

ABSTRACT

Mozzarella cheese is one of the preferred ingredients for use in pizza. Goat milk is a good source of

protein and calcium, possessing unique characteristics with a high proportion of small milk fat globules

that contain a higher concentration of short chain, medium chain and polyunsaturated fatty acids than

cow's milk. Its use in mozzarella cheese can therefore impart significant health benefits to consumers.

However, despite these unique qualities, goat milk is underutilized in Kenya. Gum arabic is an excellent

source of soluble dietary fiber, which can be used to boost fiber levels in cheese and other dairy

products. Thus, the aim of this study was to investigate the feasibility of incorporating gum arabic as a

source of fiber in goat mozzarella cheese without affecting the functionality of the cheese. Gum arabic

powder at 2, 3 and 4% was incorporated into cheese during the salting process at room temperature (20

to 25°C). The functional properties of the cheese: stretchability, free oil formation and meltability were

then determined. Sensory evaluation was conducted using 50 untrained sensory panelists on a 5-point

hedonic scale. The results indicated that the use of gum arabic in mozzarella cheese up to a level of 3%

improved the stretchability and meltability while reducing the free oil formation phenomenon. Texture,

flavor, color and overall acceptability were also rated as best for samples containing gum arabic at a

level of 3%. The results showed that the use of gum arabic can improve the functional properties,

nutritional quality as well as sensory quality of goat milk mozzarella cheese.

Key words: Gum arabic, dietary fiber, mozzarella cheese, goat milk, functional properties.