

Dairy Products: Amasi

Changing attitudes, norms and perceptions



Dietitians throughout South Africa voiced their opinions on various dairy products in the Dairy Attitude Study (DAS), which was independently conducted by the University of Pretoria for the Consumer Education project of Milk SA in 2015.

The research showed that dietitians not only consume milk, yoghurt and cheese regularly, but also associate the intake of these products with beneficial health effects. As shown in Figure 1, the respondents perceived these dairy products as nutrient dense and recognised their positive association with bone health, growth, weight loss and reduced risk for cardiovascular disease. However, the respondents were not as familiar with the taste and health benefits of maas, a commonly used fermented milk product in South Africa.

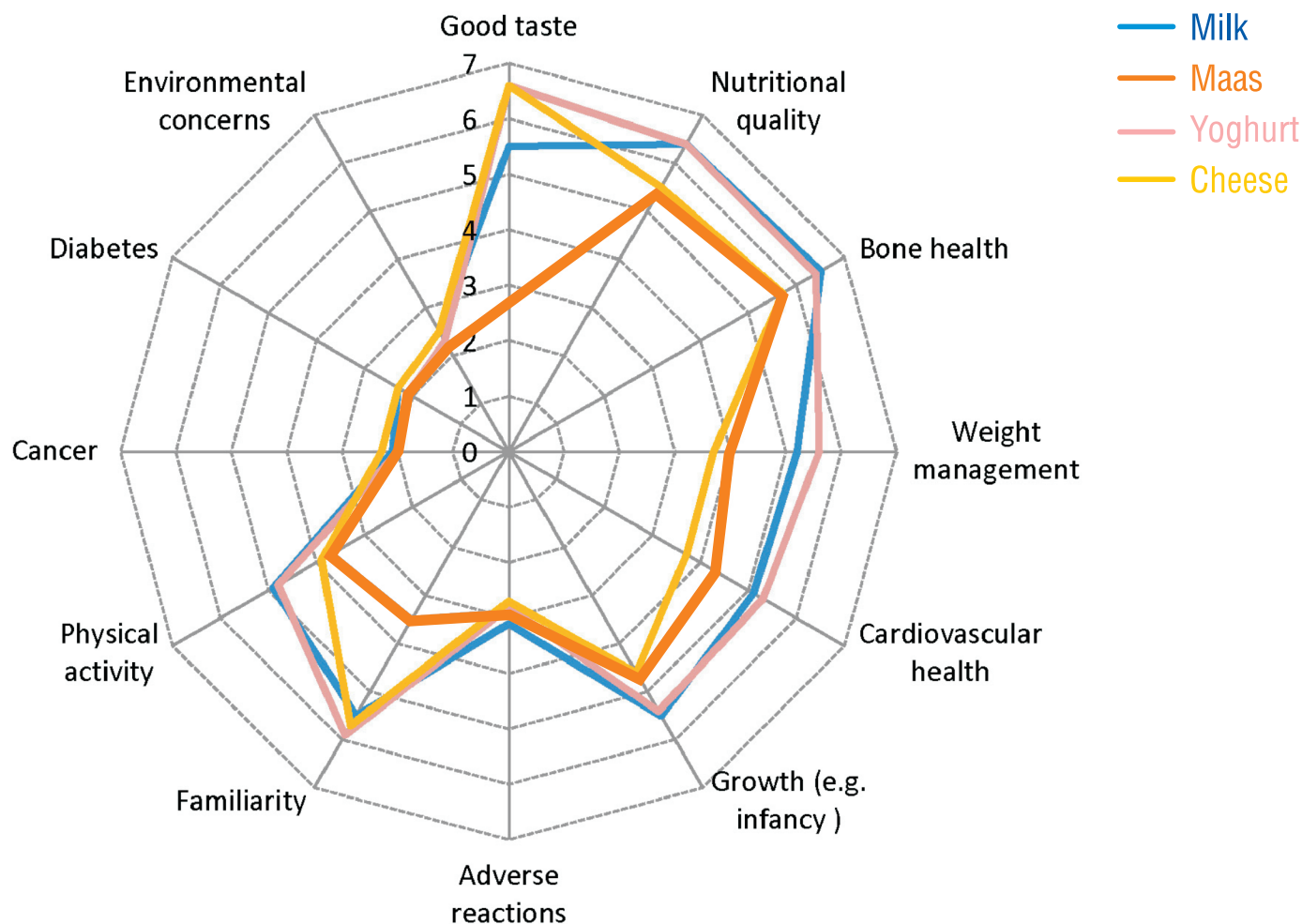


Figure 1: Summary of dietitians' perceptions of attributes of various dairy products as found in the DAS study.¹
Report on Dairy intake-related attitudes, subjective norms and perceived behavioural control of South African nutrition professionals.¹

What is maas?

Maas, commonly known as amasi in South Africa, is a fermented milk product and is described as a liquid-like beverage similar to yoghurt or buttermilk. It has a creamy white colour, a smooth texture and a distinct sour taste.²

Fermentation has been used since ancient times to preserve foods such as dairy, cereals and vegetables. The preservation effect of fermentation, originally discovered accidentally, still forms the basis of commercial maas production. Today, maas is produced by fermenting full-cream pasteurised cow's milk through the activity of naturally present or added live bacterial cultures.^{2,3}

Amasi is a historically important product in many South African cultures and is still commonly produced in the traditional way by cattle-owning families in rural areas. The first scientific record of the traditional production of maas was recorded in 1939.³ According to the description, the traditional method involved storing cow's milk in a calabash, clay pot or hide sack. The sealed container was then placed indoors near a source of gentle heat ($\pm 20^{\circ}\text{C}$).

Fermentation progressed over three to five days, and was accelerated by the presence of natural bacteria in the milk, residual bacteria on the inside of the container or by adding some amasi from a previous batch. As the milk separated, the liquid (whey) was removed at regular intervals, with the remaining thicker white coagulant being harvested when it achieved the desired qualities.⁴

Modern commercial methods for producing amasi involve fermenting pasteurised milk under controlled processing conditions, by either in-tank or in-container fermentation.² These methods are based on the addition of a permitted starter culture to the milk.

These starter cultures are generally mesophilic and typically include *Lactococcus lactis* subsp. *lactis*; *Lactococcus lactis* subsp. *cremoris*; and *Leuconostoc mesenteroides* subsp. *cremoris*.³

The nutrient composition of maas.

Fermentation is an established method to improve the nutritional quality of food products such as dairy. Amasi is nutrient dense and regarded as a good source of high-quality animal protein, along with the other important micronutrients found in dairy. Amasi naturally contains less lactose than fresh full-cream milk.

The nutritional composition of maas:⁵

Nutrients per 100g	Maas
Energy	269 kJ
Protein	3.30 g
Total Carbohydrate Lactose sugar	3.68 g
Total Fat	3.66 g
Saturated fat	2.35 g
Monounsaturated fat	1.09 g
Polyunsaturated fat	0.08 g
Calcium	162 mg
Phosphorus	92.20 mg
Magnesium	14.30 mg
Potassium	190 mg
Sodium	56.70 mg
Vitamin A	37.50 µg
Vitamin B12	0.40 µg
Vitamin B2	0.15 mg



Health benefits of maas.

Organic acids (predominantly lactic acid) produced during the fermentation process lower the pH of the milk (pH of 4.29). This causes coagulation and inhibits the growth of many of the common spoilage micro-organisms that lead to deterioration.⁴ Fermented milk therefore has a longer shelf life than fresh milk and can be stored for up to 21 days at 4°C.^{2,6} The low pH of amasi can help to delay gastric emptying, resulting in beneficial effects on the glycaemic response, appetite control and satiety.^{3,6}

Amasi is an ideal vehicle for the delivery of probiotics. Incorporation of probiotics in fermented milks has beneficial health effects, such as improving lipid profiles. The high potassium and relatively low sodium content of maas, which results in a low sodium-to-potassium ratio, is an important attribute considering emerging evidence that this ratio may be important for the prevention of hypertension and cardiovascular disease. The World Health Organization recommends an increased potassium intake from food and a lower sodium intake to reduce blood pressure, cardiovascular disease, stroke and coronary heart disease, and improve bone density.⁶

As in other fermented dairy products, the lactose content of amasi is lower than that of fresh milk. This is due to the conversion of lactose by lactic acid bacteria. Amasi is therefore generally well tolerated by people who are lactose intolerant.



An Initiative by the Consumer Education Project of Milk SA

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Maas in the typical South African diet.

During the revision of the South African food-based dietary guidelines (FBDG) in 2013, a guideline focusing specifically on dairy products was included.

This guideline states that consumers should 'have milk, maas or yoghurt every day', and was included to address the consistent reports of low calcium and potassium intakes and the high prevalence of hypertension and non-communicable diseases amongst the South African population.⁶

The inclusion of maas in the dairy guideline is a recognition of amasi being a traditionally popular food that is widely consumed by many South Africans.³

Consumer data from the 2014 Target Group Index* (TGI) indicated that two-thirds (67%) of South African households consumed maas, with the majority of maas consumers (82.4%) being black South Africans. According to the TGI, consumers are generally between 35 and 49 years of age and come from the lower socio-economic groups (Living Standards Measure 1–5). Almost 50% of households in the study consumed amasi with maize meal porridge and indicated that it is a suitable product for the whole family. According to the study 10.3% of households consume maas at least once a day, with 13.8% indicating that they consume maas at least once a week.³ Including amasi in the diet contributes to the regular consumption of complete proteins, especially in households where lysine-deficient foods such as brown bread or maize meal porridge are consumed as staple foods.⁶

It is easy to make amasi part of your daily diet:



Enjoy it as an anytime drink, on its own or with some added raw honey to sweeten it if you like.



Serve it with fruit, as you would use yoghurt or kefir.



Amasi with some bread can serve as a meal.



Pour it over maize meal porridge (pap).



Use it as a substitute for buttermilk or yoghurt when baking rusks or muffins.



Add it to soups, pasta, smoothies, dips and sauces for a creamy taste.



Amasi is an effective recovery drink after sport.



Make sure you always have amasi on hand: you can freeze commercially produced amasi for up to three months. Just shake it well after defrosting.

**For better health, make
amasi part of your three
servings of dairy every day.**

dairy
3-A-DAY
EVERY DAY

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*TGI(2014), Unpublished data. Pretoria. South Africa