



## Research Article

www.ijrap.net



### DEVELOPMENT AND ANALYTICAL STUDY OF AYURVEDIC COOKIES

Shejil Muhammed \*<sup>1</sup>, Vijay B. Negalur <sup>2</sup>, Sandesha Kumar <sup>2</sup>

<sup>1</sup> PG Scholar, Department of Swasthavritta, SDM College of Ayurveda, Kuthpady, Udupi, Karnataka, India

<sup>2</sup> Associate Professor, Department of PG Studies in Swasthavritta, SDM College of Ayurveda, Kuthpady, Udupi, Karnataka, India

Received on: 15/06/19 Accepted on: 15/10/19

#### \*Corresponding author

E-mail: drshejilmuhammedam@gmail.com

DOI: 10.7897/2277-4343.1006119

#### ABSTRACT

India is the fastest growing countries in terms of population and economics. According to the 2017 revision of the World Population Prospects, the population growth rate is 1.13%. In this, majority of population are at or below the poverty line. Intake of food by such people is of substandard while considering the nutritive value, Nutrition is the keystone that effects and characterizes the health and it is the provision of cells and organisms. Cookies are one of the most popular and widely consumed processed food products in India. They are the properly baked products with variety of ingredients, and which consumed on large scale in rural as well as urban areas. The properties of ayurvedic drug documented nicely in Ayurvedic scriptures. Ayurvedic cookies made up of ayurvedic drugs Ashvagandha [*Withania somnifera* (L.) Dunal], Vidarikandha [*Pueraria tuberosa* (Willd.) DC.] and Kushmanda [*Benincasa hispida* (Thunb.) Cogn.] along with other ayurvedic ingredients was developed. The objective of this study is to analyse the quality of the Ayurveda cookies in terms of nutrition evaluation. An analysis of the parameters like Total Ash Value, Acid insoluble Ash value, Carbohydrate, Protein and Fat content was conducted. The study revealed the significant amount of carbohydrate, protein and fat.

**Keywords:** Cookies, Nutrition, Ahara

#### INTRODUCTION

Nourishing status is the complex interaction between the foods we eat, our general condition of health in the environment we live.<sup>1,2</sup> (Triopasthamba) i.e. Ahara (food), Nidra (sleep) and Bhrmcharya (celibacy), which support the body throughout the life span, by providing the qualities like Bala (strength), Varna (lustre), Upachaya (growth) and so on.<sup>3</sup> Among these three Ahara (food) is given the first and prime importance. Prevention of many regular health problems and they're by promotion of health is achieved by supplementation of nutritious diet. According to WHO definition on malnutrition involves a cellular imbalance between supply of nutrients and energy and body's demand for them to ensure normal growth, maintenance and specific tissue function<sup>4</sup>. Malnutrition affects growth and development and the school performance of the children.<sup>5</sup> There are various treatment protocol are explained in Ayurvedic scriptures for the management of under-nutrition under the heading of Bhrimhana. Cookies are most popular and widely consumed important bakery processed food product and which are favourable mainly because of the convenience of intake, low cost and their shelf life. The Ayurveda cookies developed for this study are herbal component used for under-nutrition. Main focused ingredient in the cookies is Ashvagandha [*Withania somnifera* (L.) Dunal]<sup>6</sup>, Vidarikandha [*Pueraria tuberosa* (Willd.) DC.]<sup>7</sup> and Kushmanda [*Benincasa hispida* (Thunb.) Cogn.]<sup>8</sup> along with other ingredient like Ragi, wheat, Butter, Guda and Ella. Ayurveda cookies compound which is very safe and may be effectively used in malnutrition. So, the present work was carried to analyse of the Physico – chemical properties of Ayurveda cookies

#### Objective

To analyse the quality of the Ayurveda cookies in terms of nutrition evaluation

#### MATERIALS AND METHODS

##### Drug Material

Raw drug materials were collected from the pharmacy store of SDM Ayurveda pharmacy, Kuthpady, Udupi, Karnataka, India. The ingredient and part used are given in Table 1. Raw drugs were identified and authenticated by the pharmacognosy lab, SDM Ayurveda Research Centre, Kuthpady, Udupi, Karnataka, India. The identification was carried out based on the morphological features, organoleptic features and powder microscopy of individual drugs.

All nutritional and proximate test of Ayurveda cookies were determined by AOAC (2005) method.<sup>9</sup> Total ash, protein, fat and carbohydrate were determined by the pharmacognosy lab, Manipal Institute of pharmaceutical and research centre Madhav Nagar, Eshwar Nagar, Manipal, Karnataka.

##### Method of preparation of Ayurveda cookies

Ashvagandha, Vidarikandha, Kushmanda Ragi, Godhuma, Guda, and Ela were taken in given proportion (Table 3). Butter was added in this mixture and homogeneous mixture of these entire was made in machine. Mix the ingredients till it becomes soft dough. Make cookies by taking small pieces of the dough into required shape and size. Then the cookies were arranged in tray and kept this on oven for 30 min. at a temperature of 170°C. After confirming the proper baking is done cookies tray was taken out. Efforts were taken to make every biscuit of approximately 9 grams.<sup>10</sup>

##### Analytical study

Analytical study of Ayurvedic cookies was carried out in the following aspects.

1. Total ash.
2. Acid insoluble ash.
3. Carbohydrate.
4. Protein.
5. Fat.

- The acid insoluble ash was found to be 7.42 % in the Ayurveda cookies
- The carbohydrate was found to be 8.625 % w/w in the Ayurveda cookies
- The protein content was found to be 8.20 % w/w in the Ayurveda cookies
- The Fat was found to be 9.46 % w/w in the Ayurveda cookies

**RESULT**

**Organoleptic study**

Organoleptic features of Ayurveda cookies were observed like brown light color, fragment in odour, sweet in taste and thick solid in consistency (Table 1).

**Analytical study**

- The total ash was found to be 97.3 % in the Ayurveda cookies.

We conducted a comparative analysis to find out the influence of Ayurveda drugs in the value of carbohydrate, protein and fat, by making a plain cookie (Table 2) without the ingredient Ashvagandha [*Withania somnifera* (L.) Dunal], Vidarikandha [*Pueraria tuberosa* (Willd.) DC.] and Kushmanda [*Benincasa hispida* (Thunb.) Cogn.] It shows in Table 4 expressed that ayurvedic cookies show better result while compared to plain cookies with respect to carbohydrate protein and fat.

**Table 1: Organoleptic features of Ayurveda cookies**

No	Parameters	Observation
1	Shape	Heart
2	Size /diameter	3 cm
3	Colour	Light brown
4	Odour	Fragment
5	Taste	Sweet
6	Consistency	Thick solid

**Table 2: Cookies prepared without using Ayurvedic drugs (plain cookies)**

S. No.	Contents	Amount (%W/W)
1.	Ragi flour	24.44
2.	Wheat flour	24.44
3.	Jaggery powder	24.44
4.	Butter	24.44
5.	Ela powder	1.4

**Table 3: Cookies prepared using Ayurvedic drugs (Ayurvedic cookies)**

Contents	Amount (%W/W)
Ragi flour	22.27
Wheat flour	22.27
Jaggery powder	22.27
Butter	22.27
Ashvagandha [ <i>Withania somnifera</i> (L.) Dunal]	2.227
Vidarikanda [ <i>Pueraria tuberosa</i> (Willd.) DC.]	2.227
Kushmanda [ <i>Benincasa hispida</i> (Thunb.) Cogn.]	4.45
Ela powder	1.33

**Table 4: Result of Analytical study Sample 1 and Sample 2**

Test	Sample 1	Sample 2
Total ash	97.30 %	97.77 %
Acid insoluble ash	7.42 %	.38 %
Carbohydrate	8.62 % w/w	8.34 % w/w
Protein content	8.20 % w/w	7.50 % w/w
Fat	9.46 % w/w	9.41 % w/w

\*Sample 1 → Ayurveda cookies (Prepared with Ayurvedic Cookies)  
 \*Sample 2 → Plain cookies (Prepared without Ayurvedic Cookies)



Figure 1: Dough of the cookies



Figure 2: Cookies before entering the Oven



Figure 3: Baking of the Cookies



Figure 4: Final Cookies after baking



Figure 5: Cookies – sample A



Figure 6: Cookies – sample B

## CONCLUSION

Analytical evaluation of Ayurveda cookies was performed which is a palatable and effective medicine for under nutrition. The result shows that the presence marked amount of carbohydrate, protein and fat. The comparative study shows that the presence of Ashvagandha [*Withania somnifera* (L.) Dunal], Vidarikandha [*Pueraria tuberosa* (Willd.) DC.] and Kushmanda [*Benincasa hispida* (Thunb.) Cogn.] increase the amount of carbohydrate, protein and fat. Though the groundwork of analysis of Ayurvedic cookies are covered in the current study, additional analysis investigation is required for the identification of active constituents.

## REFERENCES

1. Capone R, Bilali HE, Debs P, Cardone G, Driouech N. Food System Sustainability and food Security: Connecting the Dots Journal of food Security 2014; 2(1): 13-22.
2. Issac Kisiangani, Charles Mbakaya, Anzelimo Makokha, Dennis Magu. Prevalence of Malnutrition among preschool Children (6-59 months) In western Province, Kenya 2014; 6(11): 398-406.
3. Frances Davidson. Nutrition and Health. In Nutrition: A foundation For Development, Geneva: ACC/SC; 2002.
4. Madhu Sharma. Basic Paediatrics Nutrition. 1st edition New Delhi, Jaypee Brothers Medical Publisher; 2009. p. 103.
5. Lad Sandip R, Patel KS, Harisha CR, Rajagopala S, Kori VK, Shukla VJ. Pharmacognostical and Pharmaceutical Evaluation of Prinana Modaka A Compound Ayurvedic Formulation, Universal Journal of Pharmacy (UJP) 2014; 03(06): 30-33.
6. Panday G, Dravyagunavidnyana, Materia medica–vegetable drugs, 2<sup>nd</sup> Ed, Varanasi: Chaukhmbaparakashana; 2002, VOL-III. p. 850.
7. Panday G, Dravyagunavidnyana, Materia medica–vegetable drugs, 2<sup>nd</sup> Ed, Varanasi: Chaukhmbaparakashana; 2002, Vol-I. p. 943. p. 243-251.
8. Panday G, Dravyagunavidnyana, Materia medica–vegetable drugs, 2<sup>nd</sup> Ed, Varanasi: Chaukhmbaparakashana; 2002, VOL-II. p. 824. p. 353-261.
9. Kumar S *et al.* Effects of Conventional and Microwave Heating Pasteurization on Physicochemical Properties of

Pomelo Citrus maxima Juice Journal of Food Processing and Technology 2017; 8: 7.

10. Hemapriya, Homemade Ragi Cookies Recipe. My Little Moppet. <https://www.mylittlemoppet.com/ragi-cookies-recipe-finger-millet-cookie/>

**Cite this article as:**

Shejil Muhammed *et al.* Development and Analytical study of Ayurvedic cookies. Int. J. Res. Ayurveda Pharm. 2019;10(6):27-30 <http://dx.doi.org/10.7897/2277-4343.1006119>

Source of support: Nil, Conflict of interest: None Declared

Disclaimer: IJRAP is solely owned by Moksha Publishing House - A non-profit publishing house, dedicated to publish quality research, while every effort has been taken to verify the accuracy of the content published in our Journal. IJRAP cannot accept any responsibility or liability for the site content and articles published. The views expressed in articles by our contributing authors are not necessarily those of IJRAP editor or editorial board members.