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STUDY TO ASSESS CARBOHYDRATE LEVELS IN VARIOUS FRUITS

Hari Priya Saripalli [1], Divakar Taneti [1], Tadi Ramesh [1] and Venkata Narasimha Kadali [*2]

Department of Biotechnology [1], S.V.K.P. & Dr. K.S. Raju Arts and Science College, Penugonda - 534320, Andhra Pradesh, India.
Department of Biotechnology [2], College of Science and Technology, Andhra University, Visakhapatnam-530003, Andhra Pradesh, India.

ABSTRACT: Fruits are considered as the wonder source of nutrition that are being obtained from the Plants. Fruits contain various bio active compounds that helps someone to fight against illness. A study has been conducted to evaluate the carbohydrate levels in various fruits. The fruits such as *Malus domestica, Carica papaya, Psidium guajava, Ziziphus jujuba, Citrus sinensis, Punica granatum, Musa paradisiaca* were tested and found to possess 0.38%, 0.48%, 0.5%, 0.5%, 0.885, 1.16% and 1.24% of carbohydrate levels respectively. In this study we found that same amount of Carbohydrate levels present in the *Psidium guajava, Ziziphus jujuba. Musa paradisiaca* shown highest amount of carbohydrate level (1.24%) and *Psidium guajava, Ziziphus jujuba* shown least amount of carbohydrate level (0.5%).

Keywords: Carbohydrate, Fruits, Nutrition, Wonder source

Correspondence to Author:
Venkata Narasimha Kadali

Department of Biotechnology, College of Science and Technology, Andhra University, Visakhapatnam- 530003, Andhra Pradesh, India.

E-mail: venkatanarasimhakadali@gmail.com

INTRODUCTION: Fruits are considered as the wonder source of nutrition that are being obtained from the plants. Fruits contain various bio active compounds that helps someone to fight against illness. People in Urban and Rural areas of India consume fruits in high percent. Fruits consist of varying amount of carbohydrates that are meant for providing energy to the body. Most developing countries depend on starch-based food as the main staple food for the supply of both energy and protein [1].

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This accounts, in part, for protein deficiency which prevails among the populace as recognized by Food and Agricultural Organization [2].

Although, human being has enormous strength to consume and adapt to a variety of eating stuff, there are certain things like fruits and vegetables that has become crucial for human diet especially fruits and their important components have a crucial role in supplying invaluable nutrients for maintaining human health [3]. Free radicals are continuously produced in our body either naturally or on exposure to environmental stress as well as other factors, our body has a defense system to produce antioxidants, fruits and vegetables are rich source of them [3].

Types of Carbohydrates: [4] There are three main types of carbohydrates:

Sugar: Sugar is the simplest form of carbohydrates. Sugar occurs naturally in some foods, including fruits, vegetables, milk and milk products. Sugars include fruit sugar (fructose), table sugar (sucrose) and milk sugar (lactose).

Starch: Starch is a complex carbohydrate, meaning it is made of many sugar units bonded together. Starch occurs naturally in vegetables, grains, and cooked dry beans and peas.

Fiber: Also is a complex carbohydrate. Fiber occurs naturally in fruits, vegetables, whole grains, and cooked dry beans and peas.

MATERIALS AND METHODS:

Sample Preparation: *Malus domestica, Carica papaya, Psidium guajava, Ziziphus jujuba, Citrus sinensis, Punica granatum, Musa paradisiaca* were taken as samples. Collected fruits were washed, removed their peels and edible portions were dried in sunlight for 1 week and then ground to fine powder. Powdered samples were kept in airtight bags under refrigeration during the study period [3].

Assessment of Carbohydrate Levels: 1g each of 10 powdered fruit samples were weighed and filtered, then centrifuged at 10,000 rpm for 10 minutes. Supernatant was made up to a volume of 30 ml. Then 4 ml^{-1} of anthrone reagent was added and kept in a boiling water bath for 10 min. Supernatant was rapidly cooled and provided the dark green color at 620 nm using a spectro-photometer. Total carbohydrate content was then calculated using the obtained absorbance values of samples [5].

RESULTS AND DISCUSSION: In this present study the carbohydrate levels in the fruits such as *Malus domestica, Carica papaya, Psidium guajava, Ziziphus jujuba, Citrus sinensis, Punica granatum* and *Musa paradisiaca* found to be 0.38%, 0.48%, 0.5%, 0.5%, 0.885, 1.16% and 1.24% respectively **Table 1** and **Fig. 1**. In this study we found that same amount of Carbohydrate levels present in the *Psidium guajava, Ziziphus jujuba. Musa paradisiaca* shown highest amount of carbohydrate level (1.24%) and *Psidium guajava, Ziziphus jujuba* shown least amount of carbohydrate level (0.5%). These results are in agreement with Vavilala *et al.,* (2012) [6] shown that apple, banana, guava, papaya, orange and pomegranate contains 1.255%, 1.35%, 0.55%, 0.685%, 0.77% and 1.3% respectively. The recommendation for the general population is that carbohydrate should supply 50 to55 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 [6].

TABLE 1: SHOWS LEVELS OF CARBOHYDRATES IN DIFFERENT FRUITS

S. no.	Fruit Name	Percent of Carbohydrate
1	*Malus domestica*	0.38%
2	*Carica papaya*	0.48%
3	*Psidium guajava*	0.5%
4	*Ziziphus jujuba*	0.5%
5	*Citrus sinensis*	0.88%
6	*Punica granatum*	1.16%
7	*Musa paradisiaca*	1.24%

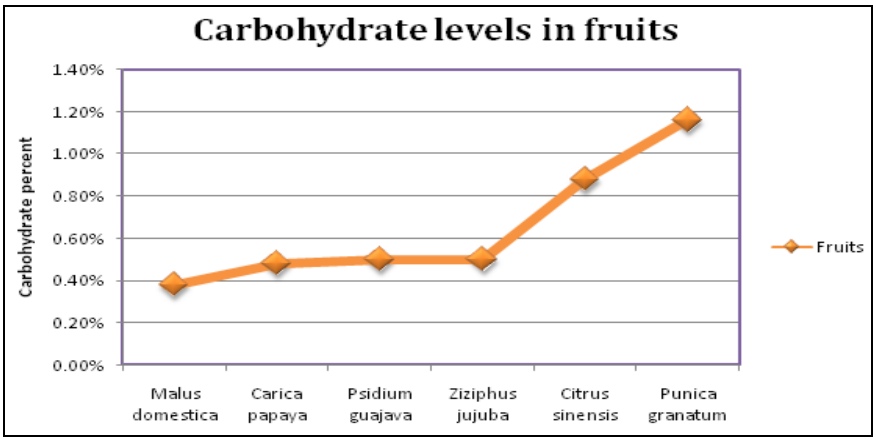

FIG. 1: SHOWS PERCENT OF CARBOHYDRATES PRESENT IN VARIOUS FRUITS

CONCLUSION: Fruits are considered as the wonder source of nutrition and they should be consumed daily for healthy life. Through this present study it can be concluded that the carbohydrates are the main source of energy for the humans by consuming *Musa paradisiaca* we get more carbohydrates for producing energy to meet activities in our daily life.

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CONFLICT OF INTEREST: Nil

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