

HEALTH CONTROL FOR THE SQUAB PRODUCER

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The principal difference between racing and fancy pigeons and squab pigeons is that the former are kept primarily for pleasure and that the expense involved is a lesser consideration. It is obviously possible to enjoy pigeons through keeping them for squabbing purposes, however, they are a business and so money becomes a prime consideration. In the management of both racing and fancy pigeons, the aim is to have no disease at all present in the birds. However, with squab pigeons, one has to look at the cost of controlling disease compared to the resultant cost of loss of production if that particular disease was not controlled.

It should be remembered that pigeons are basically a robust animal and that given the basics of management and environment are met, health problems can be kept to a minimum. Much of their disease is triggered by stress and this stress may be a problem with the loft environment or a flaw in the birds' management.

The main diseases at work in the squab pigeon are worms, external parasites, coccidia, canker, respiratory infection (*Chlamydia* sp.) and paratyphoid (*Salmonella* spp.). I will deal with each of these in turn.

1. Worms. I have seen squab pigeons with up to 300 roundworms. Given the fact that each roundworm can produce several thousand eggs per day, the potential for environmental contamination and infection is enormous. They are a serious primary parasite, which weaken the birds, leading to a delay in laying, reduced growth rate, and delayed weaning and poor food conversion. They also create a vulnerability to other secondary infections. As the drugs to clear these are cheap, and there are big production advantages to be had through their control, I feel that it is best to totally eradicate these parasites. Because of the time factor, individual medication is out and we must look at using water-soluble preparations. A cheap one that is very effective is Moxidectin (1 mg/ml). The dose is 10 ml to 1 litre of water for 24 hours. As any droppings passed prior to worming will contain worm eggs, they have the potential to reinfest the birds, ideally cleaning should follow a worming treatment. In a squab situation, it is not usually practical to meticulously clean the loft as is the case in racing establishments and so it is best to reworm the birds at a 21-day interval (which is the parasite's life cycle). Roundworm eggs only remain viable for 6 months in the environment and so if 1 day on Moxidectin is given every 21 days for this length of time, roundworms can then be cleared. New birds can be held in isolation and treated with Moxidectin prior to entering the main loft. Microscopic examination of the droppings can be done at any time to monitor the treatment's success.

2. External Parasites. Squab pigeons essentially have two common groups of external parasites, namely lice and mites. Lice feed off feather debris and skin flakes, etc. They have little production significance except for the nuisance and subsequent restlessness they cause the birds. Mites, however, are a serious parasite as they feed off blood. Some species are found predominantly on the birds, while many are mainly found in cracks and crevices of the loft, moving on to the birds, particularly brooding parents and nestlings, during the night and feeding. Affected squabs become visibly pale because of the resultant anaemia, grow poorly, wean late and occasionally die. Moxidectin has the handy side effect that it kills any external parasite that feeds off body fluids. It will therefore help to control any mites present. To completely eliminate mites, however, as well as treating the birds, the loft should be sprayed with an insecticide. I suggest using a synthetic pyrethroid called Permethrin, which is safe to use near pigeons and available at an economical price. The preparation usually used is Coopex. This comes in 25-g sachets, one to three of which are dissolved into 8 litres of water, depending on the length of residual action required (1 – 4 months). The loft is best scraped clean, sprayed with this, concentrating particularly on cracks and crevices, and allowed to dry before allowing the birds to re-enter. If lice are a problem, the birds can be dipped in this solution quite safely. This is, however, best done on a warm day and in the morning so that there is less chance of chilling. Once external parasites have been eradicated, new birds can be dipped to kill any lice and Moxidectin given as above to kill any mites they are carrying.

3. Coccidia. Coccidia is a small protozoan that lives in the wall of the bowel. Its eggs are passed in the droppings (more so in the evening). After a period of time in the environment, these eggs become infective. They become

infective quicker in humid conditions. Infected eggs are then swallowed. Once within the pigeon, larvae from these eggs then burrow into the wall of the bowel, undergo several lifecycle stages and then release eggs themselves which rupture through the fine lining of the bowel wall. As they do this, they damage the bowel wall, leading, to loss of tissue fluid containing protein and also blood. The damage also interferes with digestion and the absorption of nutrients.

Low numbers of coccidia do not significantly affect the birds' health, however, large numbers compromise production and can cause death. No drug will kill every coccidia within a pigeons's system. A controlled exposure to the organism enables the pigeon to develop an immunity to the organism and it is this that protects the bird from disease in the longer term, so that by breeding age, given that the basics of loft environment and management are met, the disease is unlikely to be a problem. Control of this problem, therefore, focuses on avoiding the situations that enable a high number to accumulate. Essentially there are two: severe stress and high exposure. A pigeon that is run down for any reason becomes more vulnerable to clinical coccidiosis because of the resultant immunosuppression, allowing the low number it is carrying in its bowel to opportunistically increase and any ingested to establish. Dampness and poor hygiene, particularly where feeders and drinkers are concerned, will enable high exposure to the organism over a short period of time, again leading to clinical disease. Control of dampness, appropriate hygiene and stress minimisation, ie through provision of a good loft, good management practices and control of other disease, will minimise problems. If unavoidable, stresses start overlapping, eg. rearing of multiple rounds of youngsters plus cold weather, etc, medication can be used to control a flare up. The drug of choice is Baycox (6 ml to 2 litres of water for 48 hours). Signs that will alert the producer to a coccidia problem include weight loss, general ill thrift, green watery droppings that may contain blood. The diagnosis is confirmed by microscopic examination of the droppings. In this situation a 2-day course of Baycox can be given, however, attention must focus on identifying and correcting the stress or management flaw that enabled the flare up to occur in the first place. With ongoing exposure, birds will usually remain coccidia-free for 4 weeks after a 2-day course of Baycox. If necessary, the medication can be given for 2 days every 4 weeks.

4. Paratyphoid. This is the name given to the disease caused when pigeons are infected with the bacterium Salmonella. When infected, pigeons show a wide variety of signs, which primarily are dependent on their age of exposure. Youngsters less than 6 weeks of age develop a typical 'going light' syndrome due to a severe gastroenteritis, causing weight loss, loss of appetite, diarrhoea and sometimes quite a high mortality rate. In older pigeons, the bacterium can infect the joints, leading to red hot swollen joints in the wings or legs, or alternatively inflame the membranes round the brain (the meninges) leading to loss of balance and head tilt. In mature birds, a generalised form of the disease also occurs where a wide variety of organs are affected simultaneously with the pigeon being profoundly ill and dying. The bacteria can also cause sterility in both sexes and can contaminate the egg prior to laying and is one of the two principal infectious causes of dead-in-shell youngsters and nestling death. Many birds exposed to the bacteria show only mild or no signs and develop into asymptomatic carriers, periodically shedding the bacteria when stressed. The bacteria can also survive and multiply in the environment. The disease is difficult to control because of the difficulty of detecting carrier birds and the difficulty in completely eradicating the bacteria from a contaminated environment. It is important that potential breeding birds are obtained from paratyphoid-free lofts. If the disease appears, usually a three-step plan is followed, where:

1. severely affected birds are culled and all affected birds are separated from the flock;
2. all birds are treated with an appropriate antibiotic in the drinking water for 10 days; affected birds that fail to respond are then culled;
3. the environment is thoroughly cleaned and disinfected.

Repeat flare-ups can be expected and these measures are repeated when these occur.

5. Chlamydia. Chlamydia is the principal cause of respiratory infection in pigeons. It is found in the system of about 70% of all pigeons all the time. With stress the organism increases in number, spreads throughout the body and can infect a variety of sites including the respiratory system, liver, bowel and ovaries. The respiratory system however is the usual site involved and signs vary from mild sneezing through to a fatal air sac infection. In hens, however, where the ovary is infected, the organism can be passed with the egg and this is the other

principal infectious cause of dead-in-shell youngsters and nestling mortality in pigeons. In a well-managed loft, flare ups tend to be mild and widely spaced. The drug of choice to treat chlamydia is Doxycycline. Doxycycline is a tetracycline antibiotic and therefore has the side effect of interfering with calcium absorption from the bowel. This makes its use during breeding difficult and can indirectly cause soft-shelled eggs, egg binding and runting of youngsters. The disease can be managed in one of two ways. 3 – 5-day courses of Doxycycline can be given in the water when flare ups occur. In a loft with a good environment under a good manager, and where all primary parasitic diseases are controlled, flare ups of clinical disease should only occur sporadically and this is a reasonable way of managing the problem. The organism can however be eradicated by a 30 - 45-day course of Doxycycline. Once the organism is eradicated, the loft would need to be kept 'closed'. This applies not only to live birds but also to droppings as the organism can remain viable in droppings for up to 7 days. Any new birds must be treated in isolation for 30 - 45 days prior to being allowed entry to the main flock. As wild pigeons and parrots carry the organism, their droppings must also be excluded from the loft. Doxycycline is a moderately expensive antibiotic, costing approximately \$50 for 1 kg of 12% powder. The dose is 1/2 teaspoon per litre. One hundred birds will drink 4 1/2 litres of water daily.

6. Canker. In health, each time the feeding stock bird feeds its youngsters, it passes on some of its own trichomonads to the growing nestling. This allows a controlled gradual exposure to the organism, which enables the youngster in turn to develop its own natural immunity to the organism. It is this natural immunity that in the longer term protects the pigeon from disease. Disease occurs in nestlings due to too high an exposure to the organism over a short period of time. This occurs as a result of the interplay of a number of factors, including the strain of trichomonad organism, the overall health of the birds, and also the genetic make up of the birds. It is important that anticanker medication be used correctly and in particular not overused. Overuse interferes with the ongoing exposure to the organism and can in the longer term create a vulnerability to the disease. If significant numbers of nestlings appear with canker, these can be treated individually in the nest with either Flagyl or Spartix tablets, however, this is expensive and time-consuming and unless caught early results in a weakened youngster of decreased value. Attention must focus on preventing further cases through strategic short courses of an anticanker drug such as Turbosole (usually for 2 days, 1 teaspoon to 1 litre) to decrease the amount of trichomonads shed by the feeding parents. In well-managed lofts, the disease can be kept to a minimum, however, any birds that consistently breed youngsters with the disease, ie are genetically susceptible, should be removed from the loft and their youngsters not considered for future breeding stock.

The extended breeding of squab pigeons is a significant stress and given time there is the potential for subtle nutritional deficiencies to develop which can have a dramatic long-term effect on production. A diet based on dry seed alone is not regarded as providing a complete or balanced diet. Complete maintenance pellets or alternatively supplementary pellets designed to be fed as 10 – 20% of an otherwise grain diet are an effective way of providing superior nutrition.

To some extent, the way that diseases are managed depends on whether the facility is purely producing squabs for sale or alternatively producing breeding stock to sell to producers. For squab production, if the effect that diseases such as chlamydia and salmonella have on production is small, it will not be financially worthwhile to embark on eradication programs. However, for a producer of breeding stock there is obvious financial advantage in being able to advertise the stock as being parasite- and chlamydia-free and genetically resistant to canker, and so the cost of these measures may be offset by the proportionate increase in value of the stock.