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● RESEARCH ARTICLE ●

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Application of hurdle technology for preservation of chevon curry at refrigeration (4±1^{0}C) temperature

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ABSTRACT

This experiment was carried out to study the physico-chemical, microbiological characteristics as well as sensory changes in the hurdle treated ready to eat chevon curry stored at 4±1^{0}C. Two temperatures were used as hurdle for drying of chevon meat. Result indicated that the samples dried at 45^{0}C were safe and acceptable up to 35th days of storage whereas samples dried at 60^{0}C were found even safe for more than 35 day. Hence, 60^{0}C dehydration temperature for 2 hours in cross flow cabinet drier could be used as a hurdle to extend the shelf life of chevon curry.

Key words : Hurdle technology, Chevon curry, Sensory evaluation

INTRODUCTION

India is rich in traditional meat and poultry products, which are an excellent source of high quality proteins and various micronutrients. Meat provides high quality protein with a high biological value, which contains all essential amino acids. Lean meat contains 18-22% protein and digestibility of meat protein is about 95-100% while the plant proteins are 65-75%. Meat contains mixture of unsaturated, polyunsaturated and monounsaturated fatty acids (MUFA). In meat 40% of total fat comprised of MUFA and, therefore, meat becomes best source of MUFA in diet. They are neutral with respect to blood cholesterol level (Rathod, 2005). Meat is good source of all minerals except calcium and is the only and richest dietary source of vitamin D (Rathod, 2005). Meat has compounds like choline, lipoic acid, carnosine, nucleotides, glutathione etc. may have ability to fight cancer, coronary heart diseases, enhances immunity, improves gut and regulates body weight.

Muscle foods play a major role in human diet particularly for non-vegetarian group of people. It is highly valuable from nutritional point of view as it provides all the necessary nutrients required for normal growth of body. In India goat as a species has become important due to concern over sustainable development and also for the upliftment of rural mass in terms of economic and nutritional stability. Goat species is distributed over varied geographical and climatic conditions with differential production capability. World population of goats is around 850.22 Million and that of India is around 125.46 Million, accounting for 14.76% of the world population. The goats and their products contribute to Rs. 14,452.57 crores annually to the Indian economy accounting for around 8% of GDP from livestock sector. The goats around the world contribute 5146 thousand MT of chevon while contribution of India towards chevon production is about 521 thousand MT which is 10.24% of total chevon production of the world (Sharma and Tiwari, 2008).

Recently the demand for traditional meat products is increasing due to rapid urbanization and industrialization in the country. Chevon curry is one of the major chevon products prepared throughout the country with considerable variation in the spice contents. But the meat and meat products are highly perishable which require preservation at an early stage to prolong their shelf life. It is essential to find out simple cost effective methods for preserving meat products for extended periods. It is, therefore, necessary to create hurdles that inhibit the microbial growth in meat products. Hurdles in food are the substances which inhibit the deteriorating process. Various hurdles used in processed food industry are water activity (a_w), pH, preservatives (pres), high temperature (F), low temperature (t) and redox potential (Eh) (Leistner and Rodel 1976). Food preservation by hurdle technology employs the intelligent use of combination difference,

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