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PREPARATION OF NONI (Morinda Citrifolia) RTS BEVERAGES

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Abstract

Noni (Morinda citrifolia linn) fruits are edible but they don't have nice taste and flavour. In present investigation attempt have been made to standardize the recipes for preparation of Noni RTS beverages. The recipe for preparation of RTS beverage was standardized by varying the levels of juice, TSS. Study revealed that the final beverage i.e. RTS having 10 % juice 14 °bx T.S.S. and 2 % ginger extract was found to be more acceptable.

Key Words: Noni, Morinda, Phytochemical, Beverages.

Introduction

Noni (*Morinda citrifolia* linn) also called Indian Mulberry was used for the study. Morinda citrifolia linn, Indian mulberry is the plant that can be used as a raw material for nutraceutical and functional food products. Recently noni juice extract has been commercially processed and distributed internationally as a dietary supplement.

Herbal and natural products of folk medicine have been used for centuries in every culture throughout the world (Acharya and shrivastava, 2008). Over the past few years as natural products have become increasingly popular, the field of natural herbal remedies has flourished One such upcoming natural plant having medicinal properties is Morinda citrifolia L, commonly known as Noni (Mathivanan et al., 2005).

The fruits are edible, but don't have a nice taste of smell. So that the variety of Noni fruit products are processed and prepared by variety of methods with addition of sugar, acid, spices and condiments , who helps to reduce the bad smell of Noni –fruit pulp. Noni juice can be blended with other herbal extracts to increase its medicinal value such as mint extract.

Noni juice is having somewhat pungent flavour and astringent taste so in preparation of RTS beverages from noni we can improve its taste and flavour using mint extract, ginger extract to increases not only its nutritional value but also consumer acceptability. The present experiment was conducted to standardize the recipes for preparation of noni RTS beverages and to study the sensory characteristics of prepared RTS beverages.

Materials and Methods

The fresh green coloured noni fruits were obtained from Trichy city. While selecting the fruits; fresh, fully matured, dark green coloured fruits were selected. These fruits are then allowed to ripen till green colour changes to dark or amber colour, and then the juice from ripe noni fruits is extracted. The various physical characteristics like average weight, Edible index and juice yield of ripe noni fruits

were studied. There are two types of noni juice on the basis of method of extraction i,e, Traditional and Non-traditional noni juice.

Sensorial Analysis: Sensory analysis of prepared product was performed by using standard method (Amerine et. al., 1987).

Ripe Noni fruits
⇩
Washing
⇩
Placing the fruits in juice collection vessel
⇩
Keep it as such for 2 months or more time
⇩
Drip extracted noni juice
⇩
Filtration
⇩
Clear Noni juice (7°Bx)

Figure 1: Flowsheet for production of traditional Noni juice

Ripe Noni fruits
⇩
Washing
⇩
Pressing in fruit press
⇩
Extraction of juice
⇩
Filtration of juice
⇩
Clear Noni juice

Figure 2: Flowsheet for production of Non-traditional Noni juice

Noni Beverages

The ready to serve beverage was formulated and standardized by varying juice level

i.e.10, 13, 14 and 15 per cent and keeping the sugar and acidity constant i.e.13 and 0.3 per cent respectively. RTS prepared with FSSAI specification having 10 per cent juice, 10°Bx and 0.3 per cent acidity was used as experimental control. The RTS beverage was also analyzed for different levels i.e. 1 % 2 % 3% of ginger extract. The process for preparation of Noni RTS beverage is outlined in flow sheet.

Ingredients	RTS
Juice (ml)	100
Sugar (g)	120
Citric acid (g)	-
Water (ml)	780
Ginger Extract	20

Table1: Recipe for Noni beverages

Parameter	Observation
Colour of the fruit	Brown / amber
Average wt of individual fruit (gm)	25.5
Average wt of waste from individual fruit (gm)	4.50
Edible index (%)	51.5
Waste index (%)	38.7
Juice yield (%)	50.5
T.S.S. of fresh juice	6.8

Table2: Physical Characteristics of ripe noni

Results and Discussions

The colour of ripe noni fruit in is dark brown or amber colour. The weight of individual noni fruit ranges from 12 to 33 g. According to Heinicke (1985); the average yield of juice obtained from ripe noni fruit was 40 – 50 % and it is found that the juice yield by fermented drip method is satisfactory i.e.51% . Also the T.S.S. of the juice extracted from noni fruit was found to be 7°bx and it is in the range of T.S.S. found by different scientists i.e. 7 – 8° bx (www.nonijuice.org.com). The amount of seeds found in each noni fruit range from 27 - 31 in numbers.

Effect of TSS levels on sensory quality of RTS

RTS beverage prepared with different TSS levels i.e. 10, 12 and 14°bx analyzed for sensory evaluation and it was observed that sensory score for overall acceptability was maximam in RTS having 14°bx TSS. So that the RTS beverage containing 10 % juice and 14° bx TSS was finalized for obtaining effect of ginger extract level on sensory quality of RTS.

Effect of ginger extract on sensory quality of RTS

It is evident from the values (Table- 4) that sample S2 was found organoleptically superior for attributes like colour, flavour, taste and consistency as compared to other samples. Moreover , sample S2 has got highest score for overall acceptability indicating very much lied by the panel members.

Sample Code	Colour	Appearance	Taste	Flavour	Mouthfeel	Over all acceptance
S0	7	7.4	6.7	7.1	7	7
S1	7.1	7.8	7.8	7.9	7.2	7.1
S2	7.2	8	8.2	8	7.4	7.2

Where, S0 – 10°Brix , S1-- 12 °Brix , S2 – 14°Brix

Table 3: Effect of TSS levels on sensory quality of RTS

	Organoleptic Characteristics					
Sample Code	Appearance	Colour	Flavour	Taste	Mouthfeel	Over all acceptability
S0	4.1	4.2	3.8	3.9	4.5	4.3
S1	6.1	6.4	5.7	6.3	6.0	5.9
S2	7.0	7.3	7.0	7.6	7.5	7.3
S3	7.2	6.9	7.1	7.4	7/0	7.0

Where, S0 -control (14 % TSS,10 % juice), S1- 1% Ginger Extract, S2 –2 % Ginger Extract

Table 4: Effect of ginger extract level on sensory quality of RTS

Conclusion

From the study carried out on Standardization of Noni (Morinda citrifolia) beverages, it can be concluded that RTS prepared from 10 % noni fruit juice, 14 % T.S.S. 2 % ginger extract was more acceptable with respect to organoleptics. The beverages prepared from Morinda citrifolia blended with ginger extract has wide range of medicinal and great consumer acceptability.

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