

The Magic Rice of Assam: Boka Saul

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Abstract

Boka Saul rice, a traditional and indigenous variety of rice cultivated in the northeastern state of Assam, India, holds a special place in the culinary and cultural heritage of the region. This review article delves into the rich history, unique characteristics, cultivation practices, culinary uses, and the significance of Boka Saul rice in Assamese cuisine and beyond. It also explores the efforts to conserve and promote this precious heritage grain in the modern world.

Keywords: Boka Saul, magic rice, Assam

Introduction

Boka saul is a specific rice variety cultivated in the northeastern state of Assam, India. In the Assamese language, "Boka" means "red" or "brown," and "Saul" means "rice." Therefore, "Boka Saul" essentially translates to "Red Rice" or "Brown Rice". This name is derived from the natural reddish or brownish hue of the rice grains, which is a distinctive characteristic of this rice variety. This food grain which is also known as 'rice that is soft' has gained a reputation as a "magic" rice as it need not be cooked the conventional way. All one needs to do is soak the grains in some warm water for about 30 minutes (or in cold water for one hour) and it's done!

The Magic Rice of Assam

Lower Assam has areas where the paddy variety known as "boka saul" (*Oryza sativa*) is grown. It served as the fuel (food) for the Ahom soldiers against the Mughal army in the 17th century. Today, it serves as food for the thousands of farmers in Assam who work in the fields every day. The urban population is still catching on it slowly. "But they ought to. Zero fuel is needed for boka saul. There is no need to cook the rice. All the rice needs to do to swell is soak it in (cold) water for one hour. It can then be eaten after being combined with curd, jaggery, and banana. The better quality boka saul swells up in less than fifteen minutes.



Although boka saul has a high "zero-fuel requirement" ranking on its unique quotient, it is also very nutrient-dense. According to a study by the Guwahati University's Biotechnology department, it has 6.8% protein and 10.73% fibre. This rice is featured by its semi-glutinous trait with low amylose content ranging from 12 - 17% (Das et al., 2018). "It is 'default organic' and also cools the body. It just won't respond, and the crop will fail, even if you help it with chemical fertilisers. The Assam Agricultural University, Indian Council of Agricultural Research, Assam Science Technology and Environment Council, and Guwahati University's Biotechnology Department collaborated on the scientific testing and analyses for boka saul throughout the course of the previous four years. According to researchers, the rice can function effectively for soldiers in high-altitude frontier areas as a "disaster management" food as well as a supplement. "For obvious reasons, this makes a fantastic 'emergency food' during floods which is an often case in Assam and the nearby areas. It was only recently given the Geographical Indication (GI) tag by the Government of India's Intellectual Property India (IPI) authority in March 2018 due to its distinctive characteristics.

Northeast India boasts a rich and diverse cultural heritage related to rice cultivation. Rice is not just a staple food in this region; it is deeply embedded in the social, cultural, and economic fabric of the communities living there. Rice cultivation and harvest are celebrated with great enthusiasm in Northeast India. Festivals like Bihu in Assam, Lui-Ngai-Ni in Manipur, and Wangala in Meghalaya are dedicated to rice cultivation. These festivals feature traditional dances, songs, and rituals performed by local communities. Many indigenous communities in Northeast India practice traditional and sustainable farming methods, often involving terrace farming, shifting cultivation (jhum), and wet rice cultivation in flooded fields. These practices are handed down through generations and reflect a deep understanding of the local ecology.

Numerous indigenous rice varieties, like Boka Saul in Assam and Joha rice in Assam and Manipur, have been cultivated for centuries. These varieties are adapted to the local environment and have unique flavors and characteristics. Northeastern cuisine revolves around rice and showcases a wide array of rice-based dishes. Each state in the region has its own traditional rice dishes, often incorporating local ingredients and flavors. Rice cultivation has inspired various forms of traditional art and craft in the region. Intricate rice straw art, such as Assamese "Japi" hats, are handmade using rice straw and are an integral part of cultural attire



and festivals. Indigenous communities in Northeast India possess a wealth of knowledge about rice cultivation, including the selection of rice varieties, seed preservation, and cultivation techniques. This traditional knowledge is passed down orally and through practical experience. It enhances community bonding and contributes to both subsistence farming and commercial agriculture. Traditional attire in Northeast India often incorporates elements inspired by rice cultivation. For example, the Muga silk, known for its golden color, is made from silkworms that feed on the leaves of the Muga plant, which is often found in rice fields. Rice cultivation in Northeast India is not just a means of sustenance; it is deeply intertwined with the region's culture, traditions, and way of life. It represents a dynamic and enduring aspect of the cultural heritage of the people of Northeast India.

In parts of lower Assam, especially during the 'xaali' season (the hottest, most strenuous period of paddy farming that starts in June and ends in December), farmers subsist, almost entirely, on a specific kind of indigenous rice: boka saul, or 'mud rice'. Those who know about this special variety of "soft" rice, swear by it. And those who do not — well, the geographical indication (GI) tag, which has just been bestowed upon it by the Government of India's Intellectual Property India (IPI) body, should do the job. Boka saul (*oryza sativa*) is a paddy variety grown in parts of lower Assam — Nalbari, Barpeta, Goalpara, Kamrup, Darrang, Dhubri, Chirang, Bongaigaon, Kokrajhar, Baksa etc. Back in the 17th century, it was the fuel for the Ahom soldiers fighting the Mughal army. Today, it's fuel for the hundreds of farmers who toil in the fields of Assam every day, for whom it's become a staple. The urban populace hasn't really caught on yet. "But they should. Boka saul requires zero fuel. The rice does not need to be cooked!" says Hemanta Baishya, founder-Member of Lotus Progressive Centre, one of the two organisations who applied for the patent in 2016. "Just soak the rice in (cold) water for one hour, and it swells up like a charm. Mix it with curd, jaggery and banana, and it's ready to eat. It will sort you for the whole day," says Baishya, adding that the higher grade boka saul swells up in fifteen minutes flat. From the warriors of the Ahom kingdom then to the farmers of lower Assam now, the 'magic' Boka saul — which recently got a GI tag — has been a breakfast staple for centuries now.

GI Tag

The geographical identification (GI) label was placed on the indigenous boka saul by the Government of India's Intellectual Property India (IPI) body



just recently in March 2018 (the boka chaul was mentioned in the G I Journal published by the GI Registry on March 28, 2018). After Muga silk, Joha rice, and Tezpur litchi, this is the only product to have obtained the GI designation in Assam (Sreenivasa Rao, 2018). In consultation with the Assam Agricultural University, the Indian Council of Agricultural Research, the Assam Science Technology and Environment Council, and the Biotechnology Department of Gauhati University, scientific tests and analysis for Boka Chaul have been ongoing for the previous four years.

GI Tag obtained by NGO

Since 2014, Simanta Kalita of the Centre for Environment Education (CEE), Guwa hati, and Bai shya of the Lotus Progressive Centre (LPC), a local NGO working specifically for the preservation and promotion of indigenous rice varieties across 45 villages in and around the Nalbari district, have been conducting research and conducting scientific experiments in order to. Nalbari has over 70,000 hectares of agricultural area, of which 3,500 hectares (about 5%) are mostly used for the cultivation of boka chaul, according to Lotus Progressive Centre. A acre can produce about one tonne of boka chaul or 1.2–1.3 tonnes of rice. The GI tag ensures that only those who have registered as authorised users—or, at the very least, those who reside within the geographic territory—are permitted to use or copy the well-known brand name. Boka Chaul is exclusively indigenous to Assam, hence efforts are being made to cultivate it more extensively and commercialise it for the benefit of the area's Assamese farmers.

Characteristics of Boka Chaul. At a time when energy saving is becoming more and more important everywhere, Komal Chaul, an indigenous variety from Assam that cooks on its own, is swiftly establishing itself as an innovative and sustainable substitute for conventional rice. It is renowned for its increased nutrition and is often consumed throughout the summer due to their cooling properties. It is typically used as a component of traditional cuisine together with curd, jaggery, milk, sugar, or other ingredients and has earned the nickname "magicor soft or komal" rice since it requires unconventional cooking methods. Boka rice is a short-grain variety that has a distinct softness due to its low amylose content, a starch component that affects how hard rice food grains are. It includes only 4 to 14 percent amylose, as opposed to the typical 20 to 25% in the majority of ordinary rice cultivars. According to research from the Gauhati University's Biotechnology Department, boka saul has 6.8% protein and 10.73 percent

fibre. This is a fantastic emergency food during floods and for tourists, space researchers, mountaineers, defence personnel, etc. for obvious reasons.

Breeding Potential

Although modern high yielding rice varieties have advanced and helped Assam and the North-East achieve self-sufficiency in rice production, these "Bok a Rice" types are still largely landraces but are extremely valuable and have characteristics that are highly valued by consumers worldwide. These cultivars have not yet been grown outside of the North-East regions, although it has been said that when the boka rice is produced elsewhere, its unique features are lost. This boka rice is typically cultivated to have long shelf lives, photosensitivity, soil susceptibility, a high propensity for pests and diseases, and low yields. Because of this, focused breeding efforts must be made to raise the quality and yield potential of these landraces in order to sell them for a high premium to nearby farmers.

S. No.	Characteristic	Boka Saul Rice	Normal White Rice
1.	Origin	Indigenous to Assam, India	Widely cultivated globally
2.	Aroma	Distinctive nutty aroma	Mild, neutral aroma
3.	Grain Size	Small, round, translucent	Medium-sized, opaque
4.	Grain Color	Natural reddish or brownish	White
5.	Glycemic Index (GI)	Relatively lower GI	Moderate to high GI
6.	Nutritional Content	May contain more nutrients	Primarily carbohydrates
7.	Culinary Use	Prized for traditional dishes	Common in various cuisines
8.	Genetic Diversity Preservation	Helps conserve biodiversity	Commercial varieties
9.	Sustainable Farming Practices	Often grown using traditional and sustainable methods	May vary in farming practices
10.	Cultural Significance	Integral to Assamese culture and rituals	Varied cultural uses

11.	Genetic Research and Varieties	May have limited research and modern varieties	Extensively researched and diverse varieties
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Table 1: Comparative table between Boka Saul and White Rice

Unique Characteristics

One of the most distinctive features of Boka Saul rice is its aroma. It exudes a pleasant, nutty fragrance that sets it apart from other rice varieties. The grains are small, round, and translucent, with a natural reddish or brownish hue. This unique appearance and aroma contribute to its popularity in Assamese cuisine.

- ✚ **Aromatic Fragrance:** Boka Saul rice is renowned for its unique aroma. It emits a pleasant and distinct nutty fragrance when cooked, which is highly prized in Assamese cuisine.
- ✚ **Small and Translucent Grains:** The grains of Boka Saul rice are small, round, and translucent in appearance. They are typically smaller than the grains of most commercial rice varieties, giving it a unique visual appeal.
- ✚ **Natural Reddish or Brownish Hue:** The rice grains have a natural reddish or brownish hue. This natural coloration adds to its uniqueness and distinguishes it from the more common white rice varieties.
- ✚ **Indigenous and Heirloom Status:** Boka Saul rice is considered an heirloom variety, having been cultivated in Assam for centuries. Its indigenous status makes it an essential part of the cultural and culinary heritage of the region.
- ✚ **Resilience to Environmental Conditions:** This rice variety is well-adapted to the geographical and climatic conditions of Assam. It can withstand both floods and droughts, making it a resilient crop in an area prone to such natural disasters.
- ✚ **Role in Traditional Rituals:** Boka Saul rice holds a special place in Assamese culture and traditions. It is used in various rituals and ceremonies, including the Bihu festival, where it symbolizes prosperity and abundance.
- ✚ **Culinary Versatility:** Boka Saul rice is prized for its versatility in the kitchen. It is used to prepare a wide range of traditional Assamese dishes, including rice-based snacks, pithas (rice cakes), and desserts, due to its unique flavor and texture.

- ✚ **Organic and Sustainable Farming Practices:** Traditional farming methods are often employed in the cultivation of Boka Saul rice. Many farmers practice organic and sustainable farming to preserve the purity and unique characteristics of this rice variety.
- ✚ **Conservation Efforts:** In recent years, there have been concerted efforts to conserve and promote Boka Saul rice and other indigenous rice varieties. Seed banks, training programs, and marketing campaigns have been established to support the cultivation of these heritage grains.

Cultivation Practices

Boka Saul rice is primarily grown in the floodplains and low-lying areas of Assam. It is well-suited to the region's climate and geography, withstanding both floods and droughts. Farmers use traditional and sustainable cultivation methods, often practicing organic farming to preserve the purity and unique characteristics of this rice. It is cultivated mostly along the bank of river Brahmaputra (Sreenivasa et al., 2018). In the second and third weeks of June, rice for the Kharif season, also known as sali, is seeded. It is primarily grown in the lower Assam districts of Nalbari, Barpeta, Goalpara, Kamrup, Darrang, Dhubri, Chirang, Bongaigaon, Kokrajhar, Baksa, Darrang, etc. The Ahom soldiers used it as fuel earlier in the 17th century while they fought the Mughal army. The hundreds of farmers who toil in the fields of Assam every day still use it as fuel or a source of energy, and it has become a staple diet for them. Even now, the metropolitan population hasn't really caught on. Boka chaul uses a lot less gasoline because it doesn't need to be cooked like regular rice. One of the two organisations that applied for the GI in 2016 is Lotus Progressive Centre, whose founder and member is Hemanta Baishya. They claim that if you soak the rice in cold or lukewarm water for an hour or overnight, it would swell up like a jam and be ready for eating after you mix it with curd, bananas, and sugar. With this cuisine, the entire day may be taken care of. The higher grade bokachaul swells up in fifteen minutes as a result of these factors, suggesting that there may be variations in this grade as well.

Conclusion

Boka Saul rice is not just a staple food in Assam; it is a symbol of cultural identity and tradition. Its unique aroma, flavor, and role in Assamese cuisine make it an integral part of the region's culinary heritage. Efforts to conserve and promote Boka Saul rice are crucial not only for preserving this heritage grain but also for sustaining the livelihoods of local farmers and



ensuring food security in the face of modern agricultural challenges. As we celebrate the rich culinary diversity of India, Boka Saul rice undoubtedly deserves a special place in our hearts and kitchens.

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