SPECIFICATIONS

PROCESS OF MAKING VACUUM FRIED SQUASH CHIPS

TECHNICAL FIELD

The present utility model refers to a food snack making process, particularly a process of making vacuum fried squash chips.

BACKGROUND OF THE UTILITY MODEL

Traditional fried snacks, while widely popular, are often associated with high oil content, unhealthy fats, and harmful compounds such as acrylamide, which forms during high-temperature frying.

Chips made from vegetables and fruits are the common alternatives to process snacks, the use of squash for chips are already in the market, but these are prepared using traditional oil frying.

Squash is the base-vegetable for the chips; it is an abundant produce in the Philippines and easily available. Squash is a good source of vitamin A, B, and C, as well as minerals like potassium, magnesium, and manganese.

The uncontrolled use of oil and the uncontrolled use of heat and pressure are factors contribute to health concerns, including obesity, heart disease, and other chronic conditions. Additionally, excessive oil absorption can lead to a greasy texture and shorter shelf life, making conventional fried snacks less appealing for health-conscious consumers.

With increasing consumer interest in healthy, natural, and minimally processed snacks, vacuum-fried squash chips offer a superior alternative to conventional fried snacks, aligning with modern dietary trends while ensuring quality, taste, and safety. This mean that, as much as possible, the natural taste of the squash must not be too altered, while having a crunchy texture.

The present process utility model addresses the following technical problems in the context of food processing, specifically, improving the quality of texture and taste of existing squash chips and improving the food preservation said squash chips, through the additional novel combination of steps of brining and freeze-drying prior to vacuum-frying.

SUMMARY OF THE UTILITY MODEL

The present process utility model technically addresses the problem of chip texture quality and taste, the process utility model by including a step for brining the sliced squashed chips, and then a step of freeze-drying said brined squash chips, to improve the texture of crunchiness, retaining the natural color of the squash and minimize flavor changes.

It is also object of the present process utility model to improve the food preservation of the squash chips, and this is technically addressed by vacuum-frying which is a type of low temperature frying under controlled pressure, which significantly decreases oil absorption and the use of band sealing to ensure airtight packaging.

The details of the parameters for the above-mentioned steps of the process are detailed in the next section, and these parameters were determined through testing's by the Food Innovation Center of the Bulacan State University.

DETAILED DESCRIPTION

In the following paragraphs the main steps for the present process utility model which is the process of making of vacuum fried squash chips is detailed.

The first main step of the process is measuring, around 1 kg to 1.5 kg of harvested squash for one batch to be process into vacuum fried squash chips.

The next step of the process is peeling of the harvested squash to remove the skin.

The next step of the process is slicing of the peeled squash into flat circular shaped chips.

The next step of the process is washing of the sliced squash chips using water.

The next step of the process is mixing of the brining solution which is made by mixing 1 tablespoon (14.175 g) of salt to one liter of water.

The next step of the process is brining of the washed squash chips to said brining solution for one hour. The brining step is the initial technical solution to result in firmer texture without altering the taste too much as evident by the salinity of the brining solution and its relatively short brining time.

The next step of the process is weighing of the brined squash chips to around 1 kg to 1.2kg to determine the batch size for freeze-drying.

The next step of the process is freeze-drying of the weighed brined squash chips. The freeze-drying of the brined squash chips was set to negative forty degrees Celsius (–40°C) for three (3) hours. The freeze-drying step further removes moisture and retains nutritional values, flavor and color.

The next step of the process is vacuum frying of the freeze-dried squash chips. The vacuum frying for the said freeze-dried squash chips is at ninety degrees Celsius (90°C) for 40 minutes at 12kPa of pressure.

The next step of the process is packaging the vacuum-fried squash chips from the vacuum fryer. The vacuum-fried chips are removed from the vacuum-fryer and are packed into a 4-layer stand-up pouch at 15 grams per pack.

The last step of the process is sealing the said above packaged vacuum fried squash chips using a band sealer.