

Application of Composite Flour in Bakery products

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Introduction

Composite flour is described as a combination of flours, starches, and other substances used to substitute wheat flour entirely or partially in bakery and pastry items. Although the texture and qualities of the bakery goods manufactured with composite flour were different from those made with wheat flour, it offers high nutritional value. To make a variety of bakery products, composite flour made from cereals, millets, legumes, seeds, and nuts high in fibre is used as an alternative (Noorfarahzilah et al., 2014).

The use of composite flours had a few benefits for developing countries:

- i) The saving of hard currency,
- ii) Promotion of high-yielding, native plant species,
- iii) A better supply of protein for human nutrition and
- iv) Better overall use of domestic agriculture production (Dalal et al., 2018).

Wheat is considered to be nutritionally poor, while being a good source of calories and other nutrients, as cereal proteins lack critical amino acids. Hence, adding affordable staples like grains and pulses to wheat flour helps boost the nutritional value of wheat products. For example, compared to regular wheat bread, the cassava-soy and cassava-groundnut loaves have increased protein content (Noorfarahzilah et al., 2014)

Applications of Composite Flour

Wheat has the inborn ability to make dough and retain gases, making it an essential component in the production of bread. In wheat, the protein concentration ranges from 8 to 15% (H.P. Bobade et al., 2018). Wheat flour mixed with other cereal flour is used to make baked products including cookies, bread, and cakes. It is projected that adding composite flour

to wheat flour to make bakery goods will have an impact on the functional characteristics of the blended samples.

Bread

The bakery products produced by using composite flour were of good quality, with some characteristics similar to wheat-flour bread. The texture and the properties of the composite flour bakery products were different from those made from wheat flour, with an increased nutritional value and the appearance. For the production of composite flour breads, the most frequently investigated flours are those from corn, barley, cassava, and chickpea. Legume proteins were successfully utilised in baked goods to produce items that are higher in protein and have better amino acid balance.

Biscuit and cookie

Ready-to-eat snacks like biscuits have a variety of attractive qualities, including as a larger market, a relatively extended shelf life, better convenience, and good eating quality. Due to their superior nutritional qualities and potential for use in feeding programmes and major emergencies like hunger or earthquakes, these types of bakery items are gaining popularity. To increase the nutritional content the cookies are prepared with fortified or composite flour (Sibian et al., 2020)

High-protein cookies produced using composite flours, such as soy bean, field pea, and defatted peanut flour mixes, substituted up to 30 g/100 g of wheat flour, and lupin and chickpea by up to 20 g/100 g (Mohd Fadzelly et al., 2014). Legumes have more nutrients, compared to cereal grains and protein content is higher (18–24%). Peanut and cowpea flour have both reportedly effective for replacing up to 20% of the wheat flour cookie dough.

Conclusion

The physio-chemical and sensory characteristics of bakery products were significantly impacted by the inclusion of composite flour to the formulation of bakery products. The use of composite flour as a functional ingredient in bread goods has a lot of promise. From this, it can be inferred composite flours can be successfully added to wheat flour bakery products in various proportions to produce baked goods with improved nutritional qualities and tolerable sensory characteristics. Therefore, the production and use of bakery products would not only

aid those with degenerative diseases but also enhance the nutritional quality of the population as a whole.

References

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