

# Food Composition and Production in Medieval England and Their Mutual Influences

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## Abstract

Food is one of the key elements for people to survive all over the time. Unlike today's highly industrialized society, food and its production activities had much higher and significant impacts on the medieval English society. Food vastly changed medieval English's life, and it is more evident when famines or population changes came. Thus, observing the food condition, their agricultural productions and relations between them is one of the most revealing ways to understand medieval English life and what's going on with English people in that particular time.

This paper will at first describe the food and agricultural condition of medieval English society. Also, it will try to explain the close relations and mutual influences between food and its production: how food requirements and conditions changed the structure of its production over time, and how on the other hand, food production changed the diet composition of different English classes as time passed. The paper will describe the food and its agricultural production according to their types since different foods had different weight on the medieval society. We will mainly focus on the time from after the Norman's conquest(11th century) to around the end of Middle Ages(about 15-16th century). Also, to have a more comprehensive view of medieval English food structure, the agricultural production we discuss will also include gardening, fishery and even hunting in addition to the traditional arable farming and livestock husbandry. Although they are playing a less important part than the core issues like grains, it is inevitable for us to consider them as well if we want to have a better, closer look in the Medieval English food culture and their significances.

## 1 Introduction

Medieval England experienced three significant periods in its food pattern: before 1086, when the population is relatively small, agricultural production is

quite old-fashioned, that is to say, similar to the Anglo-Saxon style and everything looks like what they used to be. Then suddenly, after rapid society developments and technological changes started from 11th-13th century, new agricultural technologies were invented while the population almost tripled.[1] During this period, the overwhelming population pressure forced significant changes in its food composition and agricultural production form in some areas. Such condition came to an end in the middle of the 14th century, when the Black Death came to England. The impacts of Black Death greatly changed the agricultural structure and condition in English society: a much less population pressure, increasing demand for better food, shrinking prices from markets while there's a higher wage standard for workers. And small food structure slightly fluctuated until the end of 16th century, which is beyond our discussion. Such pattern transformations occurred in food compositions and production reacting to the mentioned changes are observable and can be speculated both from history documents as well as archaeological evidences, which make it possible for us to reason the influences and relations behind them.

Before diving into detailed discussions for each kind of food eaten in medieval England, let us have a general sense of what medieval English eat. Grain, no doubt, is the main part for every Medieval English's diet. After that, for people in relatively high status, cattle, sheep, and pigs were the most frequent and largest protein sources they can get from the agriculture. Slightly different from pork and beef, fish and bird have special meanings to medieval culture and they are favored by monks and nobles holding special feasts. Products from garden, mainly vegetables and fruits, were consumed by all classes, but in a small scale with less influences. Dairies like butter and chesse performed small but special roles in the society, and they did have influences to the agriculture. And lastly the venison, obtained only in forest by hunting, can only be seen in the tables of people of high status during most of the time. Although the form of getting such food or the way of processing might slightly differ from time to time, but this food structure remained relatively stable during the whole time we are going to discuss. The food mentioned above might not cover every corner of the medieval English food composition, but they did have the most influences on people's usual or special diet.

## 2 Grain

Grain took up 80% of harvest workers's calories, 78% of soldier's and 65%-70% of nobles.[2] From this data, we can see two important facts: grain took up the main responsibility of providing medieval people food; Peasants shared a higher portion of grain in their meals than the higher classes. Such patterns can be implied through the several following sections. In the coming sections, we will discuss grain's production and consumption in two aspects: its composition change after time; its production development in Medieval Ages.

## 2.1 Grain Composition in Consumption and Production

During Medieval Ages, grains were eaten in three main ways: bread, ale and pottage. Bread existed everywhere in medieval diets. Ale constituted the main part of medieval drinks. But during the hardest time for peasants, bread and ale were more popular in middle and high classes, and for the peasants themselves, pottage was the most adopted form of grain "dishes". The reason was obvious, the making of bread required complex steps: grains needed to be milled at first to produce coarse flour on the one hand and bran on the other. And people need to pay mills for milling their grains then eventually bake and make them into breads. Producing ale was also complicated, grains were at first soaked, then heated and eventually stored in the brewhouse for ferment. They were consumed in manors and monasteries, while they were expensive for peasants to purchase by themselves before Black Death. Comparing to bread and ale, pottage was easy to make, simply just mix everything a peasant could have, like any vegetables and grains, into the pot, then boil them and 'drink' them. From the aspect of energy efficiency, cottage provides almost all grain contains to whom drinks them, while on the other hand, the process of making bread and ale more or less loses part of energy within the grain. While they were even more expensive, it was less appealing for peasants to consume grains in these two ways when their economic condition was bad.

Medieval documents were good at distinguishing different types of crops while bad at telling the difference of the same type of crop. From today's view, the main crops of Medieval England were: wheat, barley, oats and rye. Peas, beans and vetches were also produced in the field, but legumes like peas, were served more "as vegetables for the famuli" instead of grains.[3] In addition, medieval farmers commonly grew mixtures of these different crops, such as maslin, which is composed of wheat and winter barley, and dredge, which is made of spring barley and oats. The composition of bread differed according to whom they served: for rich class, white bread, which was made by wheat, was the best and exclusive bread all the time, while sometimes the materials will change to maslin and rye. For the poor, maslin, rye and barley were the most frequent materials for bread making. The reason behind the different compositions might be the different characteristics of these grains: while wheat provided the best flavor in making bread, rye can be grown in adverse environments. After the Norman conquest, the need of increasing grain productivity and quantity became significant. Thus, while wheat was more suitable for making bread, people had to use rye for lessening the pressure on grain consumption. Another fact supporting this assumption might be, after the Black Death, as population experienced a great decline, the number of wheat bread started to increase. In 1394, one Lincolnshire ploughman was given fifteen loaves of bread a week, seven of them made from wheat.[4, 5] Evidences showed more and more people started to consume white bread or bread made of barley, instead of bread made by low quality grains.

## 2.2 Agricultural developments of grains

Medieval English agriculture went through several pattern changes. During 11th-13th century, when the population pressure was gradually growing higher, the agriculture tended to be more land-saving. Started from 13th century, growing population pressure and advancing technologies led English agriculture to step into a higher level. During this particular time, full-timber framing was invented, tools like pegged mortices, saws and chisels made it possible for people to build two-stage and specialized buildings like barns. Also, the advancement in water engineering were also significant as more and more complex water diversion systems were established in the same time. Ceramic roof tiles were introduced, the pottery production were more sophisticated and horses, gradually replaced oxen in ploughing, for their better efficiency. They led to several changes in 12th-13th century medieval England: crops replaced animals because they were productive and efficient in providing energy. Peasants consumed more pottage while less in bread. Farmers chose to grow grain crops instead of horticultural crops. Mixed farming system emerged in some particular area, which was more ecologically sustainable, etc. They all led to a change in the grain consumption structure. Such changes allowed a higher capacity of population, while its pressure still remained serious.

This land-saving pattern came to an end in the 14th century, when the Black Death came and killed a great amount of people in England. After Black Death, the pattern became more "labour-saving". The causes of the pattern change were noticeable: producer faced a shortage of labour since much of the labour was lost during Black Death, and in the same time, the remaining labour required a higher wage standard. Thus, to save the cost of labour force, farmers now almost replaced all oxen with horses, for the reason that horses required less men to finish the ploughing. With less demand on food, land now had more time to rest and as a result, good harvests occurred on those fields in the first half of 14th century. But not everything was good after such a sudden change. Due to the lack of human management and care on fields, in addition to the climate change in the 14th century, field crops of certain places went into troubles of fungoid diseases and eventually resulted in poor harvests in the second half of 14th century. The total amount of produced grains actually declined after Black Death, while the increasing weight of wheat, a sign of demand in better grain, also occurred in the late Middle Ages.

Grain is the heart of medieval food and diet. Also, grain is a typical example of food production and consumption mutually influencing each other. The social and economical changes can led to a change of pattern in grain production. On the other hand, the change of grain composition will also influence the consumption and diet of medieval English people. Such pattern also existed in other kinds food in medieval England, as discussed in the following sections.

## 3 Cattle, Sheep, Pig and Dairy

### 3.1 Cattle and Sheep

Cattle and sheep were the symbols of medieval pasture. 75%-88% remains of animal from the total assemblage from the rural environment were cattle and sheep.[6] Since the status of cattle and sheep were so significant, the consumption and production of them were heavily influenced by the economy and people's demand. In the late Middle Ages, as cattle and sheep market had developed into a certain scale, butchery emerged in town and made meat supply and processing became even more prosperous.

During Roman's time, cattle and sheep were consumed at their young age. Due to the immature agricultural and husbandry development, Anglo-Saxon people inherited and continued the custom of eating cattle and sheep at their young ages. This had also led to a limited productivity in dairy farms and dairy production.

Things started to change during Mid-Saxon period. More and more animals were maintained over 3 years. The main reasons for the change were the growing demand for traction, manure and wool. In this period, farmers need to use cattle to plough their field, therefore, cattle took a greater portion of livestock than sheep. But things changed again in the 11th-12th century. After the Norman conquest, a significant growth in population forced medieval English focus more on arable production, also, the price of wool increased. As a result, sheep, whose dung was good at fertilizing the land field, gradually dominate the livestock husbandry.[6] Also, the emerge of horse ploughing replaced cattle for their work, they were more efficient and required less people to handle. Therefore, the dominance of sheep continued to grow even to the end of Medieval Ages.

If we consider the growing population pressure and technological development caused the greatest change in medieval arable agriculture, Black Death, similarly, changed the condition of medieval English husbandry tremendously. Before Black Death, meat was consumed in a desperately low amount. No more than one or two pigs will be consumed during a year.[7, 8] Moreover, people from high class consumed much more meat than the low class. However, after the catastrophe, while the population declined in an astonishing scale, population pressure was less a serious problem and ratio of resources to people grew much higher. The status of grain slightly fell, while more and more people turned themselves from crop field to pasture. Similarly, there's an noticeable increase of meat in rural, town and manor areas.[9] The demand of meat was rapidly growing. And during mid-14th to mid-16th century, people once again, consume more meats from animals at young ages(0-6 months), this is even more evident in the consumption of beef[10]. Although the preference of other kinds of meat, like fish, poultry and venison were also increasing among high status.[11], which led to a slight decline in cattle and sheep consumption, we must say, cattle, sheep in addition to pork, remain dominant in the medieval meat consumption. The emerge of butchery can be another interesting aspect to analyze the mutual influences between meat consumption and production. After 1349, thanks to the

prosperity of meat trading and consumption, professional butchery appeared on towns, and later grew into a scale that even households from manors will buy butchered meats from markets instead of processing them by themselves. As we mentioned before, people from low class now started to consume more meat as well, which was also beneficial to the development of butchery. In addition to preserving meat, butchery is a very good way of fully exploiting the value of animals. From then on, not only meat of animals can be obtained from carcasses, offals, marrow, fats and bones now became a part of people's diet: pudding and sausages were produced and consumed; bones can be used for stews and soups. In general, butchery became popular because of the increase of husbandry, but in the same time, it further developed meat production into a higher level.

### 3.2 Pig

During most of the time in medieval England, pork was the second most common eaten meat among all. Nowadays, pork seems to be similar with beef and lamb to many of us, despite the taste. However, pork and pigs played a special and essential role in medieval England food structure. In this section we will discuss the reasons why pork became one of the dominant meats in medieval England and why pork experienced a slight decline after the conquest due to that as well.

Pigs were exclusively cultivated to produce meat, this make it distinguishable from cattle and sheep. Although pigs were unable to produce valuable commodities like wool, milk or cheese, they had incomparable advantages in producing meat. First of all, pigs were extremely easy to cultivate. Peasants don't have to own a pasture for pigs to grow. So, for those environments which were arable with no space for pasture, pig cultivation will be the substitution of beef and lamb, as source of meat and protein. Pigs can eat almost anything for living, so even town's people were able to cultivate pigs. In addition to adjusting well to any environments, pigs can be fatten within two years, and as the techniques of breeding developed, pigs can even be made into pork within a younger age. Moreover, by the way of putting more piglets into one litter, the birth rates of pig increases, while the death rate were relatively low even in today's standard. Thus, medieval peasants producing pork were able to not only sell the surplus on the near markets, but also satisfy their own needs. Lastly, pork was suitable for long-term preservation, they can be made into ham and bacon to be saved for a long time.

Nevertheless, pork did slightly decline after the Norman conquest.[12]. Regardless of the many benefits and advantages pork has, it also has shortcomings: as we mentioned, pig produced no by-product. So when the price of wool was high, the scale of pork production will be undermined. After the Black Death, there was an increase in pasture and that more animals were present in the countryside.[13, 14] Also, after the Norman conquest, as the population pressure grew, peasants needed to manure their land with animal's wastes to fertilize the land in a shorter period. Among all, sheep's dung was the best nutrition

source for growing crops. As a result, pigs became less competent during such periods. Being outperformed might not be the only reason for the decline. Before pigs were driven into litters near towns, they were more often be raised near woodlands. During autumn and early winter, pigs will be sent to the near woodland for food. Woodland was thus a perfect place for pigs to search food by themselves and the governors of Norman undoubtedly realize that they can benefit a lot from the pannage. Therefore, Normans put limits on the time duration for feeding pigs in the woodlands every year to gain profits from it. Also, due to the growing population pressure, more and more woodland were removed and transformed into fields to grow crops, which limited the use of woodland for pigs as well. Being affected by these several reasons, pigs cultivation, with a limited space of development, were driven to live near towns, while the livestocks like cattle and sheep had increasing significances in commerce and agriculture. Its status, as a result, was transcended by livestock in the pasture. However, pork, especially those which were tender and made in young age, were welcomed by the picky nobles and monks. On the other hand, peasants consumed pork since they can only afford this. So pork consumption remained its dominant position with beef and lamb, and experienced an increase in the end of Medieval Ages.

### 3.3 Dairy

Dairies were ubiquitous in late medieval England. Both peasants and kings will consume certain amount of dairies. Dairy can be a premium product among the nobles, for example, the cheeses of the priory of Llanthony by Gloucester in the late Middle Ages.[15] But peasants might be able to afford to keep and consume part of them before selling them on the market.

Instead of milk, which is a daily member of breakfast for many of us, butter and cheese were the main characters of the medieval dairy. In summer, animals like cattle and sheep were in the peak of lactation. During this particular time, milk will be produced in their greatest amount from the animals over the whole year. There's no good way of preserving the heat-vulnerable milk when in Medieval Ages. As a result, only a little portion of milk will be rapidly consumed, while most of the milk will be processed and made into butter and cheese to be consumed for the times of the year when comparatively little dairy was produced. These durable products constituted the main part of medieval dairy.

Dairy was welcome by the monks, especially for Cistercians. Cistercians aimed to adhere to the letter of their monastic rule and therefore to avoid flesh, lard and, before the thirteen century, the dietary supplements of pittances. Therefore, Cistercian diet focused on cereal products, vegetables, fish, honey, and of course, dairy foods. Nobles will also cook dishes using milk, butter and cheese as well. Even for some peasants, like Piers Plowman, a peasant in the late 1360s, had a modest amount of dairy products like two green cheeses. Above all, dairy was widely consumed by almost every class in medieval English society.

Despite those foreign export exceptions and cheesemongers trading substantial dairy in cities like London and Norwich, most of the dairy products were consumed locally. The centralized marketing of dairy produce, often in tandem

with the wool crop, lessened in the fourteen century, as the stock of manors was frequently leased to cow herds and dairymen. Without bargaining power, commercial contacts, and middlemen, the potential for marketing beyond a local level was diminished.[16]

All in all, dairies were common in medieval English society. While monks had preference to avoid meat, dairies were good substitution to provide protein. Both nobles and peasants enjoyed them, while the trade was restraint in a small, local scale during most of the time in Middle Ages.

## 4 Fish and Bird

### 4.1 Fish

England was a country mostly surrounded by sea. No one will doubt that fish was something in the medieval English diet history. Although fish can be well transported and preserved in medieval England, the consumption of fish varied from place to place. While fish were almost non-existent in inland rural regions, particular regions would consume fish in large quantities, monks, town dwellers and nobles loved fish either for their religious values or tender tastes.

Eel, cod and herring constituted the main part of the medieval England fish consumption. Cod and herring were in a relatively, most frequent caught fish in the sea, and the skills of catching them were also well developed. For cod, particularly, they were large fish, which can provide sufficient amount of meat for consumption, thus were welcomed by the consumers.

In the aspect of consumers, fish market attracted both nobles and normal townsmen. While fish were commonly sold on markets near sea, nobles would purchase horses for carrying fishes from market to their kitchen[17]. Last was a dispensable part of monk's life. During this period, monks will try to avoid eating meat and absorbing oils. In addition to its religious bonus in Bible, fish can be the perfect food during a monk's last. There were clear signs of fish consumption during medieval lasts.[18] Also, there were cases proving the significance of fish in noble and monk's lives: in 1129-30 and 1160-1, monks and nobles set up expensive fishponds near their living areas for fish supply.[19] Although the productivity was terribly low, and the source of fish was still dependent on the export, surely this is the sign of the huge consumption of fish near some rich and powerful areas.

We must say the rise and decline of fish eating were the products of a complex mixture of taste, of social and religious standing, of availability in the face of seasonal and regional diversity, and many other factors besides. In monastic regions, some parts of the countryside and in some towns, they existed in a large quantities. Elsewhere, although transportation and preservation was mature, fish-eating might be never existent, which was to say, the locals didn't need fish. There was a pattern of decline in the mid-to late fifteen century, but the influence was also partial. So the relation and condition of fish consumption and production in the medieval English food structure was vastly influenced by



its local situation, no conclusive pattern can be drawn from our existing data and discovers.

## 4.2 Bird

The custom of eating birds in England was originated from Romans and it continued from then on. Birds were direct protein provider as well as by-product producer. Poultry are easy to cultivate and their products were valuable, so their existences can be seen from the lowest class to the richest one. In medieval England, we can see a clearly different status and condition for poultry and wild birds. Therefore, in the following paragraphs, we will discuss them accordingly and reveal their relations between consumption and production.

For poultry, there were two main types of birds widely cultivated by peasants: fowls(chickens) and geese. Although fowls and geese were the most eaten birds during medieval history[20], there's no way of considering them as the largest source of protein for medieval farmers. In fact, peasants won't eat their poultry as frequent as pigs, which were discussed in the earlier section. Unlike pigs, which is exclusively fed and fatten for their meat, peasants grew fowls and geese for their eggs and feathers. In addition to be used for fowl fighting, fowls produced eggs, which can be sold for a good price on the market. To prove such assumption, we can use the evidence that the number of hens in medieval rural regions was always higher than cocks,[21] since hens can produce eggs while cocks were only used for breeding. For geese, the value of their feather were much higher than their meat: feather can be used to produce warm weaving fan, brush, arrows and quills, which were needed in daily life, military and administration. As a result, instead of eating birds when they were young and fresh, peasants will tend to keep them until these poultry can not produce feathers or eggs anymore. Poultry can produce commodities of high value in the markets and were easy to breed, and therefore, peasants, even those the poorest, will cultivate poultry for benefits. Since 14th century, when the market had grown to a certain scale, the selling of birds were specifically designed to the poor, At the end of medieval ages, lords gradually gave up cultivating birds on their own and turned to buy bird products solely from the markets. To conclude, bird rearing was a very important part in peasant's economy during middle ages.[22] For wild bird, which is not grown by human, was another story. The number of their existences were much lower in the rural areas. They can only be captured by snaring and trapping in particular areas. Most of them were only eaten by the high status, although sometimes to a lavish scale.It was said in the enthronement feast for Archbishop Neville in 1465, over 10700 birds were consumed. For medieval English nobles, they will even eat birds which were considered as inedible today. In addition to eating, wild birds themselves, can be used for multiple purposes: they can be prominent status in late medieval literature and art.[23]; peacock were captivated for showing on the banquet while hawks were trained for falconry. The productivity of birds varied differently from time to time and both economic fortunes and climatic swings contributed to such fluctuations. When the life was getting better, the demand of birds were

increasing. As an outcome, diversification in wild bird management emerged, such as swannery.[24] In addition, in the late Middle Ages, nobles tended to eat immature bird or wild birds, just for their "nutritious" and tastes, instead of gaining protein.

Thus, the relations between bird consumption as food and its production is revealed: peasants all over the country grew poultry mainly for their eggs and feathers. Thus poultry widely existed but their meat was seldom eaten by peasants themselves. The poor kept selling these products and eventually poultry products became exclusive for low class producer. Although lavish feasts serving wild birds did exist, they were much harder to be obtained, so they served as a luxurious role in medieval English life, from showing to falconry, and of course eating for their tender tastes. When people's life getting better, the demand of wild birds also grew, swannery was established and wild birds served on table became younger and younger. The products of bird influenced its production scale and structure, while the productivity also affected its status and consumption.

## 5 Vegetable, Fruit and Venison

### 5.1 Vegetable and Fruit

In this section, we will mainly discuss vegetables and fruits produced in garden, in another word, garden products. The garden products were restraint in small size and locally during most periods in medieval England, the domestic trade of fruits grew slowly since the foundation of towns in the tenth and eleventh century. Foreign import of garden products existed, but for the gardens of England themselves, the condition seems to be paradoxical. Vegetables and fruits were common to every class in England, but their production and trading were restraint in small scale. They were highly valued and beloved by monks and nobles, while peasants and town households ate even more vegetables than the higher class. To figure out the puzzle, we need to analyze gardens and their products separately from the view of peasants and nobles, in the following discussion.

For nobles and monks, vegetables and fruits were a indispensable part of the daily diet. Vegetables can be good ingredients in meals for their desirable flavor and textures. Fruits were highly regarded by nobles and will be eaten during winter, particularly during Christmas.[25] Educated consumers at that time considered garden products as healthy food as well.[26] As a result, large, luxurious gardens were built attached to palaces and monasteries to supply the noble's needs. Various products would be produced in such gardens, in the example of a garden belonging to the London residence of the Earl of Lincoln in Holborn, managed by Robert Gardener, the garden produced pears, apples, walnuts, cherries, beans, onions, garlics, verjuice, roses, hemp, vine stocks and even more. Gardens like such were costly to keep: In addition to the fee of

fencing and seeds, the salary of gardeners are so high that they're similar to carpenters and skilled artisans. Additionally, they will be guaranteed the salary for a whole year. Because of the expenditure to keep such gardens was high, their numbers over England were small. Nonetheless, they were typical among the high status and play a firm role in serving the table of the rich.

For the rest of people, mainly peasants and town households, things went quite the opposite. Most of the gardens over the country were small. Some of them were only a hundred square yards.[27] Most of them required no specialization involved, although fruit trees need more skills, most of the vegetables are easy to grow. The limitation of size probably came from: The prices of grains and meats were higher in the markets, so growing garden products has little profits. Also, vegetables and fruits are incomparable to grain and livestock in terms of energy supply. So after all, garden products remained a relatively small portion in the diets of normal people. Nonetheless, they did commonly exist. Peasants will mixed leeks or onions with oatmeal and other cereals in their pottage. Garlics and mustards, due to their strong flavors, were beloved by normal people since spices were very expensive. Cider was a replacement of ale when people can't afford ale. In June and July, when grains were likely to be in short supply and highly priced in the market, green peas will the substitution for the poor. In addition, the consumption of vegetables also prevent people from low class getting into trouble with scurvy and they might indirectly realize it. All in all, serving for different purposes and constrained by the limitation of resources, normal gardens in medieval England were small, widely spread. The products were commonly consumed, but in a small scale. Considering the existences of two different types of garden for two different purpose, our puzzle in the beginning of the section is hence no more of complication.

## 5.2 Venison

Vension, referring to deer's meat mainly, were enjoyed by people of high status in most cases all over the Middle Ages. Kings, bishops and nobles served venison on feasts or important festivals. They convey certain social meanings such as power and warfare since Anglo-Saxon time. Deers like roe deers were considered as symbol of being faithful, chaste and abstemious. They were also precious gifts to who were loyal to their lords.[28] Venison were legitimately forbidden to be acquired by people like peasants and other normal ones, especially after the Norman's conquest. In this chapter, we will focus on why venison became a food so prestigious to medieval people in various aspects. There are several issues making them exclusive, expensive and only affordable by the greatest men among England.

The main reason contributed to the rarity of venison, we have to say, was not directly from the agricultural production. Before Norman's conquest, hunting was permitted, and there're more frequent signs of hunting in the rural areas even than the areas near monasteries and royal household.[6] However, as the Norman took control of England, they started to set up more and more forest laws to restrict the rights to take animals in the forest. In Norman's England,

only three kinds of places were available for hunting: royal forest, private forest and deer parks. Unless a person was professional or royal, usually people were not allowed to enter such areas for hunting. From then on, despite the existence of poaching, normal people were excluded from hunting and getting venison.

In addition, venison production itself was also hard to be productive. First, gaining venison is hard: for most of the nobles themselves, they gained venison by a way called "drive" before Norman time. A number of people riding horses will chase deers into enclosures and kill them by arrows. Although chasing might be time-consuming, but after all deers will be captured and killed in numbers. However, after the conquest, a new way called "par force" was introduced into England. Par force was more like a sport and social display as the process of Par force was to stalk, kill and excoriate a single deer using a whole day. Venison will be produced, but in a disastrous efficiency. Thus, to meet the demand of venison in royal courts and monastic feasts, kings and the greatest men over the country will hire huntsmen and specialized hunting teams traveled from forest to forest to collect venison. But the salary of hunting specialists was expensive. It cost the Bishop £26 6s.8d. to keep a huntsman, three grooms, and a pack of thirty hounds at Bishops Waltham for 316 days in 1332-3.[29] So, producing venison is undoubtedly costly either in time and money.

Also, transportation and preservation were problems to concerned. There're three concerns making the hunting need to be fast, and well planned: venison was required to be eaten in fresh; they were only "in grease" during summer, when the days were the hottest and food can easily rot; and usually forests were far away from where the feasts were held. Thus, deers needed to be hunted only a few days before the feasts began and the whole process should be accurate and fast. Also, the preservation was expensive. After some venison was consumed in the table right away, the rest were preserved with salt under the local larders: two kinds of salts were used: "gross" salt, which was coarser and produced by the evaporation of sea water; refined salt, produced from brine springs, they were easier to penetrate into the meat and less coarser, but their prices were much higher too. No matter which kind of salt was used, as the size of the deers' carcasses was large, and a number of carcasses were preserved in the same time, the cost of preservation was expensive. Salt could cost only a few shillings a quarter in the first half of the fourteenth century, it rose to an average of 6s.4d. per quarter in the period 1351-1400.[29]

To conclude, in addition to the more and more strict laws of hunting, the time-and-money-consuming hunting, transportation and preservation led the production of venison to be rare and in low productivity. These are the reasons why the prevalence of venison in town and rural was never existent during the Medieval England.

## 6 Conclusion

In this paper, we discussed the consumption, production condition of medieval English food, as well as their inner relations and mutual influences. As the main

character of medieval food, grain became even more significantly important after the Norman conquest when the population pressure gradually became a serious problem. Cattle and sheep were kept for a longer age to exploit their value in producing not only meat but also dairy and wool. Under a high pressure of food shortage, pork became the second frequent eaten meat among all animals. While vegetables were eaten in all English classes, fish, bird and venison, which were rare in quantities and limited by its production scale, were enjoyed only by monks and nobles who were the richest. Such gaps became smaller after the Black Death, when population sharply decreased and everyone had more resources to make a better living. A lower frequency of producing grain occurred, meat consumption increased and butchery were introduced. Meat types other than beef, lamb and pork started to be consumed by middle and even lower class people. Such pattern change can never live without the ever changing agricultural structure. In the same time, the structure will also be adjusted according to the need and demand of medieval people.

To be noticed, exceptions did happened, sometime even to a large scale. For example, although after 13th-14th century, England faced a tremendous pressure on population and food supply. Mixed farming style, which is a more efficient, more productive way of producing grains and meats, only existed in a relatively small parts of England. Extensive farming still dominated the whole English society. Even in the areas generally adopted intensive farming, extensive farming also existed in such areas.[30] The unwillingness of nobles might be a reason for refusing the change, but such argument was not persuasive enough. Although international agricultural trading remained small during medieval time, it did have impacts on English society, especially in the high class. All in all, the food condition in medieval England was more complicated than a single paper can explain. Nonetheless, certain clues and evidences can be drawn to reveal the most significant relations and influences between its production and consumption.

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