



## Influence of packaging materials on lipid oxidation of instant dal

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**Abstract :** The extent of lipid oxidation for instant pigeonpea dal was studied in PE (Poly ethylene), PP (Poly propylene) and PFP (Polyester-Al.foil-Polyethene) pouches. The evaluation was done at three weeks interval by measuring the changes in thiobarbituric acid (TBA), free fatty acid (FFA) and peroxide value (PV). During the whole storage period of 105 days, it was found that the NaCl treated instant dal stored in PFP (Polyester-Al.foil-Polyethene) packets showed the minimum degradation in quality parameters.

**Key Words :** Instant-dal, Quality, Lipid, Pigeonpea, Storage

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### INTRODUCTION

Pulses are very rich source of proteins and constitute the major source of dietary proteins in developing countries. Besides proteins, pulses are rich in minerals like phosphorus (230 – 414 mg/ 100g), calcium (5 – 30 mg/100 g), iron (2.7 – 11.5 mg/100 g), vitamins like thiamine (0.3 – 0.5 mg/100g), riboflavin (0.09- 0.27 mg /100 g) and niacin (1.3 – 3.5mg /100 g). Though protein quality of pulses are slightly inferior to animal proteins, cereal and pulse proteins are complementary in nature and, therefore, highly useful in meeting the dietary needs of millions of people living in the developing countries.

Normally pulses are consumed in the form of dal gruel. However, instant dal with cooking time less than ten minutes is gaining acceptance all over the world because of the convenience they provide to the consumers.

The expectation and aspirations of the urban society and the changes in the day to day life style have made packaging an essential component in sustaining the quality of life. Packaging has contributed a lot to the growing needs of the society in a number of different ways. Packaging protects the products during transport from one place to another,

preserves their quality of acceptance, reduces food loss and provides the convenience required by the urban consumer, ensuring the product integrity. Packaging also provides the important information to the consumers with respect of the product packaged and a useful marketing tool.

The selection of the food package is governed by many different facts namely, type of food product, storage conditions, transportations distribution etc. Patki and Arya (1997) prepared *Khichdi* mix from the precooked dehydrated rice, whole legume grain, spices and vanaspati and studied its storability in PFP (paper-aluminium foil- polyethylene) laminate pouches and polypropylene bags at 0°C and room temperature, 37°C. They found that the product remained stable for 18, 12 and 6 months, respectively for pp pouches and 18, 18, 12 months in PFP pouches. The study also revealed that peroxide value (PV), thiobarbituric acid value (TBA) and free fatty acid (FFA) increased in storage where as total carotenoids decreased. In the above product the off flavour resulting from the lipid degradation were the major cause of decreased sensory acceptance. Texture and the reconstitution characteristics did not change in storage. Sernwal *et al.* (2001) have studied the storage stability of instant vegetable

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