

Ministry of Higher Education
and Scientific Research
University of Al-Qadisiyah
Biotechnology College
Department of Agriculture
Biotechnology



Different treatments of Glucose which effect the blood suger level in Carpfish

A Thesis

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By

Zahraa Ahmed Lafta

SUPERVISOR

Dr.Fadil G. AL-Swedi

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﴿ قَالُوا سُبْحَانَكَ لَا عِلْمَ لَنَا إِلَّا
مَا عَلَّمْتَنَا إِنَّكَ أَنْتَ الْعَلِيمُ
الْحَكِيمُ ﴾

صدق الله العظيم

(سورة البقرة الآية 32)

Dedication

With all love

To waxes which illuminate me trail my success

Mum and Dad

**To a man who taught me the value of the situation
and principles in life**

My professor Dr.Fadil

To school that taught me a lot

**To those who stood with me contemplating my
success**

Give this humble effort

Your daughter Zahraa

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Summary

The level of blood sugar in carpfish affected by different treatments of glucose concentration in a lot of procedures that depends on the way of treatments. Also the approach of intake the glucose either indirect or direct through blood stream. There are many techniques were used in this study. In addition to the control there are two treatments were used, either oral or direct injection. Different concentrations of sugar were used (0, 20 and 40 gm/L). There are two ways for treatments by oral and direct injection of glucose compare with control. The results show there is significant difference between the control and oral but there is a significant difference between injection and oral in terms of length and weight while for glucose level measurement there was highly significant difference between injection and control, but there is not between oral treatments and control. There are many problems concerned with this research for instance many fishes were died before finish the experiment because of the lab environment was not comfortable for fish survival.

Abbreviations

Gm=gram

L=Litter

Cont=control

DI=Distilled

Mg=Milligram

Conc=concentration

Inj=injection

Treat=treatments

BS=Blood suger

Chapter One

Introduction

1.1 Introduction

Diabetes is a problem with the body that causes blood glucose (sugar) levels to rise higher than normal^{1}. This is also called hyperglycemia. During eat the body breaks food down into glucose and sends it into the blood. Insulin then helps move the glucose from the blood into the cell^{2}s. When glucose enters the cells, it is either used as fuel for energy right away or stored for later use^{3}. Case of a person with diabetes, there is a problem with insulin. But, not everyone with diabetes has the same problem^{4}. There are different types of diabetes – type 1, type 2^{5}.

1.1.1.Type 1

Diabetes in type 1, the immune system mistakenly destroys the beta-cells, which are the cells in pancreas that make insulin^{6}.. the body treats these beta-cells as foreign invaders and destroys them. The destruction can happen over a few weeks, months, or years. When enough beta cells are destroyed, the pancreas stops making insulin, or makes so ^{7}.

1.1.2.Type 2

Type 2 diabetes in the body does not use insulin properly ^{8}.This is called insulin-resistance^{9}. At first, the beta-cells make extra insulin to make up for it. But, over time the pancreas isn't able to keep up and can't make enough insulin to keep the blood glucose at normal levels^{10}. Some people with type 2 diabetes can manage their diabetes with healthy eating and exercise^{11}. However, doctor may need to also prescribe oral medications (pills) and/or

insulin to help target blood glucose levels{12}. Diabetes is a progressive disease not need to treat the diabetes with medications at first, it may need to over time{13}.

1.1.3.Carpfish

Scientific name: Cyprinus carpio Cyprinus is Greek and carpio is Latin; both words mean carp.

Description: Common carp is in the family Cyprinidae . There are many varieties of common carp found throughout the world{14}. Carp that are partially scaled along their sides are called mirror carp. Some common carp have few or no scales and which termed leather carp{15}. While many people believe that the goldfish is a young carp, goldfish and common carp are actually two distinct species .

1.1.4.Blood sugar level

The aim of diabetes treatment is to bring blood sugar glucose as close to normal as possible {16}. Blood sugar is normally measured in milligrams of glucose per deciliter of blood (mg/dl).A milligram is very little .For someone without diabetes ,a fasting blood sugar on awakening should be under 100 mg/dl . Before-meal normal sugar are 70-99 mg/dl .Postprandial sugars taken two hours after meals should be less than 140 mg/dl .If anyone have diabetes , the American Diabetes Association (ADA) advises keeping the blood sugar levels before meals from 80-130 mg/dl and the levels 1-2 hours after meals under 180 .

Chapter Two

Material and Methods

2.1.Material

2.1.1.Fish

Eighty fingerlings Carpfish were brought from Hilla covernorate – AL-Qasim City where the fish hatching farm. Fishbowl, Gloves , Net , Ruler , Dish , Needle , Camshafts and Water lake were brought from market. In addition to sensitive Balance

2.1.2.Nutrition

Fish Food : TOPKA FISH : Food (Floating _ type) was brought from market. It is a granules floating and sour waters of the fishbowl , it is suitable for carpfish. It contain Fish , wheat flour , yeast , shrimp , Vitamins and metals natural .

2.2.Methods

Adult carpfish were brought from a Farm in Qasim city Babylon . Fifty fish were collected in a big container and it transported by car to the laborotary in AL-Qadisiyah university then put each three fish in fishbowl . I used a net to take a fish from one fishbowl to measured the length , weight , temperature and blood sugar .

Box	Conc. 1	Conc. 2	Conc. 3
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Cont	0 gml	20 gml	40 gm/l
Oral	0 gm/l	20 gm/l	40gm/l
Inj	0 gm/l	20 gm/l	40 gm/l

Table(1) Different concentration utilizing with different way of intake of glucose from dec.2017 until Jan 2018.

2.2.1.Length

The length of the fish was measured in millimeter (mm) from a head to tail of the body fish by using a digital ruler and write the result . Anther fish taking from fishbowl and measured the length of it . We repeat this process for all fishbowl .



2.2.2.Weight

The weight of fish was measured in gram by using a net to take fish from fishbowl and put it in baker and then measured by sensitive balance before

that , the device is reset and write the result in balance . We repeat this process for all fish in each fishbowl .



2.2.3. Temperature

Thermometer was used to measure the temperature by putting the thermometer in each one of the fishbowl. The temperature was measured every 24 hours .

2.2.4. Blood suger

The instrument was used to measure the blood suger level in mol per distilled water for each sample in the box every day toevalute the glucose level in each sample.

2.2.5. Testing Blood Sugar :

The device is used to measure the blood sugar .It can learn about the blood glucose that is a given moment with a fingerstick blood test , using any available glucose meter . It is a little hurts, and the test strips cost money , but it can get good information about the suger level in the blood.

2.2.6.Statistic analysis

In statistic analysis of all data information were used excel for analysing the information data by using means as average for all samples.

Chapter Three

Results

3.1.Results

As shown in figure (1) there are a variable results between different treatments. The first reading shows there is a clear increase in length of carpfish then the following by the reading stay nearly the same as shown in the following graph. In comparison between the oral and control there is a significant difference while there is no significant difference between injection and control treatment but there is a significant difference between injection and oral treatment.

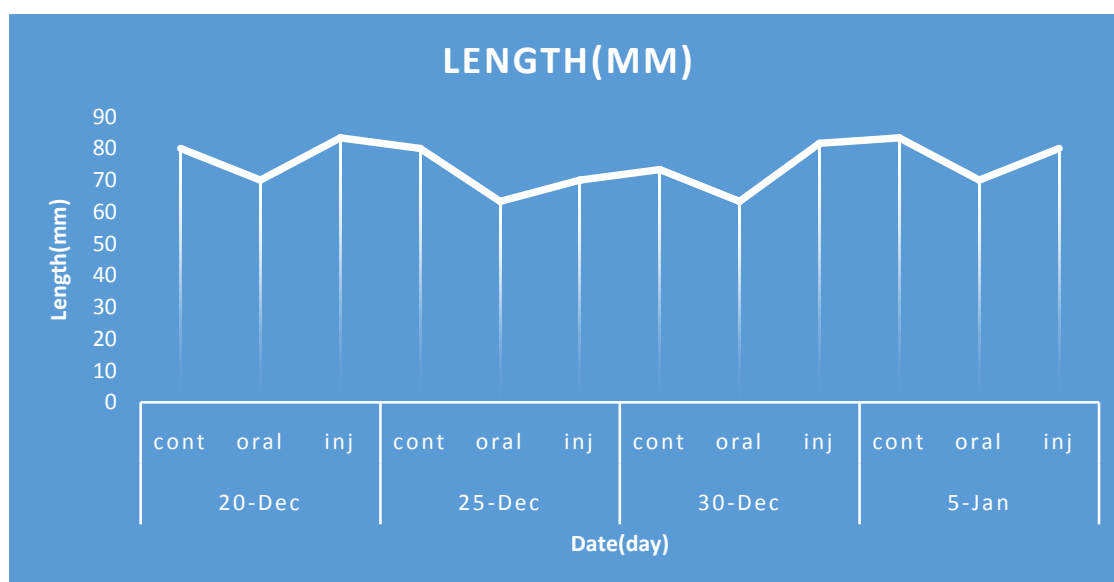


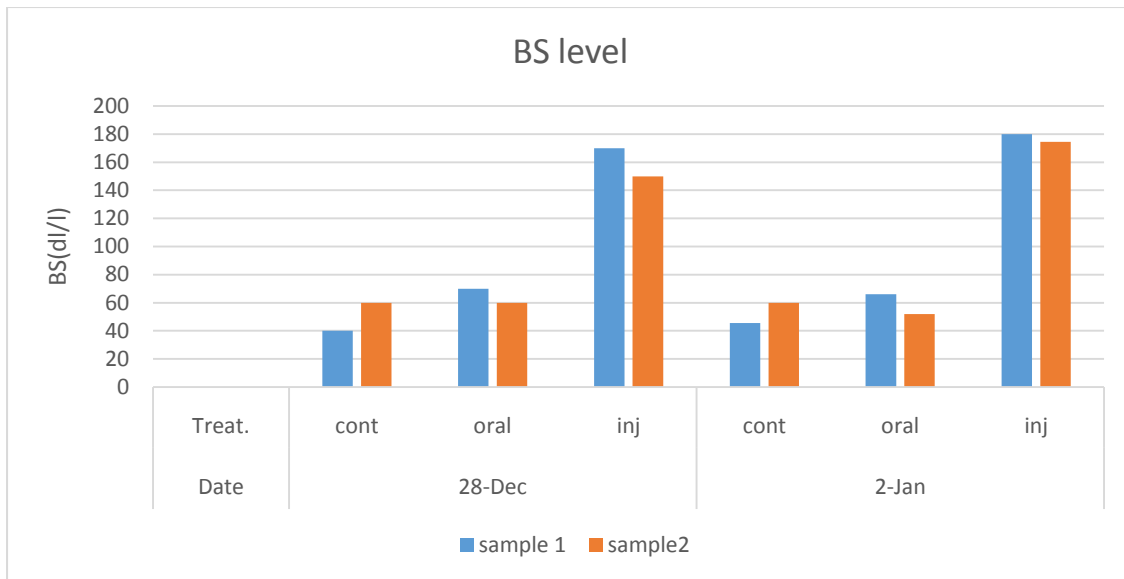
Figure 1. The effect of different treatments on the length of carpfish during the period between 20 December 2017 and 5 January 2018.

In terms of weight the beginning reading shows clearly increase in all treatments as shown in figure(2). The second reading shows there is a significance difference in weight between oral and control while there is no significane difference in weight between injection and control. In addition there is a signifigance difference in weight between oral and injection treatments.



Figure 2. The effect of different treatments on the weight of carpfish during the period between 20 December 2017 and 5 January 2018.

There was high variation in reading within 2 months for BS reading between all samples. As shown in figure(3) there was high significant difference between injection and control while there was no significance difference between oral and control. In terms of samples there was any significance difference for all reading.



Figure(3)The effect of different concentrations of glucose on 2 samples within 2 months by using 3 treatments of glucose(0.0.,20 and 40 gm/l)

Chapter Four

Discussion

4.1. Discussion

From the above results it shows that the steady increase after first reading in all treatments except the first reading was clearly increase that because the environment in the laboratory was not comfortable for survival carpfish. In addition to the sugar concentration for intake in both way oral and injection in comparison with the control there was no any effects in all reading that's mean the difference is not that big between two concentrations so it need to put more treatments and increase the concentration of glucose.

In terms of blood sugar test there was a highly variation in results as shown in above figure between the injection and control while there was no variation in results between oral treatments and control. From above results that means the effect of injection treatments of glucose directly to the blood stream more effect than oral on increase the blood sugar level in the body of carpfish for all samples used .

4.2. Conclusion

Most samples of carpfish were died before finishing the experiment because the laboratory dose not comfortable for fish requirments in spite of all facilities were supplied from the commercial market. For that reason the experiment does not continueing for molecular biology test fo the samples.

Chapter Five

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