

Common Crop Issues in Backyard Chickens

What is the Crop?

Chickens, as well as other birds, have a unique digestive system, which allows them to feed very quickly and digest it later at a safer location. They do not have teeth, so feed is swallowed whole. The crop is part of their digestive system (Figure 1).

The crop is a storage sack that holds the feed and slowly releases it to the gizzard where it is ground into smaller pieces. When the crop is full, it is visible as a small protrusion at the base of the neck in front of the chest.

The crop is easy to locate after a bird has just eaten. Many times, the texture of the feed can be felt by gently massaging the crop, especially if the feed contains larger pieces such as whole corn. While problems with the crop are rare, when they do occur, timely action will lead to better results.

The best time to check your flock for crop issues is first thing in the morning before the birds have time to eat. A normal crop will be empty and hard to find at that time. When you locate it, you can move it around with your fingers. If a bird has a crop that feels full and hard despite not having eaten for a long time, it may indicate a problem (Figure 2).

Impacted Crop May Occur After Eating Indigestible Materials

Crop binding or impacted crop results when the crop gets impacted with material (feed). Impaction is often the result of eating large amounts of poorly digestible materials like newspapers, grass, feathers, string, plastic or other indigestible material. Additionally, diseases that affect the nervous system, such as Marek's disease, can lead to impacted crops.

Birds with impacted crops will still have a full crop early in the morning before feeding. If you palpate the crop, it will feel hard like a golf ball. You will not be able to move the crop around when you massage it. You can see

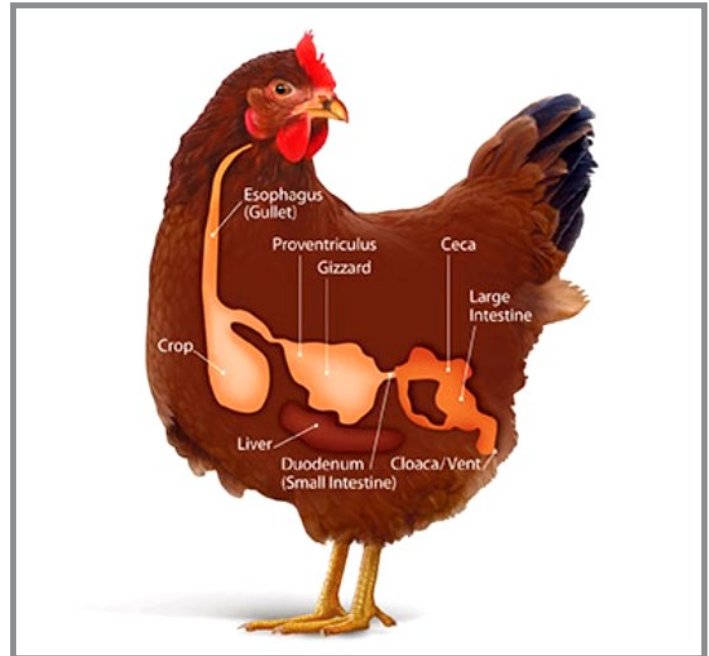


Figure 1. Poultry digestive system. Courtesy of www.nutrenaworld.com



Figure 2. Side and front view of a featherless bird with full crop pointed out by the arrows. Photo by Jon Moyle

it more easily if you compare the affected bird with another one. Be gentle while palpating enlarged crops with excessive fluid as aggressive massaging may cause aspiration pneumonia.



Figure 3 Shows impacted crop (young male) compared to normal (young female). Photo by Jon Moyle

Be careful not to over diagnose this condition. If you suspect a bird has an impacted crop, isolate it with water and no feed to see if the condition corrects itself. After fasting, if the crop is empty, the bird may have just eaten a big meal before you checked it. If the crop is still full, it may have eaten something indigestible. Continue to provide lots of water and gently massage the crop to help move the material through the digestive track. If the impaction lasts for days and becomes harder, surgical intervention might be necessary to alleviate the problem. Contact your veterinarian before it's too late.

Pendulous Crop is Enlarged and Distended

A pendulous crop hangs down in the front of the bird. As a result, the crop cannot empty properly which can lead to other problems like sour crop (see below). Affected birds continue to eat but they lose weight and eventually become emaciated and may die.

The exact cause of pendulous crop is unknown, but this condition frequently develops after binge eating, excessive water intake, or consumption of large amounts of fibrous or indigestible material like grasses, rocks or sand. Chicks brooded at very high temperatures can also develop this condition as they will drink excessive amounts of water. Crop washes will not recover any fungal elements, only foul-smelling liquid. Because the muscles and ligaments have been damaged, no treatment is available. Owners wishing to maintain their birds can try using a "crop bra." This is a type of bandage that gently places pressure on the crop to help the contents empty into the stomach and hold the crop in place. It must be worn continually, as the crop will revert to the pendulous condition if the crop bra is removed. Birds that develop a pendulous crop should not be used as breeders since the condition can pass from generation to generation.

Sour Crop Easily Identified by Smell it Emits

Known as crop mycosis, crop mold or thrush, sour crop is a yeast infection caused by *Candida albicans*. It is most easily identified by the "sour" smell it emits. It is commonly associated with long-term administration (1- 2 weeks) of oral antibiotics, which affects the microflora of the upper digestive tract and causes yeast overgrowth. It also can develop as result of a pendulous or impacted crop. Other causes include bad or spoiled feed, slimy or unclean water, and watering systems that lack proper hygiene. Additionally, any condition or disease makes birds immunocompromised can lead to the development of sour crop.

Sour crop may extend upwards to the esophagus and the oral cavity and appear as a fine white pseudo-membrane. It is not transmitted from one bird to another; however, multiple birds within the same flock can be affected if they are under same conditions or on long-term administration of antibiotics.

Sour crop can be treated using antifungals like copper sulfate or nystatin. It is important to follow the dose recommended by your veterinarian, since copper sulfate overdose can be toxic for the birds. Treatment is most effective when applied to an empty crop, so it is best to apply it early in the morning. You can flush out the crop using one teaspoon of Epsom salts (magnesium sulfate) in a cup of water. Copper sulfate solution at 1:2000 dilution in drinking water is commonly used to treat and prevent fungal infections in poultry. Again, be careful to not over use as it can become toxic.

Sour crop can be prevented by improving primary husbandry and avoiding unnecessary use of antibiotics.

Crop Worms Caused by Several Species of Helminths

Capillaria is the most prevalent species of crop worm and the problem is more common on floor-reared birds. The worms are small and thin, often resembling hair or thread. Female worms are much larger than males and range from 0.4 - 2.4 inches long, depending on the species.

Capillaria can spread via the fecal oral route but in most cases, earthworms (an intermediate host) are required to complete the lifecycle of the capillaria. Chickens are infected when they eat the earthworms. Affected birds

look unthrifty, weak and emaciated and may have difficulty breathing. In addition, crop stasis (when the crop stops functioning) might happen and sometimes sudden death occurs with no signs in severe cases.

Veterinarians can prescribe off-label medications like fenbedazole or levamisole to treat the condition, but consumption of meat and eggs must stop until the withdrawal of the drugs from the treated birds has been completed. Crop worms can be prevented by good husbandry and putting the birds on dry, well-drained soil.

References

Greenacre, C. B., & Morishita, T. Y. (2014). *Backyard Poultry Medicine and Surgery*. Hoboken: Wiley.

Boulianne M., et al., (2012). *Avian Disease Manual*, 7th ed. American Association of Avian Pathologists, Inc.

For more information, visit: <http://extension.umd.edu/poultry>.

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