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STANDARDIZATION AND ORGANOLEPTIC ANALYSIS OF MANGO GINGER (CURCUMA AMADA) AND CINNAMON CANDY FOR HYPERTENSION

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ABSTRACT:

This study is mainly focusing on the standardization and organoleptic analysis of mango ginger (curcuma amada) and cinnamon candy for hypertension . hypertension is an non communicable diseases where most of the people suffering. the normal range of hypertension is 120/80 mmHg . it is preventable by medications ,diet and lifestyle modification . mango ginger (curcuma amada) it is a spice have morphological resemblance with ginger but imparts with a raw mango flavour , has more health benefits .the mango ginger mostly grown in India to Thailand ,indo-china . it will normalize the hypertension . the essential nutrient in mango ginger are calcium , phosphorous , iron, magnesium , potassium .it is spice medicinal plant that has been possess anti-inflamatory ,antioxidant ,anti cancer property . the rhizome finds extensive use in the systems of medicine . mango ginger (Curcuma amada) and cinnamon candy, for managing hypertension. Mango ginger, known for its antioxidant and anti-inflammatory properties, and cinnamon, recognized for its potential blood pressure-lowering effects, were selected for their medicinal properties. The research involved the standardization of mango ginger and cinnamon candies to ensure consistent quality and dosage. Organoleptic analysis was conducted to assess the sensory attributes such as taste, aroma, and texture of the formulated products. The study aimed to provide valuable insights into the development of functional foods targeting hypertension management, offering not only therapeutic benefits but also palatability for consumer acceptance .

Keyword *: hypertension , non communicable diseases ,preventable, mango ginger , cinnamon .*

1.INTRODUCTION:

A persistent rise in blood pressure above the usual range of 120/80 mmHg is referred to as hypertension. As one gets older, hypertension becomes more common. The vasculature and heart undergo notable pathological alterations as a result of the chronic and ongoing high arterial pressure. A blood pressure (BP) of ≥140/90 mmHg is a threshold that indicates a high enough risk of cardiovascular disease associated to hypertension to need urgent medical intervention. Heart failure, stroke, renal insufficiency, and coronary artery disease are all significantly increased by hypertension. Medication and substantial lifestyle changes can prevent hypertension.

High blood pressure (BP), also referred to as essential or main hypertension, usually occurs gradually as an adult ages. Elevated blood pressure without a known cause is known as primary hypertension, and it is influenced by a number of factors, including genetics, environmental factors (such as diet), and cardiovascular risk factors. For high-risk individuals, lifestyle changes are advised in addition to medication therapy in order to control and prevent hypertension and cardiovascular disease (CVD). On the other hand, secondary hypertension, which appears out of the blue and usually raises blood pressure, affects some people. Underlying medical disorders such as obstructive sleep apnea, thyroid disorders, kidney problems, renovascular disease, and adrenal gland tumors can result in secondary hypertension. Additionally, intoxication from drugs like cocaine, alcohol, and amphetamines can cause it to occur.. It can also be triggered by intoxication from substances like alcohol, cocaine, and amphetamines, as well as certain medications including birth control pills, decongestants, and some prescription drugs. Additionally, congenital anomalies affecting blood vessels can contribute to secondary hypertension.(Yoshihiro Kokubo etal.,2015)

One of the main chronic noncommunicable diseases in the world is hypertension. Hypertension affects 25% of adults worldwide, and by 2025, that number is probably going to rise to 29%. Approximately 37.3% of people in economically developed countries have hypertension, while 22.9% of those in underdeveloped countries have the same condition.

Analysis has been done on the prevalence of hypertension in China and India, the two most populated countries in the world. Male hypertension prevalence rates in the general Indian and Chinese populations are 20.6% and 22.6%, respectively. epidemiological statistics about hypertension from throughout the globe. The frequency is higher in urban populations than in rural ones in China and India. In China, the prevalence of hypertension is rising. In China, 24% of people between the ages of 35 and 59 had hypertension in 1998—a 2.3% increase over 1992–1994 data and a greater percentage in males than in women. In a recent multicenter study conducted in India, the SEEK (Screening and Early Evaluation of Kidney Disease) cohort, prevalence rates of hypertension and prehypertension were found to be 42.5% and 41.5%, respectively.(Bharati V. Mittal, MD etal 2009).

Linnaeus created the genus Curcuma in his 1753 Species Plantarum. The term most likely comes from the Arabic word "kurkum," which meaning yellow. The common name for Curcuma amada Roxb. is mango ginger. It is an aromatic, perennial rhizomatous herb that is a member of the Zingiberaceae family. Curcuma amada Roxb., sometimes known as mango ginger, is a distinctive spice that resembles ginger in shape but tastes like raw mango. Mango ginger rhizome is mostly used in pickles and other food preparations. Mango ginger is highly valued in the Ayurvedic and Unani medical traditions for its use as a digestive aid, laxative, aphrodisiac, alexteric, antipyretic, emollient, expectorant, and to treat bronchitis, asthma, hiccups, biliousness, itching, and inflammation from wounds. Mango ginger possesses several biological properties such as antioxidant, antibacterial, antifungal, anti-inflammatory, platelet aggregation inhibitory, cytotoxic, and antiallergic properties. (.RS POLICEGOUDRA ETAL., 2011)The genus's geographical range includes Northern Australia, Malaysia, Indonesia, Thailand, Indo-China, and India. In addition to being grown in Gujarat, Uttar Pradesh, Kerala, Karnataka, Tamil Nadu, and the northeastern states, it grows wild in some areas of West Bengal. Considered to be the three main nutritional components influencing crop growth and output are nitrogen, phosphorus, and potassium(Priyanka,B et al .,2018). Mango ginger gets its name from the flavor and color of the fresh cut rhizome, which is similar to mango.Mango ginger is a perennial plant that spreads via rhizomes. (Ravindran PN et al.,2014)

The major sources of cinnamon (Cinnamomum zeylanicum) for spice production are the bark and leaves. This tree is evergreen and a member of the Lauraceae family. The three most identifiable species are Cinnamomum zeylanicum, Cinnamomum camphora, and Cinnamomum cassia (L.) J. Presl. Many cultures have long used this plant, mostly in culinary uses. The scent of cinnamon is well-liked. Perfumes use it into their scent composition. The industry uses composites made of this spice. Poultry diets supplemented with extracts of cinnamon essential oil have an impact on microbiological and immune characteristics (blaszczyk ,N.,etal 2021). New active packaging films based on whey protein and chitosan nanofibers have also been discovered to contain cinnamon oils. Because of its flavor, cinnamon is a desirable spice, Because of its flavor, cinnamon is a popular spice, but it may also have medicinal uses.(Gruenwald J ., et al., 2010).

Due to its main ingredients, which include coumarin, eugenol, cinnomic acid, and cinamaldehyde, cinnamon is regarded as a useful food. Cinnamon has phytochemicals and flavonoids that can stimulate vascular smooth-muscle relaxation, boost tissue levels of cyclic guanosine monophosphate (cGMP), the mediator of nitric oxide (NO), and improve blood circulation and endothelial relaxing capacity. A meta-analysis's conclusions showed that cinnamon and its constituents helped lower blood pressure's systolic and diastolic values. (azimi p et al., 2016)

2.MATERIALS AND METHODS :

Materials :

2.1Raw materials :

Raw materials such as mango ginger, sugar, cinnamon , lemon were purchased from local markets .

2.2METHODOLOGY:

Standardization of candies using mango ginger :

Mango ginger should have its skin peeled, sliced coarsely into small pieces, and then ground smoothly with water added. Take a half-cup of mango ginger juice. Put 2/3 cup sugar and 15ml water in a skillet and cook over high heat for 6 minutes. Next, add the mango ginger juice to the sugar syrup and whisk constantly for 3 minutes. Finally, stir in ¼ teaspoon of cinnamon powder. After that, reduce the heat to low and stir in ½ teaspoon of lime juice. Afterwards, make sure the sugar syrup has the consistency of a thick ball. After that, quickly switch off the flame and place into a platter. Separately into small positions within plates cool it for 20 minutes .

Table 1:Formulation of candies

Ingredients	Quantity
Mango ginger (juice)	120ml
Sugar	134 g
Cinnamon	¼ teaspoon
Lime juice	2.5 ml (½ teaspoon)

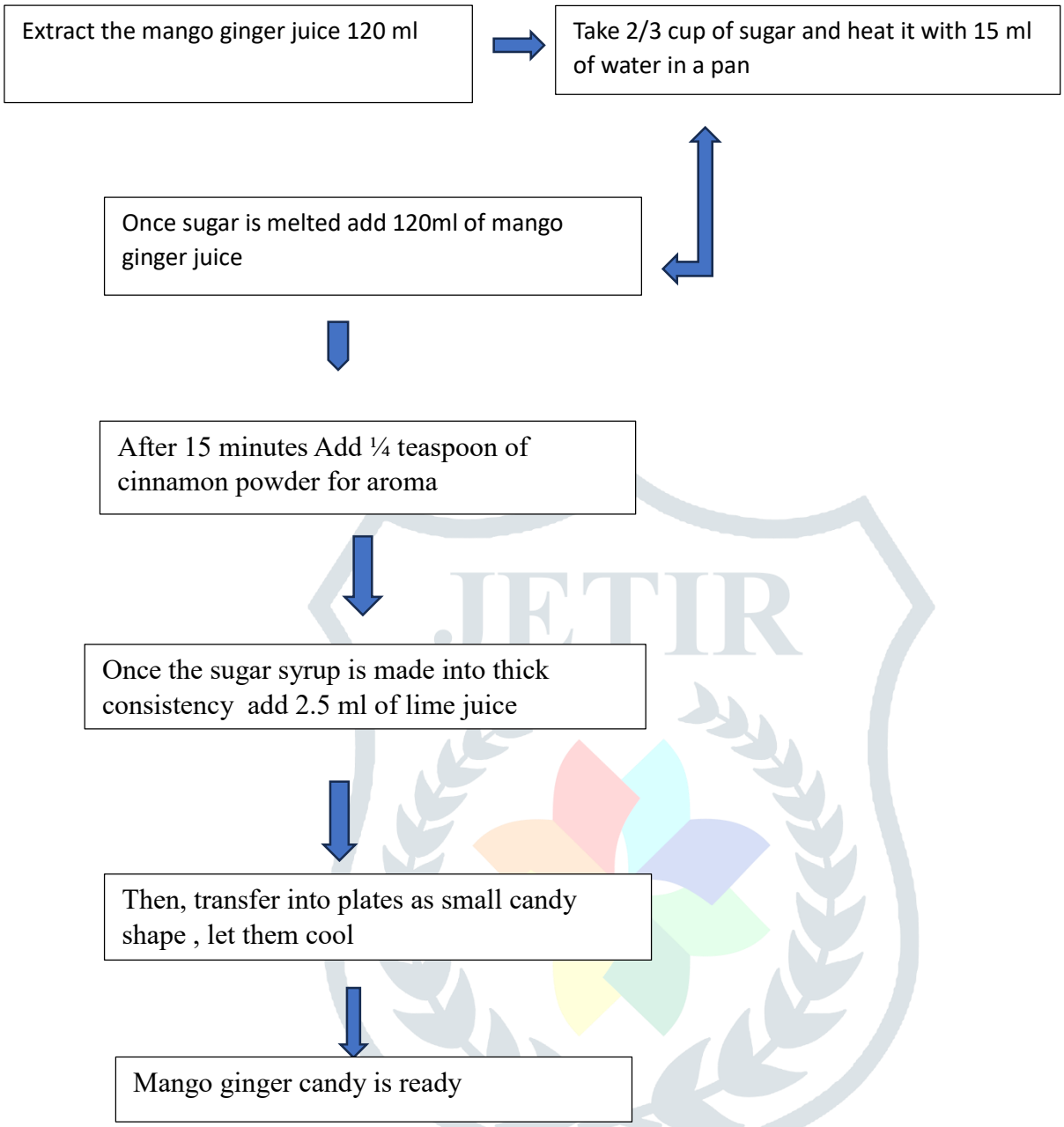

Figure1: Process flow sheet for preparation of mango ginger candy .

2.21Sensory analysis :

Sensory analysis of prepared candy sample were done using 9 point hedonic scale rating .

2.22Statistical analysis :

Analysis of variance (ANOVA) for the parameters was done using Microsoft excel .

3.Results and Discussion :

3.1Physical characteristics of mango ginger candy:

No marked difference was observed in size ,shape , weight , colour and hardness of mango ginger candy .the size and weight of mango ginger candy were found in range of 2± 2.5 cm , 3g respectively . all the samples were square in shape and recorded white colour in the candy.

Table 2:physical characteristics of mango ginger candy

Physical properties	range
Size (cm)	2±2.5
Shape	square
Weight (g)	3g
Colour	White
Hardness	Little hard

3.2Organoleptic characteristics of mango ginger candy :

Data on organoleptic characteristics viz, appearance ,taste , texture , mouthfeel and overall acceptability of mango ginger candy done using 9 point hedonoic scale in table 3,focusing on the average sensory scores . score for appearance is 8.84 , for taste is 8.78, for texture 8.56, for mouthfeel 8.8 and for the overall acceptability is 8.8 is been given for the samples .

Table 2:0rganoleptic characteristics of mango ginger candy

Appearance	Taste	Texture	Mouthfeel	Overall acceptability
8.84±0.37	8.78±0.41	8.56±0.50	8.8±0.40	8.8±0.40

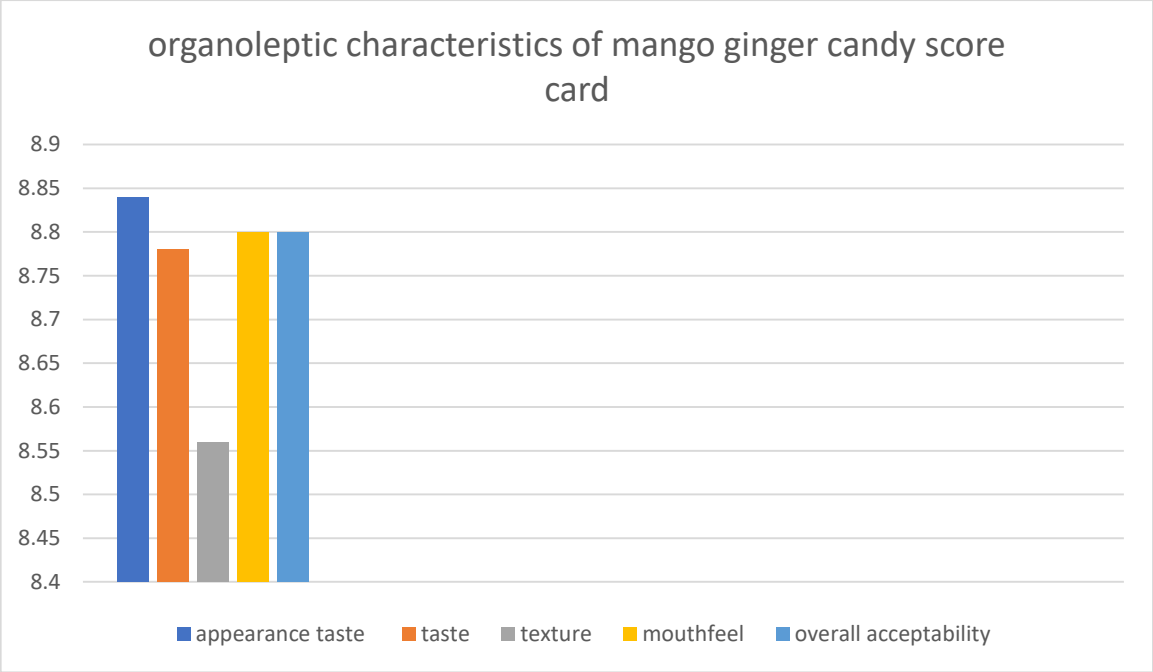

figure 1: score card of organoleptic characteristics

4.Conclusion :

I developed an mango ginger candy for the hypertensive people, at a low cost recipe .in mango ginger it has a nutritional benefits .through this sensory analysis, the product an achieved an overall acceptability score of 8.8 score , indicating its potential to satisfy the taste preferences of this demographic . by harnessing the nutritional benefits of mango ginger . I am hopeful that, initiative positively impact for the hypertensive patients by providing them with a delicious and nutritious for the patients to support their health and overall being .

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