



## Boka Chaul - A Magic Rice of Assam

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**Abstract:** Boka chaul is a popular landraces of Assam known for their cooking, nutrition and softness qualities. This rice is featured by its semi-glutinous trait with low amylose content ranging from 12 - 17%. It's an indigenous class of rice used for instant preparations. Its preparations are highly popular in community feasts and festivals in Assam. Boka chaul is popular for their especial property of preparation by just soaking it in water at room temperature and it swells up like a charm and ready for consumption after mixing with curd, banana and jiggery items. It is a group name attributed to the entity product with whole rice kernels processed through parboiling the rice grains of a special kind of winter rice called Boka dhan or Boka paddy. Because of their unique features, it has just recently got Geographical Indication (GI) tag in March, 2018 by the 'Government of India' Intellectual Property India (IPI) body.

**Key words:** Boka chaul, landraces, semi-glutinous, parboiling, Geographical Indication

### Introduction

Assam, located at the North East part of India is considerably rich in rice germplasm. It is being considered as one of the origins for rice as Assam has got wide spectrum of indigenous rice cultivars. In Assam and North-East Regions, the low to medium amylose content rice varieties are preferred for their major food purpose, and the waxy (0-8% amylose) and the intermediate/medium amylose percentage varieties are processed to obtain speciality products. The chakua rice is featured by its semi glutinous trait with amylose content ranging from 12-17%. It's an indigenous class of rice used for instant preparations. Its preparations are highly popular in community feasts and festivals in Assam. 'Boka Chaul' or 'Komol chaul' (soft rice) are prepared from this class of rice (Das et al., 2018). Boka Chaul, popular for their especial property of preparation by just soaking it in water at room temperature. It is a group name attributed to the entity product with whole rice kernels processed through parboiling the rice grains of a special kind of winter rice called Boka dhan or Boka paddy. Cultivation activities highlighting the area and the production of this class of winter rice (i.e., Boka dhan is endemic to a specific

agro-ecological zone (AEZ, Group V) called as the Lower Brahmaputra Valley Zone of Assam. Still use of Boka chaul for consumption is mostly confined to the same domain (GI 558, 2018).

It has been reported that even at the eleventh hour of arrival of any guest, or during the need of savouring homemade right dishes at any undecided moments, or at the time of guerrilla warfare in want of hurriedly consuming dishes during the bygone days of swords and arches, or, at the time of field works in agriculture crops at a distant places, Boka chaul was and has ever been the first preference that can easily be used without fear. The Boka Chaul cultivated largely for personal food by farmers, and is sold in farming areas for Rs 60 to 80 per kg, whereas it is sold at Rs 100 to 150 per kg across towns and cities. In Guwahati and other cities of North-East, it's mostly available during festive and winter seasons across all major departmental stores, including GNRC, SICEDM and NEDFi House. It is well known for its nutritious content and is specially recommended during pregnancy time. It is also consumed during hot and humid summer times as it gives cooling effect in the stomach.

## Cultivation

Boka Chaul is a Kharif season or winter rice or Sali which is sown in the second and third week of June. It is mostly cultivated in Nalbari, Barpeta, Goalpara, Kamrup, Darrang, Dhubri, Chirang, Bongaiagoan, Kokrajhar, Baksa, Darrang etc. Districts in lower Assam. Earlier in the 17th century, it served as fuel for the Ahom soliders while fighting the Mughal army. Even today, it works as fuel or source of energy for the hundreds of farmers who labour in the fields of Assam every day and for them it's become a staple food. The city dwellers or urban people haven't really caught on even now. Boka chaul requires very less fuel as this rice does not need to be cooked as normal rice!" speaks Hemanta Baishya, who is the founder-Member of Lotus Progressive Centre, one of the two organizations who applied for the GI in 2016. According them "Just soak the rice in cold or luke warm water for one hour or overnight, and it swells up like a charm and ready for consumption after mixing with curd, banana and jiggery items and with this food whole day can be sorted out. Among these also the higher grade boka chaul swells up in fifteen minutes and it means boka chaul might also have variability's among this group of rice.

## Boka Chaul - Speciality Qualities

Boka Chaul has ever been known for its 'zero-cooking' identity. This rice does not need boiling in water or cooking by pressure cooker at the time of preparation as the other kinds of rice require. It is mainly used in the preparation of traditional Assamese food items or cuisines called Lalpaan where Boka Chaul is generally eaten with curd/milk and jaggery/sugar along with other ingredients. Boka Chaul has always been the first preference that can be easily prepared without requiring any fuel. As cold water i.e. water at ambient temperature, would suffice in soaking the kernels and making them ready for consumption as food, Boka Chaul has a wide acceptability to be used anytime, anywhere. Because of this nature, Boka Chaul has metaphorically assumed another nomenclature - 'Magic Rice'. Due to this unusual and exclusive property of the rice, which is seemingly absent in any similar class of rice, it is widely recognized as 'Instant rice' or 'Soft rice' in the community. Boko chaul, which is already parboiled kernels prepared from the boka dhan group, is generally de-husked while storing. The chemical composition of the Boka Chaul is given in a Table 1.

**Table 1: Boka chaul chemical composition** ([http://www.cceindia.org/cee/pdf\\_Agriculture.pdf](http://www.cceindia.org/cee/pdf_Agriculture.pdf))

S. No.	Substances	Range (%)
1.	Moisture	5.50 - 5.98
2.	Ash	0.95 - 1.01
3.	Protein	5.50 - 8.50
4.	Crude fat	1.1 - 1.3
5.	Starch	58.0 - 60.0
6.	Amylose	9.0 - 14.0
7.	Amylopectin	45 - 58.0

\*Data obtained for the content of each parameter referred to g/100g sample analyzed.

## Boka Chaul - Processing and Preparations

The harvested paddy is parboiled and after boiling it is dried in the sun light for a day. If it is not dried in a single day, it starts rotten and become unfit for milling. So, it is important to have a thorough knowledge of the process. The process can only be executed during specific weather conditions as it requires 3 - 4 clear weather days and a bright sunshine on the 4th or 5th day. After drying, it can be stored up to 3 - 5 months and farmers take it for milling whenever needed for consumption. Traditional processing steps are given in Table 2.

**Table 2: Steps for the "Boka Chaul" processing (GI 558, 2018)**

S. N.	Steps	Description
1.	Soaking	Paddy is soaked in hot water overnight/paddy is soaked in water at room temperature for 2-4 hours /paddy is brought to boil in water in the previous night and left overnight in the same water to soaking is traditionally done in an iron vessel 'kerohi'.
2.	Parboiling	Soaked paddy or paddy as such is brought for 35-80 minutes till husk splits open slightly. For soaked paddy, boiling is done in the same water in which it was soaked, boiling is done in the 'kerohi' over wood fire traditionally.
3.	Draining and heaping of paddy	Water is drained and the boiled paddy is heaped on a colander made from bamboo to drain off excess water for 30-60 minutes.
4.	Drying	The boiled paddy is spread thinly to cool and dry in the sunshine. Turning over of paddy while complete drying is done compulsorily takes between 5-6 hours to dry fully. Sun drying is done on the same day. It takes between 5-6 hours to dry fully.
5.	Tempering	The sun dried paddy is tempered in shade for moisture equalization.
6.	Drying	The sun dried boiled paddy gives the boka chaul.

Boka Chaul is made by manually processing, a variety of sticky rice grown widely in Majuli - the world's largest deltaic island located amidst the ever-shifting sandbanks of the river Brahmaputra in Assam. The modification into "instant" rice occurs after harvested rice is soaked overnight, boiled and then sun-dried, and all this within twenty-four hours and this is one of the most underrated items of Assam; as it has only been traditionally consumed by local communities. It is cooked by soaking it in hot water overnight and consumes it the next day with onions, mustard oil or boiled potato and pickles. This subtly flavoured rice is also blended with curd/cream or jiggery and banana powder to create a breakfast favourite and popular sweet treat known as Jolpaan that is served on festive and auspicious days. Mixing this with other indigenous cereals such as chire (Flattened rice), xandoh (ground rice), muri (puffed rice) and Boka Chaul turns in another better-loved combination.

### Geographical Indication (GI) Tag

The indigenous boka chaul, which has got the Geographical Indication (GI) tag, and is being bestowed upon it by the Government of India' Intellectual Property India (IPI) body just recently on March 2018 (the Boka Chaul got featured in the GI Journal published by the GI Registry on 28 March this year 2018). This is the only product after Muga silk, Joha rice and Tezpur litchi to have earned the GI tag in Assam (Sreenivasa Rao, 2018). The scientific tests and analysis for Boka Chaul is going on from the last four years in consultation with Assam Agricultural University, Indian Council of Agricultural Research, Assam Science Technology and Environment Council and Biotechnology Department of Gauhati University.

### NGO - Obtained GI Tag

Since 2014, Baishya's Lotus Progressive Centre (LPC)-which is a local NGO engaged in the preservation and promotion of native variety of rice across 45 villages in and around Nalbari district (a Nalbari-based NGO that has been working specifically for the conservation and preservation of indigenous rice varieties since 1999) along with Simanta Kalita of Centre for Environment Education (CEE), Guwahati, has been involved in research and running scientific tests in order to obtain a GI tag for the rice. According to Lotus Progressive Centre, Nalbari having about 70,000 hectares of agricultural land of which 3,500 hectares (five percent) is mainly devoted for the cultivation of boka chaul. About one tonne boka chaul or 1.2-1.3 tonnes of rice are produced in a hectare. The GI tag makes sure that no other than those registered as authorised users (or at least those residing inside the geographic territory) are allowed to use or copy the popular product name. Boka Chaul belongs only to Assam, and thus they are trying to cultivate Boka Chaul in more quantities and commercialize it for the benefit of the local Assamese farmers.

### Unique Features of Boka Chaul

An indigenous variety from Assam that cooks on its own way, Komal Chaul is quickly emerging as a quirky and sustainable alternative to regular rice at a time when energy conservation is becoming a priority everywhere. It is known for its enriched nutrition and is eaten during summer because of their cooling effect. It is mostly used as part of the traditional cuisine with curd, jaggery, milk, sugar or other items and has gained a reputation as "magic or soft or komal" rice as it needs not to be cooked the traditional way.

Boka rice is short-grain variants with unique softness and it is a result of their low amylose content, a starch component that determines the hardness of rice food grains. Compared to the usual 20 - 25% in most of the regular rice varieties, it contains just 4 - 14 percent amylose. Based on studies by the Gauhati University's Biotechnology department, Boka saul has 10.73 percent fibre content and 6.8 percent protein. During floods and for travellers, space researchers, mountaineers, defence personnel etc, this is a great emergency food for obvious reasons.

### Breeding Prospects

Despite the advent of the modern high yielding rice varieties, helping Assam and North-East regions to achieve self-sufficiency in rice production, these "Boka Rice" are being mostly landraces but highly valuable and possess traits which are highly preferred by the farmers. Till now, these cultivars have not been cultivated outside the North-East regions, however, it has been reported that when the boka rice is grown outside the North-East, its speciality qualities are lost. This boka rice is mostly featured with long duration, photo-sensitive, lodging susceptibly, highly prone to pests and diseases and low yielding. Therefore, the focused breeding attention needs be paid towards the improvement of both quality and yield potential of these landraces to fetch high premium price in the market for local farmers.

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