats</b>
ALP	<b>Alkaline Phosphatase</b>
ALT	<b>Alanine Amino Transferase</b>
APP	<b>Amyloid Precursor Protein</b>
AR	<b>Atherogenic Ratio</b>
AST	<b>Asparate Aminotransferase</b>
B.Wt.	<b>Body Weight</b>
BGL	<b>Blood Glucose Level</b>
BHA	<b>Butylated Hydroxyl Anisole</b>
BW	<b>Body Weight</b>
BWG	<b>Body Weight Gain</b>
CAT	<b>Catalase</b>
CBC	<b>Complete Blood Count</b>
CC	<b>Creatinine Clearance</b>
CEE	<b>Cold Ethanolic Extracts</b>
Control(+ve)	<b>Control Positive</b>
Control(-ve)	<b>Control Negative</b>
DKA	<b>Diabetic Ketoacidosis</b>
DL	<b>Deciliter</b>
DM	<b>Diabetes Mellitus</b>
FBS	<b>Fasting Blood Glucose</b>
FER	<b>Feed Efficiency Ratio</b>
FI	<b>Feed Intake</b>
Fig.	<b>Figure</b>

FRAP	<b>Ferric Reducing Antioxidant Power</b>
g	<b>Gram</b>
GA	<b>Gallic Acid</b>
GDM	<b>Gestational Diabetes-Mellitus</b>
GOT	<b>Glutamate Oxaloacetate Transaminase</b>
GPT	<b>Glutamic Pyruvic Transaminas Enzyme</b>
GPx	<b>Glutathione Peroxidase</b>
GRD	<b>Glutathione Reductase</b>
Hb	<b>Hemoglobin</b>
HDL-C	<b>High Density Lipoprotein Cholesterol</b>
HMG CoA reductase	<b>3-Hydroxy-3-Methyl-Glutaryl-Coa Reductase</b>
HPLC	<b>High-Performance Liquid Chromatography</b>
HWE	<b>Hot Water Extract</b>
IDDM	<b>Insulin Dependent Diabetes Mellitus</b>
IU	<b>International Unit</b>
Kg	<b>Kilogram</b>
kJ	<b>Kilojoule</b>
LCAT	<b>Lecithin Cholesterol Acyltransferase</b>
LDL-C	<b>Low Density Lipoprotein Cholesterol</b>
LPO	<b>Lipid Peroxidase</b>
M mole	<b>Milli Mole</b>
mcg	<b>Micrograms</b>
MCH	<b>Mean Corpuscular Haemoglobin</b>
MCHC	<b>Mean Corpuscular Haemoglobin Concentration</b>
MCV	<b>Mean Cell Volume</b>
Mg	<b>Microgram</b>

mg/dl	<b>Milligram Per Deciliter</b>
MI	<b>Milli Liter</b>
ml	<b>Milli Letre</b>
N	<b>Normal</b>
NIDDM	<b>Non-Insulin Dependent Diabetes Mellitus</b>
nM	<b>Nanometre</b>
NO	<b>Nitric Oxide</b>
PCV	<b>Packed Cell Volume /Haematocrit .. Hct</b>
PL	<b>Pyloric Ligation</b>
ppm	<b>Parts Per Million</b>
RBC	<b>Red Blood Cells</b>
RIP	<b>Ribosome-Inactivating Protein</b>
ROS	<b>Reactive Oxgen Species</b>
SCL	<b>Serum Creatinine Level</b>
SD	<b>Standard Deviation</b>
SOD	<b>Superoxide Dismutase</b>
STZ	<b>Streptozotocin</b>
SUL	<b>Serum Urea Level</b>
T.C	<b>Total Cholesterol</b>
T.G	<b>Triglycerides</b>
U/L	<b>Units Per Litre</b>
UC	<b>Urea Clearance</b>
UCL	<b>Urine Creatinine Level</b>
UGL	<b>Urine Glucose Level</b>
UUL	<b>Urine Urea Level</b>
UV	<b>Ultraviolet</b>
VLDL	<b>Very Low Density Lipoprotein</b>

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**LIST OF ABBREVIATIONS**

WBC	White Blood Cells
WIS	Water Immersion Stress

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## ABSTRACT

The present work was carried out to evaluate the possible effects of cucumber and snake gourd parts (seeds, leaves, whole fruits, fruits without peel and peel of fruits) as 7.5% on the diabetes mellitus male albino rats. For this purpose, the determination of phenols and flavonoids for different fruit parts was done by HPLC method. The study included 84 rats, weight about 150 - 170 (g) weight, divided into two main groups. The first main group (7 rats) fed on basal as a (negative control group), while in the second main group (77 rats) diabetes mellitus was induced in normal healthy albino rats by intraperitoneal injection of Alloxan as a single dose (150 mg/Kg of the weight of the rat). The second main group divided into 11 groups (7 rats each). Group (1) fed on standard diet (positive control group). Groups(3-12) fed on basal diet containing 7.5% cucumber and snake gourd different parts (seeds, leaves, whole fruits, fruits without peel and peel of fruits) .At the end of the experimental period(28 days)rats were fasted overnight before sacrificing. Blood samples was collected, then centrifuged to separate the serum. Liver, kidneys, heart, spleen, lungs and pancreas were removed from each rat, cleaned and weighted to estimate of organs weight. The obtained results revealed that , treatment by Alloxan led to significant increase in serum glucose, cholesterol , triglycerides, LDL-c, VLDL-c, creatinine, urea , uric acid, AST ALT, ALP and decreased HDL-c. Feeding rats which were injected by alloxan with cucumber and snake gourd different parts (seeds, leaves, whole fruits, fruits without peel and peel of fruits at 7.5% level) showed decreased levels of serum glucose, AST ALT, ALP, and improved all other parameters including internal organs weights. The histopathological examination confirmed the improvement of biochemical parameters.

**Key words:** Diabetes mellitus, cucumber, snake gourd, glucose, liver function, kidney function, lipid profile, phenols, flavonoids, histopathological changes.