

Avian Male Reproductive System

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The avian male reproductive system is all inside the bird, unlike the males of mammalian species which have their reproductive systems outside of the body. This is one of the really remarkable things about birds; the sperm remain viable at body temperature. While female birds only have one mature gonad (i.e., ovary), both are developed in male birds. Similarly, while female birds are hatched with the total number of ova they will ever have with no new ova produced once hatched, male birds continue to produce sperm while sexually mature. While male birds continue to produce sperm for many years, the quality of the sperm decline with age, reducing fertility.

The male chicken possesses two testes, located along the chicken's back, near the top of the kidneys (Figure 1). The testes are elliptical shaped and light yellow in color.

Each vas deferens (ducts which transport sperm from the testes) opens into a small bump, or papilla, which is on the back wall of the cloaca. The papillae serve as the mating organ. The incorrectly named rudimentary copulatory organ is located on the middle and front portion of the cloaca and is used to classify the sex of baby chicks.

The vas deferens is also the main area for sperm storage in male

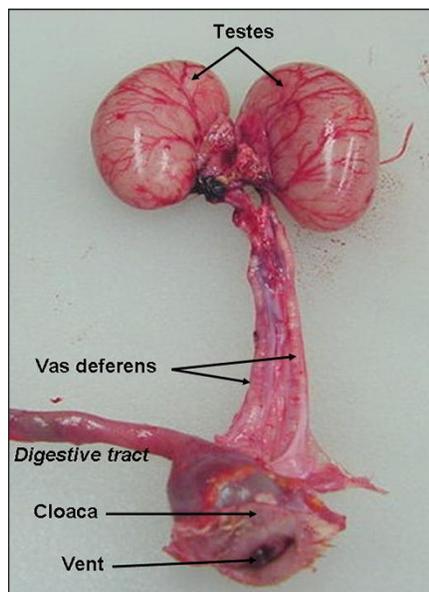


Figure 1. Reproductive tract of a male chicken. Jacquie Jacobs.

birds. Applying external pressure in this area will result in ejaculation. This method is used for the collection of sperm when artificial insemination is being used.

The main goal of a poultry breeder is to produce hatchable eggs. You must have a fertile egg to hatch a chick. Fertility, the percentage of eggs produced that are actually fertile, is a very important statistic in hatching egg production - the higher the percentage the better. If an egg is not fertile it will not, of course, contain an embryo and no chick will hatch. Simply put, hatchability can never be better than fertility.

Fertility is affected by both the male and the female, and the fertility of both tends to decrease as the birds get older. Flock fertility is dependent on the reproductive status of the birds (i.e., level of egg and semen production) combined with the birds' interest and capability of mating. From the female side, the decline in fertility is believed to be due to faster release of sperm from the sperm storage tubules. They are not able to store sperm as long, so more frequent mating is required. From the male side, it is presumed that there is a decrease in sperm quality as the rooster ages, as well as a decrease in mating activity. There is also typically an increase in early embryo death when the hatching eggs come from hens in the second half of their reproduction cycle. These early deaths often appear as clears and may be mistaken for infertile eggs when candling or breaking out unhatched eggs.

Capons

Capons are **castrated male poultry**, typically chickens, in a process referred to as **caponization**. As previously indicated, the testes of male birds are located inside the body so castration is a surgical procedure. When the testes are removed, the male bird fails to develop certain male characteristics or tends to lose them if they are already developed.

When chickens take longer to reach market weight the older meat tends to become rather coarse, stringy, and tough as the rooster ages. Caponized males grow more slowly than normal male chickens and accumulate more body fat. Deposits of fat in both the light and dark meat of capons is greater than that of intact males resulting in a meat that is more tender and juicier. The older the age at which capons are slaughtered the more flavorful the meat. With major improvements in the genetics of meat breeds, caponization is not necessary. The fact it is a surgical procedure makes it difficult and expensive and raises ethical concerns.



Figure 2. Smoked capons in the display case of a store. *Jacque Jacobs.*

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