



The role of traditional foods in food-based dietary guidelines – A South African case study on maas (cultured milk)



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ABSTRACT

With the revision of the South African food-based dietary guidelines (FBDGs) a new guideline specifically recommending the daily consumption of dairy products including maas (cultured milk) was introduced. This paper aims to evaluate the relevance of including maas as a traditional food product in the FBDGs. It was found that maas is a culturally relevant and traditional food product in South Africa. The nutrient profile of maas has changed notably over time since the first nutrient analysis was performed in 1995. The health benefits of maas, together with its popularity and its cultural relevance as part of the South African diet, make maas a suitable traditional food product to be included in the South African FBDGs.

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1. Introduction

An unhealthy food environment leads to an increased prevalence of unhealthy food choices which in turn result in an increased risk of developing non-communicable diseases (NCDs), which in turn affects both food and nutrition security.

Globally, for many years the focus of the food environment has been on the production of enough inexpensive kilojoules for consumption. The main reason for this was the reoccurring prevalence of hunger and food insecurity over the past few decades (Labadarios, Steyn, & Nel, 2011). Little emphasis was placed on encouraging variety in the diet, consumption of indigenous, traditional foods or the inclusion of other essential nutrients in the diet (Mozaffarian, 2013).

More recently, a better understanding and appreciation of local and traditional food cultures has emerged. Foods in traditional cultural settings are generally more nutritious and sustainable than those in commercial food markets and the food system in general (FAO, 2013). Studies have found that the inclusion of indigenous and traditional foods in the diet can contribute to public health by addressing the health and well-being of individuals and also the health of communities through the provision of a variety of

nutrients in culturally acceptable ways. It also supports sustainability of these communities and society as a whole (Kuhnlein & Receveur, 2007).

Whilst the promotion of adequate energy intake is important for maintenance and growth, the promotion of the intake of nutrient-dense foods, including indigenous foods, that are easily accessible (and acceptable), is also important for reaching both food and nutrition security objectives (FAO, 1993).

1.1. Policy, public health and the food environment

The simplification of the food system over time focused on a limited selection of food commodities, often high in energy and lower in cost to adhere to food security objectives. This could be considered a possible cause for the increase in overweight and obesity statistics observed throughout the western world. This in turn led to an increased incidence of non-communicable diseases (Grundy, Brewer, Cleeman, Smith, & Lenfant, 2004).

For the purpose of this study, the focus will be on a social policy tool, namely food-based dietary guidelines (FBDGs).

The main goal of FBDGs is to aid in the prevention of the development of nutrition-related diseases using a food-based approach through the inclusion of a variety of different foods acceptable to the specific population to improve nutrient intakes and food choices of consumers, ensuring food and nutrition security for all (FAO, 2012).

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The FAO provided guidelines for the development of country-specific FBDGs which included the following guidelines: FBDGs must reflect the nutrition situation of a country; FBDG must use ordinary language that is easy to understand; FBDGs must provide practical advice for local customs, dietary patterns, economic conditions and lifestyles; and must be based on scientific evidence such as accurate and up to date food composition and consumption data. Furthermore, foods included in the guidelines must be affordable and accessible (FAO, 2012).

Implied in these guidelines is thus that there is a need to focus on culturally appropriate foods, traditional cuisines and aim to address undernutrition and the nutrition transition simultaneously (FAO, 1993).

1.2. The role of food composition in food-based dietary guidelines

Sound food composition data is essential to determine the relationship between health and nutrient intakes and also the relationship between nutrients and food. High quality food composition data is instrumental in the development of country-specific FBDGs (Leclercq, Valsta, & Turrini, 2001).

Issues pertaining to current food composition databases that also influence the development of country-specific FBDGs include the absence of values for food categories as well as the accuracy of both food consumption and food composition data (Greenfield & Southgate, 2003). Foods and food groups, including traditional and indigenous foods, considered for inclusion in FBDGs must be assessed according to their nutritional composition.

2. South African case study: The role of maas as part of the South African FBDGs

South Africa (SA) is a middle-income country with a food environment dominated by cheap, palatable, highly energy-dense, nutrient-poor foods (Labadarios et al., 2011). The increased intake of these foods is accompanied by a higher incidence of NCDs. The incidence of obesity amongst men and women is estimated at 24.8% and 20.1% respectively. In contrast to the high obesity rates it is estimated that 15.4% of children are stunted (Shisana et al., 2014).

Table 1
Comparison of first set of FBDGs as published in 2001 the revised FBDGs published in 2012 in South Africa (Vorster, Love, & Browne, 2001; Vorster et al., 2013²).

| Food Based Dietary Guidelines for South Africa | |
|--|--|
| First (2001) | Revised (2012) |
| Enjoy a variety of foods | Enjoy a variety of food |
| Be active! | Be active! |
| Eat plenty of vegetables and fruits every day | Eat plenty of vegetables and fruits every day |
| Eat dry beans, peas, lentils and soya regularly | Eat dry beans, split peas, lentils and soya regularly |
| Chicken, fish, meat, milk or eggs could be eaten daily | Fish, chicken, lean meat or eggs can be eaten daily |
| Eat fats sparingly | Use fat sparingly; choose vegetable oils rather than hard fats |
| Use salt sparingly | Use salt and food high in salt sparingly |
| Eat food and drinks containing sugar sparingly and not between meals | Use sugar and food and drinks high in sugar sparingly |
| Drink lots of clean safe water | Drink lots of clean, safe water |
| If you drink alcohol, drink sensibly | Drink lots of clean, safe water |
| | Make starchy food part of most meals |
| | Have milk, maas (fermented milk) or yoghurt every day |

The first set of FBDGs for SA, consisting of 10 guidelines, was published in 2001 (Table 1) and did not include a specific dairy guideline. Milk was at the time included as part of the protein group (Table 1). Vorster et al., 2013a indicated that the inclusion of milk as part of the protein group was due to the fact that the FBDGs focused on affordability for the largest part of the population. Another concern for the exclusion of a separate dairy guideline and only the inclusion of milk in the protein group was the possible high incidence of lactose intolerance amongst South Africans (Vorster et al., 2013a).

The FBDGs were revised and republished in 2012 (Vorster, Badham, & Venster, 2013b). A guideline focusing on specific dairy products was included (Table 1): The guideline reads: “Have milk, maas or yoghurt every day” (Vorster et al., 2013b). A specific guideline for dairy was included due to the consistent reports of low calcium and potassium intakes and the high prevalence of hypertension and NCDs amongst the South African population.

Reasons for the inclusion of maas in the dairy guideline include a recognition of the fact that it is a traditional food and widely consumed. Furthermore, nutritional benefits were considered. The beneficial health effects of the incorporation of probiotics in fermented milk can play an essential role in improving lipid profiles, the lower pH of fermented milk can delay gastric emptying which can result in appetite regulation, and the low sodium-to-potassium ratio is considered to be beneficial for the prevention of cardiovascular disease and hypertension were recognised (Vorster et al., 2013a).

Since ancient times the fermentation of foods, including dairy, cereals and vegetables, has been used to preserve these foods and to improve their nutritional quality (Panesar, 2011). Maas production is based on the principle of fermentation of full cream cows milk through the activity of naturally occurring or added flora (Beukes, Bester, & Mostert, 2001; Panesar, 2011). The product is thick in consistency, white in colour and contains lumps once adequate fermentation has taken place (Beukes et al., 2001). The traditional preparation of maas consisted of fermenting full cream cows milk in a calabash, clay pot, stone jar or basket (Beukes et al., 2001). There are two commercial methods used for the production of maas – “in-container fermentation” and “tank fermentation”. Both methods are based on the addition of a permitted starter culture to milk. The typical starter cultures used to produce commercial maas are mesophilic and include *Lactococcus lactis* subsp. *lactis*, *Lactococcus lactis* subsp. *cremonis* and *Leuconostoc mesenteroides* subsp. *cremonis* (Beukes et al., 2001). After adequate fermentation has taken place, the product is packaged and consumed.

Maas is considered to be a part of the South African heritage and regarded as a supplementary staple food. The first scientific record of the traditional production of maas was recorded in 1939 (Beukes et al., 2001). However, maas was part of the indigenous South African diet long before this time, and is considered to have therapeutic and social value to local communities. It generates income and improves food security by enabling the preservation of milk (and thus extending the shelf-life) in this fermented form (Beukes et al., 2001).

However, very little information is available on the cultural importance of this unique product, and the role which this product can play to the diets of South Africans. The aim of the paper was to investigate the relevance of including this traditional food products as part of the SA FBDGs for healthy eating.

The objectives of the case study were:

- To determine the perception and acceptability of maas as a traditional food product as part of the South African diet by investigating consumption patterns.
- To determine an updated nutritional profile of maas and compare it to previously available data.

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