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Research Article

**QUANTITATIVE EVALUATION OF CARBOHYDRATE  
LEVELS IN SEEDS FOR HOME USE BY UV-VISIBLE  
SPECTROPHOTOMETER**<sup>1</sup>Bandaru Hanok Hemanth Kumar, <sup>2</sup>Arava Naveen, <sup>3</sup>Bodapathi Kaveri, <sup>4</sup>Bolli Bindhusri,<sup>5</sup>Budumuru Gayatri, <sup>6</sup>Chinthala Swathimathi, Chandaka madhu<sup>1</sup>Avanthi Institute Of Pharmaceutical Sciences

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**Article Received:** April 2023**Accepted:** May 2023**Published:** June 2023**Abstract:**

*A rapid method was developed for the quantitative estimation of carbohydrates present in the different seeds by UV-VISIBLE SPECTROPHOTOMETER. The sample extract of the almond, cashews, peanuts, walnuts, corn, pistachios, chickpeas, wheat, barley, soya beans, were subjected by using anthrone as reagent for the quantitative estimation of the carbohydrate. These samples absorbance was read in uv-visible spectrophotometer at the wavelength of 750nm. The recommendation for the general population is that carbohydrate should supply 50 to 55 percent of total calories, and 130 grams per day (520 calories per day) for male and female adults and for athletes is between 55 and 65 percent of total calories.*

**Keywords:** seeds, uv-visible spectrophotometer, wavelength, anthrone, absorbance.**Corresponding author:****Chandaka madhu,**

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## INTRODUCTION:

Carbohydrates act as the primary source of energy which is converted into glucose to generate energy essential for metabolism in every cell of the body<sup>1</sup>. Though there is no absolute requirement of carbohydrates, they are essential to ensure that energy is available to the body to perform its normal functions. Carbohydrates perform numerous roles in living things. Polysaccharides serve for the storage of energy (e.g., starch and glycogen), and as structural components (e.g., cellulose in plants and chitin in arthropods)<sup>1-5</sup>. The 5- carbon monosaccharide ribose is an important component of coenzymes (e.g., ATP, FAD, and NAD) and the backbone of the genetic molecule known as RNA. The related deoxyribose is a component of DNA. Saccharides and their derivatives include many other important biomolecules that play key roles in the immune system, fertilization, preventing pathogenesis, blood clotting, and development. In food science and in many informal contexts, the term carbohydrate often means any food that is particularly rich in the complex carbohydrate starch (such as cereals, bread, and pasta) or simple carbohydrates, such as sugar (found in candy, jams, and desserts) For most people, between 40% and 60% of total calories should come from carbohydrates, preferably from complex carbohydrates (starches) and naturally occurring sugars<sup>2</sup>. Complex carbohydrates provide calories, vitamins, minerals, and fiber.

## EXPERIMENTAL:

### Chemicals and Reagents:

Anthrone, Sulphuric acid were purchased from Merck Specialities pvt.Ltd.

### Instrumentation:

**Ultraviolet-visible spectroscopy** refers to absorption spectroscopy or reflectance spectroscopy in the ultraviolet-visible spectral region. This means it uses light in the visible and adjacent (near-UV and near-infrared (NIR)) ranges. The absorption or

reflectance in the visible range directly affects the perceived color of the chemicals involved. In this region of the electromagnetic spectrum, molecules undergo electronic transitions.

### Sample preparation:

almond, cashews, peanuts, walnuts, corn, pistachios, chick peas, wheat, barley, soya beans were taken as samples. 5 grams of each sample was extracted separately in 25ml of distilled water<sup>3</sup>.

### Reagent Preparation:

0.2 grams of anthrone was weighed accurately and dissolved in concentrated sulphuric acid and make up the volume up to 100ml and finally transferred it in to a 100ml of reagent bottle.

### Procedure:

Pipette out the 1ml of each extracted sample in to a 25ml of volumetric flask and add 2ml of freshly prepared anthrone reagent in each volumetric flask and finally make up the volume up to the mark with distilled water. Reference was prepared by taking 2ml of anthrone reagent in a 25ml of volumetric flask and make up the volume up to the mark with distilled water. To the above prepared samples wavelength was check in uv-visible spectrophotometry and wavelength was set at 750nm at that wavelength the developed colour absorbances were noted for the above mentioned samples<sup>5</sup>.

## RESULT AND DISCUSSION:

From the experiment in almond 0.97%, cashews 1.4%, peanuts 1.03%, walnuts 0.78%, corn 0.9%, , pistachios 1.3%, chickpeas 1.3%, , wheat 2.59%,barley 1.4%, soya beans 0.55% of carbohydrates are evaluated. The recommendation for the general population is that carbohydrate should supply 50 to 55 percent of total calories, and 130 grams per day (520 calories per day) for male and female adults and for athletes is between 55 and 65 percent of total calories.

**Table 1**

TYPE OF SEEDS	CARBOHYDRATE CONTENT(%)
Almond	0.97%
Cashews	1.4%
Peanuts	1.03%
Walnuts	0.78%
Corn	0.9%
Pistachios	1.3%
Chick peas	1.3%
Wheat	2.59%
Barley	1.4%
Soyabean	0.55%

**Food Amount of Carbohydrate:****CONCLUSION:**

From the Wheat we gain high calories of carbohydrates of total calories to increase the activity levels in the body.

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