Summary:

According to FAO projections meat consumption has been continuously increasing in developing countries from 10 kg annual per capita consumption to 26 kg in 2000 and is expected to reach 37 kg around the year 2030. To meet growing meat demand intensive livestock production systems should be met. But due to limited feed availability and for environmental reasons these systems cannot be expanded indefinitely. The only possible alternative is to make better use of the meat resources available and reduce wastes of edible livestock parts to a minimum. This is where meat preservation plays a prominent role. It preserves meat resources, including nearly all edible livestock parts for human food consumption so that they can be better utilized. It increases the shelf life of meat and can help in transport of raw meat to a meat processing industry, where it can be profitably utilized is the manufacture of meat products. The processes used in meat preservation are principally concerned with inhibiting microbial spoilage, although other methods of preservation are sought to minimise other deteriorative changes such as colour and oxidative changes.

Preservation usually involves preventing the growth of bacteria, yeasts, fungi, and other micro-organisms (although some methods work by introducing bacteria, or fungi to the food), as well as retarding the oxidation of fats which causes rancidity. There are various methods of preservation of meat: chilling, freezing, curing, smoking, dehydration, canning, radiation preservation etc. Chilling is most widely used method for preservation for short term storage of meat because chilling or refrigeration slows down the microbial growth and enzymatic as well as chemical reactions. Freezing is the method of choice for the long term preservation of meat. It has advantage of retaining most of the nutritive value of meat during storage. Meat smoking was known to man as an aid in preservation for a long time. Smoke contains a large number of wood degradation products such as aldehydes, ketones, organic acids, and phenols etc. which exert bacteriostatic effect besides imparting characteristic smoky flavour. Canning is a process of preservation achieved by thermal sterilization of product held in hermetically sealed containers. Canning preserves the sensory attributes such as appearance, flavour and texture of the meat products to a large extent. Freeze drying of meat is a satisfactory process of dehydration preservation due to better reconstitution properties, nutritive quality and acceptability. It involves the removal of water from the frozen state to vapour state by keeping it under vacuum and giving a low heat treatment. Maintaining or creating nutritional value, texture and flavour is an important aspect of food preservation, although, historically, some methods drastically altered the character of the food being preserved.