

Elaboration of Bread Replacing Partially Wheat Flour with Pitahaya (*Stenocereus queretaroensis*) and Chia (*Salvia hispanica* L) Flours

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Bread is one of our favourite foods in Ecuador, and this one made of wheat flour. The purpose of this work was to make bread with Pitahaya flour (*Stenocereus queretaroensis*) and Chia (*Salvia hispanica* L) partially replacing the wheat flour. Three different formulas with equal amounts of replacement were used (15%, 25 %, 30%). In terms of the sensory characteristics assessed, bread with 25 per cent replacement had greater acceptability: taste, smell, colour and texture.

Today, the production of wheat-based bakery products enriched with global protein additives is becoming increasingly widespread with growing consideration for the quality and flavour of foods. Whey proteins are the highest available standard proteins that have high digestibility and a full profile of amino acids. Whey proteins are also suggested because of their positive effects on immune development and risk prevention of heart disease and cancer incidence. Being a tropical crop, Pitayas have the opportunity to become a plant for sale to foreign markets. Originating in the Antilles, the word pitaya meant scaly fruit. The ancient Mexicans named the fruit Capitella, or thick worm, in reference to the stems' size. Many populations of *Stenocereus* have made important contributions to diets of Indian tribes inhabiting tropical semiarid lands on coastal plains in the Gulf of Mexico and the Pacific Ocean, as well as subtropical semiarid inland regions of Mexico since pre-Hispanic period. The pitayas were one of the most significant foods for the Seri Indians, as well as their favourite fruit. In ancient times pitayas from various species were an essential edible fruit in tropical and subtropical Mexico semiarid lands. Farmers have recently been growing selected plants from the wild, such as *Stenocereus queretaroensis* in Jalisco's Sayula Basin. These cacti can flower and grow fruit before the start of the rainy season in the summer. Their fruits have an attractively coloured pulp with digestible seeds (often dark red) and without the unpleasant glochids present on cactus pears. The sugar content is 10 to 11%. The shelf life is just a few days, as the fruits appear to dehisce lengthwise. Pitaya (*Stenocereus* spp.) is a fruit harvested from pitayo, a cactus that grows in arid and semi-arid regions of America and is widely distributed from South Arizona to northern Colombia and Venezuela. There are at least 24 species of *Stenocereus*; of this, *Stenocereus stellatus*, *S. Frisky*, *S. Griseus*, *S. queretaroensis*. The most important of these are *queretaroensis*. The pitaya fruit has a thin skin with spines found in small groups and scale-like structures located thereon. The pulp is sweet, juicy and has small seeds inside. Pitaya is an important crop for the national economy in countries like Mexico due to its strong sensorial properties and the excellent use of natural resources (water and soil). Pitaya fruit juice is rich in vitamin c and fibres to provide a healthy body overall. This enhances memory, and strengthens the immune system. Thanks to the abundance of fibre, Pitaya juice helps digestion and promotes probiotic production. This helps lower

blood glucose levels in type 2 diabetes. It removes cancer that induces free radicals and eliminates harmful materials so that bowel cancer does not occur. The high phenolic content and antioxidant activity of the genus *Vaccinium* are two of the most desirable characteristics of pitaya. In addition, a strong betalain content (important compounds for quinone reductase induction) was identified. A Pitaya is the fruit of cactus. It refers to genus *Stenocereus* fruit. Pitaya juice uses dragon fruit which has a vivid magenta coloured flesh due to its low sugar content, it is a perfect quencher of thirst. The pitayas are a variety widely consumed in America's arid areas. These are more acidic and cooling, with flesh juicier and a better flavour. Originally from Mexico and Guatemala, Chia (*Salvia hispanica* L.) has been a part of human diet for around 5500 years. The seeds have historically been used by people from the Aztecs and Mayas in preparing folk remedies, food and canvases. It was the second major crop after beans in prehistoric times in Columbian cultures. Together with its butter, the whole and ground forms of chia were part of cooking, ancient cosmetics and part of religious ceremonies in prehistoric Aztecs. Chia belongs to the Lamiaceae family; Genera *Salvia* Specie; *hispanica*, commonly referred to as chia, Spanish sage, Mexican chia, black chia. Plant is an annual herbal plant flower in summer with a height of approximately one meter with reverse petiole and serrated leaves (4–8 cm long; 3–5 cm wide) with hermaphrodite flowers. With fair salt and acid resistance, plants can thrive in a wide variety of well drained clay and sandy soils. It can produce 500–600 kg seed / acre but the yield of 2500 kg / acre has also been recorded under sufficient agronomic conditions. Due to its potential health benefit, the dietary fibre in foods, and particularly in whole grains, is an essential biocomponent. A significant number of observational findings have demonstrated the benefits of fibre intake such as decreased risk of coronary heart disease, risk of type 2 diabetes mellitus, and many cancer types. At the other hand, dietary fibre intake has been linked with post-meal satiety increases and resulting appetite decreases. Chia (*Salvia hispanica*, L.) and Pitahaya (*stenocereus queretaroensis*) are two plants with novel biological and bioactive properties in their seeds. Appreciably higher nutritional and bioactive ingredient concentrations make them preferably effective functional grains against physiological disorders such as diabetes, asthma, cardiovascular diseases and obesity. Chia is an annual herbaceous plant which belongs to the family Lamiaceae (Mint). It is Mexican and Guatemalan-born. Ground Chia seeds (*Salvia Hispanica*) have all the benefits of normal chia seeds, but are ground up to make cooking and baking simpler to use. Ground Chia seeds (*Salvia Hispanica*) have all the benefits of normal chia seeds, but are ground up to make cooking and baking simpler to use. Chia seeds are a good source of both Omega 3 fatty acid and dietary fibre. They are filled with antioxidants and vitamins. Chia seeds are organic, non-irradiated, non-GMO, and without pesticides are made. Ground chia seeds are used to great degree as pinole, a porridge meal that can be directly consumed or used in baked goods. The findings

of the physicochemical analysis made more appropriate to the sample were protein content of 9.32 percent, humidity resulting in 32.14 percent, and the findings of the microbiological analysis revealed a minimum value with respect to the limit permissible under NTE INEN 95: 1979.