

## ABSTRACT

The main operations of cashewnut processing are roasting, shelling, drying and peeling. Roasting of nuts introduces a characteristic fine flavour and taste to the kernels, loosens the kernel from the shell, whereas, shelling, drying and peeling operations are needed to remove the cashew shell and the peels. The current methods of processing of cashewnut being followed in India are very tedious, time consuming and highly labour intensive. In order to save time and labour, to increase the processing capacity, it is necessary to mechanize some of the operations. Attempt has been made to determine the physical characteristics and properties of raw cashewnuts, roasted cashewnuts and cashew kernels. Laboratory studies on roasting and drying were carried out to determine the optimum conditions for proper shelling and peeling of cashew kernels. The cashewnut processing equipments such as roaster and sheller were designed, fabricated and installed. The performance of developed cashewnut roaster was evaluated by taking into account the weight loss, expansion ratio, maximum compressive load, shelling yield of roasted cashewnuts and by carrying sensory evaluation of extracted cashew kernels, whereas, the performance of cashewnut sheller was evaluated by taking into account the shelling efficiency and whole kernel yield. The performance of both the units were found satisfactory. The roasting of cashewnuts in drum roaster at  $600^{\circ}\text{C}$  for 1.0 min, shelling of roasted cashewnuts in centrifugal sheller at 7.42 per cent moisture content, drying of shelled (unpeeled) cashew kernels in tray dryer at  $70^{\circ}\text{C}$ , dried upto 3.0 per cent moisture content and conditioning of cashew kernels upto 6.0 per cent moisture content gave higher whole kernel yield and better quality cashew kernels.

Key Words : Raw cashewnut, roasted cashewnut, cashew kernel, cashew shell, testa (peel), cashewnut shell liquid (CNSL), wholes, splits, butts, roasting, shelling, drying, peeling, conditioning, drum roaster, centrifugal sheller, furnace, tray dryer, expansion ratio, maximum compressive load, shelling efficiency, whole kernel yield.