

Sugar, Butter, Cashew What's In Your Cookie?

In India, like in the rest of the world, cookies are one of the most common snacks. There could be over 500 variants of cookies including traditional, handmade biscuits. For many, cookies are a kind of all-time and anytime food that gives instant energy and refreshing nourishment. From 'plain salted' and 'plain sweet' to more refined versions blended with dry fruits, to varieties with flavours such as cocoa, chocolate and cardamom, it is a broad platter to choose from.



One of the largest-selling flavours in Indian households is the butter bite. Hence, *Consumer VOICE* set out to collect samples of eight brands of butter-bite biscuits, to find out what makes them the most preferred taste of India, as also to see if these brands kept their promise of 'not just taste but also health' of their consumers.

A long time ago, when life had just started to become complex and fast-paced, and humans had just created ships and started to sail, cookies were invented. As sailors needed easy-to-carry, easy-to-store as well as long-lasting foods for their journeys, they started making a paste of flour dough which was dried and hardened (the process later became baking) and cut into pieces. These pieces were eaten with tea, butter, honey, pepper or pickles. Experiments kept happening, these pieces of hardened dough kept evolving, became lighter and tastier, and spread across the globe in hundreds of forms.

And when life started to become even more complicated and fast, and everything became instant, a few smart minds packed these pieces of dough and made them available at

almost every grocery store you visited. Cookies continue to be improvised, and their varieties are expanding. Some of these have been branded, packed, and make their way to your kitchen cabinets and coffee tables.

Top cookie brands without cashew nuts	
Brand	Rank
McVitie's	1
Unibic	2
Priyagold	3
Top cookie brands with cashew nuts	
Brand	Rank
Sunfeast	1
Britannia	2
Parle	3
Anmol	4
Tasty Treat	5

What type is your favourite?

Your cookie is either sweet or salty, or is a filled and coated biscuit. The essential ingredients to make all of these cookies are, namely, flour (maida), sugar, fat or shortening, and water. The healthier forms of biscuits are now replacing maida with whole grain or multi-grain dough. These biscuits are high on fibre content.

It is difficult to classify biscuits based on chemical composition and processing methodologies due to overlap. On the basis of sensory attributes, the different varieties can be broadly classified into five categories: 1) sweet, 2) semi-sweet, 3) crackers, 4) cookies, and 5) specialty biscuits.

Across India, there could be over 500 variants of cookies including

Comparative Test

traditional, handmade biscuits. Some of the basic cookies include 'plain salted' and 'plain sweet' as well as coconut-flavoured cookies. The more refined versions are blended with dry fruits including cashews, almonds, pistachios and peanuts. One of the largest-selling flavours in Indian households is the butter bite.

Against this backdrop, *Consumer VOICE* picked up samples of eight major brands of butter bite biscuits and tested them to find out what makes them the most preferred taste of India, as also to see if these brands kept their promise of 'not just taste but also health' of their consumers.

Test Parameters

The brands selected for the test were finalized based on market research conducted in metro cities. The testing was carried out on various parameters: namely sensory (organoleptic) tests, total fat (saturated and trans-fat), cholesterol, protein, sugar, carbohydrate, energy value, crude fibre, extracted nuts, and microbiological tests.



What lies in your cookie?

VOICE tested eight most popular as well as regular-selling brands of butter cookies. Four brands claimed cashew nut quantity to be 2-6 per cent. In the tables that follow, you will be able to compare the claims that biscuit brands make on their packs vis-à-vis the actual results from the labs that tested random samples of biscuits of each of these brands.

Brand	Claims on cashew nuts
Unibic butter cookies	May contain traces of nuts
McVitie's butter cookies	Not claimed
Parle 20-20	4%
Sunfeast cashew cookies	3.5 %
Britannia Good Day	4%
Priyagold Butter Bite Premium	Not claimed
Anmol Butter Bite kaju	2%
Tasty Treat Butter cashew cookies	6%

How are they wrapped, rolled and packed?

Biscuits should be packed in clean, sound containers, made of tin plate, cardboard, paper, or other material in such a way that it protects them from breakage, contamination, absorption of moisture and seepage of fat from the biscuits into the packing materials. The pack should not impart/induce any objectionable odour or taste into the biscuits. The biscuits should not come in direct contact with the packaging material other than grease-proof or sulphite paper, cellulose film, aluminium coating/laminates, food-grade plastics, or any other non-toxic packing material that may be covered with a moisture-proof film, waxed paper, or moisture-proof laminates. The inner layer coming in contact with biscuits should be of food-grade quality, or coated paper. The biscuits in tins should not come in direct contact with non-lacquered metal walls.

Scores on the Basis of Packaging

Brand	Observation	Score out of 3
Unibic	Packed in thermoplastic and cardboard box	3
McVitie's	Packed in thermoplastic	2.5
Parle	Packed in thermoplastic	2.5
Sunfeast	Packed in thermoplastic	2.5
Britannia	Packed in thermoplastic	2.5
Priyagold	Packed in thermoplastic	2.5
Anmol	Packed in thermoplastic and hard cardboard box	3
Tasty Treat	Packed in thermoplastic	2.5

What should be on the packet?

The following information shall be clearly and indelibly marked on the label of each container/packet:

- Name of product
- Trade name, if any
- Name and address of manufacturer
- Batch or code number
- Net quantity in gram or kilogram
- List of ingredients, in descending order of their composition by quantity
- The statement with respect to addition of permitted colour and flavours
- Month and year of manufacture

- i The words 'Best before' (month and year to be indicated)
- j Any other requirements as specified under Legal Metrology (Packaged Commodities) Rules, 2011, and Food Safety & Standards Act and Rules
- k Standard mark, if any
- l Nutritional information
- m Veg./non-veg. mark

Scores on the Basis of Information Provided on Packets

Brand	Observation	Score out of 5
Unibic	All information provided	5-2.5 = 2.5*
McVitie's	Storage instruction not given	4.5
Parle	All information provided	5-2.5 = 2.5*
Sunfeast	All information provided	5
Britannia	Storage instruction not given	4.5
Priyagold	All information provided	5
Anmol	All information provided	5
Tasty Treat	All information provided	5

*50% weightage deducted due to misleading claims

Claimed Quantities of Butter and Cashew Nuts

Brand	Quantity of butter added (%)	Cashew nuts added
Unibic	15	May contain traces of nuts
McVitie's	3.0	Not claimed
Parle	0.3	4 %
Sunfeast	0.43	3.5%
Britannia	4.2	4%
Priyagold	Not mentioned	Not claimed
Anmol	Not mentioned	2%
Tasty Treat	3.0	6%

Noted:

1. Unibic claimed to be adding 15% butter – the highest among the brands tested. Parle and Sunfeast had the lowest – being less than 1%.
2. Priyagold and Anmol did not declare butter quantity.
3. Parle claimed to be butter cookies but added only 0.3% butter, while Sunfeast had only 0.43% butter.
4. Brand Unibic's claim of 'may contain traces of nuts' is misleading.

Scores on the Basis of Actual Nuts Extracted during Test

Brand	Claims on cashew nuts	Results (%)	Score out of 6
Unibic butter cookies	May contain traces of nuts	Not found in significant quantity	0.6
McVitie's butter cookies	Not claimed		-
Parle 20-20	4%	4.10	4.26
Sunfeast cashew cookies	3.5%	3.62	3.97
Britannia Good Day	4%	4.16	4.30
Priyagold Butter Bite Premium	Not claimed	-	-
Anmol Butter Bite kaju	2%	2.0	3.0
Tasty Treat Butter cashew cookies	6%	6.54	5.7

Moisture in your cookie

As per Bureau of Indian Standards, moisture in biscuit shall not be more than 5.0%.

Brand	Moisture (%)	Score out of 3
Unibic	2.92	2.12
McVitie's	0.64	3.00
Parle	1.97	2.40
Sunfeast	4.05	1.80
Britannia	2.40	2.28
Priyagold	2.20	2.34
Anmol	2.79	2.16
Tasty Treat	2.38	2.29

Noted:

All the brands were found containing moisture in the range of 0.64% to 4.05%, which is within the permissible limit of 5.0%.

Dirt and dust in your cookie?

Acid insoluble ash indicates the presence of sand, dirt and dust. As per the Indian Standards, acid insoluble ash content in biscuits should not be more than 0.05%, and as per Food Safety and Standards Authority of India (FSSAI), not more than 0.1%.

Brand	Results (%)	Score out of 3
Unibic	0.02	2.4
McVitie's	<0.01	3.0
Parle	0.02	2.4
Sunfeast	0.01	2.7
Britannia	0.02	2.4
Priyagold	<0.01	3.0
Anmol	<0.01	3.0
Tasty Treat	0.02	2.4

Noted:

All the brands were well within the prescribed limits.

Is your cookie making you fat?

TOTAL EDIBLE FAT

Most of the brands contained fat in the form of edible vegetable fat as well as fat of the added butter. The total extracted fat is reported in the table here:

Comparative Test

Brand	Declared value (gm/100g)	Results (gm/100g)	Score out of 8
Unibic	24.2	23.46	5.81
McVitie's	18.2	19.39	7.44
Parle	22.7 (veg. fat only)	21.09	6.76
Sunfeast	21.2	21.84	6.46
Britannia	23	21.35	6.66
Priyagold	22.62	21.06	6.78
Anmol	20.1	19.99	7.2
Tasty Treat	24.0	23.02	5.99

Noted:

Lower fat is good for the consumer. Thus, brand McVitie's, which has the lowest fat, scored highest, followed by Anmol. Unibic scored lowest.

ACIDITY OF EXTRACTED FAT

As per the Indian Standards, acidity of extracted fat shall not be more than 1.2 and 1.5 (as per FSSAI).

Brand	Results (%)	Score out of 3
Unibic	0.44	2.49
McVitie's	0.48	2.43
Parle	0.42	2.52
Sunfeast	0.57	2.30
Britannia	0.56	2.31
Priyagold	0.50	2.40
Anmol	0.48	2.43
Tasty Treat	0.36	2.69

Noted:

The results of acidity of extracted fat obtained are well within the limits and indicate that the quantity of fat used was good.

TRANS-FATTY ACID

Trans-fat or trans-fatty acids are not desired and should be minimum or absent. They are produced by heating liquid vegetable oils in the presence of hydrogen. Trans-fats are even worse for cholesterol levels than saturated fats because they raise LDL (low density lipoprotein) 'bad' cholesterol and lower HDL (high density lipoprotein) 'good' cholesterol.

Like saturated fats, trans-fats raise the level of 'bad' cholesterol and increase the risk of heart disease. Unlike saturated fats, though, trans-fats lower 'good' cholesterol. Consumer awareness has led many manufacturers to reformulate products to reduce or eliminate trans-fats. Be careful to choose products that do not use trans-fats.

Trans-fat was found to be below <0.01% in all the tested brands, making them safe for consumption.

CHOLESTEROL

Cholesterol is best known for its association with cardiovascular disease. Cholesterol is especially bad because it increases the risk for nervous system problems, gall bladder stones and perhaps even cancer. It may also affect brain synapse connectivity. Overall, cholesterol is expected to be as low as possible.

Brand	Declared value	Results, mg/100g	Score out of 4
Unibic	15mg	16.23	1.94
McVitie's	40mg	40.83*	0.8
Parle	Not declared	1.4	4
Sunfeast	Not declared	<1	4
Britannia	13mg	2.53	3.95
Priyagold	1.34mg	2.63	3.92
Anmol	0mg	3.34	3.85
Tasty Treat	Not declared	<1	4

*The consumer should be cautious about over-consumption due to higher level of cholesterol.

Noted:

The presence of cholesterol in this category is due to addition of butter as well as cashew nuts.

SATURATED FATTY ACID

Saturated fatty acids are fats that remain solid at room temperature. Saturated fats are derived from animal fat as well as vegetable fat. These fats directly raise total and LDL (bad) cholesterol levels. Saturated fats should be on the lower side.

Brand	Declared value	Results (g/100g)	Score out of 7
Unibic	14.4g	15.23	2.66
McVitie's	0.76g	9.96	3.54
Parle	Not declared	9.85	4.97
Sunfeast	Not declared	10.14	4.87
Britannia	11g	10.55	4.67
Priyagold	Not declared	9.92	4.94
Anmol	10.3g	9.44	5.15
Tasty Treat	Not declared	13.51	3.43

Voice went to a couple of laboratories for help with identifying and quantifying the butter and the oil separately from total fat in biscuits. The answer was unanimous: currently there was no method to do this.

Does it contain healthy protein?

Protein plays an important role in cellular maintenance, growth and functioning of the human body.

Brand	Declared value	Results (g/100g)	Score out of 8
Unibic	7.4	7.32	6.92
McVitie's	7.7	6.82	6.44
Parle	6.9	7.84	7.44
Sunfeast	7.6	6.72	6.32
Britannia	7.5	7.22	6.84
Priyagold	7.98	6.24	5.84
Anmol	8.4	7.45	7.06
Tasty Treat	4.0	6.09	5.70

How sweet is your cookie?

Most of the biscuits contain moderate to high amounts of sugar. This sugar gives a sudden spike of energy but does not fill us. Also, diabetics have to be careful that the biscuit they eat is low in sugar. One can check the amount of sugar by checking the package. The Indian Standards have set no specific limit but a higher quantity of sugar is not desirable.

Brand	Declared value	Results (g/100g)	Score out of 5
Unibic	25.2	24.02	3.6
McVitie's	24.9	22.18	4.05
Parle	21.8	21.49	4.21
Sunfeast	24.4	22.24	4.05
Britannia	24	22.89	3.9
Priyagold	11.15	22.12	4.08-2 = 2.08*
Anmol	10.9	23.15	3.84-2 = 1.84*
Tasty Treat	28.0	27.36	2.90

*The sugar content in brands Priyagold and Anmol was found to be twice their declared value.

Total carbohydrates

Indian Standards do not have any prescribed requirement for carbohydrate since a wide variety of biscuits is produced.

Brand	Declared value	Results (g/100g)	Score out of 4
Unibic	65.4	65.45	3.94
McVitie's	68.9	70.71	3.44
Parle	67.6	68.04	3.70
Sunfeast	68.4	66.18	3.88
Britannia	64.0	67.97	3.70
Priyagold	68.38	69.45	3.57
Anmol	68.0	68.47	3.65
Tasty Treat	57.0	67.36	3.74

Noted:

The results are between 65.45 and 70.71 per 100g. We have considered lower value of carbohydrate as better.

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Energy value

There is no calorific value requirement prescribed in Indian Standards.

Brand	Declared value	Results (kcal/100g)	Score out of 5
Unibic	509	512.6	4.30
McVitie's	469	466.6	4.98
Parle	502	493.0	4.59
Sunfeast	495	501.3	4.48
Britannia	493	494.9	4.58
Priyagold	492	484.0	4.75
Anmol	486	481.9	4.75
Tasty Treat	460.0	496.3	4.55

Crude fibre

The source of crude fibre is wheat flour. Crude fibre was found in insignificant quantity in all the brands tested.

Microbiological tests

Microbiological contamination is a very serious issue for food products.

TOTAL PLATE COUNT

Brand	Results (per gram)	Score out of 3
Unibic	20	2.8
McVitie's	<10	3.0
Parle	40	2.6
Sunfeast	10	2.9
Britannia	10	2.9
Priyagold	<10	3.0
Anmol	20	2.8
Tasty Treat	10	2.9

Noted:

All the brands were found safe in terms of microbial contamination.

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All the tested brands were found free from E. coli bacteria.

Sensory tests

The sensory panel tests for the eight biscuit brands were conducted on various criteria/attributes including colour/appearance, flavour/odour, taste, after-taste feeling, and overall acceptance (irrespective of the price). These were conducted in the laboratory with trained panel members under the supervision of experts, as well as with external users.

Brand	Score out of 24
Unibic	19.52
McVitie's	19.73
Parle	17.87
Sunfeast	19.42
Britannia	18.85
Priyagold	15.92
Anmol	17.85
Tasty Treat	14.67

Key findings

Total fat (as vegetable oil and butter): Ranges from 19.39% to 23.46%. McVitie's and Anmol have the lowest percentage of total fat, and Unibic and Tasty Treat the highest.

Protein: Found in the range of 6.09% to 7.84%. The highest quantity is in Parle and Anmol, and the lowest in Tasty Treat and Priyagold.

Sugar: Sugar quantity is in the range of 21.49% to 27.36%. Tasty Treat and Unibic have the highest quantity, and Parle and McVitie's the lowest.

Carbohydrate and energy value: Carbohydrate level is highest in McVitie's and Priyagold, and lowest in Unibic and Sunfeast. Energy value is highest in Unibic and Sunfeast, and lowest in McVitie's and Anmol.

Butter: Parle claims to be 'butter cookies' but adds only 0.3% butter. Sunfeast claims 0.43% butter.

Safety (cholesterol, saturated and trans-fat, acidity of insoluble ash, extracted fibre and microbiological contamination): Cholesterol is in varying quantity from brand to brand, as are trans-fats and saturated fats. All the brands are free from microbiological contamination.

Cashew nuts: Most of the brands claim to contain crushed pieces (granules) of cashew nuts. The most quantity has been found in Tasty Treat (6.54%) and the lowest in Anmol (2%). Brand Unibic's claim of 'may contain traces of nuts' is confusing.

In terms of overall performance in the test, in the 'non-cashew nut' category, McVitie's emerges on the top, followed by Unibic and Priyagold in the second and third positions, respectively.

In the 'cashew nut' category, Sunfeast emerges as the top butter-cookie brand, followed by Britannia and Parle in the second and third positions, respectively.

COMPARATIVE PERFORMANCE SCORE OF BISCUITS/COOKIES (WITH BUTTER AND/OR CASHEW NUT)

Brands Parameters	Without Cashew Pieces				With Cashew Nut Pieces				
	Weightage %	McVitie's	Unibic	Priyagold	Sunfeast#	Britannia#	Parle	Anmol	Tasty Treat
Quantity,gm		75	135	200	165	185	195	180	66
MRP (Rs)		12	25	20	20	25	19	20	14
Cost per 100 gram (Rs)		16.00	18.52	10.00	12.12	13.51	9.74	11.11	21.21
Packing	3	2.5	3	2.5	2.5	2.5	2.5	3.0	2.5
Marking	5	4.5	2.5	2.0Ω	5	4.5	2.5 Ω	2.0 Ω	5
Physicochemical Tests									
Net weight	2	2	2	2	2	2	2	2	2
Moisture	3	3.0	2.12	2.34	1.80	2.28	2.40	2.16	2.29
Acid insoluble ash	3	3.0	2.4	3.0	2.7	2.4	2.4	3.0	2.4
Acidity of extracted fat	3	2.43	2.49	2.40	2.30	2.31	2.52	2.43	2.69
Fat	8	7.44	5.81	6.78	6.46	6.66	6.76	7.20	5.99
Protein	8	6.44	6.92	5.84	6.32	6.84	7.44	7.06	5.70
Total carbohydrate	4	3.44	3.94	3.57	3.88	3.70	3.70	3.65	3.74
Energy value	5	4.98	4.30	4.75	4.48	4.58	4.59	4.75	4.55
Total sugar	5	4.05	3.6	2.08 Ω	4.05	3.90	4.21	1.84 Ω	2.90
Cholesterol	4	0.8	1.94	3.92	4	3.95	4	3.85	4
Saturated fatty acid	7	3.54 Ω	2.66	4.94	4.87	4.67	4.97	5.15	3.43
Trans fat	4	4	4	4	4	4	4	4	4
Extracted nuts	6	NA	NA	NA	3.97	4.30	4.26	3.0	5.7
Microbiological tests									
Total plate count	3	3.0	2.8	3.0	2.9	2.9	2.6	2.8	2.9
E.coli	3	3	3	3	3	3	3	3	3
Sensory tests*	24	19.73	19.52	15.92	19.42	18.85	17.87	17.85	14.67
Total score	94/100	77.85/94	73.0/94	72.04/94	83.65	83.34	81.72	78.74	77.46
Overall score (%)§	100 %	83	78	77	84	83	82	79	78

Ratings: >90 – Very good *****, 71-90- Good****, 51-70- Average ***, 31-50- Poor **, <30 – Very Poor*

*Sensory tests include attributes such as colour and appearance, flavour/odour, taste, after-taste feeling and visual defects

#Brands Sunfeast and Britannia, though not claiming to be butter-bite biscuits, added 0.43% and 4.2% butter, respectively

Ω Weightage detected due to misleading/wrong claims as mentioned in key findings

§ Rounded-off values: <0.5 same value, ≥ 0.5 next digit assigned

NA: Not applicable