

## Rabbit Meat has the Potential of Being a Possible Alternative to Other Meats as a Protein Source: A Brief Review

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### ABSTRACT

*Domestic rabbits (*Oryctolagus cuniculus*) are ubiquitous, providing protein, fibre, research models, and companionship. Rabbits have high reproductive potentials and fast growth rate, utilize low grain and high roughage diets and breed all year-round. Other attributes are short gestation period, early sexual maturity, ability to rebreed shortly after kindling and short generation interval. These qualities confer on rabbits a potential to bridge the shortage of animal protein in developing countries, where grain can only be justified for human use.*

**Key words:** Protein, Rabbit meat

### INTRODUCTION

The meat industry is gaining more importance in the present era globally due to consumer demand or because of the ferocious competition in the industry. Consumers are becoming more conscious towards nutritional value and safety of meat. The relationship between health and diet is becoming an important factor in changing consumer's habits. Meat is associated with cholesterol, and although it is now accepted that the dietary intake of cholesterol has little bearing on plasma cholesterol, for consumers this is another negative influence on meat's health image. Meat is in a major source of fat in the diet, especially of saturated fatty acids (SFA), which have been implicated in diseases associated with modern life, especially in developed countries. The ratio of n- 6:n-3 polyunsaturated fatty acids (PUFA) is also a risk factor in cancers and coronary heart disease, especially the formation of blood clots leading to a heart attack. Rabbit meat, low on fat and high on protein, is extremely nutritious. Rabbit meat contains only 3 per cent cholesterol. It is a recommended diet for the aged, hypertensive or diabetic patients. The nutritive value is on par with fish meat. Not many go for the broiler rabbit, either due to social habit or plain compassion. "It's difficult to break this perception. Nevertheless, there have been pockets of awareness on the meat market trend. Farmers have managed annual rate contracts with every restaurant and hotel for rabbit meat consumption in some parts of India. "Unfortunately, it is difficult to reason out the poor consumption, despite the meat being extremely nutritious," lament officials and promoters. Rabbit rearing for the pharmaceutical industry and as pets for resorts is booming in the country. Rabbits are prolific breeders. The animal breeds at least four times a year with a litter of five to eight rabbits. That means a female rabbit can breed 90-105 young ones during its reproductive life of three to four years.

### Nutritive facts of rabbit meat

Nowadays, consumers are increasingly interested in a healthy lifestyle, e.g. energy and nutritional values of foods, which are rich in protein and low in cholesterol and lipid contents. From the nutritional point of

view, rabbit meat is flavourful and easily digested, with high nutritional and dietetic properties: this meat contains 20–21% of proteins, unsaturated fatty acids (oleic and linoleic; 60% of all fatty acids), potassium, phosphorus, and magnesium, it has low concentrations of fat, cholesterol, and sodium [1]. That is why the rabbit meat is better digested as compared to other kinds of meat (beef, lamb, or pork; Enser *et al.* [2] and is recommended for consumption, e.g. for persons with cardiovascular illnesses. Moreover, the energy value of rabbit meat (427–849 kJ/100 g of fresh meat) is comparable to various commonly consumed sorts of red meat [1]. The studies concerned with the quality of rabbit meat have focused mainly on biochemical or biophysical traits such as pH, water holding capacity, or colour [3, 4]. The main components of meat, excluding water, are proteins and lipids. Rabbit meat is a lean meat rich in proteins of a high biological value and it is characterized by high levels of essential aminoacids [1]. Furthermore, meat is also an important source of highly available micronutrients, such as vitamins and minerals. Also, rabbit meat does not contain uric acid and has a low content of purines [4]. Rabbit meat is characterized by its lower energetic value compared with red meats [1] due to its low fat content. Fat content varies widely depending of the carcass portion from 0.6 to 14.4% (fat from edible meat with intramuscular and intermuscular fat content) with an average value of 6.8% with the loin being the leanest part of the carcass (1.2% of lipids). Fatty acid composition of rabbit meat is characterized by high polyunsaturated fatty acid content. The fatty acid composition of rabbit meat and its possible modification through diet will be discussed later on. The amount of cholesterol in rabbit meat is about 59 mg/100 g of muscle [5], lower values than those presented in meat from other species (61 mg in pork, 70 mg in beef, 81 mg in chicken) [1]. The mineral fraction of rabbit meat is characterized by its low contents in sodium (49 and 37 mg/100 g for hind leg and loin, respectively) and iron (1.3 and 1.1 mg/100 g for hind leg and loin, respectively), while the phosphorus level is high (230 and 222 mg/100 g for hind leg and loin, respectively) [5]. Rabbit meat has a low zinc concentration (0.55 mg/100 g) and the copper concentration is quite similar to the meat of other species (0.03 mg/100 g) [6]. Selenium levels in rabbit meat depend on diet, reported to vary between 9 µg/100 g [7] and 22 µg/100 g [8]. Meat is an important source of B vitamins. Consumption of 100 g of rabbit meat contributes to 8% of daily Vitamin B2, 12% of Vitamin B5, 21% of Vitamin B6, and 77% of Vitamin B3 requirements, and provides a fulfillment of the daily Vitamin B12 requirement [6]. However, heat treatments alter Vitamin B contents [7]. In addition, rabbit meat, as is true of other meats, contains only trace amounts of Vitamin A. Nevertheless, it should be noted that a high amount of this vitamin can be found in rabbit edible liver [9, 10].

### SUMMARY

The market in the world for rabbit meat is also growing. Global consumption of rabbit meat in the world is highest in Malta – 7.5 kg per head, followed by Italy – 5.5 kg and France – 3.0 kg [4]. On the other hand, in the USA and Canada, the consumption of this meat is very low (0.15–0.20 kg), although rabbit meat is in the same price range as chicken breast and other higher valued chicken parts.

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