Compositions of *Hibiscus rosasinensis* floral extract infusion and its prospects of use as a health tonic

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ABSTRACT

Herbal remedies are being practiced expeditiously. The beneficial effects of these herbal remedies on health problems have been observed and experienced by humans for thousands of years. Indigenous medicinal plants are more valued because they are acquirable and have low side effects. Nutritional composition and medicinal use of *Hibiscus rosa-sinensis* flowers have been conducted in this study.

*Hibiscus rosa-sinensis* has medicinal properties for anti-tumor, anti-fertility, antipyretic, hypoglycemic, anti-inflammatory, analgesic, antimicrobial, CNS depressant, and hypertensive activity and is a primary ingredient in many herbal teas. Among the different bioactive compounds contained in the flowers, polyphenol compounds are of the utmost importance for their antioxidant properties.

Flowers have a wide range of pharmacological actions, which may be therapeutically beneficial for overall health and wellness of population, the need of the hour is for further research in clinical aspects. Consumption of tea made from the above-mentioned flower petals is being followed by a large number of people to control various lifestyle diseases. Since plants are easily available and no special conditions are required to cultivate and collect them, it could be a better choice to treat ailments.

KEY WORDS : Flower extracts, Health, *Hibiscus rosasinensis*, Medicinal plants, Pharmacological

Introduction

Lifestyle diseases are prevailed over by use of many indigenous medicinal flowers / plants that are edible. Since ancient times, several types of edible flowers have been utilized for nutritional and therapeutic purposes. Recently, a growing interest in finding prospective new edible flowers for cookery has emerged. Edible flowers are non-toxic and consumed in human diet because of the health benefits. They confer distinctive and potent color, flavor and aroma to the food, and therefore have gained popularity in the culinary world as an innovative ingredient. Edible flowers are regarded as ornamental elements as their nutritional content is unrecognized by most people. However, all flowers cannot be considered edible due to the risks of presence of certain toxic chemicals. Therefore, more focus is needed to determine the presence of macro and micronutrients and effect of antinutritional factors found in common edible flowers. Generally, edible flowers are known to contain components similar to those contained in other parts of the plant from which they are sourced. They have a high water content, low content of fats and protein, carbohydrates and minerals in varied proportions. They possess various substances such as phenolic compounds, nitrogenous substances, carotenoids, vitamins, and their metabolites.

Studies on the extraction of antioxidants of edible flowers have been achieved by several procedures. Therefore, in the present work, edible petals of *Hibiscus rosa-sinensis* (Vernacular Hindi: gudhal) were characterized and evaluated in terms of nutritional and mineral constitution, and presence of bioactive compounds in different extracts.

Materials and Methods

Samples

The flowers of *Hibiscus rosa-sinensis* (Gudhal) were procured from various sites of Ajmer city, Rajasthan. Flowers were dried at room temperature and pulverized. Then their powder passed through a mesh sieve and stored in airtight polyester containers until further use and for analysis (Fig. 1.).

Proximate Analysis

Proximate Analysis was done. The six analyses...
TABLE-1: Nutritional analysis of three samples of *Hibiscus rosa sinensis* flowers obtained from three places in Ajmer city.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>HRS (A)</th>
<th>HRS (B)</th>
<th>HRS (C)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Moisture</td>
<td>7.91± 0.746</td>
<td>7.06 ± 0.144</td>
<td>8.12 ± 0.151</td>
</tr>
<tr>
<td>Ash</td>
<td>5.85±0.289</td>
<td>6.11 ± 0.164</td>
<td>6.26 ± 0.486</td>
</tr>
<tr>
<td>Crude Protein</td>
<td>12.64±0.408</td>
<td>11.94±0.348</td>
<td>15.66±0.657</td>
</tr>
<tr>
<td>Crude Fiber</td>
<td>9.08±0.316</td>
<td>8.06 ± 0.145</td>
<td>3.95±0.160</td>
</tr>
<tr>
<td>Crude Fat</td>
<td>3.61±0.278</td>
<td>3.6 ± 0.183</td>
<td>5.18±0.085</td>
</tr>
<tr>
<td>CHO</td>
<td>60.91±0.873</td>
<td>63.23 ± 0.465</td>
<td>60.83±1.453</td>
</tr>
<tr>
<td>Energy (kcal/100g)</td>
<td>326.69 ± 6.582</td>
<td>333.08 ± 1.763</td>
<td>352.58±1.097</td>
</tr>
<tr>
<td>Vitamin C (mg/100g)</td>
<td>0.80±0.021</td>
<td>0.83± 0.036</td>
<td>0.86±0.026</td>
</tr>
</tbody>
</table>


<table>
<thead>
<tr>
<th>Parameter</th>
<th>HRS (A)</th>
<th>HRS (B)</th>
<th>HRS (C)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Calcium*</td>
<td>45.33±4.619</td>
<td>48.00±8.000</td>
<td>48.00±8.000</td>
</tr>
<tr>
<td>Magnesium</td>
<td>32.40±2.806</td>
<td>50.22±7.424</td>
<td>46.98±10.117</td>
</tr>
<tr>
<td>Potassium*</td>
<td>271.70±1.375</td>
<td>206.29±5.412</td>
<td>199.61±0.569</td>
</tr>
<tr>
<td>Sodium</td>
<td>78.27±6.583</td>
<td>63.17±2.790</td>
<td>75.94±2.612</td>
</tr>
<tr>
<td>Iron*</td>
<td>6.02±0.618</td>
<td>6.06±0.593</td>
<td>13.46±1.121</td>
</tr>
<tr>
<td>Zinc</td>
<td>6.91±1.101</td>
<td>5.20±0.269</td>
<td>7.92±0.840</td>
</tr>
</tbody>
</table>

and, hypertensive effects 5,10,22 and as antiasthmatic agents 23,26. A component of the essential oil was found to be active against human cancer cells and also has antifungal activity 16. Aerial parts of *Hibiscus rosasinensis* were extracted using ethanol and used for treatment of constipation and diarrhea 8, epilepsy, bronchial catarrh and leprosy 19.

Flowers are highly perishable owing to their high moisture content. Dehydration is one of the most convenient methods of food preservation practiced worldwide. *Hibiscus* is a principal constituent in many herbal teas and has medicinal properties with health benefits. It can be prepared with dried or fresh flowers and can be served hot or ice cold. The *Hibiscus* petals are separated from rest of the floral parts, washed and taken in a pan of water to boil. If dried floral powder is available, it may be used easily without the steps of separating and washing. Once the fresh petals or dried floral powder starts boiling, 3-4 black peppers, a clove, and a small piece of cinnamon (roughly crushed) and a few mint leaves are added. The mixture is allowed to steep for a few minutes until the petals turn pale. Then the infusion is strained and honey is added. It is garnished with some mint leaves and served hot.

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Fig.1: *Hibiscus rosa sinensis*

(a) Flowers  (b) Petals  (c) Dried Powder
Alternatively, ice cubes may be added and iced tea may be served.

Polyphenol molecules obtained from flowers are significant for their antioxidant properties. These are widely exploited to preserve oxidative stability due to their function of scavenging and extending the shelf-life of products.

Ancient medicinal literature report *Hibiscus rosa-sinensis* to be a highly potential and beneficial plant against various human disorders. *Hibiscus rosa-sinensis* flowers are reported to contain quercetin, anthocyanins, flavonoids, cyclopeptide alkaloid and vitamins. The *Hibiscus* flower is significant in traditional Indian systems of medicine as a prominent herbal remedy of indigenous practices across the world used in treatment of hair loss, female sexual disorders, piles, diseases of pitta and as female contraceptives. In Ayurveda infusion of flower petals is used as a demulcent in fever.

**Conclusion**

As this plant grows widely in a variety of habitats, its extracts can be used for several health issues, enumerated above instead of allopathic medications. Concomitantly, evaluation of the *Hibiscus* flowers for interrelationships along with chemical drugs is required for side effects, if any. This is a totally unexplored area and very much need of the hour. Value addition of floral parts is gaining prominence. Plants offer comprehensive medicinal activities, which may be explored and harnessed to ameliorate general health and well-being of the community, which is the pressing priority for further research. The only precaution that should be taken is that consumption of herbal infusions in small quantities and with less or no accompanying spices will be more beneficial, so as that no other side effect arises. This *Hibiscus* tea, on consumption will substantiate to provide better well-being of people. Eventually, good health and well-being of people will be ensured by use of plant products as ‘nutraceuticals’ instead of pharmaceuticals.

**References**


