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## The moult and side issues

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Last week I had a visit from my veterinarian. He did not come to see my pigeons; they were all fine., but soon we were talking about the pigeons and that is when he decided to go to the loft to have a look at the moulting process of my pigeons.

During his visit I gained a lot of knowledge about the moult which I would like to share with the readers of the PIPA website.

Some fanciers would see the moult as some sort of a disease but believe me, this is absolutely untrue. We know that several mammals lose their hair on a regular basis as well, just like a pigeon loses its feathers throughout the year. Hair loss and the moult is influenced by the same factors: exposure to sunlight, the hormones and partly the temperature. The moult starts with the dropping of the primaries, which are the feathers that form the outside part of the wings. The 20 secondaries will start to drop as well, following a distinctive pattern: they will start to drop from the feather closest to the primaries all the way to the feathers closest to the body. We know that the bird's feathers do not grow evenly, but if one of the feathers does not grow to its full size the pigeon was probably sick during the moult or had an inadequate diet.



A bird does not only shed its wing feathers, it also loses its cover feathers and its fluff once in a while. The renewal of the fluff should proceed as smoothly as possible. Exposure to sunlight has a large influence on the moulting process. In the autumn there is a lot less sunlight and this influences the glands that produce hormones. Sunlight exposure has an influence on the pineal gland, which is a very important structure in the brain and is located in the Turkish saddle, a protective bone structure in the centre of the brain.

The direct and indirect effect of this gland on other glands and organs can have significant consequences. For a fancier this small section of the brain is of great importance; it decides when a pigeon starts to moult, it regulates the breeding, the bird's development, its blood pressure, it regulates the production of crop milk and influences the carbohydrate metabolism. Even the slightest malfunction of this gland might disturb the growth process of the bird.

The hormones in the pineal gland also influence the thyroid, which is situated in the neck. This thyroid gland is highly active in the moulting period. The sex organs also have a big influence on the growth of the feathers; they cause the form and colour of the male and the female pigeon to be different. So basically there is an entire set of glands that is monitored by the so called pineal gland. Can a fancier influence the moulting process? Absolutely, there are a few things we can do to influence the moult. The most important stimulus is the exposure to sunlight. With the use of artificial light we can lengthen the day, which has an influence on the moulting process.

When we compare pigeon fancying to the poultry industry we could say that pigeon fanciers do not make use of artificial light very often. If there is a problem with the artificial lighting in a poultry farm there is a chance that the hens start to moult too early, as a result of which there is a decrease in egg production. The hens use the same system as a pigeon: the light stimulates the pineal gland, which in turn influences other glands.

Sunlight (or artificial light) has a huge influence on the moult; it explains why young birds born in January moult at the same moment as young birds born in March. So it has nothing to do with the age of the feathers.

To keep the birds in a good physical condition and to stimulate a smooth and trouble free moult it is important to provide a healthy diet. For informational purposes we give you a method that is often used in the poultry industry. In fact nobody knows exactly what the best diet for an animal is although scientific tests have been carried out all over the world about what to feed to poultry. This is what a poultry farmer says on the subject:

“Time and again it appears that farmers make big mistakes when it comes to feeding their moulting hens. The way some pigeons are treated dates back from before the Second World War. Back in those days a farmer did not have the same information we have now; information that seems self evident today.”

Back in the days it was often believed that moulting chicken hens should be kept in a good physical condition; that is why they were given as much grain as possible (barley, wheat, corn) and only a small portion of flour (which is rich in proteins).

Modern insights have already proved the opposite. Today the hens are usually given less grain and a lot of proteins: the opposite of what they used to do. This change was the result of scientific research such as feeding tests on moulting hens and laboratory studies on their feathers. Scientists have also studied the composition of proteins. This led to the idea that moulting hens (and this applies to pigeons as well) need additional

proteins to compensate for the loss. As a result it was found that the formation of new feathers is influenced by a diet rich in proteins. It was often said that “a hen loses its feathers that are rich in proteins, so we have to increase the amount of proteins in their feed. Indeed, it proved that the chickens started to moult earlier with such a diet. With this approach the moulting period could be shortened by ten to fourteen days.”



A rich moulting mixture is indispensable for a trouble free moult.

This finding does not only apply to chickens; we can also use it for pigeons. It speaks for itself that we have to adapt the pigeon feed to their performance. If your feed consists for 10% protein in winter you should give 20% protein during the moult and in the breeding period. These vegetables provide proteins and will improve the feather growth. In the moulting period the pigeon needs a balanced diet with plenty of variation, rich in proteins and vitamins. The birds will also need an open loft for several reasons.

We have an idea of how to influence the moult of a pigeon now but it is important to know that some birds have an irregular or difficult moult. This could be caused by an incomplete or inadequate diet, as we have pointed out. Another factor could be the presence of external parasites that have a bad influence on the moult. When the feathers crumble off or break off during the moult the pigeon will be weakened. Internal parasites can also cause problems and might lead to irregular growth of the feathers. This sometimes leads to feathers that grow too short which results in deformed wings. There are also several poisons that cause feathers to drop or that prevent them from growing back. **Thallium** (1) for instance has a very bad influence and it also causes mammals to drop their hair too early which makes them bald for an extended period of time. This product is often used in mouse poison so be careful if you use any mouse bait in your loft!

If we briefly reread our articles on the subject we could conclude that the moult is caused by a lot of factors, including shortening days and hormonal influence. We have also pointed out that we can influence the moulting process ourselves, for instance by

providing a diet rich in proteins during the moult, by keeping the pigeons in an open loft and by making sure that the pigeons have a balanced diet.

The aim of the article was to convince the readers that the moult is not at all a disease but rather a natural process that occurs regularly. However, a diseased pigeon runs the risk of having a disturbed moult but that is something any fancier will look after.

### **Remarks and observations**

A pigeon that has had a trouble free moult will generally be in an excellent physical condition. For a fancier it is very important to take good care of your pigeons when they are renewing their feathers. If not it might become very difficult to have a successful career as a fancier. We should never forget that good health lies at the basis of a good and regular moult. That is why we should do whatever is possible to keep the pigeons in a good health, for instance by giving them plenty of freedom and by avoiding too many races and too much breeding. If possible the pigeons should have an open loft in a natural surrounding where they can enjoy the sun, fly around and have a good moulting period.

But be careful: you should only leave the loft windows open with good weather and you should not let your pigeons fly out for several hours when it is raining. If you do not keep this in mind your pigeons might get ill sooner or later. You should also try to avoid any draught in the loft in the moulting period, especially in damp or cold weather. If you do not pay attention to this your pigeons might be exposed to diseases. In fact pigeons will moult quicker in a warm loft.

(1) What is Thallium?

Thallium is a metal that was discovered by W. Crookes in 1861. Together with C.A. Lamy he managed to isolate the metal in 1862. The name thallium comes from the Greek Thallos, which means green twig or branch with leaves. It was given this name because of the notable green colour of one of its spectral lines. Thallium is found in Greece, the former Yugoslavia and Denmark. Thallium is found in nature in very small quantities.

There are not many applications for Thallium; it is used in rat poison and in the electric and chemical industry.





# Feeding racingpigeon in moult



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**DVM: Doctor of Veterinary Medicine**

During a full moult, the loss and replacement of feathers amount to about 25% of the protein mass of a bird. Feathers and feather sheaths contain more than 90% of their dry mass as protein. Thus, it should be no surprise that during the moult, the preferential breakdown of the flight muscles occurs to supply amino acids, along with those from the diet, to complete the moult. This means that for both reproduction and the moult, pigeons should be fed a variety of suitable grains, legumes and perhaps higher protein pellets, to provide a wide range of important amino acids and increased energy for these events – and to prevent the utilization and loss of these amino acids from tissues such as the breast muscles. *A ration with upwards of 18% protein – but not higher - to supply a wide range of amino acids would be ideal, not only for breeding, but also for the moult.* Pigeon fanciers can take a lesson from sheep breeders who practice *flushing* their ewes prior to breeding. Flushing means that well in advance of the breeding season, the *quality* of the feed for these animals is markedly increased, to insure that there is high fertility, and a resulting vigorous crop of lambs. A similar approach in pigeons is important in the weeks before the birds are mated or during the moult. What is to be done? Simply this. Enrich the ration by increasing the percentage of peas, cooked (toasted) soybeans (*never feed raw soybeans!*), hemp, lentils, canola (rapeseed), flax (linseed) and a high protein livestock pellet, especially one that contains animal or other high quality sources of amino acids, and decreasing the percentage of cereal grains accordingly.

