

# COMPARATIVE STUDY OF BELL PEPPER ON THE ASPECTS OF THEIR APPROXIMATE ANALYSIS (CAPSICUM ANNUUM)

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**Abstract**— Bell pepper, also known as sweet pepper or a pepper and capsicum, is a cultivar group of the species *Capsicum annuum*. Cultivars of the plant produce fruits in different colors, including red, yellow, orange, green, chocolate/brown, vanilla/white, and purple. Bell peppers are sometimes grouped with less pungent pepper varieties as "sweet peppers". Bell peppers are sensitive to an abundance of moisture and excessive temperatures. The main aim of this project is to determine the proximate principles of bell pepper. To perform sensory evaluation of the bell pepper recipe in order to determine its acceptability in terms of different sensory attributes. To make oneself familiar with Research Methodology that is reference work, experimental work, statistical analysis of experimental data, interpretation of results obtained, writing of project work and compilation of bibliography in proper order. To study the biochemical and nutritional profile of bell pepper. The various proximate principles and physiochemical properties of bell pepper sample are recorded. To estimate various parameters in an individual sample of bell pepper with two different colours. The estimate various nutritional components of bell pepper are recorded. To estimate their liking on the basis of the taste of two bell pepper by conducting sensory evaluation. The significance of the study section is that we get the chance to create a perspective for looking at the problem. It points out how the study relates to the larger issues and uses a persuasive rationale to justify the reason for the study. The significance of the study makes the purposes worth pursuing. In a project to identify and analyse the phytochemical properties of bell pepper were evaluated. The bell pepper selected fruit were greenish-reddish in color and firm feeling. The study suggests that red and green bell pepper has equal nutritive value and in fact the red bell pepper has more culinary uses and is more spicy and tastier than green bell pepper. We have done proximate analysis and also antimicrobial activity was done to check the minimal inhibitory concentration and sensory evaluation have also done for the sample the results obtained was Determination of various nutritive and phytochemical properties of the fruit extracts have been determined. These active fruit extract may be further subjected to biological and pharmacological investigation and other therapeutic compounds.

## I. INTRODUCTION

Bell peppers (*Capsicum annuum*) are part of the Solanaceae family and have been cultivated for thousands of years, beginning in South and Central America before being brought back to Europe from North America by Christopher Columbus. They are grown throughout the world, but mainly in China, Mexico, and in the United States. While green, red, and yellow bell peppers are the most common ones you are going to encounter at your local supermarket, other varieties such as orange, purple, brown, and black are also grown.

Red, yellow and green pepper.

## A. Scientific classification

Kingdom: Division: Magnoliophyta  
Class: Magnoliopsida  
Subclass: Asteridae  
Order: Solanales  
Family: Solanaceae  
Genus: *Capsicum*  
Species: *C. Annum*

## B. Binomial name: *Capsicum annuum*

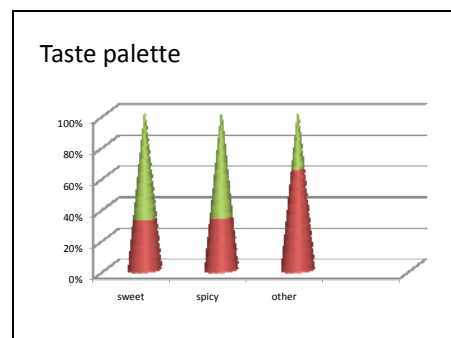
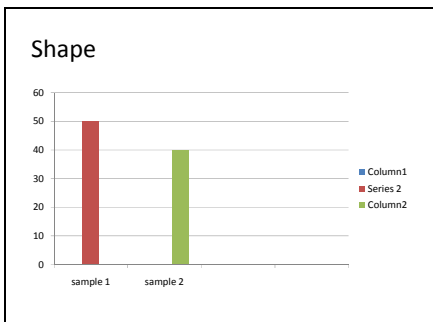
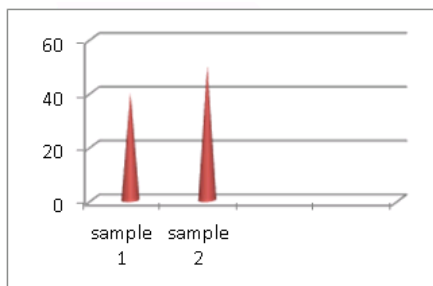
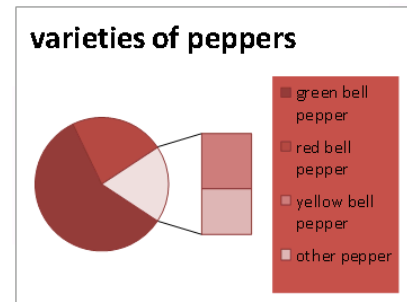
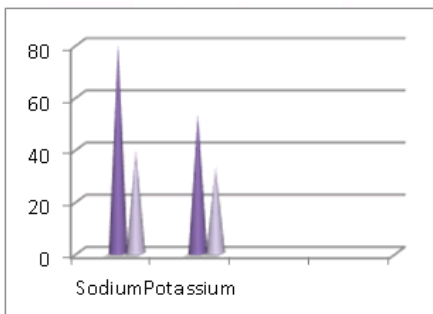
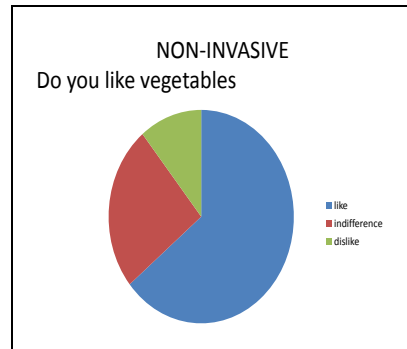
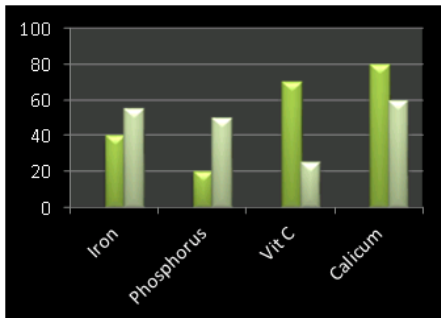
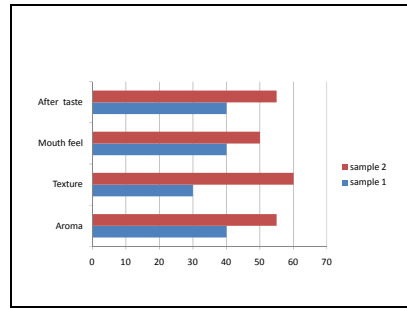
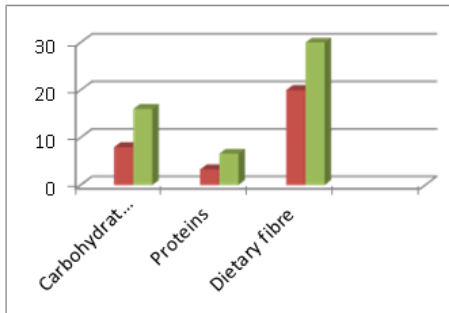
Ideal growing conditions for bell peppers include warm soil, ideally 21 to 29 °C (70 to 84 °F), that is kept moist but not waterlogged. Bell peppers are sensitive to an abundance of moisture and excessive temperatures.

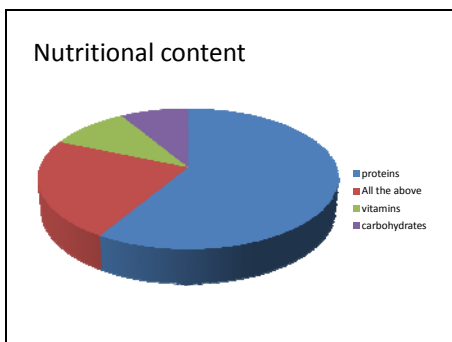
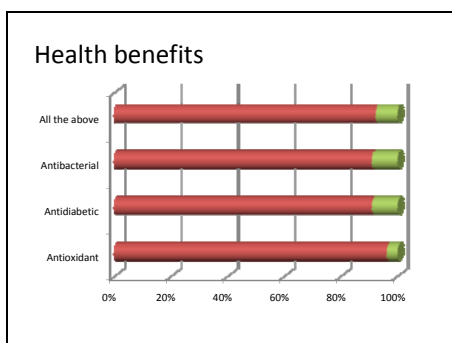
The color can be green, red, yellow, orange and more rarely, brown, white, rainbow (between stages of ripening) lavender and dark purple, depending on the variety of pepper. Most typically, unripe fruit are green or, less commonly, pale yellow or purple. One variety, Permagreen, maintains its green color even when fully ripe. Red, yellow, and orange peppers all come from different seeds and are different cultivars of pepper. Red peppers are simply ripened green peppers. Green peppers are less sweet and slightly more bitter than yellow or orange peppers, with red bell peppers being the sweetest. The taste of ripe peppers can also vary with growing conditions and post-harvest storage treatment; the sweetest are fruit allowed to ripen fully on the plant in full sunshine, while fruit harvested green and after-ripened in storage are less sweet.

## II. MATERIALS AND METHODS

Analysis of proximate principle of bell pepper sample for Carbohydrates, Proteins, Calcium, Iron, Phosphorus, Potassium, Sodium, etc., was done by standard methods. Antimicrobial activity such as minimal inhibitory concentration, DNA, PCR was done and sensory evaluation was also performed.

III. RESULT AND DISCUSSION





The carbohydrate content is high in the green bell pepper sample than red bell pepper hence the bell pepper sample determine a higher nutritional value. The bell pepper sample contains potassium in adequate amount which is beneficial when consumed. It contains various trace elements such as sodium, calcium, dietary fibres and phosphorus among which the bell pepper sample contain more dietary fibre hence it is more nutritive. The aqueous extracts of green and red bell pepper was prepared using chilled distilled water were investigated for its effect on the Escherichia coli, which is the normal flora of human gastro-intestinal tract. The minimal inhibitory concentration of the aqueous extract, as a measure of susceptibility of the microbe to the formulation, was determined using the broth tube dilution method. The results obtained using the above mentioned microbiological technique was re-evaluated and confirmed using a highly sensitive Real time polymerase chain reaction reaction(RT-PCR).

#### IV. CONCLUSION

The present study reports for the results exhibited of bell pepper used as in traditional Indian medicine for the treatment. Determination of various nutritive and phytochemical properties of the fruit extracts have been determined. These active fruit extract may be further subjected to biological and pharmacological investigation and other therapeutic compounds. All the objectives were met, thus the work

concludes red and green bell pepper sample contains are found to be nutritive, inexpensive and sustainable. In our present investigation, the aqueous extracts of green and red bell pepper was prepared using chilled distilled water were investigated for its effect on the Escherichia coli, which is the normal flora of human gastro-intestinal tract. The results obtained using the above mentioned microbiological technique was re-evaluated and confirmed using a highly sensitive Real time polymerase chain reaction (RT-PCR). The MIC (minimal inhibitory concentration) results obtained exhibited the antimicrobial activity of the aqueous extracts of red and green bell pepper. The MIC of the aqueous extract for red and green bell pepper was found to be 125mg/ml and 100% respectively (Table no. 4 and 5).The bactericidal property observed was confirmed using Real time PCR. In order to achieve the same, DNA was extracted only from the dilution tube which exhibited the MIC. The DNA extracted from the dilution tubes was qualitatively analyzed on agarose gel. DNA was observed from the MIC tube treated with red bell pepper extracts whereas it was absent for the tube treated with green bell pepper extract. Whereas green bell pepper extract has a bactericidal antimicrobial property. Therefore it is possible, that the presence of antimicrobial compounds varies among the variance in bell pepper.

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