

PROCESSING AND QUALITY OF SOME UNCONVENTIONAL MEAT

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With the everincreasing population, the demand for meat is continuously increasing in India. In present system of Agriculture though there is enormous scope for increasing the production of conventional meat, there are certain limitations also. Demand for chevon and mutton is always high and the supply was never upto that level. In recent years chicken is one of the most common source of meat and becoming very popular. In this article an attempt is made to present the hygienic processing and quality of some unconventional meat which include game animals also. Some of such meat are getting popularity and commercial farming of such animals are coming up.

In Africa a special focus has been made in 1960 for harvesting game meat. The programme was not fully successful because the cost of marketing such meat is high for maintaining hygienic requirement and the demand was limited. The prospect is more linked to the development of tourism. The game meat is very lean but not tough, low in fat and gives variety. This is true irrespective of species, age and live weight. The dressing percent is comparable to other livestock and some time it is even higher. The hind quarter yield is similar to indigenous species. Meat is generally lean, tender with good flavour.

The methods for utilizing game animals for meat production are.

1. Hunting - which needs proper men & processing
2. Sustained cropping of animals
3. Management of game on ranches & farms
4. Domestication of wild game by commercial farming.

Some of the most promising game species which are getting popularity for commercial farming are rabbit, ostrich, deer and pigeon. The processing and quality of meat from these species will be discussed in this article.

RABBIT :

Most rabbit keeping started mainly for meat production. Nowadays there are good progress on commercial rabbit farming. Broiler rabbit is emerging as an alternative source of meat. Some of the important breeds are Soviet chinchilla, white giant, black brown etc. Rabbit has high fertility rate, fast growth and high feed conversion efficiency (2.5 : 1). Due to high fertility (30 - 50 offsprings / year) rabbit is an efficient meat producer.

Usual time for slaughter of rabbit is at the weight of 2 kg between 60 - 90 days of age. Slaughter is done by making animal

unconscious by giving a sharp blow with a heavy object on the head. It may also be done by neck dislocation. in case of younger (broiler) rabbits. Immediately bleeding should be done by cutting the ventral part of neck by halal method. The skin is removed by case on method as practiced in small animals. All visceral organs are removed by cutting at the ventral aspect of the abdomen.

A part of head containing maxilla, eye ball, teeth with fronto-nasal sinuses are removed as in-edible. Skull with brain and cheek muscles are taken as edible. The primal cuts are fore legs, breast & ribs, loin and hind legs which contributes 15, 20, 27 and 28 % of the carcass and the carcass yield varies between 43 - 48 %.

Rabbit meat is low in fat (3.8%) high in protein (20.7 %) low in calorie and cholesterol which is comparable with chicken. USDA points out that rabbit meat is one of the most nutritious meat available, not only it is high in protein and low in fat and cholesterol, it is also very flavourful and easily digestible. Since they can grow with waste materials and roughes, rabbit meat has potential to be an inexpensive source of white meat and an alternative to chicken. The inhibition about consumption of rabbit meat may be reduced by consumer education and by making different value added meat products like sausages, nuggets, kababs, patties etc.

DEER :

Deer is more specifically a game animal. With the advent of civilization deer is slowly domesticated in the farms or in the parks. Still it is a wild animal and people enjoy hunting from the forests as a hobby and also to enjoy meat. In U.K there is huge demand for deer meat (venison). Mainly red deer is reared in the farm. About 10 -15 thousand carcasses are produced in UK in the year 1997 from 200 odd farms. Americans consume 100 metric tones of deer meat per year, imported from New Zealand.

Deer can be shot by a riffle from close range which has strong welfare appeal. They can be slaughtered in an abattoir after transport or a on-farm abattoir may serve the purpose. Just before slaughter the deer should not be allowed to wallow to reduce mud contamination. The stress to the animal should be minimum which will reduce keeping quality of meat due to glycogen depletion, leading to high ultimate pH. Proper care should be taken during transportation and before slaughter in the lairage. Stunning of deer is done by frontal head short with captive bolt pistol. Immediately hoisted from hind legs and bled in the same way as in cattle. Routine post mortem inspection should be done. The size of the young red deer varies between 46 -146 kg with a dressing percent of 55.

The field slaughter of farmed deer is usually practiced in the farm itself. Park deers are shot as they graze. After shooting the carcass is immediately bled and eviscerated and transported for further dressing. In case of game deer also similar practice is followed. After evisceration the abdomen should be washed if water is available or should be wiped properly. Then the carcass should be kept open under air for cooling which will prevent the early onset of spoilage. It should be brought at the earliest and dressing and chilling should be done immediately.

Deer meat fully satisfies the consumer demand for lean meat with low fat (5-10%) containing 55% PUFA compared to 4-5 % in beef and lamb, the dressing percentage upto 55 % and meat is highly preferred for its flavour

OSTRICH

Ostrich is the largest living bird averages 2- 3 m in height , weight upto 150 kg and life span 30-70 yrs. About 70% of the value of the bird comes from the skin which produces high quality soft and durable leather. Commercial Ostrich farming is important component of livestock in several countries. Domestication of ostrich started in South Africa in 1867 mainly for production of top quality leather and market for meat developed within Europe. Although classified under poultry, ostrich produces red meat with beef like texture. Ostrich should be slaughtered at the age of 12-14 months weighing about 85-90 kg for getting better quality meat and leather.

Stunning of the birds are done by using electrical method. An application of 400mA with 11 V for 2-6 seconds causes unconsciousness for 60 second. An effectively stunned bird will not show any signs of rhythmic breathing. Bleeding must be done without any delay by cutting ventral part of neck, immediately below the head which will sever both carotid and jugular veins. Thoracic sticking may also be done for bleeding. Allow bleeding about 14 min. Dressing procedure follow as in small animals, skinning done by longitudinal incision from the neck, evisceration done by a mid ventral incision below the breast bone. Routine post mortem inspection may be done. Main reason of condemnation is air sacculitis.

The pH of ostrich muscles declines very rapidly and reaches to 5.85 within one and half hours. After some time the pH rises

and reaches near 6.0, which develops moderate degree of DFD (Dark Firm Dry) meat. It may be a characteristics of ostrich muscle. Since the sub-cutaneous fat layer is almost absent cold shortening may occur if the meat is chilled below 10°C within short time.

Ostrich meat is like red meat and more comparable to beef like texture. The meat contains low level of fat, calories and cholesterol in comparison to other red and white meat. The fat is rich in poly unsaturated fatty acids (PUFA).

An average carcass of ostrich weighs about 30 kg and leathers of top quality measures about 14 square feet. The meat, bone and fat percent based on dressed weight is 62.5, 26.9 and 9.2%, respectively. About 10-15 kg meat may be obtained from the less valuable cuts of ostrich which may be utilized for value added products like, burgers, sausages, nuggets etc.

PIGEONS

Pigeon have high liveability, resistant to disease and can adopt in most part of world. They can be grown in confinement throughout the year. Pigeons are slaughtered by modified Kosher method. Squabs are scalded at 54°C for 1 min. Adults are scalded at 59°C for 1.5 min.

The slaughter characteristics and meat yield is influenced by sex and age. Pigeons before flying is called squabs. The average live weight for squabs 231-258g and adults 285-310g. The dressing percentage varies between 75-77%. The cuts are same as in chicken and their proportion is neck 4.1-4.6%, wings 13.8-15.8%, drumstick 3.5-3.8%, thighs 5-5.3%, back 14-15.8% and breast 24-26.7%. The average meat bone ratio is highest in breast cut, followed by thighs, neck, back, drumstick and wings in that order, generally higher than chicken, turkey and ducks.

The utility of pigeon meat for table purpose is well known in India and abroad. Squabs are profitable source of pigeon meat and grow more rapidly. They have a well fleshed breast and a yellow skin colour. The squabs are highly preferred because of tender meat and suitable for barbequeing.

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