

## CANNING OF SHRIMP (DRY PACK)

**Aim:** To study the canning of shrimp without any filling medium (Dry pack)

**Introduction:** Shrimp is generally canned as ‘wet pack’ where it is canned in brine. ‘Dry pack’ that is packing without brine, also is practiced to some extent.

Shrimp are caught throughout the coastal line of India and the magnitude of catch varies from region to region. The West coast is more productive than the East coast, with the Southern part contributing comparatively larger quantities than the Northern part. The most important fishing ground is the inshore waters from where *Peneaus indicus*, *P. monodon*, *Metapeneaus dobsoni*, *M. affinis*, *M. Monoceros* and *Parapeneaeopsis Stylifera* are caught. These species are in great demand in both freezing and canning industries. Only small sized shrimp are used for canning purpose.

Canning of shrimp in the form of ‘dry packs’ though, is not a common method of processing; the buyers produce it in order. In this mode of canning, the blanched shrimp are wrapped in parchment paper and canned without any filling medium. Usually the dry pack canned foods are given more retorting time, due to the absence of filling medium which otherwise would have increased the rate of heat transfer. “Dry pack” means that the amount of juice is too small to cover the whole surface of the content (meat), therefore a half of the surface is exposed.

**Product Code:** SRD

**Can used** : a) 4½ -Oz. Shrimp can, S-R lacquered  
b) 5-Oz. Can, S-R lacquered

**Std. Net weight** : a) 128 grams for 4 ½-Oz. Shrimp can  
b) 141 grams for 5-Oz. Can

**Materials and Equipments:** Fresh shrimp, deveining blades, blanching containers, equipment for fan drying, table salt, citric acid, parchment paper and other canning equipments.

**Procedure:**

Raw Material : Fresh raw shrimp



Washing :



Weighing :



Beheading :



Peeling : Removal of shell (exoskeleton) on the abdomen.



Deveining : Removal of gut by deveining blade.



Washing :



Weighing :



Blanching : By boiling in 8- 10% salt solution containing 0.3% citric acid for 8-10 minutes



Drying : By fan for around 3-5 minutes.



Grading : According to size.



Weighing :



Packing	:	Pack 128 grams of the blanched shrimp in a parchment paper and place in the can (Net weight + 2 grams extra)
↓		
Seaming	:	By vacuum seaming or after proper exhausting.
↓		
Can washing	:	
↓		
Retorting	:	
↓		
Cooling	:	
↓		
Drying	:	
↓		
Storage	:	

### **Problems commonly met with canned shrimps:**

In the preparation canned shrimp, blackening, softening and discolouration may cause trouble.

**a) Iron Sulphide blackening:** Blackening of the can interior and the product due to Iron sulphide is a problem met with in canned shrimp, lobster, crab, tuna, etc. Blackening occurs because of the reaction of the sulphur-containing constituents released from the fish during heat processing with any exposed iron of the can resulting in the formation of Iron sulphide that is black in colour. Even though the fish cans are internally coated with a sulphur resistant lacquer, any imperfection on the lacquer coating or a scratch on it can expose the tin layer.

Trimethylamine present in marine fish will dissolve tin exposing Iron for reaction with the sulphur containing compounds to produce iron sulphide. The reaction takes place rapidly under alkaline condition that develops in the fish, which has started deteriorating. This

blackening can be prevented by maintaining proper acidity in the can contents by adding tartaric or citric acid in the can, which will retard generation of hydrogen sulphide. A parchment lining is commonly used in shrimp cans aiming at preventing the sulphide and ferrous ions from coming into contact. Uniform lacquering of cans and avoiding the possibility of any exposed tin / iron or the other remedial measures that helps to prevent the occurrence of this Iron sulphide blackening problem.

**b) Softening:** The cause of softening of canned shrimp is the decomposition of the protein to soluble non-protein substances. That takes place in the raw shrimp when freshness declines. In order to prevent this condition, strictly fresh raw material should be employed and maintenance of high degree sanitation in the cannery and quick completion of the processing without allowing long delays between different stages in processing are the measures suggested to overcome this phenomenon.

a) **Loss of colour:** The original red colour of canned shrimp declines during long storage periods. In order to prevent such loss of colour, the raw shrimp should be dipped in an acid solution (0.1% citric or tartaric acid) for about 15 min. after the shell is removed.