

depend on the texture of chhana. For making good quality Rasogolla, chhana should have moderately soft and uniform texture. It shall show slight springiness when pressed with thumb. A small piece of chhana crushed to pasty consistency and rolled between palms of both hands, it should yield round ball of even surface and no cracks. Good quality chhana should not release or separate fat on kneading or working.

Buffalo milk is not preferred for making chhana because it yields a product of hard body and chewy texture. Chhana of such consistency will be difficult to convert into Rasogolla balls. Therefore, cow milk is always preferred for chhana making.

29.2.4 Sequence of observations

The first step in sensory of chhana is the examination of packaging material, which should be neat and clean and able to protect the product from environmental contamination. Then remove the packaging material and observe the colour and appearance of the product. Even the smallest defect should be noticed carefully. Simultaneously, inhale the odour of the product. For further assessment of flavour, take sufficient quantity of chhana into the mouth.

While rolling into mouth and chewing in between teeth, note the tactual and taste sensations. Finally expectorate the sample and note if any after taste persists Texture of chhana should be evaluated by: (a) pressing and rolling, small piece of chhana in between the forefingers and thumb to note the hardness stickiness, etc. and (b) spreading small mass of chhana on the palm of the hand with the thumb to observe uniformity, size and toughness of grains.

Table 29.1 Sensory score card for Chhana

storage under high humid conditions are other reasons for the contamination and growth.

4. Visible foreign matter/soiled: In many cases foreign matter, normally soil, is present in chhana. This can be detected by visually as well as by tasting the product in the mouth. Improper straining of milk and manufacture and packaging of chhana under open unsanitary conditions are main causes for this defect. Sometimes black or brown particles are also visible in chhana, which is due to localized burning of milk solids.

29.2.5.2 Flavour defects

1. Smoky: Though not very serious, this flavour defects is most common in chhana. This defect arises due to the manufacturing of chhana on a smoky wooden fire.

2. Burnt/cooked: This defect in chhana commonly develops as a result of uncontrolled heating of milk particularly at last stages.

3. Sour/acidic: This defect can be easily detected by the sense of smell and taste. It may be due to over acidification of milk, use of high strength coagulant solution. It may also be due to use of sour milk for making chhana or storage of chhana at ambient temperature for longer period.

4. Metallic: This defect can be detected easily by tasting the product and observing the mouth feel. The taste of products having metallic flavour resembles that perceived by tasting rusted iron. Metallic flavour defect is quite common in many Indian milk products.

5. Oxidized: Many times there is confusion between metallic and oxidized flavour. But pure oxidized flavour develops due to the oxidation of some fatty constituents of channa. The oxidized is characterized by a quick taste reaction when the sample is taken in the mouth and gives sensation of paperboard, tallowiness, oily etc. The oxidized flavour is also persistent after the sample is expectorated.

6. Rancid: The flavour resembles butyric acid. Rancidity results from the hydrolysis of the fat due to lipase enzyme secreted by bacteria or those in the milk itself. Since the milk intended for chhana making is heated up to boiling, the enzyme is completely inactivated. So this flavour defect in chhana occurs rather infrequently. However, if the milk is already rancid, it will produce a rancid chhana.

7. Stale: This is normally observed in the products stored for a longer under refrigerated conditions. The product with this defect does not have the typical pleasant flavour present in the fresh sample. Chhana may also produce this defect.

29.2.5.3 Texture defect

1. Hard/ Dry body: Chhana with firm body feels solid and offers resistance to pressure. Chhana with hard body gives serious problem in kneading and making Rasogolla balls. The dry chhana has not cohesiveness and when meshed to form balls, it breaks into small

Body & Texture	
-	Soft and spongy
+	Slightly hard and loose
++	Hard, less spongy
+++	Too hard, lacks sponginess, decomposed
Taste and smell	
-	Pleasant, with moderate sweetness
+	Slightly caramel
++	Caramelized slightly less sweet
+++	Caramelized, lacks sweetness
Appearance and colour	
-	White and round
+	Slightly brown and round
++	Brown and slightly flat
+++	Brown, flat

29.4 Sandesh

Sandesh is a popular chhino based sweet of eastern India and Bangladesh. It is broadly classified in 3 main varieties:

1. Low moisture / Hard grade – Kara Pak
2. Medium moisture / Soft grade – Naram Pak
3. High moisture – Kaccha gola

Soft grade is the most selling variety in India. There are wide differences in the chemical composition, microbiological qualities and sensory characteristics of market samples. The variation in the quality of milk and methods of preparation are responsive for changes in the quality of finished product.

29.4.1 Sensory characteristics of *sandesh*

Table 29.4 (a) Soft grade

Sr.No.	Quality Attributes	Desirable Attributes	Undesirable Attributes
1	Colour	Yellowish white / white brown when Nolen gur is added / Chocolate and uniform	Dark shadow, spotting, non-uniform and variegated burnt
2	Appearance	Clean, attractive, uniform shape and size, free from any foreign matter and mechanical holes	Irregular, non-uniform, dry surface, presence of free fat, foreign matter and mechanical holes.
3	Body	Soft and cohesive	Hard, crumbly, brittle, lacking cohesiveness, oily, gummy
4	Texture (Mouth feel)	Smooth, little grainy and moist	Larger grain size, tough grains and open
5	Aroma	Slightly cooked, caramelized, creamy, Nolen gur smell if added	Raw channa, bland, over caramelized, burnt,

			stale, oxidized, rancid, smoky, putrid and fermented
6	Taste	Sweet, fresh, rich, creamy, imparts delicate and pleasant sensation, pleasant gur taste if nolen gur added.	Sour, raw channa, dry, stale, oxidized, rancid, burnt, smoky, putrid, bitter, salty, pungent and lacks pleasant sensation

Table 29.4 (b) Hard Grade

Sr.No.	Quality Attributes	Desirable Attributes	Undesirable Attributes
1	Colour	White, brown when nolen gur is added	Same as in Soft grade
2	Appearance	Clean, moist, presence of bigger grains of irregular shape and size	Dry and oily surface, presence of visible dirt
3	Body	Soft, weak, brittle, lacks cohesiveness and compactness	Hard, gummy and sticky
4	Texture	Coarse, irregular grain shape and size, melts easily on tongue	Smooth, fine and tough grains
5	Aroma	Creamy, mildly cooked, fresh, nolen gur smell if added	Same as in Soft grade
6	Taste	Sweet, fresh, creamy, when nolen gur added gives typical taste of gur	Same as in soft grade

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