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## Tender shoots of *Cucurbita pepo* L., consumed by the Santal tribe: future nutraceutical for urban food basket

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### ABSTRACT

*People have mostly ignored seasonal and regional nutraceuticals, vegetables, and other food stuffs. As a result, during famine or during times of high prices for marketable foods, many people, especially those who live in cities, are highly affected. The solution is to be aware of locally and seasonally available foods. It could be done through documentation to highlight the importance of tribal foods. Tribal foods have nutritional and medicinal values that reflect the sound health of the communities. Keeping this in view, an attempt has been made to document the common seasonal foods of the Santal community of India. Authors have studied food habits of the Santal community and found an interesting locally available popular plant parts which is consumed occasionally. In times of food scarcity, they consume tender leaf and stem of *Cucurbita pepo* (Field Pumpkin). In this communication, authors have presented the way of cooking and benefits of consuming the tender leaf and stem of *C. pepo* to highlight the importance of locally available common vegetables during scarcity of food.*

## INTRODUCTION

Tribal communities around the world are always associated with nature, and even though they depend on nature for their livelihood, food, medicine, or other materials from nature or forests, they cause no harm to nature or forests. The way they utilise and extract forest products is mostly sustainable. Again, they are good at cultivating vegetables or wild vegetables, including leafy vegetables or other food products. Indigenous traditional knowledge of many nutraceutical plants has been passed down from generation to generation. These people conserve the forest, wildlife, and environment and are the key to sustainability. Now, slowly, the scenario of tribal people is rapidly changing with the migration of tribal people to urban areas or cities for different purposes. This is true even for indigenous communities in any region of the world. People live for good food to eat and a good shelter to live in, and in all walks of life, this is the sole purpose (Kumar et al. 2012; Nial et al. 2019). However, it is sad that we think money can buy everything, and hence the goal is shifted to earning more money. Here, the idea of good food and good shelter is no longer for the good of human health but rather for the good of taste buds, and shelter is no longer meant to be for simple living but for extra

comfort. This is how urbanization has started and expanded in a rapid and dangerous way, and people are wasting money. The whole idea of urbanization and unhealthy foods that are either adulterated or filled with chemicals has greatly affected the health of people, especially in urbanized areas or in cities. Migration of people, especially tribal communities, or indigenous communities of any region, is itself a great loss to the people themselves, shifting their healthy food habits to unhealthy food habits, which is resulting in a gradual decline in the indigenous traditional knowledge of wild foods and medicines. An urge to earn more profit could lead to the over extraction of forest products or the degradation of forest resources along with associated wildlife and their ecosystems. Urban dwellers are becoming aware of the issue, but they have no choice and purchase only pricey vegetables grown using chemicals and fertilizers. Again, when there is inflation in the economy or during famine, these people are mostly affected due to their ignorance of the nutraceuticals and healthy foods and vegetables or plant parts that can be easily grown and consumed. This study focuses on bringing awareness to people in urbanised areas or cities about the easily available nutraceutical leafy vegetables that are less marketed but very nutritious

and could be consumed. The Santal Community is one of the largest tribal communities distributed in India. They are very talented in the arts, especially the art of painting the mud houses, and rich in indigenous traditional knowledge about wild foods and medicinal plants from the forest. They are the sole conservators of Sal Forest, as their cultural and religious activities depend on Sal trees, flowers, and leaves. Consuming wild leafy vegetables and cultivating vegetables and medicinal plants are common in this community (Kumar 2015). Here, the importance of the tender shoots of *C. pepo* is highlighted rather than the fruit, and consuming them as a nutraceutical food could be an option to reduce intake of unhealthy and chemically filled foods.

## METHODOLOGY

During a survey and interaction with tribal communities in Mayurbhanj, Odisha in 2019, a Santal lady was observed collecting tender shoots of *C. pepo*. Out of curiosity, the team inquired about the purpose of collecting the tender shoots of *C. pepo*. She revealed that the tender shoots of *C. pepo*, locally known as Kokharu, are very delicious vegetables, more delicious than the fruits. She mentioned, "They are very healthy too; are you not aware of it? You should try it too". The team responded that they would like

to document the whole process of cooking this healthy and nutritious food. And so, the whole process is documented and illustrated here (Plate 1).

## RESULTS AND DISCUSSION

Nutritionally, the tender shoots and leaves of *C. pepo* are very rich in carbohydrates and proteins that are comparable to soya beans, apart from other minerals. It is also rich in phenolic compounds and hence shows antioxidant activity. An experiment conducted by Oloyede and his coworkers published in 2016 showed that excessive use of inorganic fertilizer decreased the nutrient composition and antioxidant profile of pumpkin leafy vegetables (Oloyede et al. 2012; Logan et al. 1998).

## CONCLUSION

The vegetables that are known to people globally are very few. Profit-making, import, and export of well-accepted vegetables must undergo various processes or be grown to fit the market strategy. This affects the nutritional values of many marketed foods and vegetables. If people are aware of healthy, nutritious, delicious, and easily available food alternatives, their health issues can somehow be reduced and added to their wellbeing. This documentation could be helpful for people looking for healthy and organic food alternatives. Tribal people and indigenous

communities of different regions are the hub for indigenous traditional knowledge

and sustainable living.



**Figure 1:** Illustration showing how the tender shoots of *C. pepo* (Field Pumpkin) is collected, cleaned, cooked, and served as a healthy nutraceutical

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