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FORMULATION AND DEVELOPMENT OF FLAVORED TAMRIND SOFT CANDY INCORPORATED WITH GILOY (*Tinospora cordifiloa*) AND PALM SUGAR (*Arenga pinnata*)

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Approved by Government of Tamil Nadu & Accredited by NAAC with 'A' Grade (2 nd Cycle)

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Abstract: The soft candy which is available on the market are known with many health effects due to addition of improper preservatives added on to it. This study and the development of the product ensures that no chemical preservatives are added on to it and as well as ensures that this development of the product is highly nutritious and safe for consumption. The two mainly incorporated herb (giloy) and palm sugar in combination with tamarind which has been used for the development of the product compute to be an excellent source of nutrients and also adds up an additional flavoring to the product which compared to the other soft candies which is avail these days. The formulated soft candies were good in terms of nutritional composition like energy, carbohydrate, protein, fat, fiber, total sugars and vitamin-c**.** Finally, the product which has been developed outperforms the control completely in terms of nutritional aspects. Due to its nutritivevalue, this product is especially recommended for diabetic people.

Index Terms – **Tamarind,giloy,palm sugar**

I. INTRODUCTION

Giloy improves metabolism by working on digestion (known as a pachan property in Ayurveda). What's more, it also improves absorption (known as deepan property in Ayurveda). Both these functions, when performed smoothly by our body, leads to better regulation of blood sugar levels. Moreover, giloy has antioxidant and anti-inflammatory properties which means that it can also help with diabetes-related illnesses such as the healing of wounds and kidney function. (Grace bains,2020,). Tamarind (TamarindusindicaL.) is one of the most widespread trees of the IndianSubcontinent. It is a large evergreen tree with an exceptionally beautiful spreading Crown, and is cultivated throughout the wholeof India, except in the Himalayas and Western dry regions (1993; Rao et al., 1999).Tamarind is a multipurpose Plant. The pulp of the fruit has been used as a spice in Asian cuisine, especially in the southern part of India, for a long time. Almost all parts of the tree find a use in the food, chemical, pharmaceutical or textile industries, or as fodder, timber and fuel (Dagaret al., 1995).

II. METHODOLOGY

INGREDIENTS SELECTED FOR THE FORMULATION OF GILOY, PALMSUGAR AND TAMARIND SOFT CANDY:

S.NO	INGREDIENTS
1	Tamarind (*Tamarindus indica*)
2	Giloy (*Tinospora cordifolia)*
3	Palm sugar
4	Water
5	Chilli powder
6	Salt

III. FIGURES AND TABLES

TABLE 1: Formulation of giloy and palm sugar incorporated in tamarind soft candy:

S.NO	INGREDIENTS	CONTROL	V1	V2	V3	V4
1.	Tamarind(*tamarindus indica)*	70	70	70	70	70
2.	Giloy(*Tinospora cordifolia)*	-	2.5	5	7.5	9
3.	Palm sugar	25	22.5	20	17.5	15
4.	Chilli powder	2.5	2.5	2.5	2.5	2.5
5.	Salt	2.5	2.5	2.5	2.5	2.5

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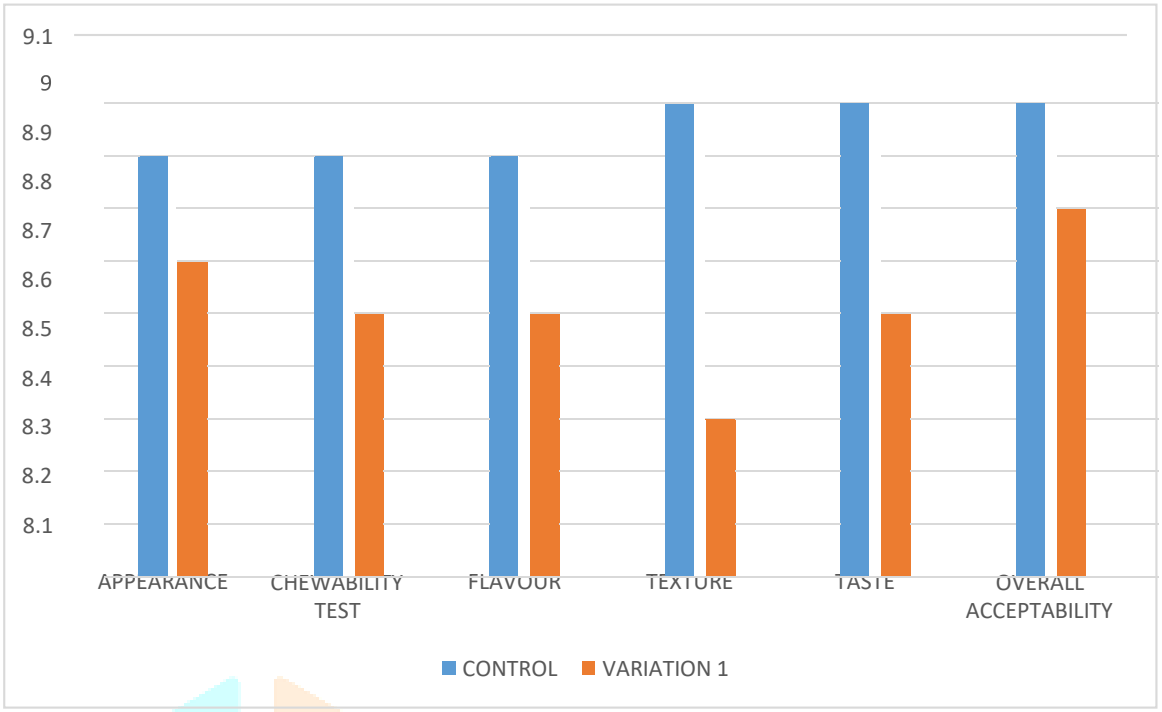
TABLE 2: ORGANOLEPTIC EVALUATION OF TAMARIND GILOY

S.NO.	CONTROL	VARIATION 1	VARIATION 2	VARIATION 3	VARIATION 4
APPEARANCE/ COLOUR	8.9 ± 0.18	8.7 ± 0.43	7.9 ± 0.90	7.6 ± 1.09	7.1 ± 0.84
CHEWABILITY TEST	8.9 ± 0.18	8.6 ± 0.49	7.6 ± 0.62	7.3 ± 0.88	7.1 ± 0.86
FLAVOUR	8.9 ± 0.18	8.6 ± 0.49	7.7 ± 0.50	7.3 ± 0.74	6.5 ± 0.81
TEXTURE	9	8.4 ± 0.49	8 ± 0.69	7.3 ± 0.92	7.5 ± 0.50
TASTE	9	8.6 ± 0.49	7.9 ± 0.71	7.4 ± 0.77	6 ± 0.90
OVERALL ACCEPTABILITY	9	8.8 ± 0.37	7.7 ± 0.69	7.5 ± 0.50	7.1 ± 0.54

FIGURE 1: FIGURE OF ORGANOLEPTIC EVALUATION OF TAMARIND GILOY

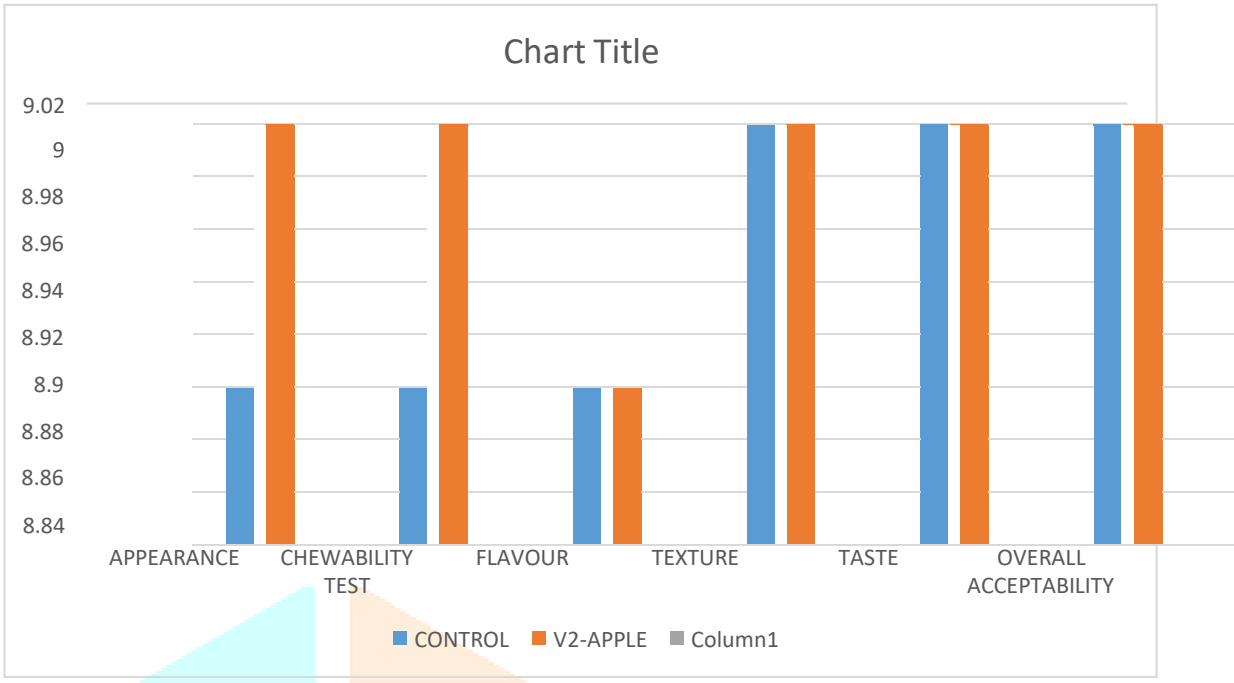


The developed tamarind giloy, sample 1, 2, 3, and 4 were evaluated 30 panel members. The products were evaluated based on the preference on appearance/colour, flavour, texture, taste, and overall acceptability using likeability scale. The table indicates the average sensory score of the formulated fish nuggets. Among the four variations, the I variation was highly accepted in all sensory characteristics.

TABLE 3: MEAN SENSORY SCORE OF CONTROL AND TAMARIND GILOY

	CONTROL	V1-ORANGE	V2-APPLE	V3-GUAVA
ACCEPTANCE/COLOUR	8.9 ± 0.18	8.5 ± 0.47	9	8.2 ± 0.43
CHEWABILITY TEST	8.9 ± 0.18	8.7 ± 0.43	9	8.4 ± 0.49
FLAVOUR	8.9 ± 0.18	8.5 ± 0.47	8.9 ± 0.18	8.5 ± 0.47
TEXTURE	9	8.4 ± 0.49	9	8.4 ± 0.49
TASTE	9	8.4 ± 0.49	9	8.5 ± 0.47
OVERALL ACCEPTABILITY	9	8.5 ± 0.47	9	8.4 ± 0.49

FIGURE 2: FIGURE OF MEAN SENSORY SCORE OF CONTROL AND FORMULATED TAMARIND GILOY



From the above table it is clear that the formulated tamarind giloy,has better score than control and based on organoleptic evaluation the highest scored overall acceptability variation I has been used for further analysis.

TABLE 4: PHYSIO-CHEMICAL ANALYSIS OF TAMARIND GILOY

Criteria	Control	Sample
ASH	3.9	8.62
MOISTURE	10.8	23.5

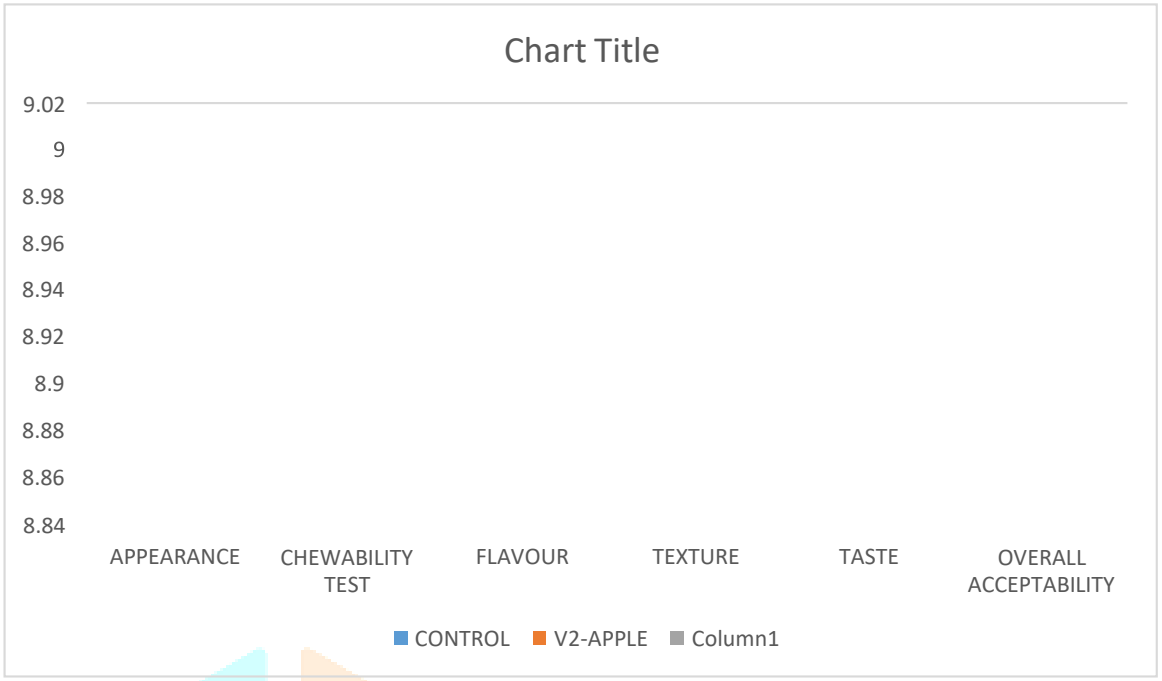
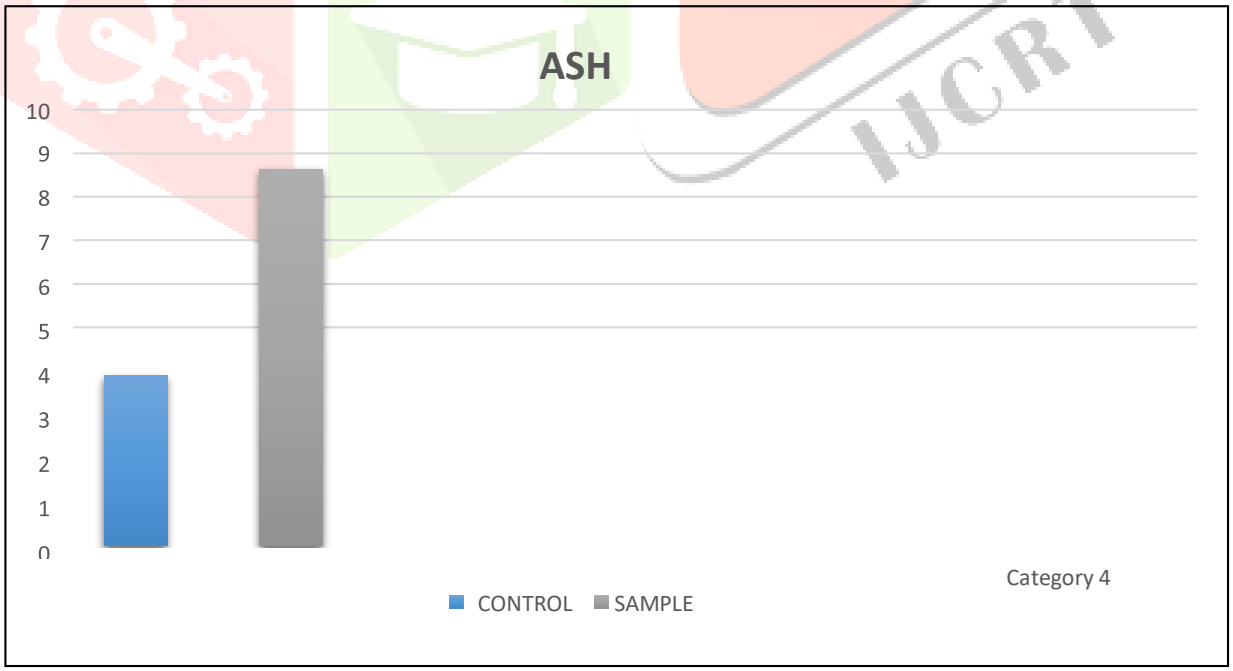


FIGURE 3: FIGURE OF PHYSIO-CHEMICAL ANALYSIS OF FISH NUGGETS

The experimental Tamarind giloy(Variation I) has got the higher score of ash value when compared with control. The ash content of the control and sample was (3.9& 8.62).



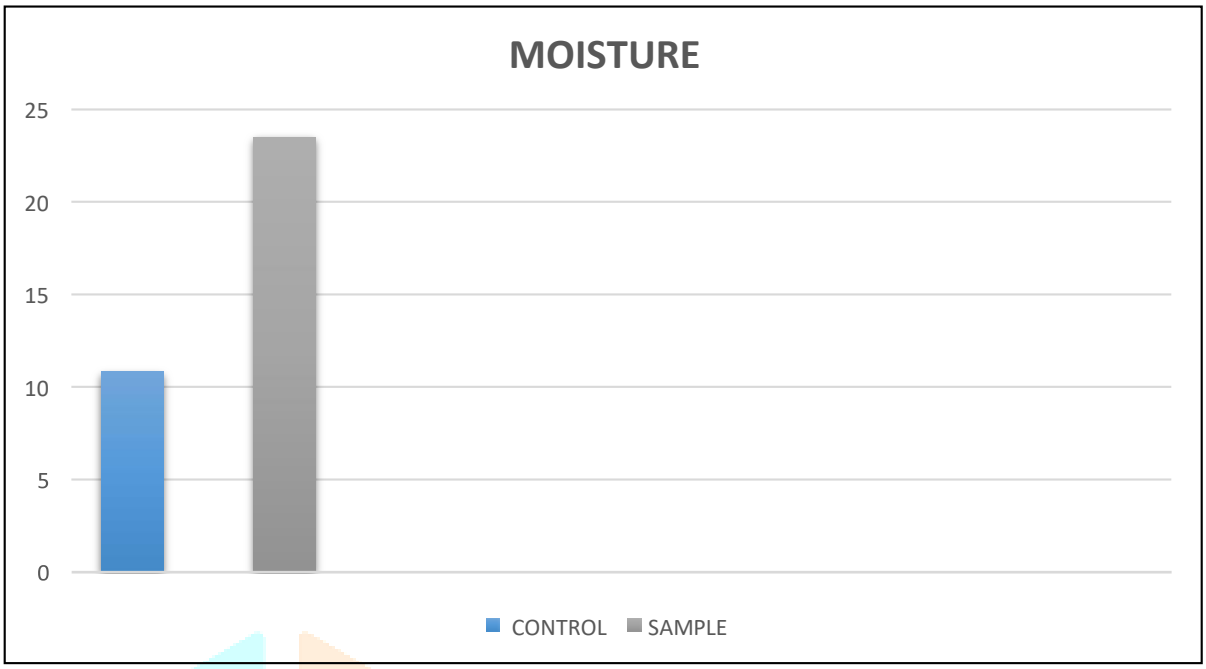
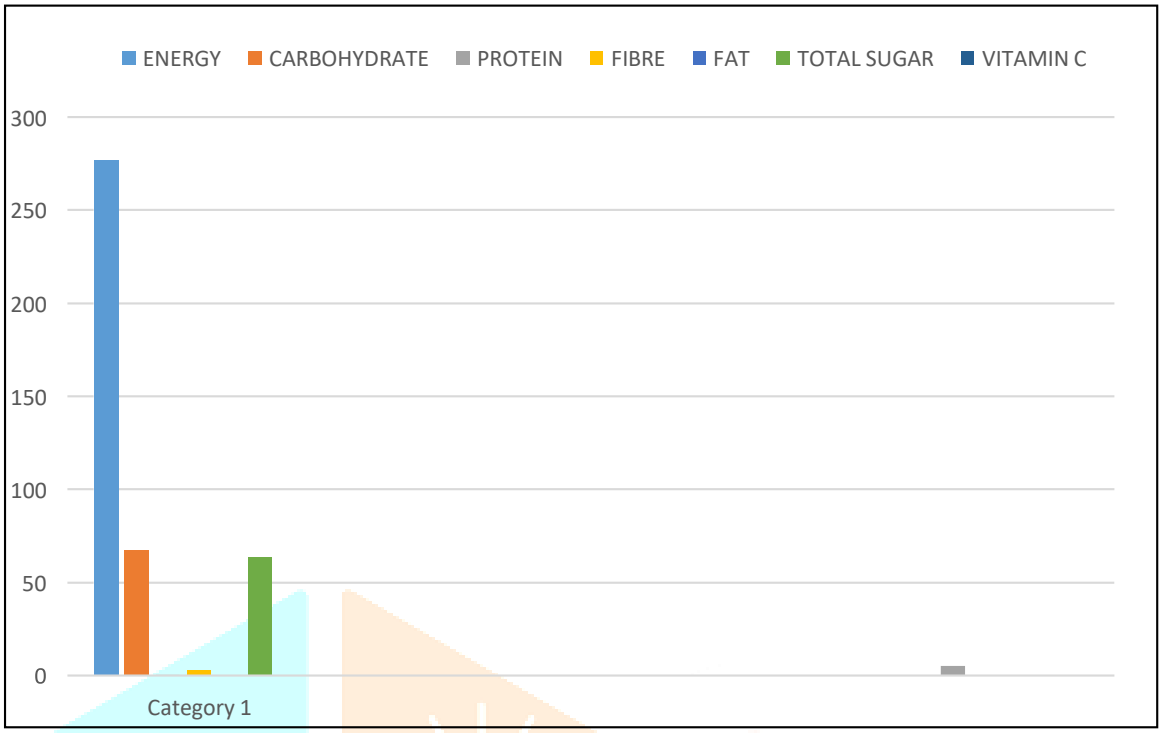


TABLE 5: NUTRITIONAL ANALYSIS OF TAMARIND GILOYCONTROL AND SELECTED VARIATION

S.NO.	CRITERIA	NUTRITIVE VALUE OFCONTROL	NUTRITIVE VALUE OFSAMPLE
1	ENERGY	254	277.1 KCAL
2	CARBOHYDRATE	56	67.47g
3	PROTEIN	0.09	0.19g
4	FIBRE	1.44	2.57g
5	FAT	0.20	0.22g
6	TOTAL SUGAR	73.2	64.1g
7	VITAMIN C	0	0.06 mg

FIGURE 4: NUTRIENT ANLAYSIS OF TAMARIND GILOY



From the graph the formulated product has secured high score than the control.

TABLE 6: COST CALCULATION OF TAMARIND GILOY

INGREDIENTS	QUANTITY	COST OF SELECTED VARIANT
TAMARIND	70g	25.5
GILOY	2.5g	2
PALM SUGAR	15.5g	9
CHILLI POWDER	1g	0.36
SALT	1g	0.036
APPLE	10 ml	22
TOTAL		58.896

- Raw material cost = 58.986
- Overhead charges = 4%
- Total cost = 60

The price for 100g of the formulated tamarind giloy 60/- including all the overhead charges.

IV. DISCUSSION

Candy comes under sugar and confectionary products. Tamarind giloy candy is prepared from aherb named giloy(Tinospora cordifolia) and palm sugar is used as a sugar alternative .Giloy(Tinospora cordifolia)is a climbing shrub and an essential herb in Ayurvedic medicine. All parts of the plant are used in Ayurvedicmedicine. However, the leaf and stem is thought to have the most beneficial compounds. The Ayurvedic Pharmacopoeia of India has approved the plant's leaf and stem is used in medicine . Giloy might be helpful forthose with diabetes or who are at risk of heart disease. Several studies show that giloy reduces blood sugar bymaking cells less insulin resistant.In this present study giloy(Tinospora cordifolia) and palm sugar was used to formulate this softcandy and apple was used for the flavour .Soft candy was prepared by 50g of tamarind, 2.5g of giloy ,11g of palm sugar, 2.5g of chilli powder,2.5g of salt and 10.5 ml of apple extract.The formulated soft candy was evaluated for sensory acceptability,,labelling and cost calculation was done.

CONCLUSION

The formulated soft candy incorporated with giloy and palm sugar was standardized. The result revealed that the formulated soft candy was highly acceptable in all sensory characters. The formulated soft candy had rally good sensory characteristics. This study indicates about possibility of utilizing the herbal products in candies.

REFERENCE

1. Balandrin MF, Klocke JA, Wurtele ES,Bollinger WH. Natural Plant Chemicals:Sources of Industrial and MedicinalMaterials. Science 1985; 228:1154-1160.
2. Briskin DP. Medicinal Plants andPhytomedicines, Linking PlantBiochemistry and Physiology to HumanHealth. American Society of PlantPhysiology 2000; 124:507-514.
3. Daniel M. Medicinal Plants: Chemistry and Properties. vol.2, Science Publication, 2006,24-36.
4. Anonymous. Wealth of India: Rawmaterials. CSIR, New Delhi, 1976, 10.
5. Chaudhari S, Shaikh N. Gaduchi-the best ayurvedic herb. The Pharma Innovation,Journal 2013; 2(4):97-102.
6. National Medicine Plant Board. www.nmpb.nic.in. 04 April, 2014.
7. Khosa RL, Prasad S. Pharmacognostical studies on Guduchi (*Tinospora cordifolia* Miers). J Res Ind Med 1971; 6:261-269.