

Production of dried shrimp mixed with turmeric and salt by Spouted Bed technique enter the rectangular chamber.

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Abstract. Today, dried shrimp in the market were refused food colour and drying until shrimp are colourful and tasty. Meanwhile, Community groups, women's health trying to produce food products come from herbs. As an alternative to consumers. The production process is also a traditional way to dry. In order to extend the shelf life longer. Sometimes, potential risks, both in quality and quantity of products. As a result, consumers are enormous. Thus, this research aims to study the possibility to produce shrimp dried mixed with turmeric and salt. Then dried shrimp mixed with turmeric and salt to keep up the quality criteria of the Food and Drug Administration-FDA It can reduce the risk of the consumer and can keep up in a kitchen Thailand. When buying shrimp from the fisherman's boat Will be made clear, clean impurities and shaking the sand to dry. Prepare a mixture of turmeric and salt. The shrimp were dipped into a beef with stirrer for 3 minutes. And scoop up centrifugal shrimp with dried. Measurement of initial moisture content averaging 78%wb. Then drying technique Spouted enter the rectangular chamber a continuous manner. Until average moisture content to 17%wb. The air temperature in the drying chamber at 180 °C and hot air speed 4.5 m/s, a state heat transfer Mass and moisture within the shrimp. In chamber when drying, the shrimp have moved freely behaviour can spit water out faster does not burn. Shaving legs of shrimp shell fragments lightweight is sorting out the top of drying chamber. Private shrimp were dried out to the front of the quad drying chamber. Power consumption 27.5 MJ/kg, divided into electrical energy 12.3 MJ/kg and thermal energy is 15.2 MJ/kg. The hot air comes from burning LPG gas burner with dual automatic. And can adjustable to room temperature drying characteristics modulation setting.

Key word :Shrimp, Dried Prawn, Spouted bed, Heating chamber

1. Introduction

For dried shrimp, it was originally a shrimp for the family to live a family life. At this research, we offer shrimp from the sea fishing industry. Fresh shrimp from sea are a must. There is a need for a machine tool with a tactical and neat approach. To reduce the risk of loss of quality, volume of shrimp and price. Fresh shrimp from the fishing boat are frozen in the cold and the duration cannot be determined, but the average is about 10 days. When the boat is compared, the Marine Department will assign the fishing boat to loading and unloading in the loading area. Subsequently, raw materials in the ship will be transported to the designated channel. Then comes the various processes until the correctness of each criterion is determined. Then the raw materials past the sorting will be taken to the auction control room. To bid to buy the required. In the shrimp, Will be separated into groups and there are criteria to estimate how many impurities. Price will vary with impurity. Then sort the fresh shrimp and pack it in plastic bags of 20 kg each to facilitate the transfer to the dry shrimp factory as ordered by customers who are regular customers. When fresh shrimp crates are transported by small

trucks, they can control the temperature at 150°C. They will be checked by the quality control agency according to freshness criteria. Then issue SPECIMENT as a production order to the production unit. To prepare the material to be processed[1]. Shrimp is washed to free from fine sand particles. Then finely water and then turmeric for 90 seconds to 20 kg fresh shrimp weight. Delivered into the centrifugal dryer (drying by centrifugal force) for 150 seconds per weight fresh turmeric with turmeric 60 kg. Delivered to the dryer with a rectangular spouted bed dryer. The capacity is 300 kg/h until shrimp dried exothermic heat build-up comes close to atmospheric temperature. It will be put into plastic bags and paper boxes to facilitate the storage and transport, transport and transportation. This article is for research purposes, to improve the quality and efficiency of the dry shrimp process in the manufacturing industry. To enhance employee loyalty from factory manager, staff, practitioners and support agencies to have a quality manufacturing experience and performance for planning year. In 2018, Turmeric dried turmeric to Japan and England.

In the preliminary research study. Information is the company's information, as well as a collection of practical experience and produced as a product. For access to research and the data of the production process has allowed the drilling machine to be installed in the location. Employees will record all information for convenience. And it's easy to coordinate between real and current entities, the spec Shrimp of the shrimp, the time it takes to produce and the partner's purchasing power.

2. Machine and Method

2.1. rectangular spouted bed dryer[2]

Shrimp dryer was made for dry shrimp trade. It will use LPG gas, generate heat and then reduce heat by fan. Hot air goes along a rectangular pipe through a sieve. It is a room between a fixed hot air room and a rectangular drying room with a dimension of 1.50 x 0.3 x 0.9 m³. At the input position, it will use a set. Screws feeder and need to have a thread of 5 pitch conveyor screws all the time. Hot air does not come up as a barrier to enter dried shrimp into the drying room. 1 HP 380 V electric motor that can feed shrimp continuously at 200 kg/h. In the drying room[2], the hot steamed shrimp is sent to the bottom of the drying room. And a set of screws feeding the shrimp will be in contrast to the outlet of the dried shrimp. The screws are above the sieve plate for 18.3 cm shrimp and the dried shrimp leaves are removed from the drying chamber with a rectangular opening of 30x15 cm². There is a wind control board for the shuffling of shrimps that can be divided according to the criteria set to be free according to the amount of each shuffle, leaving the drying room to fall into the basket. The hot air has moisture content out of the drying chamber in the same vertical direction as the outlet of the dried shrimp. Shrimp shredding And the pulp bag slides down to the bottom of shrimp of the cyclone, falling into the prepared basket. The hot air will be forced out of the top of the cyclone into the atmosphere in the production room[3]. In the drying room there will be a ventilator to control the relative humidity in the room. And external dust to meet the criteria of the Department of Fisheries and provincial health control.

2.2. Drying of Shrimp

This rectangle-shaped machine is designed and built to dry the cooked shrimp (Broiled Shirting). It has been around for years and the organization wants to launch new products. The objective of this study is to study the production of dried shrimp in the form of commercial trash. Shrimp was fed to dried with average humidity. 75%wb. It is fed into a rectangular drier using LPG for heat source generator. By using gas burners from Germany, which can heat up to 150 kW. Hot air pressurizes the hot air flowing through the rectangular pipe through the bottom of the sieve, supporting the hot compressed air, which flows through the pressure to flow across the drying chamber. The spatula shape is rectangular at a speed of 4.5 m/s (at the grill supports shrimp). The dimension of the rectangular spouted chamber is 30 x 150 x 147cm³. The temperature inside the drying room is rectangular in shape is constant at 150 °C. Feeding the shrimp is adjusting feed rate and using default input values. 200kg / h and lobster when fed into the drying room. Shrimp behaviours started shifting from the beginning of the medium plate sieve to shrimp. And move to the front in a neat and independent manner, depending on the moisture content of each shrimp. Shrimp moves to the end of the sieve. Shrimp dried by the criteria will be out from the drying room[3,4]. The part of this position

will be collected to analyze the results. This sample is then sent to the Quality Control Agency. To confirm by the order of the specification compliant partner. The average value of shrimp was 41.4% wb. The shrimp that were studied in this study were non-graded shrimp. However, it is a miniature product that contains dried by-products and dried by-products from the shrimps. Square spheres are as follows;

1. Dry Shrimp is the main product that the market needs.
2. Shrimp and shellfish out of the shrimp. While there is movement within the drying chamber.
3. Pulp from the shrimp that came out of the moustache and tail from shrimp.

3. Result

This experiment the study of drying fresh shrimp Miniature not graded. Feeding capacity 200 kg/h. The pressure of the hot air inside the drying chamber of the spouted bed is constant through drying shrimps processed working. Because the creation of a full state. It must be composed of two things that must be very closely related are hot air crossing the drying chamber. And the shredded raw prawns are free in the drying room. Both of these must be taken as a characteristic of the drying behaviour of the shrimp. Consistently meet the needs and goals of producing quality dried shrimp products.

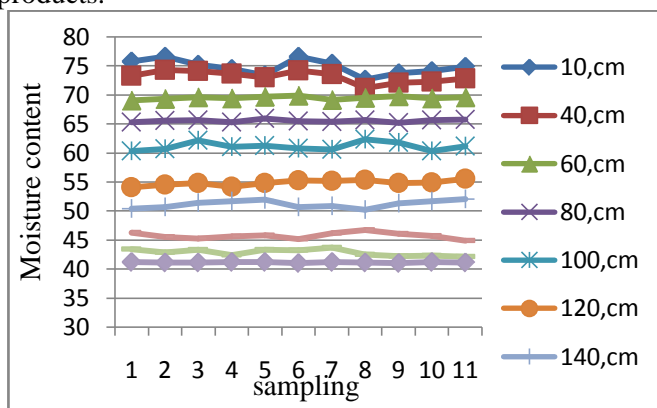


Figure 1. Graph moisture content of shrimp with sampling along drying chamber spouted bed

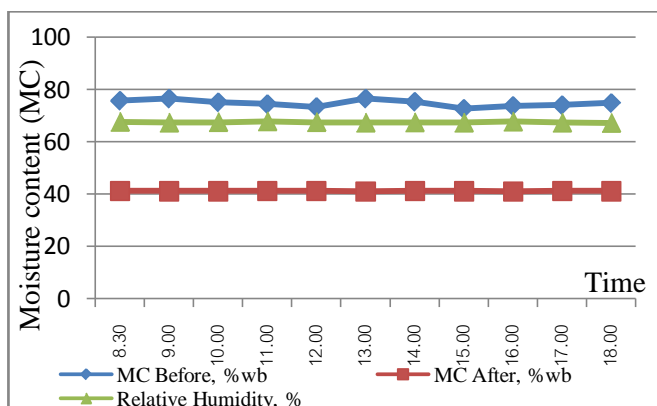


Figure 2. Drying of shrimp with continuous spouted bed technique this graph shows the difference in initial moisture content, which can be reduced to the final moisture content of the shrimp.

For the temperature of the hot air used in the drying room, effect of free shuffling behaviour of shrimp in the drying room show in Figure 1 and 2. When adjusting the hot air temperature at 150 °C, The free shuffling of the steaming shrimp. The moisture content of shrimp did not affect the drying behaviour of shrimp. When the hot air temperature is raised to 180 °C, the shifting of the shrimp does not change. Show that the lobster's popularity has no effect. But it requires more LPG gas. When the temperature inside the drying room is full, the bed is rectangular. And the structure of the dryer and auxiliary equipment. There will be more heat loss.

For the dynamics of drying It compares the change in moisture content with time of shrimp to move forward independently. In a full spouted bed inside a rectangular shaped chamber. The hot air

that helps the shrimp move forward. Instantly following the timing of the spouted bed show in Figure 3. From Figure 3, the moisture content is rapidly reduced. Regularly after the moving shrimp move up to 30% of the full length of the drying chamber, the rectangular are filled with squares. The moisture content of the shrimp is consistent when the shrimp move to 90% of the length of the rectangular spouted bed. And at the end of the rectangular spouted bed. This provides a sufficiently dry area for the required final moisture content. Each shrimp will move rapidly according to the density of each shrimp. Then finally dry shrimp out of the rectangular spouted bed chamber.

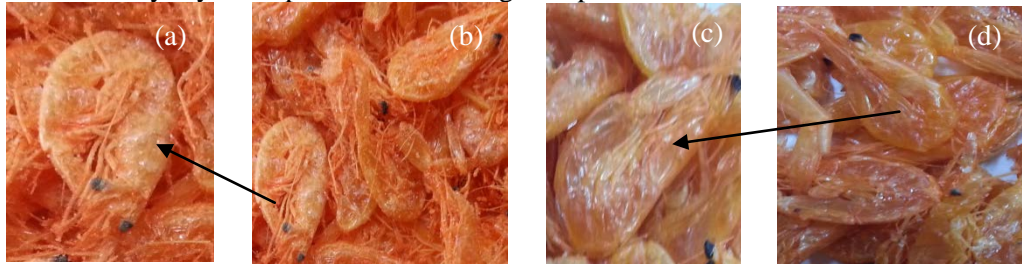


Figure 3. Continuous- spouted bed drying technique. From about 80%wb initial humidity. until the final moisture content is about 40%wb, with the eyes, legs, tentacles and shell of shrimp. Do not show burns due to heat. (a) and (b) Salted Turmeric, (c) and (d) Turmeric sweet turmeric

In comparison of the dynamics of drying and quality of dried shrimps produced from this rectangular spouted bed dryer. Before experimenting with a technique that emphasizes the characteristics of the shrimp. Shrimps were sampled to represent the drying by drying by baking. Electrically heated wire that adjusts to a temperature of 107 °C and provide 76 hours of drying time. Based on the principle. According to Association of Official Agricultural Chemists 2000 (AOAC 2000) Food Analysis Standards. To be used as criteria in determining the distribution criteria of quality dried shrimp.

4. Conclusions

Summary of research results, Shrimp drying using rectangular spouted bed technique. This objective to produce shrimp sweet-salted turmeric with commercial quality. The spouted bed can set the initial moisture content of the shrimp. Shrimps through the process of fling with a mechanical mechanism until the value is less than 78%wb. Shrimp feeds into drying chamber, spouted bed, rectangular shape using hot air 150 °C. The hot air flows across the grate plate so that the shrimp can move freely all the cross section of the great plate. Shrimp feeds with a capacity of 200 kg/h can be reduced to a final moisture content of 40.3%wb. The moisture ratio of the shrimps rapidly decreases in the rectangular spouted bed. Shrimp raw materials do not need to control size shrimps. The hot air velocity, temperature and the static pressure between the sieve plates must be constant. It can be produce turmeric products dried turmeric is a consistent colour. Although the Shrimp have different dimensions

5. Reference

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