

One of the questions that is always at the top of everyone's agenda is the age-old problem of infertility. Some of you may have read "Canary Tales" by Linda Hogan the American specialist breeder and aviculture scientist – well respected by our top breeders in this country. In one of her mailbags she was asked about fertility, scientific research on the subject and how she conditions her birds, I thought you might like to read and consider the following:

***Extract from "Canary Tales" by Linda Hogan***

If the hen begs the male to breed with her, fertility is not generally a problem. An occasional male is infertile, especially when breeding closely related birds, but these can be culled from the stock. It is a common practice to increase the frequency of extras such as egg food and greens in a well-meaning attempt to rush the birds into breeding. However, successful breeding will come naturally for the birds if we avoid the temptation to rush them into breeding condition.

To be successful in breeding take your clues from the birds. When we study the birds and pick up on their signals, we will produce optimal results. I will give you some general guidelines. Foods are either high in carbohydrates, proteins, or both. Foods that are high in carbohydrates push breeding behaviour (egg laying, loss of body confirmation, and loud frequent singing). Greens, canary seed, egg food (EMP) without egg added are all high in carbohydrates be very careful not to rush the hens with these foods; infertile eggs will result. The more rushing you do, the lower your fertility rate.

Often I receive phone calls during breeding season from people having almost no fertility. Almost always, they are giving the birds everything and lots of it. They fail to understand the birds are being pushed to lay eggs, which is not the same as laying fertile eggs. I tell them to stop giving any extras and within about 3-4 weeks they call back and are surprised because now the fertility is almost 100%. You have to feed right to get good results.

Higher protein foods include: hard-boiled egg, wheat germ, petamine, and oily seeds (hemp, rape and niger). Higher protein foods encourage breeding behaviour but not egg laying.

In January, feed seed mix daily, fresh water daily, cuttlebone available, and a digestible mineral available (no sand or true grit).

**The extras:**

1. Petamine made in US by Kellogg. It is a powder with niger seeds. You probably have a similar product there. It is 21 % protein, 13% fat and is sold as a conditioner because it has lots of vitamins and minerals. The most important ingredients in a conditioner are vitamins, minerals, brewers dried yeast, soy protein concentrate, wheat germ meal, cod liver oil, and fish meal. Feed four days a week.
2. Toasted wheat germ. 100% natural lightly toasted wheat germ. It is 2% carbohydrate, 2% fat, 4 gms of protein, and is high in vitamin E. Feed three days a week.
3. Once a week feed a small amount of bee pollen (no more than 1/4 teaspoon per bird). This is high in vitamins, approximately 25% protein and high in carbohydrate.
4. Hard-boiled egg yolk small amount once a week. DO NOT FEED EMP OR OTHER NESTLING FOOD UNTIL THE FIRST BABY HATCHES!!!
5. Feed a small amount of greens once a week. Greens are high in carbohydrates. Large quantities fed frequent will push.

Get the males ready first. If the males are lagging behind (not dropping wings and displaying breeding behaviour about one month before you plan to breed) coat their seed with a little wheat germ oil and powdered vitamin containing amino acids.

One may also increase toasted wheat germ available to the males. Toasted wheat germ brings birds along more slowly than wheat germ oil. If wheat germ oil is overdone, males become aggressive and mean.

On the 13th day of egg incubation, offer egg food daily only if babies are expected. EMP with hard-boiled egg will work fine. (Egg food should be high carbohydrates and high proteins. High protein discourages the hen from laying the second nest too quickly.) The first five days or until the chicks are banded, also feed 1/4 of a hard-boiled egg to each pair. If the hen feeds poorly, the hard-boiled egg yolk will sustain chicks until she feeds more. If you continue to offer pure hard-boiled egg after the chicks are banded, watch the vents. This may be too rich and cause sealed vents. If this happens, increase carbohydrates (greens) and stop the pure hard-boiled egg. Offer green and sprouted seed daily after the chicks are banded. When weaning, feed the young egg food, hard-boiled egg, greens, sprouted seeds, and couscous. I prefer wheat couscous. To one cup of couscous, add one cup of hot water. Stir and let set about 5 minutes, stir again. If it is lumpy, break it up with your fingers.

Couscous prevents weight loss and going light. (Separate male and female babies to prevent females from going light.)

Wheat germ oil should be added to egg food when birds reach peak breeding condition. This will prolong fertility and breeding, but be sure to stop adding it about a month before moulting. If you don't the hens will keep laying. Also discourage egg laying by taking away greens and increasing rapeseed. During molting feed more oily seeds and proteins. Add some carbohydrates when you trying to stop the moult but be careful not to overdue it as that will destroy the type confirmation.

From your letter, I can see you are offering your birds a good diet. Unfortunately, you are overfeeding foods that push the hens to lay infertile eggs before they reach breeding condition. When this happens, hens lay lots of single dark blue eggs, skip laying for a few days, lay eggs off the perch, abdomens are not red and do not feel hot, fail to build good nests and desert their nests. Be more patient. Breeding is natural if we don't rush egg laying. Always slowly and progressively bring the birds toward breeding condition.

As far as lighting it must be a consistent total daily photoperiod and progressively longer days as breeding season approaches. In the US, Borders breed best at 14 1/2 hours of total daylight. Artificial lights are not essential but adequate lighting is necessary for the hens to see the chicks begging for food.