



Digestive Biscuits

Look for the ones with the most dietary fibre

Digestive biscuits are expected to be a rich source of dietary fibre and in the comparative tests we carried out on nine brands, this parameter was given the highest weightage. For most people, digestive biscuits are a good alternative to cookies and snacks that contain only white flour and sugar. At the same time, there are standards to abide by when it comes to quality and safety, and not all the brands out there may pass muster. Brands also tend to make their own particular claims to stand out and more often than not, the truth emerges only when we check these against bare facts and numbers.

A Consumer Voice Report

We tested nine leading brands of digestive biscuits on various quality, safety and acceptability parameters that are crucial in determining whether the product is safe for consumption at all. As per our standard practice, we undertook market research to identify the popular and regular-selling brands of digestive biscuits across the country.

The key parameters for which the biscuits were tested included total dietary fibre, energy, protein, carbohydrates, total sugar and total fats, acid-insoluble ash and moisture. A major health-related parameter was microbiological safety. We conducted tests for total plate count (TPC) and *E. coli*. The testing was conducted at an NABL-accredited laboratory.

The samples were tested as per specifications laid down by Indian Standard IS: 1011 and FSS Regulations, 2011.



**CV RECOMMENDATION | TOP PERFORMER |
VALUE FOR MONEY
Priyagold**



Key Findings

- Based on the overall test findings, Priyagold is the top performer. It is also the value-for-money brand (Rs 20 for 200 gm pack).
- In the sensory panel tests, Anmol was the most liked brand and was followed by Priyagold and Cremica. The least preferred brands were Dukes and Parle.
- Dietary fibre was highest in Patanjali (7.1 per cent), followed by Priyagold with 6.6 per cent. However, the dietary fibre in Patanjali was much lower than their claim of 12.48 per cent.
- Dietary fibre was lowest in Cremica (4.3 per cent).
- The highest amount of protein was found in Priyagold (8.6 per cent); it was lowest in Cremica (7.0 per cent).
- Fat was found highest in Dukes (23.5 per cent) and Unibic (23.5 per cent), and lowest in Anmol (15 per cent). Most of the brands have used palm oil.
- Energy value was highest in Dukes (499.9 kcal/100 gm) and lowest in Anmol (458.6 kcal/100 gm).
- Carbohydrates percentage was highest in Anmol (73.4) and lowest in Unibic (63.8).
- Sugar content was highest in Anmol (22.5 per cent) and lowest in Britannia (17 per cent). Consume less sugar, particularly if you are an elderly person or a diabetic.
- Cremica (370 cfu/100 gm) and Anmol (310 cfu/100 gm) were found to have a slightly higher total plate count. However, Indian Standard has not specified any limit for TPC.

'Biscuit' is a term used for a variety of primarily flour-based baked food products. It covers a large variety of sweet, salted, filled and coated varieties made from dough containing certain essential ingredients: namely flour (maida), sugar, milk fat, edible oil, milk and milk products, leavening agent and water. It is difficult to classify biscuits based on chemical composition and processing methodologies due to overlap. However, differences can be distinguished by their sensory attributes.



Comparative Test

BRANDS

Rank	Total Score out of 100 (rounded off)	Brand	Type	MRP (Rs)
1	89	Priyagold	Digestive biscuit	20
2	88	Patanjali	Digestive cookies	50
3	87	Unibic	Oatmeal digestive cookies	40 (buy 1, get 1 free)
4	86	Britannia	Nutri choice digestive	20
5	85	McVitie's	Digestive biscuit	20
5	85	Anmol	Digestive biscuit	20
6	83	Dukes	Digestive	20
7	81	Parle	Digestive biscuit	20
8	80	Cremica	Digestive biscuit	20

Score Rating: >90: excellent*****, 71-90: very good****, 51-70: good***, 31-50: average**, up to 30: poor*



TESTED

	Net Weight (gm)	Cost per 100 gm, in Rs	Best before (months)	Manufactured/Marketed by
	200	10	9	Surya Food and Agro Ltd
	250	20	6	Patanjali Biscuits Pvt. Ltd
	150	27	6	Unibic Biscuits India Pvt. Ltd
	100	20	6	Britannia Industries Ltd
	100	20	9	United Biscuits Pvt. Ltd
	100 + 20 gm free	20	6	Anmol Bakers Pvt. Ltd
	100 gm	20	9	Ravi Foods Pvt. Ltd
	100 gm	20	6	Parle Biscuits Pvt. Ltd
	150 gm (100 + 50 gm free)	20	9	Mrs. Bector's Food Specialties Ltd

Dietary fibre includes all parts of plant foods that our body cannot digest or absorb. Unlike other food components such as fats, proteins, or carbohydrates that our body breaks down and absorbs, fibre is not digested. Instead, it passes relatively intact through our stomach, small intestine, colon, and out of our body. Dietary-fibre requirement can be met by adopting a diet that incorporates plant-origin foods including fruits, vegetables and grains.

The main role of fibre is to keep the digestive system healthy. A high-fibre diet offers many health benefits, which include:

- Normalising bowel movements
- Maintaining bowel health
- Lowering of cholesterol levels
- Helping control blood sugar levels
- Aiding in achieving healthy weight

Consuming more than the recommended in a day can be unpleasant for you. Getting too much fibre in your diet too quickly can cause undesirable symptoms in your gut, including bloating, gas and cramping. Add more fibre to your diet in small steps to avoid adverse effects.

Recommended Dietary Allowance (RDA) for Dietary Fibre

Children

1 year–3 years	4–8 years
19 gm/day	25 gm/day

Older children

Male (9–13 years)	Female (9–13 years)	Male (14–18 years)	Female (14–18 years)
31 gm/day	26 gm/day	38 gm/day	26 gm/day

Adults

Male (19–50 years)	Female (19–50 years)	Male (>50 years)	Female (>50 years)
38 gm/day	25 gm/day	30 gm/day	21 gm/day

Pregnancy/Lactating mothers

Pregnancy (19–50 years)	Lactating (19–50 years)
28 gm/day	29 gm/day

Source: National Institute of Nutrition

Comparative Test

Who Has Claimed What

Brand	Claim
Anmol	-
Britannia	High fibre
Dukes	High fibre, zero cholesterol, trans fat-free
McVitie's	High fibre, zero cholesterol, trans fat-free
Patanjali	100% atta, no cholesterol, no maida, zero trans fat
Parle	No trans fat, high fibre, vitamins and minerals
Priyagold	No artificial colour or flavours, zero cholesterol, trans fat-free
Unibic	Low salt
Cremica	High fibre, zero cholesterol, trans fat-free

TEST RESULTS FOR PHYSICOCHEMICAL PARAMETERS

Total Dietary Fibre | Energy | Protein | Carbohydrates | Acid-Insoluble Ash | Acidity of Extracted Fat | Moisture

◆ Total Dietary Fibre

Dietary fibre has many health benefits. In addition to being important for the digestive system, dietary fibre can also reduce one's risk for heart disease, diabetes and some cancers, and help in weight control.

- Dietary fibre was highest in Patanjali (7.1 per cent), followed by Priyagold with 6.6 per cent. It was lowest in Cremica (4.3 per cent). It may be noted that dietary fibre in Patanjali was lower than their claim of 12.48 per cent.

◆ Energy

Energy value is the amount of calories which our body obtains from food. While there is no requirement prescribed in the national standards, energy value is expected to be higher in biscuits.

- Among the tested brands, energy value was highest in Dukes (499.9 kcal/100 gm) and lowest in Anmol (458.6 kcal/100 gm).

◆ Protein

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

- The highest amount of protein was found in Priyagold (8.6 per cent); it was lowest in Cremica (7.0 per cent).

◆ Carbohydrates

Carbohydrates are a source of energy. No requirement for carbohydrates has been specified in the Indian Standard because of the wide variety of biscuits produced.

- Carbohydrates percentage was highest in Anmol (73.4) and lowest in Unibic (63.8).

Total Sugar

Sugar is added to biscuits to enhance their taste. It is the sugar that causes a sudden spike in energy. Indian Standard has not prescribed a specific limit but a higher quantity of sugar is not desirable. In particular, diabetics have to be careful about choosing biscuits that are low in sugar. You can check the amount of sugar by reading the details given on the label.

Sugar was highest in Anmol (22.5 per cent) and lowest in Britannia (17 per cent).



Total Fats

Fats are sources of essential fatty acids, an important dietary requirement. Fats play a vital role in maintaining healthy skin and hair, insulating body organs against shock, maintaining body temperature, and promoting healthy cell function.

There are saturated and unsaturated fats. Eating a lot of saturated fat increases the level of bad cholesterol (low-density lipoproteins, or LDL) in the blood. Both saturated fat and trans fats can raise the levels of total cholesterol and bad cholesterol in the blood. And it is generally acknowledged that high levels of LDL place you at greater risk of heart disease.

Unsaturated fats are of two kinds: monounsaturated fats (MUFA) and polyunsaturated fats (PUFA). MUFAs lower the level of bad cholesterol (LDL) in the blood and raise the good cholesterol (HDL). PUFAs, on the other hand, reduce both the good and the bad cholesterol.

All the biscuit samples had fat percentages close to their declared values. Fat was highest in Dukes and Unibic (23.5 per cent each) and lowest in Anmol (15 per cent).

◆ Acid-Insoluble Ash

Acid-insoluble ash indicates the presence of sand, dirt and dust. As per the Indian Standard, acid-insoluble ash in biscuits should not be more than 0.05 per cent; as per FSS Regulations, it should not be more than 0.1 per cent.

- Acid-insoluble ash was found within the specified limit (0.05 per cent).

◆ Acidity of Extracted Fat

The acidity of extracted fat in biscuits is greatly influenced by the germ-oil content and acidity in the flour. You would have noticed that fried snacks that have been stored for a long time give off a bad smell and taste. It indicates rancidity. Biscuits turn rancid either when the fat used in processing is rancid or if the biscuit is not fresh.

As per Indian Standard, acidity of extracted fat shall not be more than 1.2 per cent; as per FSS Regulations, it shall not be more than 1.5 per cent.

- All the brands fell within the specified limit (1.2 per cent).

◆ Moisture

Moisture generally refers to the presence of water in a product. The texture, taste, appearance and stability of food products depend on the amount of water they contain. It may be noted that biscuits with less amount of moisture is better as it translates into a longer shelf life.

As per Indian Standard, moisture content in biscuits shall not be more than 5.0 per cent by mass.

- Moisture content in all the brands was within the specified limit.
- The lowest moisture content was in Patanjali (1.9 per cent), followed by Priyagold (2.0 per cent). Parle was found with highest moisture content (4.8 per cent).



PHYSICOCHEMICAL

Parameter ↓	Weightage (%)	Priyagold	Patanjali	Unibic	
Total dietary fibre	20	17.20	18.20	17.00	
Energy	10	9.13	9.17	9.93	
Protein	9	8.46	6.98	7.79	
Carbohydrates	6	4.58	4.76	3.98	
Acid-insoluble ash	5	4.80	4.20	4.40	
Acidity of extracted fat	5	4.55	4.70	4.70	
Moisture	5	4.50	4.55	4.10	

FOR MICROBIOLOGICAL ACTIVITY (TOTAL PLATE COUNT, E. COLI)

Microbiological contamination is a very serious issue for food products. While the national standards have not specified requirements in this regard, we conducted tests on the biscuit samples for total plate count (TPC) as well as presence of *E. coli*. These microorganisms are responsible for many food-borne diseases. Due to improper or poor hygienic condition during the manufacturing process, microorganisms may occur in the finished product.

- Two brands, Cremica (370 cfu/100 gm) and Anmol (310 cfu/100 gm), were found with a slightly higher total plate count. All other brands had TPC less than 10 cfu/100 gm. As mentioned earlier, there is no

requirement specified in the Indian Standard.

- *E. coli* was absent in all brands.

FOR SENSORY ATTRIBUTES

Sensory panel tests were conducted in a lab under the guidance and supervision of technical experts. The biscuits were judged by the panellists on these parameters: colour and appearance, texture, flavour/ odour, taste and crispness. Ratings were then given on a 10-point scale.

- Anmol was the most liked brand among panellists, and was followed by Priyagold and Cremica.
- Dukes and Parle were the least favoured among all tested brands.



SCORES

	Britannia	McVitie's	Anmol	Dukes	Parle	Cremica
	16.00	16.20	16.60	14.00	16.20	12.60
	9.41	8.88	6.69	9.99	7.83	9.32
	7.52	6.57	6.98	7.79	6.84	6.30
	4.42	4.33	5.72	4.02	4.47	4.49
	4.80	5.00	4.80	4.40	4.20	4.40
	4.55	5.00	3.80	4.10	3.80	3.65
	4.25	3.65	4.35	4.25	3.10	4.15

Brand	Score out of 20
Anmol	16.3
Priyagold	16.0
Cremica	15.9
Patanjali	15.7
Britannia	15.5
McVitie's	15.3
Unibic	15.3
Dukes	14.5
Parle	14.5

FOR GENERAL QUALITIES

Marking/Labelling

The following details shall be marked on the product label:

- Name of product
- Trade name, if any
- Name and address of manufacturer
- Batch or code number
- Net quantity in gm or kg
- List of ingredients in descending order of their composition by quantity
- Statement with respect to addition of permitted colours and flavours
- Month and year of manufacture
- The words 'best before' (month and year to be indicated)
- Standard mark, if any

k) Nutritional information

l) Vegetarian or non-vegetarian (symbol)

m) MRP

n) Customer-care details

- All brands have the required information on their labels.

Net Weight

The weight of the product is measured and compared with the declared value on the packaging. The net weight should be within the tolerance limit permitted in Legal Metrology Rules. For a 100 gm to 200 gm biscuit pack, the tolerance allowed is 4.5 per cent.

Net weight of all the tested brands was found to be more than the declared value and they scored equally well on this parameter.

Packaging

Packaging plays an important role in maintaining consistent quality of the product. Biscuits shall be packed in clean, sound containers – made of tin plate, cardboard, paper or other material – in such a way as to protect them from breakage, contamination, absorption of moisture and seepage of fat from the biscuits into the packing materials. The packaging material should not impart any objectionable odour and taste to the biscuits. Further, the biscuits shall 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

Comparative Test

material that may be covered with a moisture-proof film, waxed paper, or moisture-proof laminates; the inner layer coming in contact with the biscuits shall be of food-grade quality or coated paper. The biscuits in tins should not come into direct contact with unacquered metal walls.

- *All the brands are packed in food-grade material. Anmol and Patanjali have been rated higher due to their double packing (thermoplastic and hard cardboard box). All other brands are in thermoplastic material.*

You Can Make It at Home

Ingredients you will need

200 g whole wheat flour, 1 tsp baking powder, a pinch of salt, 50 g brown sugar, 50 g oatmeal, 100 g butter, milk and 1 tsp vanilla

The process

Powder oats in a mixer.

Mix all the dry ingredients in a bowl. Then add the butter and mix until crumbly.

Add the milk to the mixed dough and make a firm dough. Keep it in fridge for 15 minutes.

Take out dough and roll to 3 mm thickness and cut out 6 cm diameter circles.

Cut to the required size using a round cutter and place on to a greased baking sheet.

Preheat oven to 180 degrees centigrade and bake for 15 minutes, take out cool and store in an airtight container at room temperature.



Dear readers: We are open to hearing your suggestions on products and services that you believe should be reviewed/ tested by Team Consumer Voice. You may write to editorial@consumer-voice.org.