



## Capons<sup>1</sup>

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### What is a capon?

Walking through the supermarket, it is often possible to find capons for sale. While it is obvious from the shape of the packaging that it is a bird, there is often no indication in the labeling of what exactly a capon is. On a recent tour of a local grocery store by 4-H members very few of the participants knew the definition for a capon.

A young chicken is called a chick. A male chicken is a cock or a cockerel, depending on its age. Similarly, a female chicken is called a pullet or a hen. The age at which a pullet becomes a hen and a cockerel becomes a cock depends on what type of chicken is being raised. Purebred poultry producers have very age-specific definitions. A chicken is a cockerel or pullet if it is less than one year of age. After one year of age, the chicken is referred to as a hen or cock. In the commercial industry a female chicken is called a hen after it begins egg production (around five months of age). A sexually mature male chicken (again, around five months of age) is referred to as a rooster. A capon is a castrated male chicken.

In caponization, the surgical castration of male chickens, the testes of the male chicken are completely removed. As a result, the cockerel fails to

develop certain male characteristics or tends to lose them if they are developed. Capons are usually quiet and docile, lacking a cockerel's disposition to fight. The comb and wattles cease growing after castration, so the head of a capon looks small. The hackle, tail and saddle feathers grow unusually long.

Removal of the testes and thus elimination of the male sex hormones they produce reduces the male sex instinct and changes their behavior. They will become more docile and less active. Energy that is normally expended in fighting, courting behavior, and territorial protection is greatly reduced, allowing more efficient conversion of feed into growth, fat deposition and improved meat quality.

Caponizing produces a unique type of poultry meat grown for a specialized market. The meat of uncastrated cockerels tends to become rather coarse, stringy, and tough as the birds age. This is not the case with the capon. Caponized males grow more slowly than normal males and accumulate more body fat. The concentration of fat in both the light and dark meat of capons is greater than that of intact males. It is claimed that the capon meat is more tender, juicier, and more flavorful than regular chicken. A comparison of the body weights and carcass characteristics of capons and intact cockerels is given in Table 1.

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## The U.S. capon industry

China and Italy appear to be the areas where the earliest caponizing was practiced. Later, this knowledge spread to other countries - France, Britain, Africa, and later to the United States. As the heavy roaster fowl came to be produced from broiler-type males before they become sexually active, there was a thought that caponizing might disappear. As yet, this has not happened. In the 1990's, capon continues to be in demand, especially for the gourmet market and in certain ethnic communities.

Historically capon production has been centered in two major areas:

1. The Northeast, where Pennsylvania growers supply much of the New York and adjacent markets. New Jersey and New York also had pockets of production that were more active in the 1970's and 1980's.

2. The Midwest, where the Wapsie Produce Company of Decorah, Iowa continues to be the major processor for the considerable number of capons grown in Wisconsin, Iowa, and Minnesota.

Today, relatively few capons are marketed commercially in the United States. It is estimated that around a million capons are produced annually. This is in contrast with the 8 billion broilers produced each year. Today commercial capon production in the United States is now limited to a single producer, Wapsie Produce Company in Iowa.

## Capon production

Any breed of chicken can be caponized. Over the past 100 years breeds that were particularly favored for capon production included Jersey Giants, Brahmas, Orphingtons, Cornish, Plymouth Rocks, and Cochins. Today commercially grown capons are produced using the Cornish x Plymouth Rock cross typically used by the commercial broiler industry.

Commercially grown capons are marketed at 15 to 18 weeks of age. The goal is a capon weighing six to eight pounds at packaging (9 to 11 pounds live weight). By contrast, commercial broiler chickens

are marketed in six to eight weeks and roasters in about eight weeks.

A lot of attention has been focused on diets for growing capons in such a way as to produce rapid early growth and retard excess deposits of fat as the bird nears market age. Birds with stronger legs and better balance are sought after for capons as more time spent on their feet and exercising tends to reduce breast damage. Growth rates can also be adjusted by modifying the lighting programs used.

## Caponization

Caponizing, like sexing, is an acquired skill and, since it is a serious operation from the standpoint of the chicken, is best done by experienced individuals.

Male birds are typically caponized at two to four weeks of age. The testes of a male chicken are located within the abdominal cavity. A good caponizer can operate on about 200 birds per hour. An antibiotic is injected into the birds at the time of caponization, or one is fed for a week prior to the operation and for a week after. This aids in preventing stresses and infection.

The cockerel is taken off feed and water 12 to 24 hours prior to surgery. This is so that the intestines are not full and crowding the abdominal cavity during the operation. The partially empty intestines settle away from the testes, thus providing improved visibility within the body cavity. The bird must be penned on wire or a clean floor or it may ingest litter material.

Surgical caponizing involves total removal of the testes at about two to four weeks of age. At this age heavy breeds should weigh about one pound. The operation may be performed on older birds, but the young bird suffers less adverse effects and survival rate is higher.

The bird is fastened on a surface on its left side with the wings held together above the body. The legs are also fastened together and the bird stretched out to its full length in order to expose the rib cage area. Feathers in this rib area must be removed and the skin disinfected with 70% ethanol or another skin disinfectant.

Using a sharp scalpel or knife, a one-inch incision is made through the skin and other tissues between the two posterior ribs. The skin should be moved to one side before making the incision so that skin cut and muscle cut are not aligned afterwards. The incision should be deep enough to expose the abdominal air sac covering the intestines and other abdominal organs. Care must be used to avoid cutting a large vein in the skin that runs diagonally toward the back of the bird. The abdominal air sac is punctured with a sharp hook or probe to expose the internal organs. The testes are located on the dorsal wall at the anterior end of the kidneys, posterior to the lungs. The testes of a three-week-old cockerel are about the size of a large wheat kernel and may be yellowish, white, gray or black in color.

Both testes should be removed from the single incision, the lower or left testes removed first. The testis is grasped with special forceps and then twisted free from its connective tissue while slowly pulled from its attachments. Care must be taken not to rupture large blood vessels located between the two testes. The upper, right testis is then similarly removed. Electrically heated cautery equipment is available for incising the skin and removing the testes. It prevents excessive bleeding and may reduce the incidence of "slips". The rib spreader may now be removed and tension on the bird released, allowing the skin and thigh muscle to slip back into place. Once the bird is released, the incision should close without need for sutures or bandage.

Removal of both complete testes is necessary since any fragments that remain will grow and produce enough male hormone to create a "slip." While a "slip" will not be a normally functioning cockerel, it will also not yield the desirable meat qualities of a good capon.

Following surgery the birds should be provided feed and water in a clean pen where they are not crowded. Crowding may cause cannibalism, prolonging healing of the incision. "Windpuffs" may develop within a few days due to a buildup of air under the skin that escapes from air sacs cut during the surgery. Carefully puncturing the skin with a sharp instrument will effectively release entrapped air and may be repeated if necessary.

## Other avian species?

The virtues of castrating domestic birds other than the chicken have not been extensively investigated, although some data are available for the turkey. In general, neither carcass quality nor production characteristics such as growth rate and feed efficiency are altered by caponization of toms and, therefore, the practice has never been advocated on a commercial scale.

It is possible to caponize pheasants. Caponized pheasants are much more quiet and sluggish and less likely to fly. The caponized pheasant will grow to a slightly greater size than a standard bird, with increased body fat. Although caponizing pheasants is not the norm in industry, it does have some benefits. There is a higher average body weight at sixteen weeks, cannibalism and other aggressive tendencies are reduced or eliminated, resistance to be captured and handled is reduced, and carcass quality at slaughter is excellent with a high degree of body fat.

## References

Etches, R.J. 1996. Reproduction in poultry. CAB International, Oxon, UK.

Anonymous, 1967. Caponizing chickens. USDA Leaflet 4910.

**Table 1.** Body weight and carcass characteristics of capons and cockerels.

	Caponized male	Intact male
Examples of live weights (kg) obtained by different researchers with different breeds:		
Broiler chickens (Cobb, 1969) at 11 weeks	1.74	1.87
New Hampshire chickens (1957) at 13 weeks	1.85	1.85
New Hampshire chickens (1957) at 24 weeks	3.39	3.47
New Hampshire chickens (1955) at 17 weeks	5.69	5.62
Broiler chickens (Hubbard, 1976) at 18.5 weeks	3.96	3.61
Feed efficiencies (kg feed per kg live weight gain) obtained by different researchers with different breeds:		
Broiler chickens (Cobb, 1969) 4-11 weeks	3.07	3.00
New Hampshire chickens (1957) 0-13 weeks	2.97	3.03
New Hampshire chickens (1957) 0-24 weeks	5.09	5.03
Broiler chickens (Hubbard, 1976) 5-18.5 weeks	4.14	3.74
Result of 1969 study with Cobb broiler chickens: Percent of panelists describing breast meat as		
juicy	62	62
dry	38	38
tender	96	94
not tender	4	6
Percent fat content (1969 study with Cobb broiler chickens)		
Light meat	0.75	0.43
Dark meat	4.41	3.62
Finish score (1957 study with New Hampshire chickens)		
at 13 weeks	2.55	2.57
at 24 week	2.10	1.94
Fleshing score (1957 study with New Hampshire chickens)		
at 13 week	2.34	2.62
at 24 week	2.55	2.45

Source: Reproduction in poultry, 1996.