INTRODUCTION

- Pressure-assisted thermal processing (PATP) is a recently emerged, alternative processing technology for low acid foods due to the growing consumers’ demand for better quality of foods.
- It involves simultaneous application of pressures (500 to 700 MPa) and temperatures (95 to 121°C) to a preheated food.
- Uniform compression heating and rapid cooling reduce severity of thermal effects and preserves food quality, especially texture, color and flavor.
- Systematic studies were conducted to evaluate the role of pressure in preserving food under comparable process temperatures.
- Such comparison would help the food industry to make informed decisions as to the commercial viability of introducing PATP treatment.
- The objective of present work is to compare the effect of PATP and thermal processing (TP) on the quality attributes of processed carrots.

MATERIALS AND METHODS

RESULTS AND DISCUSSION

Pre-process time:
- In order to evaluate the effect of pressure on quality attributes, the pre-process time for PATP and TP were matched (Fig. 1).

Effect of PATP and TP on texture:
- During the TP, the loss of hardness was higher as compared to PATP
- During PATP, up to 105°C the loss of texture was dependent on pressure. At 121°C, pressure dependence reduced.
- At 500 MPa, 121°C, the increased loss of texture (83.95%) as compared to 700 MPa, 121°C (37.91%) was due to exposure to the higher preheating temperature and pressure before pressurization (59.4 and 86.1°C, respectively).

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