

Processing and Value Addition of Onion

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Introduction

India is known as the second largest fruits and vegetables producer in the world followed by China. India, during 2017-18 has produced about 97358 Thousand MT fruits and 184394 Thousand MT vegetables in about 6506 Thousand Ha and 10259 Thousand Ha areas, respectively (Horticultural Statistics At a Glance, 2018, MoA & FW, GoI). Unfortunately, fruits and vegetables being perishable in nature get wasted to the tune of 20-30 per cent in the supply chain due to improper handling, transportation and poor post-harvest management; and only 2 per cent are processed in to value added products and the rest is consumed as fresh. Therefore, processing of fruits and vegetables offers immense scope for wastage minimization and value addition; thus can generate significant income and employment in Indian agrarian economy.

Onion is one of the important vegetables consumed extensively on daily basis in India. India is the second largest Onion growing country in the world. Indian onions are famous for their pungency and are available round the year. However, because of poor post-harvest infrastructure and value addition, a huge quantities of onion get spoiled in the supply chain. Therefore, processing of onion in to various value added products can minimize the losses and offers huge scope for entrepreneurship development at micro, small or medium scale levels using effective government schemes such as PM-Formalization of Micro Food Processing Enterprises Scheme of MoFPI, Government of India.

Origin and Distribution of Onion

Onions are one of the oldest vegetables in continuous cultivation dating back to at least 4,000 BCE. The ancient Egyptians are known to have cultivated this crop along the Nile River. There are no known wild ancestors, however; the center of origin is believed to be Afghanistan and the surrounding region. Onions are among the most widely adapted vegetable crops. They can be grown from the tropics to subarctic regions. This adaptation is



primarily due to differing response to day length. Onions are grouped into three groups based on their response to hours of day length. The short-day varieties bulb with day lengths of 10-13 hours, intermediate varieties bulb with day lengths of 13-14 hours and long-day onions with day lengths greater than 14 hours.

Onions are nutrient-dense, meaning they're low in calories but high in vitamins and minerals. Benefit Heart health as it is rich in antioxidants, it also contains anti-cancer, anti-bacterial properties to boost bone density, digestive and control blood sugar.

Processing and Value Addition of Onion

Onion offers a huge potential for value creation through processing. Advances in the field of processing makes it possible to produce different value added products from onion i.e. minimally processed ready to use or ready to cook fresh onion, onion paste, dehydrated onion flakes, onion powder, onion oil, onion vinegar, onion sauce, pickled onion, onion wine and beverages etc.

Minimally processed onions are peeled and/or cut onions which retain its freshness. Availability of minimally processed onions to cook or ready to use purpose reduces the overall food preparation time. Alternatively, onions are used by way of frozen onion rings where the raw onions are sliced into rings, freeze dried and stored in a suitable packaging material under low temperatures. The frozen onion rings have a long storage life of 12 months and can be readily used for direct consumptions or for adding to soups and dressings.

Onion paste is another product where the onion is grounded yet retaining its freshness. Dehydrated onion flakes can be processed into onion powder by proper grinding. Onion powder dissolves very easily and reconstitute quickly compared to onion flakes. It is successfully used in the preparation of baked products like pizza and bread, and also for spicing up grilled chicken. Onion oil is another flavouring substance which is widely used in the seasoning of processed products and is also used as a natural used preservative in some food products. Onion salt is another common ingredient in the spice mix and can be used at the place of table salt to offer a refreshing new taste to the household. Dehydrated onion flakes & powder can be used in soups, sauces, salad sprinkles, seasoning, pizza and others. Paste also has huge demand in culinary and other

purposes. Onion paste can be made from red, white big and small onions. Vacuum packed onion has increased shelf life and can be used/ consumed at later-stage.

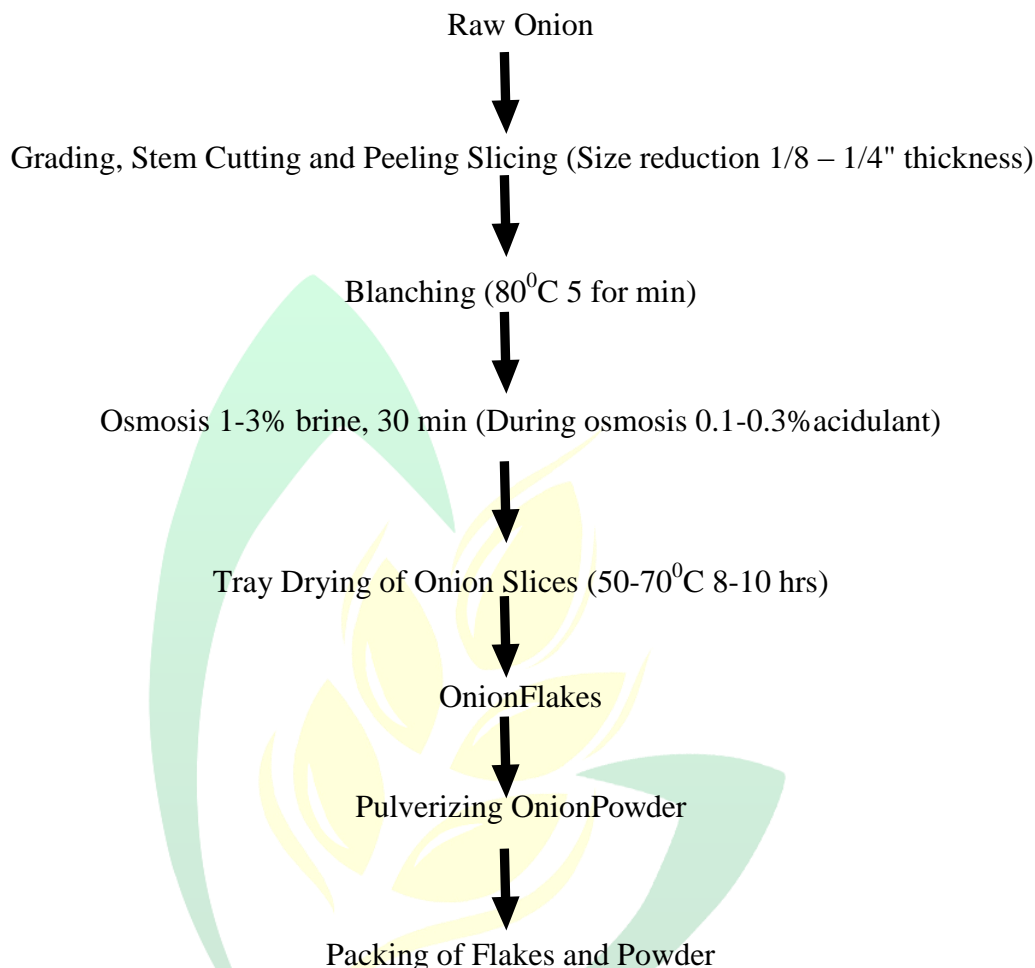
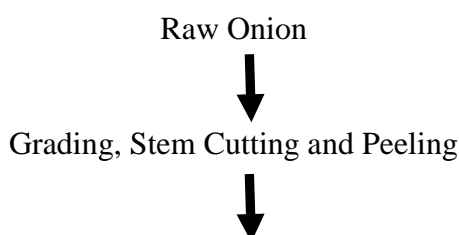


Fig. 1 Processing of Onion Flakes and Powder

Vacuum packing is a method of packaging that removes air from the package prior to sealing. Vacuum packing reduces atmospheric oxygen, limiting the growth of aerobic bacteria or fungi and preventing the evaporation of volatile components. It helps to extend the shelf life of food products with flexible package forms and to reduce the volume of the contents and package.

Processing of Onion Puree and Paste



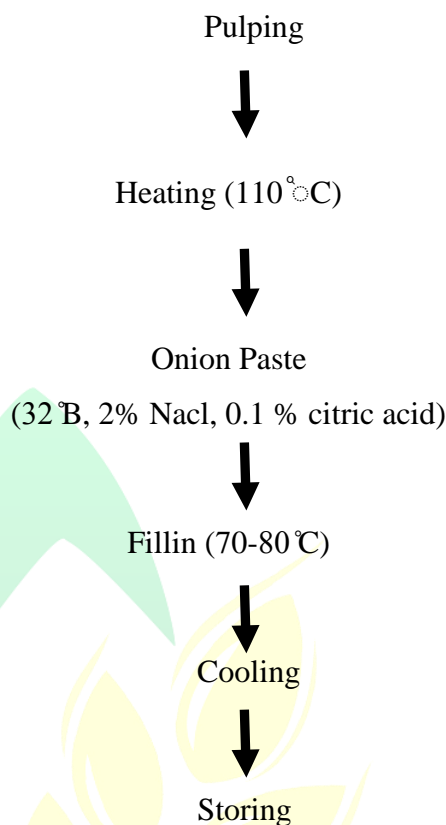


Fig. 2 Processing of Onion Puree and Paste

Summary:

Due to scanty processing technology of fruit and vegetables and high post-harvest losses most of the fruit and vegetables produced inside India get wasted or did not give that much profit which it can be generated for. Losses the supply chain due to improper handling, transportation and poor post-harvest management only two per cent are processed in to value added products and the rest is consumed as fresh. Therefore, processing of fruits and vegetables offers immense scope for wastage minimization and value addition; thus can generate significant income and employment in Indian economy and also a good scope for raising business entrepreneurs. Onion is one of the important vegetables consumed extensively on daily basis in India. India is the second largest Onion growing country in the world. Indian onions are famous for their pungency and are available round the year. However, because of poor post-harvest infrastructure and value addition, huge quantities of onion get spoiled in the supply chain. Therefore, processing of onion in to various value added products can minimize the losses and offers huge scope for entrepreneurship development at micro, small or medium scale levels using effective government schemes.